

CSR Report 2011

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## CSR Report

### About CSR Report

Sony first issued an environmental report in 1994. In 2003, Sony enhanced the information related to corporate social responsibility (CSR) and changed the name of the report to "CSR report".

Sony has released the CSR report on its website since 2008, disclosing its key CSR activities, comprehensive information related to its business operations and important topics of interest to stakeholders in full detail. A PDF file of the website's content will be also available soon.

Sony also issues an abridged version of the report in printed form, CSR Report Executive Summary, which highlights Sony's key CSR activities. You can request the printed version or download the PDF file of the report from Sony's website.

Sony's basic philosophy in regards to corporate social responsibility (CSR) is set forth in the Sony Group Code of Conduct and is summarized as follows.

**It is the core corporate responsibility of Sony Group to the society to pursue its corporate value enhancement through innovation and sound business practice. Sony Group recognizes that its business activities have direct and indirect impact on the societies in which it operates, and therefore sound business practice requires that business decisions give due consideration to the interests of its stakeholders including shareholders, customers, employees, suppliers, business partners, local communities and other organizations. The Sony Group will endeavor to conduct its business accordingly.**

In line with this basic view, Sony conducts CSR activities with a focus on sustainability in two areas. First, Sony endeavors to ensure the sustainability of its business operations. To this end, Sony has established effective systems for corporate governance and compliance to ensure sound business practices. At the same time, it promotes efforts to ensure the quality and environmental soundness of its products and services over the entire supply chain and value chain including its operations. Sony also believes in the importance of fostering diverse and lively workplaces and employees with a high level of social awareness. Recognizing fully that its business activities affect both society and the environment in direct and indirect ways, Sony takes steps to minimize that impact to the best of its ability.

Second, Sony strives to contribute to the realization of a sustainable society. With the aim of addressing the issues facing global society today and realizing a sustainable global environment-which includes ensuring biodiversity-Sony aims to create value by developing products and services and advancing innovation, as well as to promote initiatives that draw on the capabilities of employees. Here, it is important to maintain a global perspective and to work in partnership with Sony's various stakeholders.

As expressed in the key phrase "For the Next Generation.", Sony continues to undertake a variety of CSR activities and to promote effective disclosure and communication with stakeholders.

## Reporting Scope and Composition

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- This website summarizes the CSR activities of the Sony Group worldwide during fiscal year 2010 (which began on April 1, 2010 and ended on March 31, 2011). It also includes reporting on some material activities, such as major organizational changes, up to the end of September, 2011. In this website, the Sony Group refers to Sony Corporation -- the parent company that operates in Japan -- and all consolidated subsidiaries in which Sony Corporation holds a capital stake of more than 50%. "Sony" and "the Company" refer to the Sony Group.
- Sony discloses its operating and financial results in the "Investor Relations" website and information on our CSR activities in the CSR website.
- Guidelines referenced in the preparation of this report are as follows: 2006 Sustainability Reporting Guidelines, published by the Global Reporting Initiative (GRI) in October 2006 and Environmental Reporting Guidelines (Fiscal year 2007 version), published by Japan's Ministry of the Environment. For comparative tables that are covered in 2006 Sustainability Reporting Guidelines, please see below.
- GRI Sustainability Reporting Guidelines 2006 and its Content Index  
<http://www.sony.net/SonyInfo/csr/report/sustainability/index.html>
- Sony has obtained third-party verification of reported environmental data. For more information, please see below.
- Independent Verification Report  
<http://www.sony.net/SonyInfo/csr/environment/data/BVQI/index.html>



## Management Message

### Message from the CEO

(Updated on November 16, 2011)

Let me begin a review of our corporate social responsibility (CSR) initiatives in fiscal year 2010 by addressing the Great East Japan Earthquake of March 11, 2011 and the subsequent tsunami, and at the same time expressing my sincerest condolences to all those who have been affected by these disasters. Fortunately, none of our employees suffered major injuries or lost their lives in these tragic events, though sadly, many of their family members and friends experienced grievous losses. While rebuilding has begun, none of us can afford to forget the longterm impact these events will have on Japan, though I am certain that the resiliency of the Japanese people, combined with the ongoing support of the international community, is helping Japan to emerge from this time of trial stronger than before, and with a renewed sense of purpose.



Very soon after the disaster struck, I visited our Sendai Technology Center in Miyagi Prefecture, which had been heavily damaged by the tsunami that tore through the region. I was humbled by the selflessness and resourcefulness demonstrated by our Sony colleagues in the tense hours after the quake. They not only worked quickly to ensure their own collective safety, but also went to great lengths to assist and ensure the safety of the many local residents who had fled other nearby buildings and taken refuge in our facility.

I am extremely proud of the courageous way in which Sony employees in Japan have coped with the difficulties they have faced in recent months as a result of this disaster. I am equally proud of how our employees around the world rallied together with business partners, customers and other key stakeholders, to lend unprecedented support to the relief effort. In addition to making an immediate \$5 million charitable contribution, we instituted a global matching gift program through which we matched employee contributions, dollar for dollar, to the relief efforts. This initiative, alone, raised a total of \$11 million for disaster relief and recovery. But our efforts did not stop there. Sony Music Entertainment came together with the other major music companies to launch a special benefit album called "Songs for Japan." PlayStation®Network (PSN) gave consumers around the world the ability to make disaster relief contributions directly from their PSN accounts. The list goes on and on.

Sony continues to contribute actively to post-disaster relief and reconstruction, by participating in a wide range of medium- and long-term reconstruction efforts in cooperation with various stakeholders, including Sony employees, local communities, nongovernmental organizations (NGOs) and nonprofit organizations (NPOs).

In April 2011, PSN, Qriocity and Sony Online Entertainment systems were the victims of an unprecedented criminal cyberattack that forced us to temporarily shut down these services. Sophisticated criminal intrusions into network systems like the ones we experienced pose a threat not only to our customers, but also to the entire business world. We have engaged some of the most respected names in cybersecurity, and together we have worked to strengthen our information security systems, placing our highest priority on ensuring the security of our customers' personal information.

These events have presented significant challenges to our Company. However, I have always believed that out of crisis comes opportunity. Following the earthquake, for example, we focused on minimizing its impact on our customers and on reinforcing our risk management system to ensure our ability to maintain business continuity, even in the event of a disaster. And while the Great East Japan Earthquake has affected Japanese society in many different ways, among the most notable is the change in social imperatives with respect to the energy supply and demand structure.

Disruption of electric power supplies in areas affected by the quake caused sudden power failures. As a result, energy storage technologies are attracting increasing attention for potential use in facilities such as schools, hospitals, broadcast facilities and data centers, as well as in residential homes. Having identified power generation and energy storage as key new business areas even before the disaster struck, we are focusing on this opportunity and accelerating innovation in this area.

In April 2011, we commenced mass production of an energy storage module that uses rechargeable lithium-ion batteries that are made with olivine-type lithium-ion iron phosphate as the cathode material and have a lifespan of more than 10 years. This groundbreaking innovation, which truly responds to current needs, will contribute to reducing our environmental impact. We began selling energy storage modules to infrastructure facilities for use as a backup power source, as well as to residential communities for home use. This module is finding favor for a variety of other applications as well, including a new energy system currently being tested in Okinawa, Japan, that is combined with such natural energy sources as solar and wind.

On the subject of environmental initiatives, I am pleased to report that we succeeded in meeting or exceeding nearly all of the targets set forth in our Green Management 2010 plan, which aimed to reduce our environmental impact over a five-year period from fiscal year 2006 through fiscal year 2010. Among our achievements was a 30% reduction in greenhouse gas emissions from our sites compared to 2000 levels. Looking ahead, we will step up efforts to respond to environmental challenges with the aim of achieving new mid-term environmental targets for fiscal year 2015 in line with our "Road to Zero" global environmental plan -- which sets forth a long-term vision of achieving a zero environmental footprint.

The initiatives described in this note are just a few of those undertaken this year in an effort to fulfill our responsibilities as a global corporate citizen and to promote social innovation that contributes to a safe, healthy and sustainable future for our planet and its people. Working with international organizations, NGOs and others, we will continue to pursue a wide range of ambitious initiatives in an effort to fulfill our responsibilities as a global corporate citizen.

I hope that you find this report and our CSR website informative, and that they provide you with a greater understanding of both the philosophy behind our CSR program and the full range of our related activities.

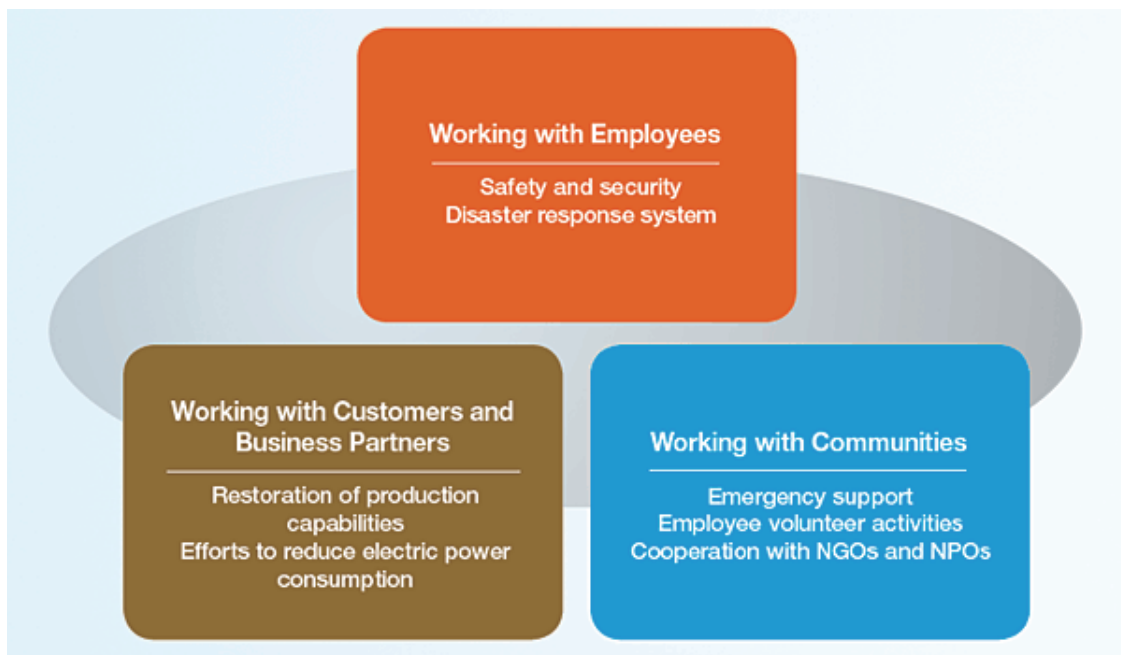


Howard Stringer  
Chairman, CEO and President  
Representative Corporate Executive Officer  
Sony Corporation

## Sony Group Support for Recovery Efforts in the Wake of the Great East Japan Earthquake

Sony offers its deepest sympathy to all who were affected by the Great East Japan Earthquake, which struck on March 11, 2011.

While certainly affected by the disaster, Sony was fortunate to have been able to continue its operations, enabling Sony to support Japan's relief efforts immediately following the disaster and ongoing medium- and long-term recovery initiatives.



### Working with Employees

#### Safety and security measures and Sony's disaster response system

In the immediate aftermath of the disaster, Sony gathered information and coordinated responses on the ground through its emergency response headquarters. The headquarters worked swiftly to assess the impact on Sony Group sites and confirm the safety of staff working at these sites, as well as to extend support to evacuees once they had returned home. Sony also helped provide temporary and new housing to employees whose homes were destroyed or partially damaged by the earthquake.

Going forward, Sony will apply insights gained and lessons learned from the Great East Japan Earthquake to further strengthen systems for responding to disasters and ensuring the safety and security of its employees.

#### Enabling employees to participate in volunteer activities

Shortly after the disaster, Sony began to support employees who sought to participate in volunteer activities; specifically, Sony established special volunteer programs, both at damaged sites and elsewhere, tailored to the needs of communities in affected areas. (For more information on employee volunteer activities, see pages 10-11.)

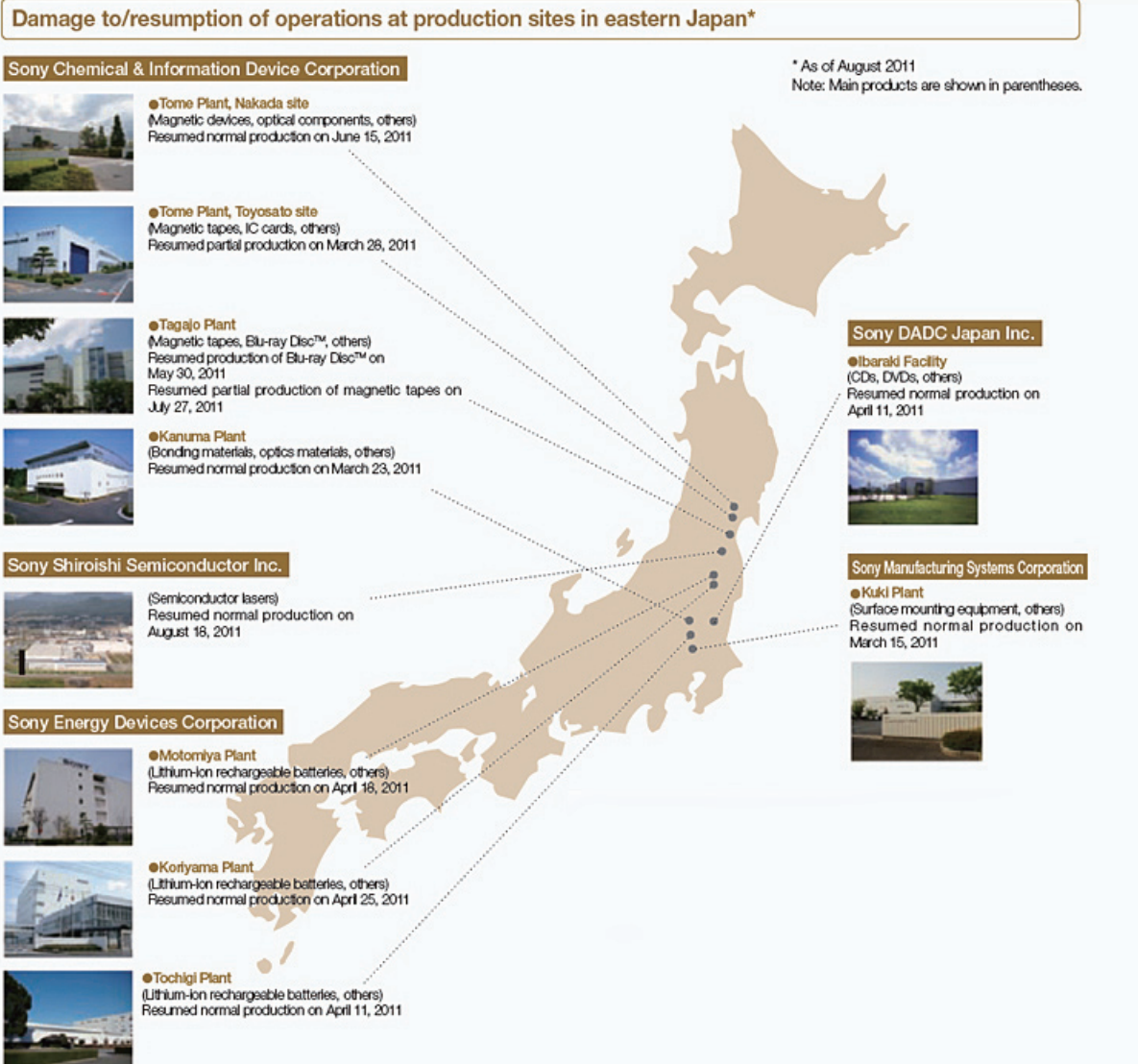
## Working with Customers and Business Partners

#### Efforts to assess damage and resume operations at Sony manufacturing sites and plants in eastern Japan

Despite having to suspend operations at 10 manufacturing sites damaged or otherwise affected by the disaster, Sony had succeeded in resuming normal or partial operations at all sites by the end of May 2011. Notably, Sony's Tagajo Plant in Miyagi Prefecture, which sustained the most significant damage, resumed production of the mainstay Blu-ray Disc™ and other professional disc media in late May and magnetic tapes in late June.

In addition to the 10 sites noted above, Sony was also forced to implement temporary production adjustments at several other domestic manufacturing sites that were not directly damaged in the disaster in response to shortages of necessary raw materials and components. However, the most of Sony's manufacturing sites have now resumed normal production.\*

\*As of August 2011



### Responding to restrictions on electric power use

In response to restrictions on electric power use-implemented as a consequence of insufficient electric power supplies in areas served by Tokyo Electric Power Co., Inc., and Tohoku Electric Power Co., Inc. -Sony has taken steps to reduce power consumption. Specifically, the Company implemented night shifts, rotating facility closures in the summer months, introduced daylight savings time at its facilities, and installed energy-efficient lighting and air-conditioning equipment. With these approaches among other measures, Sony reduced its power consumption to 15%\* below the target that was set by the Japanese government.

\*July-September 2011

## Working with Communities

In the days following the Great East Japan Earthquake and in the months since, Sony has engaged its employees and has undertaken a number of activities, working closely with nongovernmental organizations (NGOs) and nonprofit organizations (NPOs) to contribute to immediate relief efforts and long-term recovery.

### Support at Sony sites in disaster-hit areas

Sony sites in disaster-hit areas took prompt steps to assist displaced local residents. The damaged Tagajo Plant provided food and shelter to approximately 100 local residents who sought refuge at the upper floors of the flooded facility in the immediate aftermath of the disaster. Plant staff also assisted with relief efforts at the local volunteer center. The Tagajo Plant is also working with local authorities and is planning to lend certain site buildings to local businesses and temporarily assign certain staff members to assist and support officials.

### Emergency relief provided by the Sony Group

In addition to donating a total of \$5 million, the Sony Group provided emergency aid supplies in the days following the disaster, including 30,000 radios and 500,000 dry cell batteries.

### Matching gift program to support employee contributions and fundraising programs for customers

Approximately 74,000 Sony employees and former employees in more than 50 countries and territories donated a total of approximately \$5.5 million directly to relief efforts. With an additional \$5.5 million raised through a special matching gift program, whereby Sony matched employee donations, the total of \$11 million was donated for disaster relief and recovery.\*1 Fundraising programs with customers, such as direct donation from PlayStation®Network (PSN) accounts and Sony Point program and So-net Point service, raised an additional \$2.5 million from approximately 300,000 participants.\*2

\*1 As of June 2011

\*2 As of June 17, 2011

### Donated the proceeds from the sales of Songs for Japan, a charity compilation album, to support the victims of the Great East Japan Earthquake

Sony Music Entertainment cooperated with other major record companies\* to produce a charity compilation album, Songs for Japan, with the proceeds from the sales of the album donated to the Japanese Red Cross Society.

\* UNIVERSAL MUSIC LLC, Warner Music Japan Inc. and EMI Music Japan Inc.



### Employee volunteer efforts

**More than 260\* Sony employees have volunteered to assist with relief efforts in areas affected by the disaster. Sony will continue to encourage participation in volunteer initiatives in a manner that reflects local needs and the progress of recovery.**

\* As of September 2011

### Participation in business community volunteer program

In response to a call by the Keidanren One Percent Club\*1, Sony recruited employees to volunteer for a program organized by the Joint Committee for Supporting Voluntary Disaster Relief Activities. Participants were dispatched to affected areas, where they assisted with a variety of efforts, including the removal of mud and rubble, as requested by local volunteer centers. Debriefing sessions were held afterward to enable participants to report on their activities and widen the circle of support. A cumulative total of 95 employees have volunteered for this program.\*2

\*1 The Keidanren One Percent Club was established by the Keidanren in November 1990. Members are committed to donating the equivalent of at least 1% of their current profit (companies) or disposable income (individuals) to support social contribution initiatives.

\*2 As of September 2011



Participants in business community volunteer program

### Program organized by concerned employees

With the aim of widening the circle of support, participants in the business community volunteer program plan and administer a program that enables employees to use their holidays and weekends to volunteer in disaster-hit areas. Approximately 70\* employees have participated in the program.

\* As of September 2011



Participants in program organized by concerned employees

### Supporting recovery through the medium of soccer

Anxious to help bring smiles back to the faces of local children, players on Sony-affiliated team Sony Sendai FC\*1 organized soccer classes for children in evacuation centers while at the same time assisting with efforts to restore operations at Sony facilities. In the city of Tagajo, players also sponsored a public viewing of J.League team Vegalta Sendai's first home match of the year, a project undertaken in cooperation with the Solar Bear Fund\*2.

\*1 The Sony Sendai Football Club is a Sendai-based professional soccer team.

\*2 The Solar Bear Fund, which uses two bears as its mascots, is a Japanese NPO involved in a broad range of activities, including promoting the adoption of renewable energy and providing environmental education for children.



Soccer classes for children organized by Sony Sendai FC players

## Medium- and long-term initiatives undertaken in cooperation with NGOs and NPOs

### Collecting, cleaning and digitizing photographs and photo albums

As part of its effort to provide support in areas affected by the Great East Japan Earthquake, Sony developed a special macrophotography-based digitizing device to facilitate the digital preservation of tsunami-damaged photographs and photo albums. Sony employee volunteers in the area worked with a local NGO to collect and clean photographs and albums, which were then digitized and stored using the device.



Restoring a damaged photo album using a specially developed digitizing device

### Supporting NPOs focusing on children

Capitalizing on Group assets, Sony prepared a special entertainment package\* for use by NPOs working to assist children in disaster-hit areas. The package was also given away at a fundraising event organized by a relief organization at the Sony Building in Tokyo's Ginza district.

\* The entertainment package included a television and DVD player, as well as various software titles, including animation, movies and music.

### Assisting efforts to provide opportunities for children to study and play through participation in Project Yui

Sony has endorsed Project Yui, a public-private sector consortium established to support medium- and long-term recovery efforts in disaster-hit areas, and is helping to provide opportunities for children to study and play—primarily in Ishinomaki, Miyagi—as well as to sort and distribute study materials. Approximately 20\* employees volunteered to participate in activities with local children, including building PET bottle rockets and baking cookies in the assembly hall of a temporary housing village.

\* As of September 2011

### RESTART JAPAN Fund: Providing support for recovery efforts over the medium and long term

With the aim of assisting children in affected areas over the medium and long term, Sony joined forces with Save the Children Japan\* to establish the RESTART JAPAN Fund. Sony is harnessing the considerable assets of the Sony Group to focus on protection and care, education, and creative activities for children.

As a first step, profits from sales of “RESTART,” a charity single performed by the Japanese band TUBE, were donated to the RESTART JAPAN Fund. Other fundraising activities included a special science program for children organized by Sony Science Foundation, a charity concert sponsored by Sony Music Foundation and a charity beach soccer match between teams from Japan and Brazil, held in Rio de Janeiro, Brazil.

Sony will continue to collaborate with Save the Children through the RESTART JAPAN Project to assist children in areas affected by the disaster.



Charity beach soccer match between teams from Japan and Brazil (held in Brazil)



Save the Children RESTART JAPAN

<http://www.savechildren.or.jp/restartjapan/eng/>

\* Established in 1919, Save the Children is a United Nations-certified global NGO that provides support for children and their families, as well as for the improvement of local communities. One of the world's most respected NGOs, Save the Children is active in approximately 120 countries, where it conducts a variety of programs-including emergency relief-tailored to local needs. Save the Children Japan is a Cabinet Office-approved organization.



Charity song "RESTART"

## Corporate Governance

### Governance Structure

Sony is committed to strong corporate governance. As a part of this effort, in 2003, Sony adopted the "Company with Committees" corporate governance system under the Companies Act of Japan. In addition to complying with the requirements of applicable governance laws and regulations, Sony has introduced its own requirements to help improve the soundness and transparency of its governance by strengthening the separation of the Directors' function from that of management and advancing the proper functioning of the statutory committees. Under Sony's system, the Board of Directors defines the respective areas for which each of the Corporate Executive Officers is responsible and delegates to them decision-making authority to manage the business, thereby promoting the prompt and efficient management of the Sony Group.

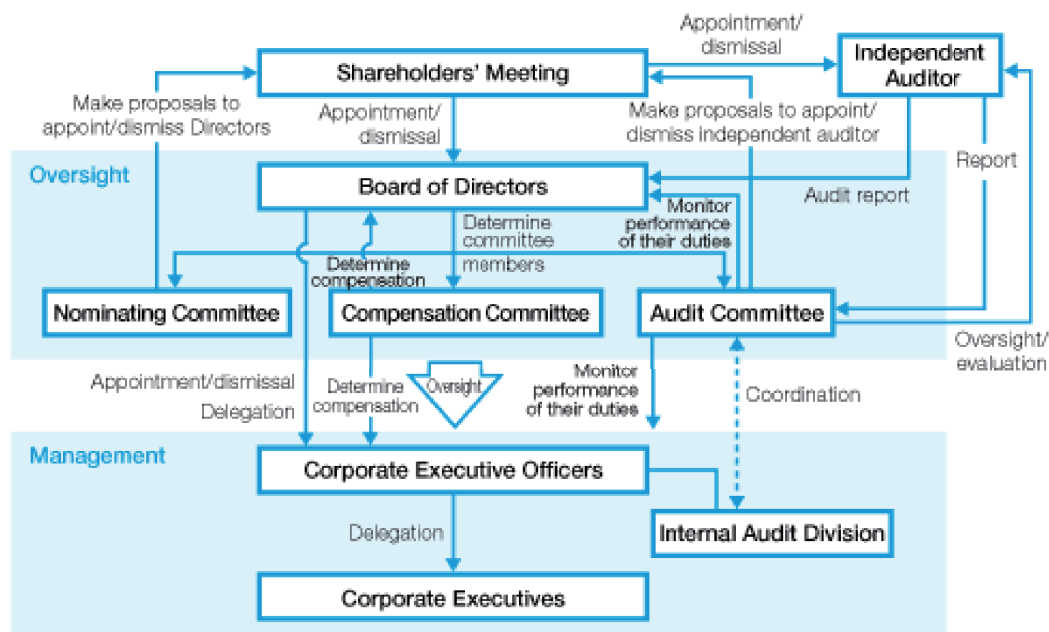
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## Corporate Governance

### Governance Structure

(Updated on November 16, 2011)

Sony Corporation is governed by its Board of Directors, which is appointed by resolution at the shareholders' meeting. The Board has three committees (the Nominating Committee, Audit Committee and Compensation Committee), consisting of Directors named by the Board of Directors. Corporate Executive Officers are appointed by resolution of the Board of Directors. In addition to these statutory bodies and positions, Sony has Corporate Executives who carry out business operations within designated areas.



### Primary Roles of the Governance Entities

(Updated on November 16, 2011)

#### Board of Directors:

- Determines the fundamental management policies of the Sony Group
- Oversees the management of Sony Group's business operations
- Appoints and dismisses the statutory committee members
- Appoints and dismisses Representative Corporate Executive Officers and Corporate Executive Officers

#### Nominating Committee:

- Determines the content of proposals regarding the appointment/dismissal of Directors

#### Audit Committee:

- Monitors the performance of duties by Directors and Corporate Executive Officers (with respect to processes in place to ensure the adequacy of the financial reporting process, to enable management to ensure the effectiveness of internal control over financial reporting, to ensure timely and appropriate disclosure, and to ensure compliance with applicable

law, Articles of Incorporation and internal policies). Monitors the status of any other items described in the "Internal Control and Governance Framework" determined or reaffirmed by the Board of Directors in accordance with the Companies Act of Japan. As part of its monitoring, attends the Nominating Committee and Compensation Committee meetings.

- Oversees and evaluates the work of the independent auditor (including to evaluate the adequacy of its independence and its qualification, to propose its appointment/dismissal or non-reappointment, to approve its compensation, to evaluate the appropriateness of its audit regarding the financial results and internal control over financial reporting, and to pre-approve its engagement for any services other than audit services to be provided)
- Prepares the Audit Committee Review Report in which the Audit Committee expresses its opinion on the performance of duties of Directors and Corporate Executive Officers, on the Business Report and on the independent auditor's audit procedures and results based on its review activities including review of the matters subject to the Committee's opinion in the Audit Committee Review Report.

**Compensation Committee:**

- Sets policy on the contents of individual compensation for Directors, Corporate Executive Officers, Corporate Executives and Group Executives, and determines the amount and content of individual compensation of Directors and Corporate Executive Officers in accordance with the policy

**Corporate Executive Officers:**

- Make decisions regarding the execution of Sony Group business activities within the scope of the authority delegated to them by the Board of Directors

**Corporate Executives:**

- Carry out business operations within designated areas, including business units, headquarters functions, and/or research and development, in accordance with the fundamental policies determined by the Board of Directors and the Corporate Executive Officers

## Sony Initiatives

(Updated on November 16, 2011)

To strengthen its governance structure beyond legal requirements, Sony Corporation includes several provisions in its Charter of the Board of Directors to ensure the separation of the Board of Directors from the execution of business, and to advance the proper functioning of the statutory committees. The main provisions are as follows:

- separating the roles of the Board chairperson/vice chairperson and Representative Corporate Executive Officers;
- limiting the number of terms of outside Directors;
- appointing chairs of statutory committees from the ranks of outside Directors;
- setting forth qualifications for Directors for the purpose of eliminating conflicts of interest and ensuring independence;
- raising the minimum number of Nominating Committee members (five or more) and requiring that at least two Directors of the Committee be Corporate Executive Officers;
- suggesting that, as a general rule, at least one Director of the Compensation Committee be a Corporate Executive Officer

- prohibiting the appointment of the CEO or COO of the Sony Group (or persons in any equivalent position) to serve on the Compensation Committee; and
- discouraging the concurrent appointment of Audit Committee members to other committees.

## Meeting Record

(Updated on November 16, 2011)

During the fiscal year ended March 31, 2011, the Board of Directors convened ten times. The Nominating Committee met six times, the Audit Committee met ten times and the Compensation Committee met eight times. All 12 outside Directors participated in all meetings of the Board of Directors held during his/her tenure period of the fiscal year ended March 31, 2011 except for Yukako Uchinaga, Roland A. Hernandez and Osamu Nagayama. (Yukako Uchinaga and Roland A. Hernandez each participated in nine meetings out of ten; Osamu Nagayama participated in six meetings out of seven.) Also, all 11 outside Directors who are members of Committees participated in at least 75 percent of the aggregate number of meetings of each Committee held during the fiscal year ended March 31, 2011. All three outside Directors who are members of the Audit Committee participated in all meetings of the Audit Committee held during his/her tenure period of the fiscal year ended March 31, 2011.

## Cooperation of the Audit Committee and the Internal Audit Division

(Updated on November 16, 2011)

Sony Corporation has an Internal Audit Division, which coordinates closely with the internal audit departments of major subsidiaries around the world to promote Sony Group's internal audit activities on a global basis. The Sony Corporation Internal Audit Division makes periodic presentations and submits monthly reports to the Audit Committee. To help assure its independence, the appointment and dismissal of the person in charge of the Sony Corporation Internal Audit Division is subject to the prior approval of the Audit Committee.

## Governance Related to the U.S. Sarbanes-Oxley Act

(Updated on November 16, 2011)

Sony is subject to the Sarbanes-Oxley Act (SOX) regulations because it is a foreign private issuer of equity securities registered with the U.S. Securities and Exchange Commission (SEC) and subject to SEC reporting requirements. Among other requirements, SOX requires the CEO and the CFO of Sony Corporation to sign certain certifications to accompany the Sony Annual Report on Form 20-F filed with the SEC, relating to the "fair presentation" of the consolidated financial statements, disclosure controls and procedures, and internal control over financial reporting. Sony has established "Disclosure Controls and Procedures," outlining the process through which potentially material information is reported from important business units, subsidiaries, affiliated companies and corporate divisions and is reviewed and considered for disclosure in light of its materiality to the Sony Group. The "Disclosure Committee," comprised of officers and senior management of the Sony Group including those who oversee investor relations, accounting, corporate planning, legal,

corporate communications, finance, internal audit, human resources and group risk, supervises the preparation of Sony's annual reports, current reports, quarterly earnings releases and other material disclosure, and assists the CEO and CFO in the establishment and implementation of this system and also in undertaking appropriate and timely disclosure. Effective since the fiscal year ended March 31, 2007, SOX also requires the inclusion of a management report on the company's internal control over financial reporting in the Form 20-F. In order to ensure compliance with this requirement, Sony formed a cross-functional steering committee comprised of management in charge of the principal Sony Group headquarters functions to monitor necessary actions including documentation, testing and evaluation of controls and to perform oversight and assessment of the global evaluation. Based on the company's evaluation, management has concluded that Sony maintained effective internal control over financial reporting as of March 31, 2011.

## Board of Directors' Determination Regarding Internal Control and Governance Framework

(Updated on November 16, 2011)

At a Board meeting held on April 26, 2006, the Board of Directors reaffirmed the existing internal control and governance framework (including the system regarding rules and other structure of risk management) and determined to continue to evaluate and improve such framework going forward, as appropriate. At a Board meeting held on May 13, 2009 the Board of Directors reaffirmed such internal control and governance framework, as slightly amended, in effect as of the date of determination and determined to continue to evaluate and improve such amended framework going forward, as appropriate. This determination was required by and met the requirements of the Companies Act of Japan.

### Supervision

#### Board of Directors

Chairman of the Board: Yotaro Kobayashi*	Yukako Uchinaga*	Director and Executive Vice President, Benesse Holdings, Inc.
Howard Stringer		Chairman of the Board, Chief Executive Officer and President, Bertiz Corporation
Ryoji Chubachi	Mitsuaki Yahagi*	Chairman of the Board, The Japan Research Institute, Limited
Yotaro Kobayashi*	Tsun-Yan Hsieh*	Chairman, Lin-Hart Group
Yoshiaki Yamauchi*	Roland A. Hernandez*	Retired Chairman and Chief Executive Officer, Telemundo Group, Inc.
Peter Bonfield*	Kanemitsu Anraku*	Director, Mzuho Financial Group, Inc.
Fuji Cho*	Yorihiko Kojima*	Chairman of the Board, Mitsubishi Corporation
Ryuji Yasuda*	Osamu Nagayama*	Executive Officer, Chugai Pharmaceutical Co., Ltd.
	Yuichiro Anzai*	Executive Academic Advisor for Keio University Professor, Faculty of Science and Technology, Keio University

#### Nominating Committee

Yotaro Kobayashi\* (Chairman)  
 Peter Bonfield\*  
 Fuji Cho\*  
 Roland A. Hernandez\*  
 Yorihiko Kojima\*  
 Yuichiro Anzai\*  
 Howard Stringer  
 Ryoji Chubachi

#### Audit Committee

Yoshiaki Yamauchi\* (Chairman)  
 Mitsuaki Yahagi\*  
 Kanemitsu Anraku\*

#### Compensation Committee

Ryuji Yasuda\* (Chairman)  
 Tsun-Yan Hsieh\*  
 Osamu Nagayama\*

\* An Outside Director who satisfies the requirements under Item 15, Article 2 of the Companies Act of Japan

### Execution

#### Corporate Executive Officers

Howard Stringer**	Chairman, Chief Executive Officer and President	Hiroshi Yoshioka	Executive Deputy President, Officer in charge of Professional, Device & Solutions businesses
Ryoji Chubachi**	Vice Chairman, Officer in charge of Product Quality & Safety and Environmental Affairs	Keiji Kimura	Executive Vice President, Officer in charge of Intellectual Property and the Disc Manufacturing business
Kazuo Hirai**	Executive Deputy President, Officer in charge of Consumer Products & Services businesses, Common Software Platform, Global Sales and Marketing Platform and Creative Center	Nicole Seligman	Executive Vice President, General Counsel
		Masaru Kato	Executive Vice President, Chief Financial Officer

\*\* Representative Corporate Executive Officer concurrently serving as Director  
 \*\*\* Representative Corporate Executive Officer

(Names and positions of new Directors and Corporate Executive Officers as of June 28, 2011)

#### Related Links

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- Charter of the Board of Directors:  
[http://www.sony.net/SonyInfo/IR/info/strategy/BoardCharter\\_E.pdf](http://www.sony.net/SonyInfo/IR/info/strategy/BoardCharter_E.pdf)
  
- Basic policy regarding remuneration for Directors and Corporate Executive Officers and amount of such remuneration (pages 103 - 106)  
[http://www.sony.net/SonyInfo/IR/library/FY2010\\_20F\\_PDF.pdf](http://www.sony.net/SonyInfo/IR/library/FY2010_20F_PDF.pdf)
  
- Board of Directors' determination regarding internal control and governance framework pursuant to the Japanese Companies Act:  
<http://www.sony.net/SonyInfo/IR/library/control.html>
  
- Significant differences between the New York Stock Exchange's corporate governance standards and Sony's corporate governance practices (including the explanation of "outside Directors"):  
<http://www.sony.net/SonyInfo/IR/info/strategy/NYSEGovernance.html>

## Risk Management System

(Updated on November 16, 2011)

Each Sony Group business unit, subsidiary or affiliated company, and corporate division is expected to review and assess business risks on a regular basis, and to detect, communicate, evaluate and respond to risk in their particular business areas. In addition, Sony Corporation's Corporate Executive Officers have the authority and responsibility to establish and maintain systems for identifying and controlling risks with the potential to cause losses or reputational damage to the Sony Group in the areas for which they are responsible. The Corporate Executive Officer in charge of Compliance is tasked with promoting and managing the establishment and maintenance of such risk management systems through the coordinated activities of the Group Risk, Compliance, Internal Audit and other relevant groups. As part of this effort, a network of Regional Risk Officers has been established to identify and work with designated "risk" contacts at each business unit, subsidiary or affiliated company, guide and confirm appropriate Enterprise Risk Management initiatives at the local and operational level, and share best practices.

## Crisis Management System

(Updated on November 16, 2011)

One aspect of risk management is the proper handling of crises if and when they arise, and the proper preparation for such crises. Sony's crisis management and business continuity activities predominately occur at the business and operational level closest to the events the Company may encounter. Since some events can have a significant impact on the entire Sony Group as a whole, Sony has established a Group crisis management procedure to enable a swift and organized Group-wide response to crises as needed. Under this system, crises are evaluated and classified into three levels to ensure dynamic and appropriate responses. Level 1 is defined as a crisis with the possibility of significant impact on the Sony Group, and the possibility of serious negative impact on the business of the Sony Group or its reputation, and will be handled under the direction of the CEO. Level 2 is a crisis that is determined not to be Level 1, but still has the possibility

of widespread impact within the Sony Group, and will be addressed by a cross-functional committee composed of headquarters executives relevant to the issue. Level 3 is a crisis that the Corporate Executive Officer in charge of the subject area determines may be resolved within his/her authority.



## Compliance

### Compliance

Ethical business conduct and compliance with applicable laws and regulations are fundamental aspects of Sony's corporate culture. To this end, Sony has established a Global Compliance Network comprised of the Compliance Division at the corporate headquarters, a global compliance leadership team, and regional offices around the world; adopted and implemented the Sony Group Code of Conduct; and set up Compliance Hotline systems through its Global Compliance Network -- all in order to reinforce the Company's worldwide commitment to integrity and help assure resources are available for employees to raise concerns or seek guidance about legal and ethical matters.

- Strengthening the Compliance System > page 21
- Sony Group Code of Conduct > page 22
- Internal Hotline System > page 24
- Educating Employees about the Sony Group Code of Conduct and the Internal Hotline System > page 24
- Compliance Monitoring Program > page 25
- Sony Group Anti-Bribery Program > page 26
- Basic Approach and Systems to Exclude Anti-Social Forces > page 26
- Information Security and Personal Information Management > page 27

## Compliance

### Strengthening the Compliance System

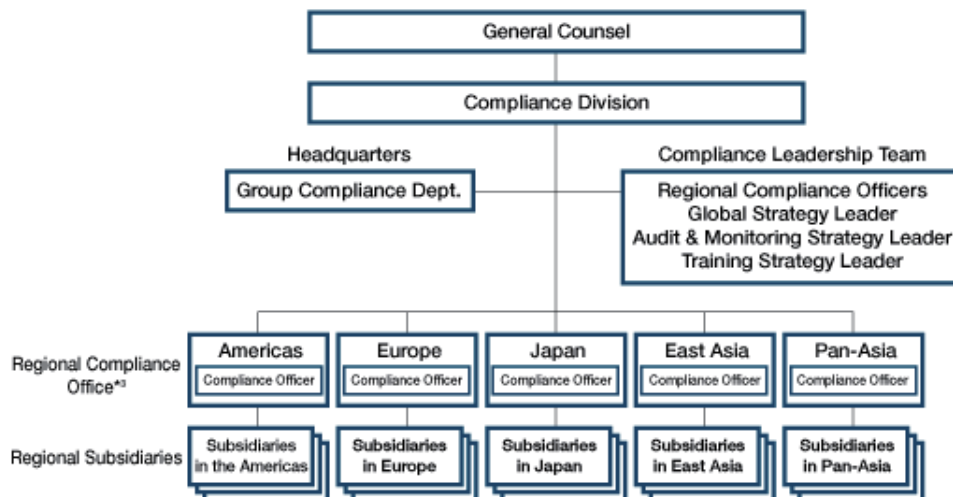
(Updated on September 9, 2011)

In July 2001, Sony Corporation established the Compliance Division, charged with exercising overall control over compliance activities across the Sony Group, to emphasize the importance of business ethics and compliance with applicable laws, regulations and internal policies. The Compliance establishes compliance policies and structures for the Sony Group and performs crisis management functions. In July 2003, Sony established a regional compliance network comprised of offices in the Americas, Europe, Japan, East Asia\*1 and Pan-Asia,\*2 which are charged with exercising regional control over compliance activities to strengthen the compliance system throughout the Sony Group. Officers responsible for compliance in each region have the authority to issue instructions concerning compliance to Sony Group companies in their respective regions and, by cooperating with one another, are working to establish and maintain a comprehensive global compliance structure. To further reinforce global compliance efforts, a Compliance Leadership Team was formed in September 2009 as an additional component of the global compliance organization. The Compliance Leadership Team assists the Sony Corporation General Counsel and Compliance Division in identifying, developing and implementing key compliance strategies and compliance-related measures; encourages more active participation in Group-wide compliance activities from a larger group of key Sony personnel by involving not only the Regional Compliance Officers but also experienced legal/compliance personnel from Sony Group companies; and creates a global framework that by its very structure highlights the company's compliance priorities and commitment to best practices.

\*1 Coverage area of East Asia compliance office: Mainland China, Hong Kong, Taiwan and South Korea

\*2 Coverage area of Pan-Asia compliance office: Southeast Asia, Middle East, Africa and Oceania

#### Global Compliance Network



\*3 The Americas Office is responsible for Sony Corporation of America, the Sony Pictures Entertainment Group, and the Sony Music Entertainment Group, in addition to the Electronics Group companies in the America's Region. The Sony Europe, East Asia and Pan-Asia Offices are responsible for the Electronics Group companies in their respective regions. The Japan Office is responsible for Sony Corporation, the Sony Computer Entertainment Group, and Sony Financial Holdings, in addition to the Electronics Group Companies in Japan

## Compliance

### Sony Group Code of Conduct

(Updated on September 9, 2011)

In May 2003, Sony adopted the Sony Group Code of Conduct, which sets the basic internal standards to be observed by all directors, officers and employees of the Sony Group in order to emphasize and further strengthen corporate governance, business ethics and compliance systems throughout the Sony Group. This Code of Conduct sets out, in addition to legal and compliance standards, the Sony Group's basic policies concerning ethical business practices and activities on such topics as respect for human rights, safety of products and services, environmental conservation and information disclosure. It has been adopted and implemented by each Sony Group company globally and is the subject of frequent "tone from the top" messaging and other training. To date, the document has been translated into 26 languages.

- Sony Group Code of Conduct:

[http://www.sony.net/SonyInfo/csr/compliance/code\\_of\\_conduct.pdf](http://www.sony.net/SonyInfo/csr/compliance/code_of_conduct.pdf)

The Sony Group Code of Conduct reflects principles set out in the Organisation for Economic Co-operation and Development (OECD) Guidelines for Multinational Enterprises, the United Nations Global Compact and the United Nations Universal Declaration of Human Rights. Sony also participated in the formulation of and observes the standards outlined in the Charter of Corporate Behavior of the Nippon Keidanren (Japan Business Federation), an alliance of Japan's leading corporations.

- OECD Guidelines for Multinational Enterprises

<http://www.oecd.org/>

- United Nations Global Compact

<http://www.unglobalcompact.org/>

- United Nations Universal Declaration of Human Rights

<http://www.un.org/Overview/rights.html>

- Nippon Keidanren Charter of Corporate Behavior

<http://www.keidanren.or.jp/english/policy/cgcb.html>

## Sony Group Code of Conduct

Established May 2003

[Scope of Application: Companies]

Standards applicable to Sony Corporation, as well as any company more than 50% of whose outstanding stocks or interests with voting rights is owned directly or indirectly by Sony Corporation, and such other companies as determined by the Board of Directors of Sony Corporation

[Scope of Application: Personnel]

Standards applicable to all Sony Group directors, officers and employees

[Headings]

### 1. General Standards

- 1-1 Compliance with Laws as well as Internal Rules and Policies; Honest and Ethical Business Conduct
- 1-2 Relationship with Stakeholders
- 1-3 Appreciating Diversity
- 1-4 Avoiding Structural Conflicts of Interest
- 1-5 Communication of Concerns and Alleged Violations

### 2. Respect for Human Rights

- 2-1 Equal Employment Opportunity
- 2-2 No Forced Labor/Child Labor
- 2-3 Sound Labor and Employment Practices
- 2-4 Work Environment

### 3. Conducting Business with Integrity and Fairness

- 3-1 Product and Service Safety
- 3-2 Environmental Conservation
- 3-3 Fair Competition
- 3-4 Advertising
- 3-5 Public Disclosure
- 3-6 Personal Information
- 3-7 Intellectual Property
- 3-8 Confidential and Proprietary Information
- 3-9 Fair Procurement
- 3-10 Gifts and Entertainment
- 3-11 Recording and Reporting of Information

### 4. Ethical Personal Conduct

- 4-1 Insider Trading
- 4-2 Personal Conflicts of Interest
- 4-3 Corporate Assets
- 4-4 Media Relations and Public Statements

## Compliance

### Internal Hotline System

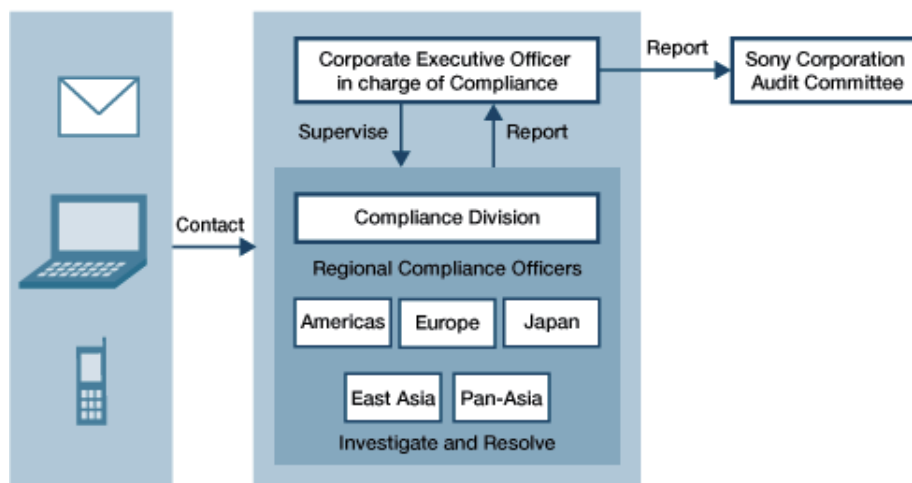
(Updated on September 9, 2011)

Following the adoption of the Sony Group Code of Conduct, Sony also established a Sony Group Compliance Hotline system as a resource for employees to report concerns or seek guidance about possible violations of laws or internal policies, and to allow the Sony Group to respond swiftly to potential risks of such possible violations. The Sony Group Compliance Hotline system is available worldwide. Callers who report issues in good faith are protected from any possibility of retaliation for the report.

The Sony Group Compliance Hotline system is directly linked to the Corporate Executive Officer in charge of Compliance and is operated independently from the ordinary line of command. Summaries of hotline calls, results of investigations, and updates on the operation of the system are reported to senior management and the Audit Committee.

During fiscal 2010, the Sony Group received approximately 360 hotline contacts covering issues primarily relating to employment, labor, work environment, information management and possible conflicts of interest. All contacts received are investigated for the purpose of verification and appropriate action. In certain cases, these contacts have led to a review of internal procedures and the strengthening or enforcement of internal rules.

Sony Group Compliance Hotline



### Educating Employees about the Sony Group Code of Conduct and the Internal Hotline System

(Updated on September 9, 2011)

To ensure that all employees understand the importance of the Sony Group Code of Conduct, as well as to promote use of the internal hotline system, Sony Group senior management informs executives and employees about these topics through ongoing dissemination of e-mails, as well as implementation of online and class room training. Further, Sony Group executives and senior management with a certain level of authority are annually requested to submit a certification stating that they understand that all personnel must comply with applicable laws, regulations and internal policies and the need, in

their role as managers, to communicate the importance of acting ethically and compliance with applicable laws, regulations and internal policies. Sony Group companies inform their employees about the Code and the internal hotline system on an ongoing basis through the dissemination of e-mails, booklets, wallet cards, posters, feature articles in internal newsletters, and/or postings on the company's intranet.

In addition to these initiatives, the Sony Group provides education and training sessions that use e-learning and other approaches presenting real-life examples to impart more in-depth expertise regarding business ethics and individual aspects of the Sony Group Code of Conduct that are crucial to compliance by the Sony Group. These include fairness in competition and business dealings, and the prevention of discrimination and harassment in the workplace. Sony has adopted a compliance education protocol that sets forth minimum mandatory global communications and training requirements in a wide range of compliance areas. Through ongoing communication, awareness and training efforts, Sony will continue to promote a thorough Group-wide understanding of the importance of the policies and values set forth in the Sony Group Code of Conduct.



Booklets, wallet cards, posters and training DVDs used to raise awareness of the Sony Group Code of Conduct and the internal hotline system

## Compliance Monitoring Program

(Updated on September 9, 2011)

A compliance monitoring program helps to assure thorough global adherence to the Company's Code of Conduct, internal policies, and training and other protocols. The program relies on self-assessments, compliance audits and internal audits, along with monitoring of hotline reporting. Key Sony Group companies worldwide periodically undertake compliance self-assessments, which involve self-inspection of enumerated compliance-related activities and detailed reporting on their status. The Regional Compliance Officers evaluate the results of the self-assessments and report the results to the Corporate Executive Officer in charge of Compliance. The Regional Compliance Officers also identify measures to address reported issues and provide relevant instruction and supervision to Sony Group companies in their respective regions.

## Compliance

### Sony Group Anti-Bribery Program

(Updated on September 9, 2011)

Sony has adopted the Sony Group Anti-Bribery Policy, which builds on the anti-bribery and accurate record-keeping requirements in the Sony Group Code of Conduct to help ensure that Sony Group personnel do not violate, or appear to violate, any applicable anti-corruption laws or regulations. This Policy reflects Sony's strong commitment to business integrity and, in particular, establishes practices and procedures that must be followed to help assure integrity in all Sony's dealings with government officials.

### Basic Approach and Systems to Exclude Anti-Social Forces

(Updated on September 9, 2011)

Sony strives to comply with all applicable laws, regulations and internal policies and to conduct its business activities in an honest and ethical manner. As a part of this effort, Sony personnel strongly oppose anti-social forces (i.e., organized crime) that threaten to disrupt the order and safety of our community and endeavor to prevent or eliminate any relationship with anti-social forces.

Sony's frequent messaging and ongoing training of all its personnel on the Sony Group Code of Conduct help ensure that its corporate ethics are understood and observed throughout the Sony Group. In addition, Sony maintains strict anti-money laundering policies, supplemented by anti-money laundering "Know Your Customer" procedures and training. These policies and measures, along with Sony's internal hotline system to encourage its personnel to report concerns or raise questions about possible violations of laws, regulations and internal policies, should help prevent or eliminate relationships with anti-social forces.

## Compliance

### Information Security and Personal Information Management

(Updated on September 9, 2011)

Sony has established the Sony Global Information Security Policy and its related subordinate rules, the Sony Global Information Security Standard, which set forth Sony's commitment to information security and define policies to be followed by all Sony personnel. Sony has established an organization charged with developing, maintaining and implementing this policy. This organization coordinates with individuals responsible for information security at Sony Group companies globally to create an effective Group-wide information security management system. Sony formulated the Global Basic Principles on Personal Information in July 2000, and is reinforcing internal rules and business processes to ensure the appropriate handling of the personal information of its customers and business partners. To encourage broad understanding of its principles on personal information management, in April 2005 Sony also introduced the Sony Group Privacy Policy\* at all Sony Group companies in Japan. Recognizing that employee awareness of both information security and personal information management is vital, Sony Corporation requires training programs for its employees to increase their understanding and improve the overall level of information security and personal information management.

- This policy applies to Sony Corporation and its subsidiaries in Japan.
- Sony Group Privacy Policy  
<http://www.sony.co.jp/privacy/en/>



## Product Responsibility

### Product Responsibility

Sony has various businesses globally to provide products and services that meet customer requirements in terms of satisfaction, reliability and trust.

#### Philosophy and Policy for Product Quality and Services

Basic philosophy and policy for Sony's product quality and services

page 29

#### Product Quality, Quality Management



Sony is committed to improving product quality and quality management.

page 30

#### Responsiveness and Customer Service



Sony is taking various steps to improve its responsiveness and service capabilities with the aim of enhancing customer satisfaction.

page 38

#### Usability



Sony has identified "usability" as an essential aspect of product quality and is taking steps aimed at making it easier for people to use Sony products and services.

page 41

#### Supply Chain Management



Sony is seeking to introduce CSR management in production process through our supply chain that includes human rights, labor, and environmental protection.

page 44

## Product Responsibility

### Philosophy and Policy for Product Quality and Services

Sony is wholeheartedly committed to improving product and service quality from the customer's viewpoint with the aim of maintaining and enhancing customers' satisfaction, reliability, and trust. This reflects Sony's belief that our most important goal is to remain a highly trusted partner for our customers.

### Philosophy and Policy

(Updated on September 15, 2011)

Since the start of its operations, Sony has given top priority to providing customer oriented, high-quality products and services as an operating foundation. This philosophy is set forth in the Founding Prospectus drafted in 1946 by Sony's co-founder, Masaru Ibuka.

The Sony Group Code of Conduct, established in May 2003, compels Sony to continuously seek ways to comply with or exceed legally mandated standards in all aspects of its business activities to ensure the safety and satisfaction of customers who use its products and/or services.

To instill this philosophy more firmly, in January 2007 Sony formulated The Sony Pledge of Quality, which lays out Sony's basic policy on product and service quality in the Electronics business.



## Product Responsibility

### Product Quality and Quality Management

In line with commitment to quality-"High-quality, reliable products that our customers can use with confidence"-set forth in The Sony Pledge of Quality, Sony is promoting continuous, decisive efforts to enhance product quality and to reinforce its quality management system.

### Sony's Quality Management System Organizational Structure

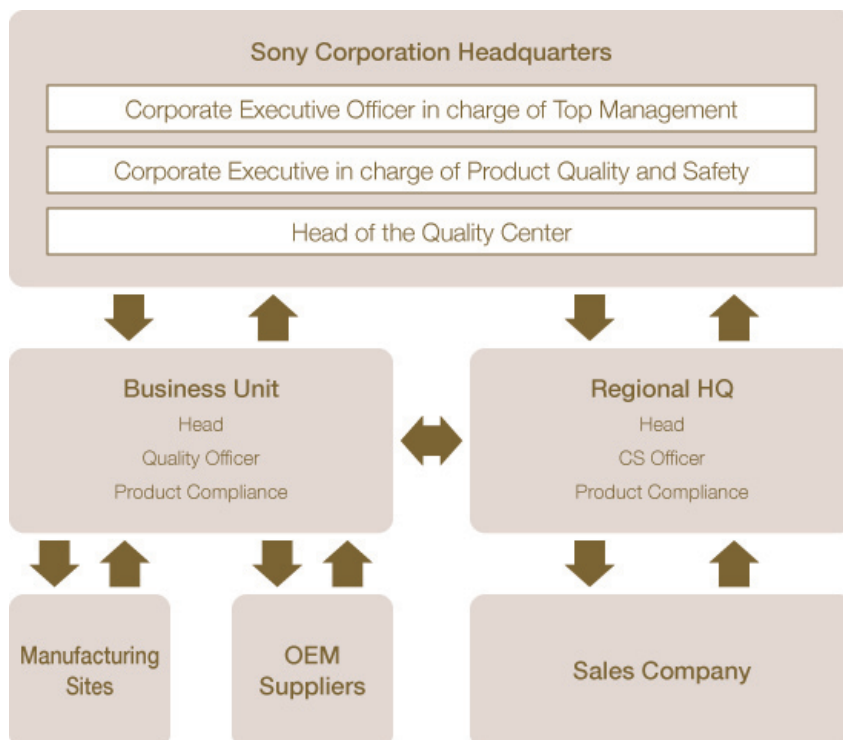
(Updated on September 15, 2011)

Sony recently reconfigured its quality management system by reviewing its quality management mechanisms across all processes, from development, planning, design and manufacturing through to sales and service; redefining the roles, responsibilities and authority of those responsible for product and service quality; and establishing guidelines to guarantee an appropriate level of quality. Based on this new quality management system, Sony has developed a framework and is to implementing measures on an ongoing basis to improve the quality of its products and services.

This framework and examples of such measures are shown below.

### Framework of Sony's Quality Management System

(Updated on September 15, 2011)



- Has appointed the Corporate Executive in Charge of Product Quality and Safety and has tasked them with coordinating efforts to improve product and service quality and ensure timely responses to problems;
- Has appointed Quality Officers within each business unit and has tasked them with spearheading product- and business-specific initiatives under the supervision of the Corporate Executive in Charge of Product Quality and Safety and the senior executive of the relevant business unit;
- Has appointed CS Officers to coordinate service departments in markets around the world where Sony products are sold and has tasked them with spearheading a network of global-level initiatives under the supervision of the Corporate Executive in Charge of Product Quality and Safety and the individual in charge of the relevant regional headquarters;
- Has created a framework for promoting business unit- and region-specific initiatives to ensure Sony's products comply with pertinent laws and regulations;
- Has obtained certification under ISO-9001 for all sites manufacturing electronics products;
- Has formulated mid-term quality targets, fiscal year quality targets and key indicators for quality-oriented business plans of the Sony Group, with the aim of fulfilling The Sony Pledge of Quality; business units and regional headquarters subsequently formulated fiscal year quality targets and quality-oriented business plans to guide quality-improvement initiatives;
- Has held regular Quality Strategy Meetings, attended by top management, which function as the ultimate decision-making authority for quality in the Electronics business, to deliberate and decide on policy, strategies, and targets related to product quality, as well as key measures to further improve quality;
- Has held regular Quality Officer Meetings, attended by Quality Officers in each business group, to evaluate the progress of quality-oriented business plans, promote initiatives aimed at achieving targets, and debate specific activities and responses to quality-related issues and shared challenges. As well, Sony has held a Global Quality CS Officer Meetings, attended by business unit Quality Officers and regional CS Officers, to share information on initiatives for increasing product and service quality in each region and to share challenges and efforts, thereby contributing to global efforts to improve product quality;
- Has formulated Sony Group quality standards applicable to Sony's electronics products and related services, focusing on such criteria as product safety and performance, labeling and services. These standards are updated continuously to reflect technological advances, changes in applicable legal and regulatory requirements, and social changes;
- Has strengthened rules worldwide from September 2006 to ensure prompt reporting to the Corporate Executive in Charge of Product Quality and Safety, when Sony receives information about an incident involving a Sony product that affects customer safety or has the potential to do so. Based on these reports, the Corporate Executive in Charge of Product Quality and Safety provides the necessary follow-up and instructs the relevant divisions to investigate the incidents and respond appropriately to the customer. In December 2007, Sony applied the same system to possible software vulnerabilities in products, and ensures full implementation of the system.

## Responding to the Customer

(Updated on September 15, 2011)

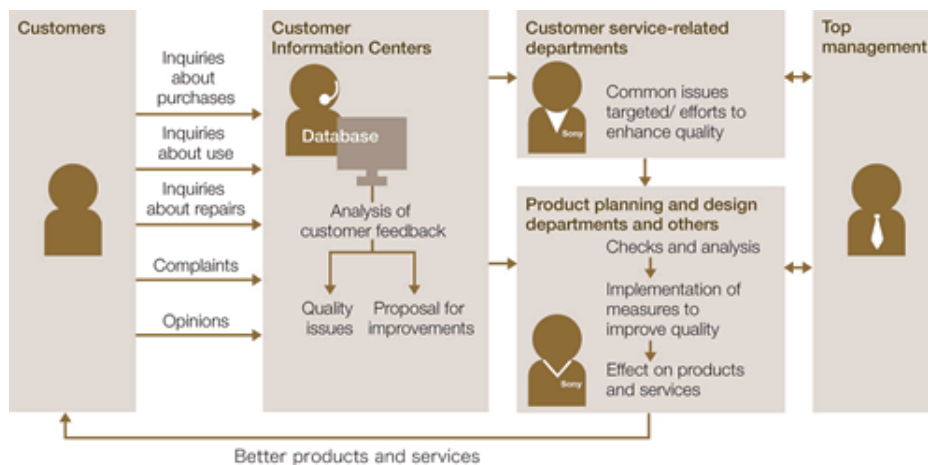
Sony makes active use of customer feedback to improve its products. Opinions, reports of malfunctions after purchase, questions regarding use and other feedback received through Customer Information Centers are promptly and accurately evaluated and disseminated to the planning and design groups so that improvements in product quality can be made in a timely fashion, thus contributing to efforts to enhance product power.

One example was the digital cameras and video cameras with improved usability, through the provision of operation guides and step-by-step instructions on the products' LCD screens. In another example, customer feedback prompted the redesigning of the external storage media slot of a digital photo frame, thereby enhancing usability. Other undertakings include the revision of product user manuals containing overly technical language that many customers found difficult to understand and enhancing the usability of our website by, among others, using clearer, simpler language and video guides.

Video guide from the Sony website

( <http://www.sony.jp/support/service/Support/movie/index.html> )

## Utilizing Customer Feedback



## Quality Hot Line

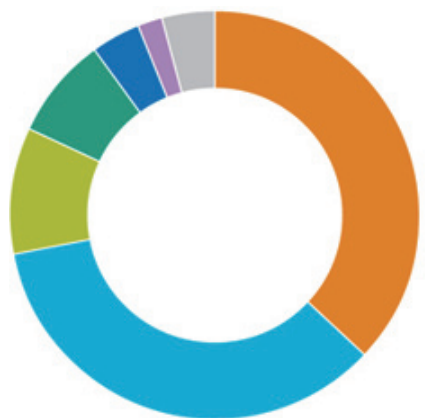
(Updated on September 15, 2011)

It is vital to detect product quality-related problems as early as possible. To that end, Sony therefore established the Quality Hot Line in 2003, to gather product quality-related information, including reports of problems, as well as opinions from Sony Group employees. Employees can send messages regarding such matters as issues that are too difficult to handle at their workplace and problems concerning the quality of Sony products and/or services from the customer's perspective, to the Quality Hot Line's in-house website. Upon investigating a problem to ascertain the veracity of the information received, the Quality Hot Line proposes and introduces measures to prevent previous problems from recurring and precluding potential new problems.

One example of measures proposed and introduced by the Quality Hot Line was the redesign of the image processing mechanism used in a digital high-definition video camera based on information provided by a Sony employee, resulting in an improvement in image quality.

As of March 2011, Sony had received more than 1,500 reports since the establishment of the Quality Hot Line. The diverse range of information received has included proposals to make products and manuals more user-friendly, and has led to more than 950 improvements.

As these initiatives indicate, Sony is wholeheartedly committed to improving product and service quality from the customer's perspective with the aim of maintaining and enhancing customers' satisfaction, reliability, and trust.



Website and catalog improvements:	37%
Design reviews:	35%
Services reviews:	10%
Manual improvements:	8%
Verification system reviews:	4%
Manufacturing technology improvements:	2%
Other reviews and improvements:	4%

(As of March 31, 2011)

## Monitoring Quality in Markets

(Updated on September 15, 2011)

Sony has established dedicated quality management organizations in each of its business areas that are responsible for monitoring quality for pertinent products in market places. With the aim of fortifying its ability to identify quality issues in the markets and to accelerate its ability to respond in the event of a problem, in May 2009 Sony created a market quality monitoring committee within its headquarters in Tokyo, enabling it to swiftly gather information from a wide range of sources, both in Japan and overseas, in the event of a product quality issue in the market. The headquarters' quality management and technology experts gather weekly and share quality issues among them. They are also responsible for monitoring the effectiveness of responses in such situations, ensuring responses are consistent and promoting the adoption of measures to prevent previous problems from recurring and precluding potential new problems, thereby helping to expedite Sony's quality improvement efforts.

Since it began operating, the headquarters' market quality monitoring committee has held a total of 50 quality study meetings and has reported on 58 incidents. For 36 of these incidents, the committee recommended and oversaw the implementation of measures aimed at preventing previous problems from recurring and precluding potential new problems. In cases where problems are relevant to multiple businesses areas, the committee analyzes the causes and works with headquarters' R&D departments to develop constituent technologies and evaluation techniques to prevent problems from recurring, as well as implements measures and concurrently shares pertinent information throughout the Sony Group, thereby preventing previous problems from recurring and precluding potential new problems.

## Initiatives Aimed at Improving the Quality, Safety and Long-Term Reliability of Products

(Updated on September 15, 2011)

### Initiatives Aimed at Improving the Quality of Products

Sony pursues design-, manufacturing- and parts-related initiatives aimed at improving product quality.

#### Design-related quality initiatives

At the start of the design process, the individual in charge of a particular business group verifies new technologies and new parts and, from a user's perspective, determines how a product is to be used. At the conclusion of the design process, the individual in charge ascertains the degree to which the intended level of product quality, reliability and usability has been realized. In addition, to ensure our ability to provide customers with products of a quality worthy of the Sony brand, we required OEM/ODM companies and parts suppliers to comply with Groupwide quality standards. Compliance with these standards is also tested at the end of the design process. Such approaches prevent the occurrence of problems pertaining to new technologies and product parts, as well as ensure product designs that incorporate consideration for user convenience.

#### Manufacturing-related quality initiatives

In its efforts not to receive, manufacture or ship anything with quality-related problems, Sony adheres to a policy of

workmanship at all of its production sites that ensures customers can use Sony products with confidence. Initiatives include establishing important independent quality-related targets at each site and pursuing continuous improvements in product quality and the achievement of such targets through Groupwide implementation of the Plan-Do-Check-Act (PDCA) cycle integrating Sony headquarters with business groups.

#### **Parts-related quality initiatives**

Recognizing the importance of parts, and resolved to manufacture products built for long-term use, Sony carefully selects key parts independently for each of its major product categories and is pursuing focused efforts aimed at increasing the reliability of the parts it uses through cooperation with relevant departments and Sony's headquarters.

#### **Initiatives Aimed at Improving Product Safety**

As another part of the effort to improve the safety of its products, Sony has established an in-house committee to address product safety from a medical perspective, and has prepared related internal standards, which it updates and modifies as necessary to reflect the ever-evolving understanding of human health. Sony is also promoting efforts company-wide to strengthen internal processes for ensuring that Sony's products are in line with applicable laws, regulations and standards.

When developing products employing new technologies, Sony also seeks advice on product safety from a medical perspective from experts outside the company, which it then incorporates into product development, design and engineering. When deemed necessary, Sony also conducts evaluation tests to verify safety with the assistance of specialized organization.

Sony recognizes the safe and comfortable viewing of 3D televisions, which it commercialized in 2010, is a significant issue. Since 1997, representatives from Sony have sat on committees set up by various industry organizations and have attended meetings on international standardization to handle image safety, in order to obtain advanced knowledge of potential health risks or concerns including motion sickness. With the aim of leveraging such knowledge, Sony is also participating in various conferences on 3D images.

#### **Initiatives Aimed at Improving the Long-Term Reliability of Products**

The Quality Reliability Lab, established in January 2009, continues to enhance Sony's product safety and reliability, in order to deliver safe, long-lasting and reliable products to customers.

In the lab, specialists continue to work on developing elemental technologies that are vital to product reliability, e.g., adhesives, anticorrosives, etc., and reliability techniques that go with newly developed technologies and products to attain even higher-level product reliability.

The reliability and evaluation techniques, and the information obtained through these activities, are openly accessible and available to all Sony employees via training sessions, seminars, and websites, and are utilized to improve design and parts selection processes.

Sony also presents some of its own knowledge on new evaluation techniques at academic meetings and industry conferences and gatherings, in its efforts to contribute to industry.

For example, a drop test method, using strain gauges applicable to surface-mounted semiconductor devices, has been adopted by Japan Electronics and Information Technology Industries Association (JEITA) as its standard, illustrating how Sony extends its contributions to industry and acts above and beyond the responsibilities of a manufacturer.



## Efforts to Eliminate Software Vulnerability

(Updated on September 15, 2011)

The digitization and networking of consumer electronics products and an increase in the relative importance of software in recent years has heightened the danger of, among others, the leakage of personal information and the destruction of data. As a consequence, software vulnerability has become an important issue.

In addition to establishing a special function for collecting security risk-related information from outside experts, Sony has created an internal software vulnerability team comprised of individuals assigned to each business group who are responsible for software vulnerability issues. Based on information received, the team-led by such individuals-assesses the impact of risk on customers from a security perspective and implements appropriate measures.

To ensure its ability to deliver products that customers can use with confidence, Sony has also established internal guidelines pertaining to software vulnerability and continues to implement employee training programs. Additionally, in 2009 Sony reinforced its product security framework by introducing a mechanism that detects software vulnerabilities during the security inspections prior to product shipment and ensures that the inspections are duly conducted.

## Responses to Quality Issues

(Updated on September 15, 2011)

Sony recognizes that ensuring its customers' satisfaction, reliability, and trust is the most important crucial management task and strives to prevent quality-related problems through the systems and efforts described above.

Following a product quality issue involving lithium-ion batteries for notebook PCs in 2006, Sony made several design improvements including selecting a higher grade of insulation materials and redesigning the device's structure to prevent foreign particles from penetrating the devices.

In addition to implementing the forced internal short-circuit test of cells and introducing new evaluation techniques, Sony developed a new manufacturing process for these batteries with enhanced levels of cleanliness, building on know-how accumulated in the fabrication of semiconductors, thereby further improving battery quality.

Sony strives to prevent quality-related issues through the kinds of systems and efforts described above. As this case illustrates, Sony also responds swiftly when a problem arises, by investigating the facts and taking the appropriate actions. Sony approaches such efforts with a global perspective, working closely with concerned parties in local markets.

Sony also seeks to respond swiftly to the concerns of customers in the event of a quality-related issue, following a process common to all Sony products for determining the basic policy and timing of a public announcement. This process starts with the gathering of information from Customer Service Centers worldwide and collaborating with concerned local parties to ensure an accurate grasp of the issue. Based on information collected, Sony identifies the causes of a quality-related issue and implements the appropriate measures, taking prompt steps to verify the effectiveness thereof, as well as to view the issue from the customer's perspective, and deciding on countermeasures in cooperation with the individuals in charge of product quality at local sites to provide the same level of service to customers worldwide.

With regard to methods and media for issuing public announcements of product quality-related issues, Sony examines the effectiveness of the various means at its disposal, including the Internet, e-mail or other electronic media, as well as direct mail, newspaper advertisement or other conventional media.

## External Recognition

(Updated on September 15, 2011)

As an organization that manufactures and sells a wide range of products in markets around the world, Sony strives to ensure its ability to provide safe products by promptly resolving safety-related issues by, among others, leveraging its internal product supply systems and reporting to top management, and is working actively to raise awareness internally by capitalizing on lessons learned from Sony's voluntary recall of battery packs in 2006, as well as to rebuild its culture of product safety. In fiscal year 2009, these efforts were recognized when Sony was chosen to receive the Director-General for Commerce and Distribution Policy Award in the third METI Minister Awards for Best Contributors to Product Safety, sponsored by Japan's Ministry of Economy, Trade and Industry.



## Product Responsibility

### Responsiveness and Customer Service

In addition to continuously improving product quality, Sony is taking various steps to improve its capabilities in supplying support to customers to deliver, as set forth in The Sony Pledge of Quality, "Heartfelt service with a personal touch."

#### System

(Updated on September 15, 2011)

Sony has assigned CS Officers to coordinate customer support operations in markets around the world where its products are sold, in cooperation with the Corporate Executive in Charge of Product Quality and Safety and regional headquarters, and has established a network of service bases with the aim of enhancing the quality of its services on a global level, through which it provides services tailored to the needs of local customers.

#### Training for Customer Support Staff

(Updated on September 15, 2011)

With the aim of providing high-quality services to customers around the world, Sony provides training for employees and staff of service partners involved in customer response activities worldwide to promote common solutions. In Asia, including Japan, Sony also conducts technical- and customer relations-oriented contests for employees staffing telephone help desks and service counters and visiting repair personnel, as a way of increasing motivation to bolster customer satisfaction.

#### Customer Information Centers

(Updated on September 15, 2011)

Sony established its first Customer Information Center in 1963 in Japan to respond to customer inquiries. Today, Sony has Customer Information Centers worldwide, enabling it to provide prompt responses to customer needs that reflect customers' perspectives, thereby helping Sony to enhance the quality of its customer service.

**Number of Inquiries Received from Customers (Fiscal 2010)**

(Thousands)

Region	Number of inquiries received (telephone, e-mail, letter)
Japan	4,560
North America	5,010
Europe	2,560
China (mainland) and Hong Kong	2,840
Pan-Asia*1	3,730
Latin America	1,470

\*1 Coverage area: Taiwan, South Korea, Southeast Asia, Middle East, Africa and Oceania

## Using the Internet

(Updated on September 15, 2011)

Sony also uses the Internet to communicate with customers. In addition to enhancing the content of our websites, which include product-related news and frequently asked questions (FAQ) sections, the websites offer downloads of manuals and software updates, as well as provide prompt and easy-to-understand information about products and services, including support services. The website has earned high marks in, among others, independent studies of effective support websites. For example, in Japan Sony provides services designed to give first-time personal computer users greater confidence: Operators are able to guide personal computer users while remotely monitoring their screens via the Internet with the users' permission. Customers can also submit a request via the Internet to have support personnel dispatched to their locations to assist with installation and set-up.

Sony uses customer feedback to enhance its Internet-based customer services. One recent example is the addition to the Sony website of pages that offer easy-to-understand guides on how to connect multiple devices and obtain even greater enjoyment once devices were connected.

## Repair and Service Network

(Updated on September 15, 2011)

Currently, there are more than 6,700 Sony service locations worldwide, including Sony service stations and those of authorized repair agents. To ensure prompt responses to customer needs, Sony strives to improve its repair and service operations by carefully benchmarking against other leading companies. Sony is shortening distribution and repair times and reviewing repair fees in regions around the world with the goal of enhancing overall customer satisfaction around the world.

Many Sony products were damaged during the Great East Japan Earthquake and the North Nagano Earthquake. In line with pertinent legislation covering customers in the worst hit areas, we provided replacements even for products no longer under warranty.

**Sony Service Locations (Fiscal Year 2010)**

Region	Service Network (Number of Service Locations)
Japan	920
North America	1,596
Europe	1,365
China (mainland) and Hong Kong	453
Pan-Asia*2	1,655
Latin America	708

\*2 Coverage area: Taiwan, South Korea, Southeast Asia, Middle East, Africa and Oceania

## Product Responsibility

### Usability

Products today are increasingly complex and multifunctional. "Usability" is an essential aspect of product quality, and Sony is taking steps aimed at making it easier for people to use our products and services.

### Usability and Accessibility

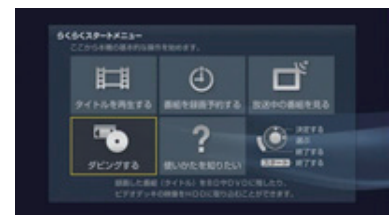
Advancements in technological innovation are leading to the development of products that are increasingly sophisticated and multifunctional - a trend that is spurring demand for enhanced usability. Sony views usability as an essential aspect of product quality and is continuously taking steps to make it easier for more people to use its products and services, for example, by holding periodic user interface meetings and integrating user tests into the product development process.

(Updated on September 15, 2011)



User test (usability assessment)

One of many Sony products developed with a particular emphasis on ease-of-use is a remote control that features an enlarged area for essential buttons. This remote control also employs radio technology, enabling it to function when pointed in any direction and even when it is randomly left on top of a desk or table. The HX920, HX820, HX720, NX720, EX720, EX72S, EX420 models of Sony's BRAVIA™ LCD televisions come with this easy-to-use, multifunctional remote control. Sony Blu-ray Disc™ recorders feature the "Rakuraku (easy-to-use) Start Button", which makes operating the recorder easy—even for first-time users who don't know how. Pushing the button displays instructions on the screen (the "Rakuraku Start Menu"), making it easy to set the machine to record or replay recorded programming. The "Rakuraku (easy-to-use) Start Button" comes with the AX2000, AX1000, AT900, AT700, AT500, AT300S models of Sony's Blu-ray Disc™ recorders.



Rakuraku Start Menu

Sony makes sure the opinions of customers are fed back to the appropriate individuals and actively incorporates information thus gained into its product development efforts. Examples of products that have resulted from comments on usability received through this channel include an easy-to-use digital still camera that displays operating instructions on an LCD mounted right on the camera and a digital photo frame featuring a redesigned external storage media slot that makes it possible to remove storage media that has been accidentally inserted. Sony also invites customers to test out new product prototypes. Customer opinions are then incorporated into the final products. One example of a product that benefited from comments received through this channel is an easy-to-shoot digital video camera with a clip whose angle has been adjusted to 7 degrees for easy shooting.



Digital photo frame with enhanced usability as a result of feedback from customers



Repeated user testing of prototypes for this digital video camera resulted in the angle of the clip being adjusted to 7 degrees for easy shooting

Sony's commitment to usability also extends to special features designed to make our products accessible to an increased number of consumers, including the elderly and those working to overcome disabilities.

For example, Sony's entire lineup of BRAVIA™ LCD televisions for the European market features an audio description function that provides access to a narrative soundtrack for visually impaired users, and digital video teletext for hearing-impaired users, both as standard features. Another example is Sony's Reader™ digital reading device, currently available in the United States, Canada and Europe, which not only stores hundreds of books on a single electronic device, but also enables readers with low vision to adjust the size of the text on the screen according to their needs. Certain Sony televisions come with headphones that do not override—and can be adjusted independently from—the speakers, enabling hearing-impaired individuals to enjoy watching television together with non-hearing-impaired family and friends without fear of disturbing others.

Looking ahead, ease-of-use and accessibility will remain core elements of the Company's product development efforts.

For more information, visit

• <http://www.sony.co.jp/Fun/design/activity/sustainable/ucd/index.html> (Japanese only)

## Providing Information to a Diverse Range of Customers

(Updated on September 15, 2011)

Sony Corporation provides CD versions of catalogs and audio user manuals to visually impaired users and customers who are unable to use regular catalogs and manuals for other reasons.

Sony issues CD versions of catalogs twice a year with the same content that is released on Sony's website. These catalogs, which are produced by Sony Marketing (Japan) Inc. in cooperation with the Japan Braille Library, provide voice guides on the main functions of new products.

For some product models, audio guides that serve as audio user manuals and text data are available on Sony's product information website.

## Age-based Rating Systems for Game Software

(Updated on September 15, 2011)

Sony Computer Entertainment Inc. (SCE) aims to make games as popular as music, movies and broadcasting and has been developing our PlayStation(R) business for users in all age groups. Game industry organizations have responded to the proliferation of new game genres by introducing rating systems for customers in Japan, the United States and Europe (CERO, ESRB and PEGI, respectively), based on games' target age groups. The U.S. system has operated for more than 10 years and won top marks from the public not only for indicating age categories but also for being the first to add descriptions that detail the contents of a game. PEGI is endorsed by the European Commission as a paradigm of self-regulation in the entertainment industry. In Japan, measures are being promoted to make the system more effective, including, with the cooperation of retailers, the voluntary refusal to sell software rated by CERO for ages 18 and above to underage customers.

To regulate access by underage users, SCE has included a Parental Lock function in PSP® (PlayStation®Portable) and PLAYSTATION®3. This function enables customers to adjust access levels and limit children's access only to appropriate software across the PlayStation® platform.

With the average age of Web users declining, concern is growing about sites on the Internet containing content that is inappropriate for or harmful to children. So-net Entertainment Corporation, which provides an Internet-related service in Japan, has introduced "Site Select", a filtering system that blocks access to such sites, as well as to sites targeted by phishing scams, thereby aiming to create an environment in which the whole family can enjoy Internet use worry free.



©2009 So-net Entertainment Corporation  
The So-net website's Site Select page (Japanese only)

- The So-net website's Site Select page (Japanese only)  
<http://www.so-net.ne.jp/siteselect/>



## Product Responsibility

### Supply Chain Management

#### Underlying Philosophy

(Updated on September 15, 2011)

Sony approaches CSR in procurement from two perspectives. One relates to materials procurement procedures and involves creating and maintaining sound business partnerships with suppliers, regarded as Sony's stakeholders, in line not only with relevant laws and regulations but also with internal policies. The other relates to production processes and involves providing the necessary support to realize CSR from such standpoints as the environment, human rights and labor conditions.

- For information about Sony's procurement policy, please visit the following website:  
<http://www.sony.net/SonyInfo/procurementinfo/activities/index.html>

#### CSR in Procurement

(Updated on September 15, 2011)

##### Procurement Activities, Education and Training

Sony is committed to undertaking procurement activities based on fair business practices, transparency and equal opportunity. Sony's procurement agents are not permitted to form personal ties or relationships based on potential personal gain with any supplier.

In Japan, procurement agents in the electronics business are required to participate in e-learning programs designed to ensure a thorough understanding of the company's handbook, "Working Principles for Procurement Personnel." The content of these programs is translated into English and Chinese to help train overseas procurement agents, thereby ensuring the highest ethical standards on a global basis. Training programs employing case studies illustrating acceptable and prohibited behaviors and other approaches are used to enhance the business capabilities of newly appointed procurement agents.

##### Supplier Hotlines

Sony Corporation has also installed a hotline for suppliers to report compliance violations on the part of Sony Group company employees or executives. Appropriate actions are taken in response to such reports once veracity has been confirmed.

#### Basic Approach to CSR in the Supply Chain

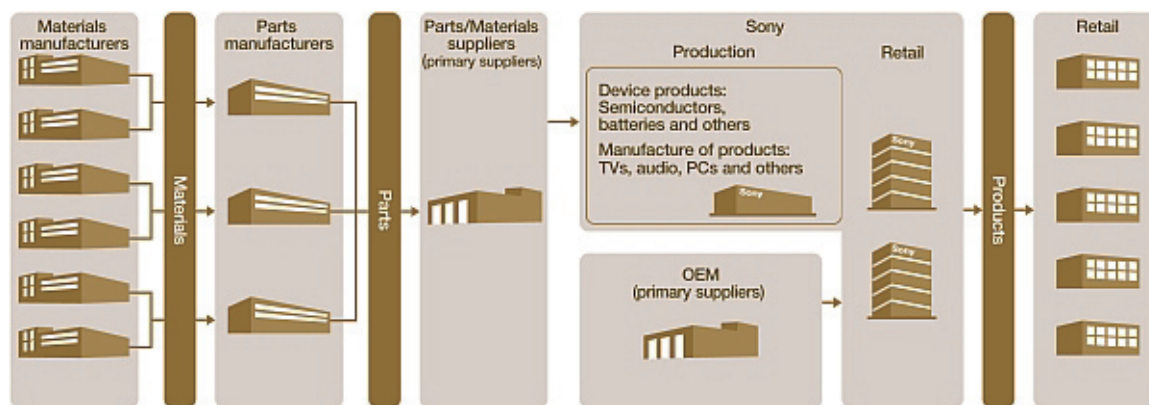
(Updated on September 15, 2011)

In addition to the quality of the products it delivers to consumers, Sony also ensures appropriate standards throughout its production processes from such standpoints as the environment, human rights and labor conditions. As a part of policy for

product quality, Sony views appropriate standards in environment, human rights and labor condition this as a vital issue in relation to its CSR activities. In particular, as supply chains have expanded to include developing countries, this interest has broadened to encompass not only the company's own production lines, but also those of the companies that supply it with parts and materials and the companies to which it subcontracts work.

While working together with other companies in the industry to develop a common framework, Sony is seeking to introduce "CSR procurement," namely, CSR management programs through our supply chain that include legal compliance, employment, occupational health and safety, and environmental protection.

#### Basic Structure of the Supply Chain



## Policy for CSR in the Supply Chain

(Updated on September 15, 2011)

Sony's expectations of its suppliers include compliance with laws, regulations and social standards and an environmental program.

Given the global nature of its suppliers, Sony has led the industry by introducing our own global standards for management of chemical substances, called "Management regulations for environment-related substances to be controlled which are included in parts and materials" (SS-00259). Sony has also established the Green Partner Environmental Quality Approval Program for Sony suppliers. Sony maintains a common global quality standard for parts by purchasing electronic parts only from suppliers who have passed an audit and have been certified as Green Partners.

Stakeholders's interests have risen sharply in companies' overall responsibility for their products, including such issues as human rights, labor conditions and environmental protection of OEM/ODM companies and parts suppliers. In response, we established the Sony Supplier Code of Conduct, which is based on the Electronic Industry Citizenship Coalition (EICC) Code of Conduct and is centered on the premise that since suppliers are engaged in the manufacture of Sony products, they should adhere to the Code and address such issues, and thus comply with Sony's standards.

Sony's basic procurement contract with material suppliers lays down observing related laws and regulations and the Sony Supplier Code of Conduct. Sony requests all potential new suppliers to comply with the Code, as well as to conduct

assessments as a part of requirements of a preliminary examination.

It is Sony's basic policy to reconsider its business relationship with the supplier in the event that an existing supplier is confirmed to have committed a major violation of the Sony Supplier Code of Conduct, or not exhibit an appropriate level of cooperation to studies and audits.

In the event that a violation of the Sony Supplier Code of Conduct is reported by a third party and a violation be confirmed, Sony will ask the supplier to take corrective actions and report back on the progress. If the violation has been committed by a secondary supplier, Sony will work in cooperation with the relevant primary supplier to urge corrective action.

#### **Sony Supplier Code of Conduct (Summary of Contents)**

Established June 2005

- Legal Compliance
- Labor
  - Freely chosen employment
  - Prohibition of child labor
  - Elimination of discrimination
  - Prohibition of harsh or inhumane treatment
  - Guarantee of minimum wages
  - Compliance with laws regarding working hours
  - Respect for the right of employees to associate freely
- Health and Safety
  - Machine safeguarding
  - Industrial hygiene
  - Safety
  - Emergency preparedness and response
  - Occupational injury and illness
  - Control of employee exposure to physically demanding work
  - Maintenance of dormitory and canteen facilities
- Environment
  - Product content restrictions
  - Chemical and hazardous materials
  - Wastewater and solid waste
  - Air emissions
  - Environmental permits reporting
  - Pollution prevention and resource reduction
- Management System
  - Company commitment
  - Management accountability and responsibility
  - Legal and customer requirements
  - Risk assessment and risk management
  - Performance objectives with implementation plans and measures
  - Training
  - Communication
  - Worker feedback and participation
  - Audits and assessments
  - Corrective action process
  - Documentation and records
- Ethics
  - No corruption, extortion and embezzlement
  - Disclosure of information
  - No improper advantage
  - Fair business, advertising and competition
  - Programs to ensure the protection of whistleblowers
  - Community engagement
  - Protection of intellectual property

- Sony Supplier Code of Conduct

[http://www.sony.net/SonyInfo/csr/quality/code/qfhh7c00000i5kbl-att/supplier\\_code.pdf](http://www.sony.net/SonyInfo/csr/quality/code/qfhh7c00000i5kbl-att/supplier_code.pdf)

## Basic Framework

(Updated on September 15, 2011)

### Participation in the Electronic Industry Citizenship Coalition (EICC)

Supply chain overlap considerably in the electronics industry, with multiple manufacturers of finished products sharing the same subcontractors and parts suppliers. Accordingly, there are fears that the introduction of independent, company-specific standards for socially responsible management will cause confusion and constitute a significant burden on companies in the supply chain.

With the aim of improving processes in the electronics industry supply chain, Sony, as one of the member companies, participate in the establishment of the Electronic Industry Citizenship Coalition (EICC) in 2004.

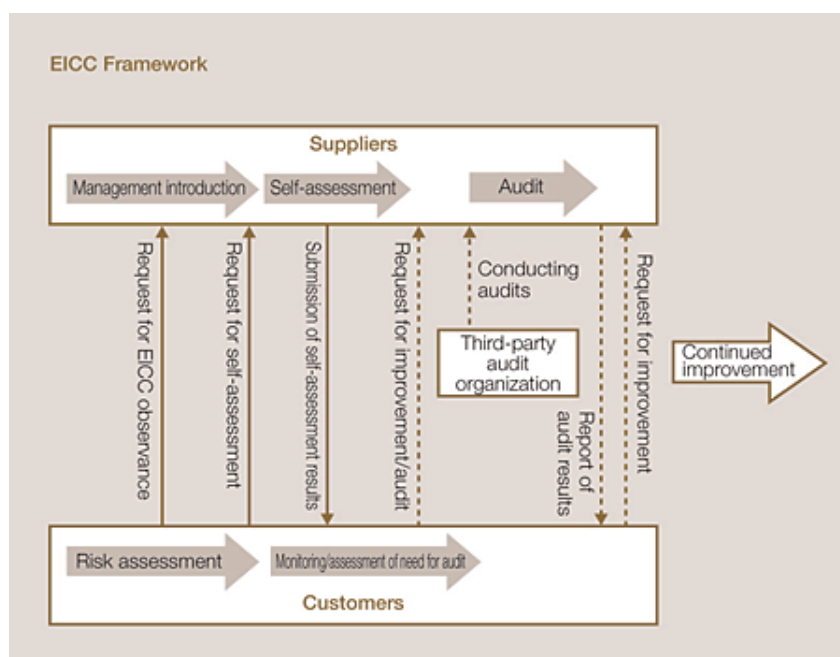
The EICC formulated a basic code of conduct based on industry best practices and is working to develop the tools and Web-based system, as well as the skills development programs for suppliers, necessary to create a framework for ensuring the code is upheld. As of June 2010, the EICC consisted of 48 participating companies from Europe, the Americas and Asia. Members include manufacturers, OEM companies. In cooperation with the Global e-Sustainability Initiative (GeSI) Supply Chain Working Group, consisting mainly of the European telecoms sector and other electronics industry organizations, the EICC is currently promoting social responsibility across the global supply chain.

The EICC continues to address a number of crucial issues. As part of this effort, Sony is participating in Environmental Sustainability working group of the coalition that promotes the awareness and reporting of CO2 emissions.



### Principal EICC Activities

- Formulation and revision of the EICC code of conduct
- Development of common implementation tools
- Risk assessment tool
  - A tool designed to help companies identify areas of risk and prioritize activities
- Supplier self-assessment questionnaire
  - A self-administered survey for suppliers to provide information on their CSR efforts and management systems
- Audits
- Standardization of audit procedures
- Identification of qualified third-party firms to conduct audits
- Development and administration of a Web-based system
  - A Web-based information system for collecting, managing and analyzing CSR data provided by individual suppliers
- Education and training
- Stakeholder engagement
- Work groups relating particular subjects
- Environmental Sustainability work group
- Extractive work group
- Asia Program



- Electronic Industry Citizenship Coalition (EICC) Website:  
<http://www.eicc.info/>

## Sony's Structure for Promoting Supply Chain Management

(Updated on September 15, 2011)

Sony's head office division, CSR, procurement operations and manufacturing operations groups, are mainly promoting supply chain management in CSR initiative, in cooperation with other head office-related groups, business groups and manufacturing sites. The head office's CSR group keeps abreast of external trends and communicates with stakeholders, drawing on both to formulate company-wide basic supply chain management policies. The procurement group is responsible for implementation to suppliers, ensuring that suppliers comply with the Sony Supplier Code of Conduct by requesting compliance to the code, conducting necessary studies and audits, analyzing the results thereof and implementing necessary measures.

## Implementation Framework

(Updated on September 15, 2011)

### Formulation of the Sony Supplier Code of Conduct

In 2005, Sony established the Sony Supplier Code of Conduct, based on industry best practices as highlighted in the EICC Code of Conduct, to ensure that suppliers understand Sony's expectations in more detail and that the code is observed by suppliers of products and materials around the world.

### **Promoting Initiatives by Suppliers**

As part of its effort to assess supplier compliance with the Sony Supplier Code of Conduct, Sony has introduced assessment questionnaires and explanatory meetings for its approximately 1,200\* suppliers worldwide.

As of the end of fiscal year 2008, Sony had conducted 30 of these explanatory sessions to suppliers in Japan, Mainland China, Pan-Asia and the United States. Sony continues to support efforts for suppliers to conduct their business in a socially responsible manner by conducting assessments and further inquires of follow-up measures.

As of March 31, 2011, assessments had been conducted in all but a few of areas where Sony has suppliers and Sony had received the results of assessments from almost all of its suppliers worldwide. The results of these assessments indicate several overall trends, including that organizational development, i.e., the establishment of labor and ethical management systems, remains at a transitional stage. Sony will continue to support the efforts of suppliers to improve their activities.

The EICC has also established a framework for third-party supplier audits based on the EICC Code of Conduct. This framework encompasses the certification of third-party auditors, as well as the provision of necessary auditing tools, including manuals and audit checklists. Up to and including 2010, these audits focused on suppliers in regions where member companies consider the risk of violation to be high.

Sony's suppliers have also undergone audits based on EICC standards through the EICC's shared audit program.

The results of these audits identified a comparatively substantial number of non-conformance issues in the categories of labor and ethical management systems, health and safety, and labor.

\*Corporate group unit(as of June 2011)

## **Stakeholder Engagement**

(Updated on September 15, 2011)

With the aim of developing a framework for promoting effective supply chain management, the EICC holds discussions periodically with NGOs, socially responsible investors and other stakeholders, in which Sony is also participating. Such discussions were held, in Mexico, the United States, Switzerland, Mainland China and the Netherlands.

## **Addressing Issues Related to the Environment, Labor, Human Rights and Conflicts in the Procurement of Raw Materials**

(Updated on September 15, 2011)

There has been increasing stakeholders' concern on such issues as environmental degradation, human rights violation and labors issue related to the extraction of metals essential in the manufacture of electronics products. Also, there has been raising concern of those metals relating to financing armed group and which is potentially seen as relating to conflict in the Democratic Republic of the Congo and its adjoining countries. To address these concerns, in July 2010, the United States passed the Dodd-Frank Wall Street Reform and Consumer Protection Act, one section of which required the certain companies to report the status of their use of "conflict minerals," that is, minerals sourced from those countries, to the

U.S. Securities and Exchange Commission.

In 2008, the EICC and the GeSI (Global e-Sustainability Initiative) established a working group to address such issues and are exploring options for action by the electronics industry. As of the end of 2010, the working group had completed a study for the current status of use of metals in the electronics industry and measures to be taken by the industry to support these issues effectively. Through this study, the working group succeeded in identifying certain metals used in significant quantities in electronics products. The working group also conducted a study aimed at tracing procurement routes for these particular metals up to and including the mining process. As a member company of EICC, Sony will continue participating the working group and support establishing industry framework.

Sony is taking steps in response to the issue of conflict minerals, working first to identify certain minerals used in Sony products, as well as the respective supply chains thereof. Utilizing this information, Sony will review a framework and measures to be included in its fundamental policy to establish systems and implement measures necessary to eliminate such conflict minerals - to the greatest possible - from its supply chain. Recognizing that such issues are common across the electronics industry, Sony is utilizing an industry-wide framework, spearheaded by the EICC/GeSI, in this process. Under its conflict free smelter program, EICC/GeSI has issued the conflict minerals reporting template for the industry-wide supplier survey and several smelters are certified for conflict free smelters. Please refer to below EICC/GeSI press release for the details of the conflict free smelters program.

- EICC/GeSI launched Conflict Mineral Reporting Template (Press release)
- EICC/GeSI Conflict Free Smelter Program Complaint Smelter List  
<http://www.conflictreesmelter.org/index.htm>

In August 2011, Sony has started supply chain survey to suppliers for selected categories using EICC/GeSI's "Conflict Mineral Reporting Template."

As tin has been identified as one of the metals under the scope of the US Dodd-Frank Act, in March 2010, the ITRI, a tin industry organization, launched a traceability project for tin. The goal of this project is to identify the mine sites supplying tin for export from the Democratic Republic of Congo, thereby facilitating source verification and industry responsibility. Recognizing the importance of this initiative, Sony has supported the project, as have other members of the EICC.

Sony is also acknowledging to increasing concern regarding the environmental impact of illegal logging by incorporating such considerations into its procurement policies for wood and paper products and will take steps necessary to respond this concern.

For these issues, Sony, with the EICC, promotes ongoing, active dialogue with NGOs, industry associations and other external stakeholders. Looking ahead, Sony will continue to address issues of corporate social responsibility through cooperation with the wider electronics industry.

## Employees

### Employees

Sony endeavors to create a rewarding corporate climate that supports the efforts of a diverse range of employees.

Since its establishment in 1946 \*, Sony has sought to remain at the forefront of technological development, building continuously on its achievements to create new lifestyles for people everywhere. Sony has also fostered groundbreaking new businesses, adopting an innovative approach to this challenge that exceeds national and regional boundaries. In these efforts, Sony recognizes its employees to be one of the most crucial aspects of its corporate foundation.

Sony acknowledges that its ongoing ability to offer dream-inspiring products and services and exciting new lifestyles around the world depends on its ability to secure and foster talented employees with a wide range of values and personalities, irrespective of nationality, culture, race, gender, age, or the presence or absence of physical limitations. Guided by the concepts of diversity and inclusion, Sony recruits individuals from various backgrounds. Sony also strives to create positive working environments and opportunities that enable individuals with diverse backgrounds to fulfill their potential by learning from one another, believing these to be essential to a rewarding corporate climate.

\* Established as Tokyo Tsushin Kogyo K.K., the company changed its name to Sony Corporation in January 1958.

#### Employee Data

Basic information of Sony Group employees including total number of employees

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#### Recruitment



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#### Training & Development



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## Employees

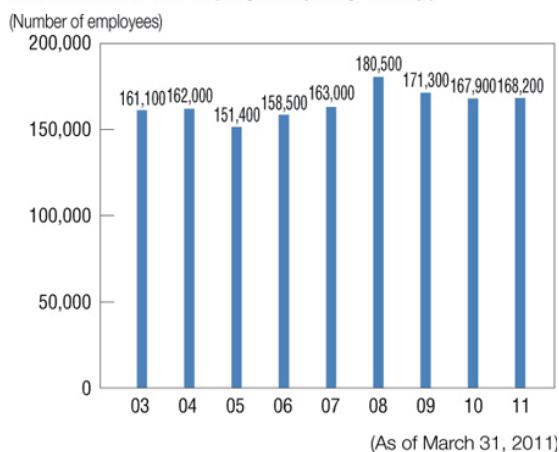
### Employee Data

In Europe and Japan, the implementation of structural reforms resulted in significant personnel reductions. In contrast, in the Asia-Pacific region (i.e., excluding Japan), the recovery and subsequent expansion of production levels led to personnel increases at production bases. As a consequence, as of March 31, 2011, the total number of employees in the Sony Group was approximately 168,200, essentially level with the previous fiscal year-end.

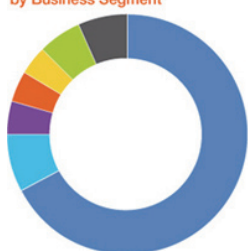
Sony Corporation's headcount peaked at 23,000 in 1993, after which it remained fairly consistent at approximately 17,000. As of March 31, 2011, Sony Corporation's headcount was approximately 16,000.

(Updated on October 28, 2011)

#### Total Number of Employees (Sony Group)



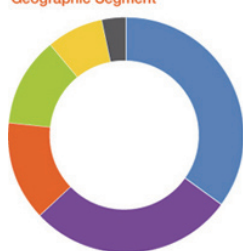
#### Sony Group Personnel by Business Segment



Consumer, Professional & Devices:	113,200 employees
Networked Products & Services:	13,100 employees
Financial Services:	7,500 employees
Pictures:	7,000 employees
Music:	6,800 employees
Other:	9,800 employees
Total:	10,800 employees

(As of March 31, 2011)

#### Sony Group Personnel by Geographic Segment



Japan:	35.0%
East Asia*1:	28.0%
Pan-Asia*2:	13.6%
United States:	12.4%
Europe:	7.7%
Latin America:	3.2%

(As of March 31, 2011)

\*1 Coverage area: mainland China, Hong Kong, Taiwan and South Korea

\*2 Coverage area: Southeast Asia, Middle East, Africa and Oceania

**Composition of Sony Corporation's Directors and Corporate Executive Officers**

	Total	Female	Non-Japanese Nationals
<b>Directors</b>	15	1	4
<b>Corporate Executive Officers</b>	7 *3	1	2 *4
<b>Corporate Executives</b>	31	-	2
<b>Sony Group Directors</b>	16	-	6

\*3 Of the seven Corporate Executive Officers, two serve concurrently as Directors.

\*4 Of the two Corporate Executive Officers who are non-Japanese nationals, one serves concurrently as a Director.

**Personnel by Business Segment (Sony Corporation)**



- Consumer, Professional & Devices :  
9,585 employees
- Networked Products & Services :  
1,296 employees
- Group companies in Japan:  
5,736 employees

(As of March 31, 2011)

## Employees

### Recruitment

To create a corporate climate in which different experience and values are respected and diversity is embraced, Sony has long recruited employees with various backgrounds both in Japan and overseas. With the aim of securing human resources with capabilities that transcend business fields and regional boundaries, Sony adheres to a recruitment policy that emphasizes respect for each individual's unique abilities, irrespective of nationality, culture, race, gender, or the presence or absence of physical limitations.

(Updated on October 28, 2011)

### Diversity in recruiting practices

As a company with sales, manufacturing and R&D bases in a number of different countries, Sony is promoting the localization of these operations by working to secure local human resources that best respond to national, regional and location-specific needs. Additionally, with the aim of securing talented human resources crucial to growing its global business, Sony recruits university graduates overseas to work in Japan.



Advanced Japanese language training for new recruits (India)

Early in the 21st century, Sony expanded the scope of its efforts to recruit students to work in Japan, who were mainly from Europe and North America previously, and began to actively seek out promising university and post-graduate students in China and India. Recruiting in China began in earnest in 2001. As of April 2011, Sony had recruited a cumulative total of 246 university and post-graduate students in China. Recruitment from universities and graduate schools in India began in earnest in 2009. In both countries, recruitment efforts benefited from the cooperation of local Sony Group companies, which ensured that Sony secured top-level human resources. To encourage acclimatization, Sony provided new recruits with a variety of training, including Japanese language lessons, both before and after they began working in Japan.

Sony has also established a Global Internship Program, which welcomes university students from Europe, North America, China and India, among others. Having set a target for increasing the portion of new university graduates it recruits accounted for by non-Japanese nationals to 30% by fiscal year 2013, Sony is conducting recruiting presentations at universities, graduate schools and research facilities around the world, as well as for groups of overseas students studying in Japan.

## Employment record (Sony Corporation)

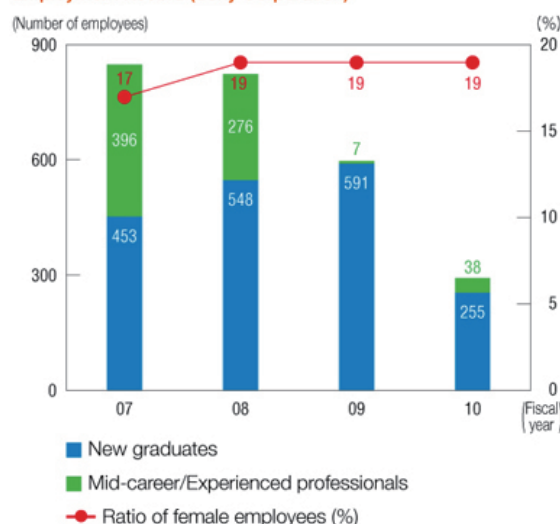
With the aim of securing both the business leaders of the future and key employees who will help grow core businesses over the medium term, Sony recruits a set number of students and experienced mid-career experienced professionals each year.

In line with the Sony Group Code of Conduct, enacted in May 2003, Sony actively recruits talented personnel and treats all applicants without regard to nationality, culture, race, gender, religion, or the presence or absence of physical limitations or other factors that are unrelated to Sony's legitimate business interests.

Of the female university graduates who joined Sony Corporation in April 2011, 52% were hired for clerical positions, while 14% were hired for engineering positions.\*

\* On average, graduate school students represented 10% of the total number of new graduates hired.

Employment Record (Sony Corporation)



## Employees

### Training & Development

- The development and vitality of Sony's employees drives dynamic growth for Sony -  
Sony recognizes its people as its most important management asset and the growth of its people as a crucial aspect of its management foundation. Sony strives to further enhance motivation and encourage personal growth for its employees through on-the-job learning, as well as through access to a variety of programs designed to enhance individual abilities and skills and tailored to local needs.

- Fostering global business leaders > page 58
- Nurturing engineering talent > page 59
- Enhancing management skills > page 60
- Support for career building > page 63

## Employees

### Fostering global business leaders

(Updated on October 28, 2011)

Established in 2000 to promote cross-border and cross-business cultivation of global business leaders, Sony University offers short- and long-term development programs that address this task from the perspectives of business vision, management decision-making capabilities, the Sony spirit and networking. In fiscal year 2010, approximately 20 potential business leaders from around the world participated in a six-month program that promotes friendly rivalry. In Japan, Sony also strives to foster future business leaders, offering a 10-month module for prospective core leaders, as well as a program for more junior employees identified as future management material, both promoting active interaction and mutual learning.



Participants in a Sony University program

Sony also offers a variety of distinctive training programs in countries and regions around the world that capitalize on the unique aspects of its various businesses.

#### Sony Group Global Leadership Programs Around the World

Music	<b>The FAST FORWARD Leadership Program</b> This program seeks to encourage entrepreneurial spirit and new ways of thinking, as well as to cultivate firm resolve and quick decision making. In addition to carefully screened global participants from the music business, the program also welcomes participants from the Sony Group's pictures and electronics businesses.
Electronics (Europe)	Since 2009, Sony has implemented a program whereby promising managers participate in projects designed to address social issues related to education and the environment, among others. These include initiatives organized by socially active companies partnered with the NGO streetfootballworld*. This program helps cultivate an entrepreneurial spirit and gives participants the chance to learn through experience gained from dynamic projects with a social focus, as well as to apply their own work experience as an employee of Sony.
Electronics	<b>Global Leadership Development Program</b> This program is conducted by Sony Supply Chain Solutions, Inc. (SSCS) and accepts 26 participants from 12 countries each session. Training strives to ensure understanding of Sony's medium-term strategic directions. Other highlights include lectures by top executives and tours of manufacturing facilities in Japan-both aimed at encouraging a global perspective and building employee networks that transcend borders-as well as group discussions.
Financial Services (Japan)	<b>Next-Generation Leadership Development Tutorial (Sony Financial Holdings Inc.)</b> Launched in October 2010, this tutorial targets executive officers and management-level employees of Sony Life Insurance Co., Ltd., Sony Assurance Inc., Sony Bank Inc., and Sony Financial Holdings Inc., and accepts 20 participants each session. In addition to lectures focusing on leadership capabilities and business strategies, the tutorial includes a variety of programs, including group activities aimed at developing business creativity necessary for managers.

\* Streetfootballworld is an NGO that seeks to address social issues through the medium of soccer.

## Employees

### Nurturing engineering talent

(Updated on October 28, 2011)

Despite the increasing openness of technologies, as well as the acceleration of cross-border and cross-business collaboration, Sony continues to excel as a technological innovator.

Sony has traditionally promoted a variety of initiatives involving cooperation among its various R&D bases-as well as with other companies and/or R&D institutions-primarily in Japan, North America and Europe. However, in recent years Sony has also expanded its participation in cooperative initiatives in China and India. Engineers are responsible not only for adding depth to Sony's technological expertise, but also for generating ideas that integrate technologies from multiple specialized fields and for providing leadership for development teams that transcend national and corporate boundaries. In fiscal year 2010, Sony launched the Global Human Resources Development Program-a program designed to nurture the engineers that will spearhead Sony's advance into an increasingly globalized age, as well as to instill greater awareness of their role as core human resources-as part of Sony Corporation's R&D Platform. Under the program, young software engineers from Japan, China and India study and live together for three weeks, during which they also welcome visits from Indian IT vendors and participate in specialized software engineer development courses, enabling them to experience the momentum of the Indian market firsthand, as well as to learn about doing business in an emerging economy.



Class offered as part of the Global Human Resources Development Program

In addition, approximately 230 Sony engineers with frontline expertise in key technological fields develop curricula and textbooks for use in Key Technology training courses, the aim of which is to enhance the expertise of engineers. The courses also offer the opportunity to learn a leading-edge technology from a specialist outside the Company. In fiscal year 2010, more than 20,000 employees took part in these training courses.



Technological training for new recruits

For new recruits, the Technology Training Committee, which comprises leading Group engineering experts, seeks to quantify individual skills at the time of recruitment through a three-pronged ("express," "build" and "test") process. Results for each individual are fed back to the employee and his or her supervisor, an approach that ultimately helps to enhance the effectiveness of the Core Sony Technologies training program for new recruits. Through this process, together with specialized technological training aimed at familiarizing new recruits with technologies specific to each of Sony's businesses, Sony strives to enhance the technological understanding of new recruits. In addition, at the behest of their supervisors or tutors new recruits participate in theme-based training, which addresses issues that crop up in real everyday work, helping them to become familiar with how business is conducted and enhancing their ability to act efficiently. Further, new recruits assigned to R&D or engineering departments are given on-the-job training in production training-including visits to actual production facilities to learn about principal production workflows-and in sales techniques.



**Sony Group Training Programs for Engineers Around the World**

Electronics (Asia Pacific)	This in-house "study abroad" program aims to foster engineers capable of working with individuals from multiple cultures and is available for engineers in Japan, India and the Asia Pacific region.
Electronics	With the aim of enhancing energy-related technologies, Sony Energy Devices Corporation conducts a program whereby it accepts employees from Sony Electronics (Wuxi) Co., Ltd. (China), Sony Electronics (Singapore) Pte. Ltd. and Energy Technology Singapore to train for one to three years.

## Enhancing management skills

(Updated on October 28, 2011)

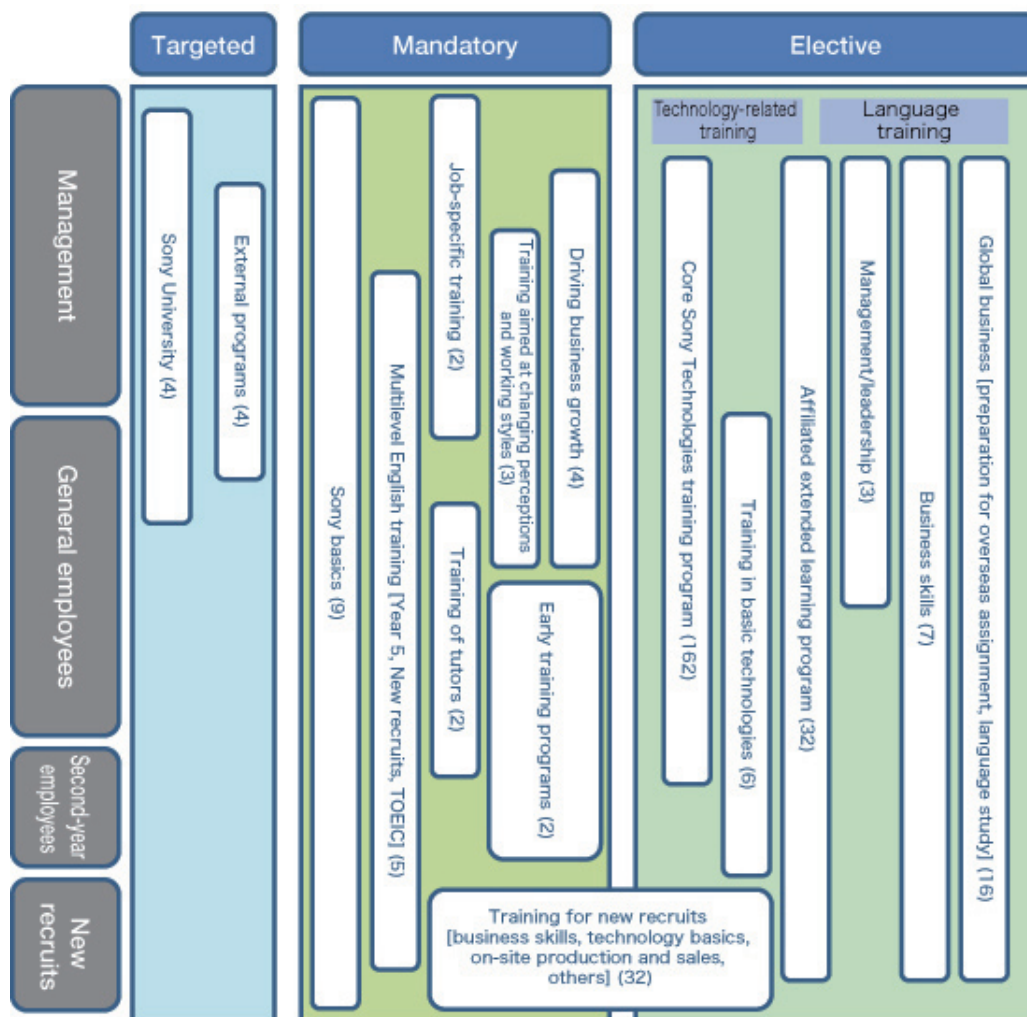
Given the astonishing pace of change in the operating environment, Sony believes structure is essential to the training of employees, which provides the necessary support for employees with such diverse backgrounds. To this end, Sony is stepping up efforts to enhance the management skills by offering a variety of training programs targeting management-level employees around the world.

For all management-level employees, Sony provides mandatory training programs that focus on effecting a change in each individual's perception of the responsibilities of management, as well as orientations by in-house instructors on management styles and position-specific training. Sony also trains experienced employees to serve as tutors, not only to provide support for new recruits, but also to engender early awareness of the importance of fostering new talent, thus creating a tutor system that is charged with enhancing the skills of future management.

**Sony Group Management Training Programs Around the World**

Pictures	<b>The SPE Employee Development Curriculum ("SPEED")</b> This program was developed with the aim of having supervisors help bolster the skills of their employees. Managers and employees review performance goals and hold discussions focusing on such tasks as enhancing workplace environments and bolstering expertise.
Electronics (USA)	<ul style="list-style-type: none"> <li>The leadership and professional curriculum includes a series of programs/modules targeting individuals under the guidance of executive leadership-level employees, which include course work in:            Project Management;            Presentations and Presence;            Innovative Communication;            Coaching and Developing Others;            Negotiating and Persuading Others; and            Winning as One Sony Business Simulation. - More employee participation within each business group is encouraged for relevant business development.</li> <li>Sony Electronics Inc. (SEL) also implemented a new Learning Management System.</li> </ul>

Common Employee Training Programs (Sony Corporation)



\* Figures in parentheses denote the number of programs available.

In Japan, Sony Corporation offers more than 300 employee training programs-including general training, e-learning, on-site training-tailored to specific objectives. Mandatory multilevel job-specific training helps participants acquire crucial skills in a systematic effort to foster human resources with the skills to drive future business growth. Sony is also expanding its menu of elective training options, which are aimed at enhancing job performance and include tailored classes focusing on languages and business skills. Additionally, Sony provides support for self-learning and personal development, including lectures, correspondence courses and programs offered by Sony in affiliation with external organizations. In fiscal year 2010, the cost of training for a single Sony Corporation employee was estimated at approximately ¥350,000.

**Participation in Companywide Training\* in Fiscal Year 2010 (Sony Corporation)**

	Targeted	Mandatory	Elective (Technology- related)	Elective (Others)	Total
<b>Number of programs</b>	8	35	207	43	293
<b>Number of times offered</b>	10	164	347	155	676
<b>Participants</b>	96	36,071	20,507	3,996	60,670
<b>Cumulative total training time (Hours)</b>	13,670	195,106	50,321	19,050	240,047

\* "Number of times offered" and "Cumulative total training time" exclude e-learning.

## Employees

### Support for career building

(Updated on October 28, 2011)

Sony respects the individual's desire to take on new challenges and has fostered the development of a corporate culture in which employees are inspired to seize the initiative in building their own careers. This approach, together with Sony's belief that structure is essential to the training of employees, guides Sony's efforts to provide support for employee career development.

Since 2007, Sony Corporation has designated October "Career Month," a period during which it works to create opportunities for employee growth. Over the course of this month, employees can meet directly with their supervisors to discuss training and development plans regarding their careers. The results are fed back to management and applied to efforts to reinforce Sony's programs for fostering human resources, thereby facilitating carefully tailored support for career building. As part of its broad system of support for career building, Sony distributes the Career Building Guide, a publication that outlines hints for furthering career-related discussions and contains information on training programs focused on personal growth. Sony has also appointed specially trained employees to serve as career advisors. Additionally, Sony has created an in-house Web portal called Search that enables employees to access a wide range of career-related information. Such career support efforts play a key role in revitalizing work environments.

#### Support for Career Building Around the World

Electronics (USA)	<ul style="list-style-type: none"> <li>In North America, Sony has created an in-house Web portal that enables employees to access extensive information relevant to career-building efforts.</li> <li>Educational assistance is provided to employees who are continuing their education as part of their career development.</li> </ul>
Electronics (China)	<p><b>"MyCareer.net"</b></p> <p>This is an in-house Web portal designed to support career-building efforts and self-development.</p>



Search, an in-house Web portal designed to support employee training and career-building efforts



Career Building Guide

## Employees

### Leveraging

As a company that does business in a variety of countries and regions, Sony recognizes the importance of cultivating future business leaders with a global perspective based on diversity. Sony is implementing a variety of initiatives aimed at bringing the capabilities of such employees into full play, irrespective of nationality, culture, race, gender, or the presence or absence of physical limitations.

- Appointing global business leaders > page 65
- Creating opportunities through Global Job Posting system > page 66
- Leveraging engineering talent > page 66
- Promoting greater opportunities for women > page 68
- Promoting greater opportunities for individuals with disabilities > page 70

## Employees

### Appointing global business leaders

(Updated on October 28, 2011)

Since fiscal year 2008, Sony has appointed Global Talent Directors from among its regional human resource managers. Global Talent Directors are charged with identifying promising individuals in all businesses and all regions with the aim of fostering such individuals as future business leaders through worldwide job rotations. To this end, Global Talent Directors select promising candidates and key positions within their particular area of responsibility and seek out appropriate matchings during sessions held biannually for this purpose. To date, approximately 100 Sony employees, primarily management-level and mid-tier executives, have successfully been rotated through a schedule of job assignments.

#### Basic Philosophy behind Global Talent Directors' Job Rotation Project



#### Examples of Activities for Appointing Global Business Leaders Around the World

Electronics (Latin America)	With the aim of reinforcing efforts to foster future regional business leaders, in fiscal year 2010 Sony in Latin America introduced the Positioning for Success program, a job rotation initiative that encompasses key positions in the region, as well as cross-border assignments arranged by global talent directors.
Electronics (Asia Pacific)	This core human resource recruitment program operates in tandem with each Group company in the Asia Pacific region to recruit and foster future regional business leaders. The International Career Program (ICP) was initiated as a job rotation program to develop young talent. The Strategic Career Management Committee (SCMC), which comprises regional senior management and personnel department heads and meets biannually, organizes and implements a multinational job rotation project designed to give selected leadership candidates experience in a variety of businesses.

## Employees

### Creating opportunities through Global Job Posting system

(Updated on October 28, 2011)

In March 2010, Sony introduced an in-house global recruiting system into its Global Sales and Marketing Headquarters and began inviting applications for positions from Sony Group employees worldwide. As of April 30, 2011, more than 260 applications had been received from employees in 37 countries for a total of 100-plus positions ; to date, 19 employees have been hired. This recruiting system gives employees who welcome the challenge an opportunity to excel on a global level. Through initiatives such as these, Sony aims to facilitate the optimal placement of its human resources from a global perspective and at the same time to foster a pool of individuals with the breadth of experience and network of contacts required of global business leaders. In the second half of fiscal year 2011, Sony plans to expand scope of recruiting beyond sales and marketing to encompass all areas of endeavor, thus further enhancing its ability to effectively deploy talented human resources.

### Leveraging engineering talent

(Updated on October 28, 2011)

Sony continues to undertake a variety of activities under the direction of its top engineers, aimed at ensuring its reputation for engineering excellence, as well as at advancing in-house technologies.

In fiscal year 2006, Sony introduced the special designation of Distinguished Engineer (DE) to acknowledge individual engineers who have played instrumental roles in the development of Sony's core technologies. Sony has also established the "DE Community," which enables engineers to participate in free discussions with other engineers from the same technological background from across the organization. DE Community activities are founded on "Three Values," which are to enhance Sony's technological standards, to realize a Sony United wherein technology transcends organizational boundaries and to foster the next generation of technical experts.

To date, Sony has designated a cumulative total of 300\* individuals as DEs. Each year, the DE Communities hold DE Sessions, in which DEs promote technological exchange by sharing recent technological information from both within and outside the Sony Group and seeking to elucidate important technological developments in the spotlight.

Sony also strives to nurture human resources in technological areas over the medium to long term through regular seminars hosted by DEs, as well as through DE workshops, which welcome DEs from around the world. Additionally, since fiscal year 2007 DE Community-driven medium- and long-term proposals have been incorporated into R&D plans, a practice that has played a crucial role in advancing technological expertise at Sony.

In fiscal year 2003, Sony established the Sony MVP award, which honors individual employees who have applied specialized technology and knowledge to create new value for Sony and is designed to help motivate engineers to pursue greater challenges and achievements, thereby creating a corporate culture that emphasizes the creation of value. In fiscal year 2010, 11 Sony employees from around the world were certified as MVPs, bringing the cumulative total certified to date to 207.



Each Sony Group company has also established unique systems for recognizing leading engineering talent. In addition to acknowledging the outstanding achievements of these individuals, such systems support efforts to effectively deploy valuable human resources worldwide.

\* As of July 2011

## Scope of Activities of Sony Distinguished Engineers

### Principal strategies and activities of the DE Community

- (1) Promote the **exchange of technologies and related information** across organizational lines  
Example: Communicate information on technological trends derived from regular DE Community activities, including discussions and forums
- (2) **Abstract, share, debate and express opinions, and make proposals** (DEs, DE Community)  
Example: Identify problems on the technological development frontlines and propose solutions
- (3) Promote top-down **investigation of key concerns**  
Example: Role of think tanks tasked with advising top management on technological matters, formulation of medium- to long-term technological road maps (by technology and by application), benchmarking with key competitors, among others
- (4) **Fostering human resources** in technological fields  
Example: Designation of DEs from a technological perspective and across organizational boundaries, participate in planning of initiatives for fostering engineers in key technological fields over the medium to long term.



- Measures to motivate engineers in key technological areas
- Review/establishment of new key technological areas
- Creation of new technologies (technological areas)
- Nurturing of next-generation DEs and engineers in key technological areas



Scope of Activities of Sony Distinguished Engineers



Sony MVP logo



**Sony's Unique Systems for Recognizing Leading Engineers Around the World**

Monozukuri system (Master Craftsman system)	With the aim of reinforcing its craftsmanship, a crucial challenge, Sony established this system in fiscal year 2005 to recognize engineers who demonstrate a passion for craftsmanship, have both craftsman-worthy skills and qualifications and set an example for other employees. Engineers employed by Sony EMCS Corporation, Sony Semiconductor Kyushu Corporation, Sony Energy Devices Corporation, Sony Chemical & Information Device Corporation, Sony Shiroishi Semiconductor Inc., Sony Manufacturing Systems Corporation and Sony/Taiyo Corporation are eligible for this designation.
Equipment Engineer system	Established as part of an effort to fortify production technologies, this system recognizes equipment engineers at Sony Semiconductor Kyushu Corporation and Sony Shiroishi Semiconductor Inc. The aim is to encourage equipment engineers to refine their skills through continued participation in training programs and to acquire practical capabilities and specialized expertise on a par with equipment manufacturers.

## Promoting greater opportunities for women

(Updated on October 28, 2011)

Having established the Diversity Development Department within its Human Resources Division, Sony Corporation continues to pursue a wide range of initiatives aimed at promoting diversity in line with DIVI@Sony\*1, a project inaugurated in fiscal year 2005 to promote diversity across the Company. In particular, with the majority of employees in the electronics business (who are engineers) being male, Sony recognizes a pressing need to encourage more women to participate and excel in this area. Accordingly, as a first step in addressing the wider issue of employment diversity, the DIVI@Sony project is focusing on gender diversity and is working to establish a framework for advancing the careers of female employees, building employee networks and creating an environment conducive to promoting greater opportunities for women.

For example, project members arrange trainings and events for female employees in managerial positions and symposia and seminars on career issues for female employees with the aim of bolstering general awareness and expanding employee networks. Project members also organize roundtable meetings for male managers to promote better management understanding and support. Another increasingly well-established part of Sony's effort to provide career support for female employees is the DIVI@Sony mentoring system. Women find that the higher they rise in rank the fewer role models there are and the fewer people with whom they can consult. The mentoring system aims to encourage women to continue setting their sights higher and gain more confidence by discussing work- and career-related issues with experienced mentors. Members of the DIVI@Sony project also attend seminars to recruit female students who are aspiring to become engineers, and strive to provide support for efforts to foster prospective female engineers in recruiting activities.

**Ratio of Female Employees in Management Positions\*3 in the Sony Group (Japan)(%)**

	FY06	FY07	FY08	FY09	FY10
Ratio of female employees (%)	25.6	24.8	24.8	20.9	19.5
Ratio of female employees in management positions (%)	2.9	3.1	3.5	3.6	3.6

**Ratio of Female Employees in Management Positions in the Sony Group (USA)(%)**

	FY06	FY07	FY08	FY09	FY10
Ratio of female employees (%)	38.6	37.8	38.2	39.3	32.6
Ratio of female employees in management positions (%)	31.4	31.6	32.2	35.6	33.8

**Ratio of Female Employees in Management Positions in the Sony Group (Latin America) (%)**

	FY06	FY07	FY08	FY09	FY10
Ratio of female employees (%)	-	-	-	40.6	41.4
Ratio of female employees in management positions (%)	-	-	-	25.6	20.8

**Ratio of Female Employees in Management Positions in the Sony Group (China) (%)**

	FY06	FY07	FY08	FY09	FY10
Ratio of female employees (%)	-	-	78.8	68.2	64.8
Ratio of female employees in management positions (%)	-	-	36.5	33.5	25.2

**Ratio of Female Employees in Management Positions in the Sony Group (Asia Pacific) (%)**

	FY06	FY07	FY08	FY09	FY10
Ratio of female employees (%)	-	-	51.8	52.9	49.2
Ratio of female employees in management positions (%)	-	-	26.6	22.6	18.7

**Ratio of Female Employees in Management Positions in the Sony Group (Europe) (%)**

	FY06	FY07	FY08	FY09	FY10
Ratio of female employees (%)	39.3	40.3	42.3	40.5	34.6
Ratio of female employees in management positions (%)	17.4	17.2	18.0	17.9	20.5

\*1 DIVI is an acronym for Diversity Initiative for Value Innovation. The DIVI@Sony project is designed to promote employment diversity in the Sony Group in Japan.

\*2 The Positive Action Promotion Council for Women was established in 2001 by the Ministry of Health, Labour and Welfare in collaboration with a prominent business association. The council's aim is to promote voluntary and bold positive action on the part of Japanese companies.

\*3 Totals are based on data provided by Sony Group companies as of the end of each fiscal year. The definition of "manager" varies in different countries, regions and companies.

## Promoting greater opportunities for individuals with disabilities

(Updated on October 28, 2011)

The Sony Group works actively to provide work environments in which disability is not an obstacle.

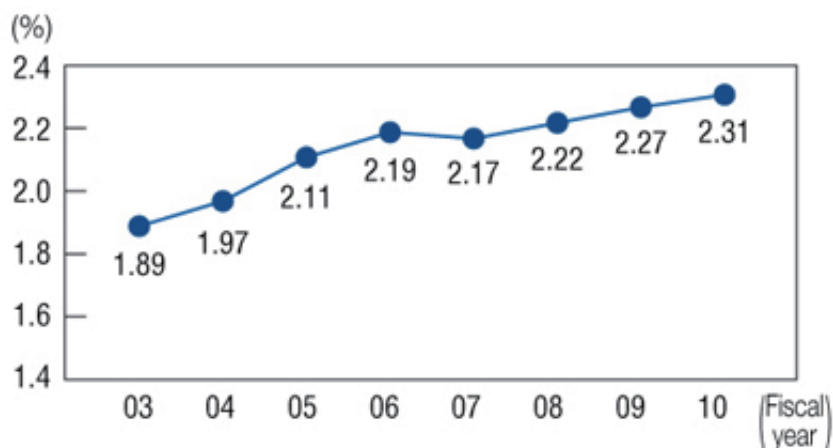
Sony Corporation strives to provide opportunities for individuals with disabilities in areas that maximize their work contributions, as well as to create work environments in which all employees, disabled or otherwise, can fully exercise their capabilities. To this end, it has developed a systematic framework that incorporates this philosophy from the recruiting stage and strives to make accommodations necessary to provide equal access to employment opportunities. In fiscal year 2010, Sony held a Group recruiting fair for disabled individuals in which around 20 Sony Group companies participated.

Sony also strives to ensure positive work environments by working to enhance understanding in departments to which disabled employees have been assigned and by installing necessary facilities. In fiscal year 2010, Sony provided guidance to such departments, as well as inaugurated a training program aimed at improving awareness, which included role-playing exercises, and at promoting the creation of workplaces that accommodate disability.

Sony Taiyo Corporation\*1, a manufacturer of microphones and the Sony Group's first special-purpose subsidiary, has devised a platform that capitalizes on its 30 years of knowledge and experience in employing disabled individuals with Sony and other Group companies, in line with its founding spirit of self-sufficiency. Based on this experience and know-how, Sony Taiyo and other Group companies use case studies for modifying their facilities, as well as for promoting the understanding of nondisabled employees. For Sony City Osaki, Sony Corporation's new office building in Tokyo, the views of disabled employees and advice from Sony/Taiyo were incorporated from the earliest design stages, resulting in a structure that is significantly more in tune with the concept of universal design than Sony's head office building, offering a work environment that is inherently accessible and accommodates the needs of all employees.

Sony's commitment in this area extends beyond legal compliance. In fiscal year 2010, employees with disabilities accounted for 2.31% of Sony Corporation's workforce, while the average for domestic Sony Group companies, which employed a total of 201 individuals with disabilities, was 1.93%, both well above the 1.8% mandated by Japanese law for companies over a certain size.

Two other Sony subsidiaries that provide employment opportunities for disabled individuals are accredited as special-purpose subsidiaries. These are Sony Hikari Corporation, established in fiscal year 2002, and Sony Kibo Corporation, established in fiscal year 2003. In conjunction with its 10th anniversary, Sony Hikari plans to increase employment significantly in fiscal year 2012 and has recently taken on responsibility for janitorial services for Sony City Osaki.



Disabled Employee Ratio (Sony Corporation)\*2

\*1 Sony/Taiyo has implemented concepts such as universal design and inclusive design-a comprehensive workplace design concept that emphasizes usability, environment and education to meet the needs of people regardless of age or ability-to create a work environment in which anyone can work irrespective of whether or not they have a physical limitation.

\*2 Average for each fiscal year (average of month-end ratios from April to March)

## Employees

### Support

Sony recognizes the importance of creating accommodating work environments to fully maximize the talents of a workforce comprising individuals from a variety of backgrounds.

- Enhancing global mobility > page 73
- Introduction of Global Employee Survey > page 73
- Systems that support a healthy work–life balance > page 74
- Support for employees undertaking child care or nursing care > page 75
- Human rights and equal opportunities > page 77
- Occupational Health & Safety > page 78

## Employees

### Enhancing global mobility

(Updated on October 28, 2011)

As of March 31, 2011, Sony had approximately 1,500 employees working in countries other than their own. Of these, 170 employees were transferred between Sony Group companies outside Japan. To enhance the global mobility of human resources, in May 2010 Sony gathered experts on global personnel policies and standards with the aim of enhancing the ease and efficiency of overseas assignments by formulating common Sony Group policies and standards and expanding rules for the treatment of employees assigned to overseas positions under various formats, including transfers.

### Introduction of Global Employee Survey

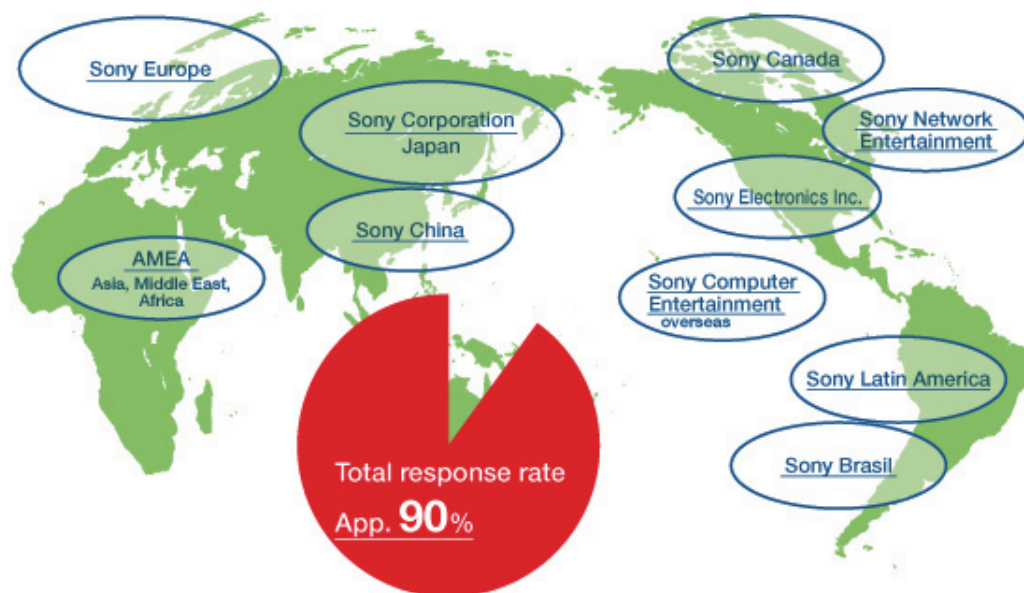
(Updated on October 28, 2011)

To date, Sony has solicited the opinions of employees and individuals from various organizations worldwide regarding strategies and corporate culture, thus gaining input from Sony Group companies and organizations around the world that can be incorporated into improvement efforts. Beginning in fiscal year 2010, Sony integrated these various surveys into a single global employee survey.

The survey positions Sony to gain a better grasp and make meaningful comparisons of the organizational and personnel situations at each Sony Group company using common Groupwide indicators, as well as to compare employee engagement and motivation with that of other global companies and analyze findings. Because it provides direct access to employees' opinions regarding strategies and corporate culture, the survey ensures that employees in managerial positions have an accurate understanding of where strengths lie and where adjustments are needed and helps them to take effective action. For this reason, the survey constitutes an important support tool for employees. At present, Sony is analyzing the results of the fiscal year 2010 survey from various perspectives and providing feedback on findings to management. These results will be reflected in the identification of challenges and the formulation of action plans.

In fiscal year 2010, the survey was distributed to employees at Sony Group companies worldwide and the response rate for the survey was approximately 90%. The survey included questions regarding Sony as a whole, its organizational structure and personal development opportunities-including whether employees recognized solid growth opportunities at Sony, whether supervisors' efforts to foster their employees were effective and whether skill-building training opportunities were sufficient-and the results are proving highly useful in enhancing managerial capabilities, as well as in enhancing workplace conditions and facilitating organizational improvements conducive to individual growth.

## Scope of the Sony Group's Global Employee Opinion Survey and Response Rate (Fiscal Year 2010)



\* The response rate is the percentage of responses received from employees who received and have completed the survey.

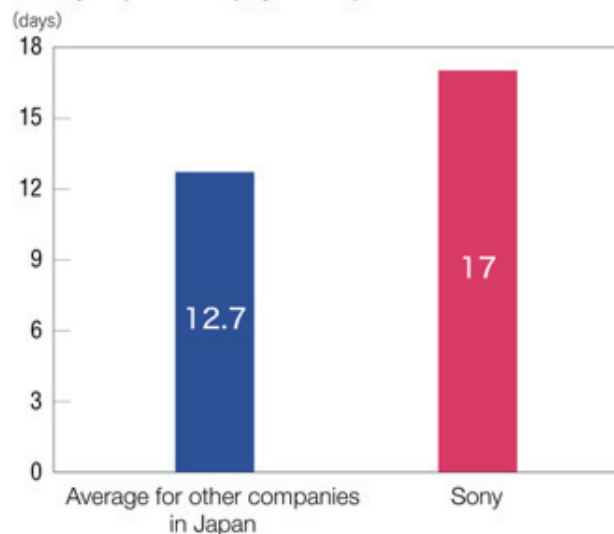
## Systems that support a healthy work–life balance

(Updated on October 28, 2011)

Sony not only adheres to the laws and customs of the countries and regions in which it operates, but also offers versatile working styles designed to help its employees achieve a healthy work–life balance.

In Japan, Sony Corporation has introduced a flex-time system and a discretionary working system, enabling it to offer employees a variety of versatile options. Sony employees regularly use a high percentage of their allotted annual paid days off which in fiscal year 2010 averaged 17 days.

Average Annual Paid Holidays for Sony Corporation Employees in Japan



\* Source for average for other companies in Japan: Comprehensive Survey of Wage Conditions (Fiscal 2010), Central Labour Relations Commission. Surveyed companies held more than 5 billion yen in capital and had a workforce of more than 1,000 employees.

## Employees

### Support for employees undertaking child care or nursing care

(Updated on October 28, 2011)

To assist employees trying to balance the demands of child care and work, Sony has established a special child care leave system, which provides up to 20 days' paid leave and which in certain instances can be used in combination with regular child care leave. Sony also offers an accumulated leave system aimed at employees undertaking child care or nursing care. A significant number of employees take advantage of these various leave systems.

#### Number of Employees Taking Child Care Leave at Sony Corporation\*1

Number of employees taking child care leave	264 (incl. 5 males)
Percentage of eligible employees taking child care leave	98.3%
Percentage of employees who returned to work	96.5%

#### Systems that Support Efforts to Balance Work and Child Care at Sony Corporation

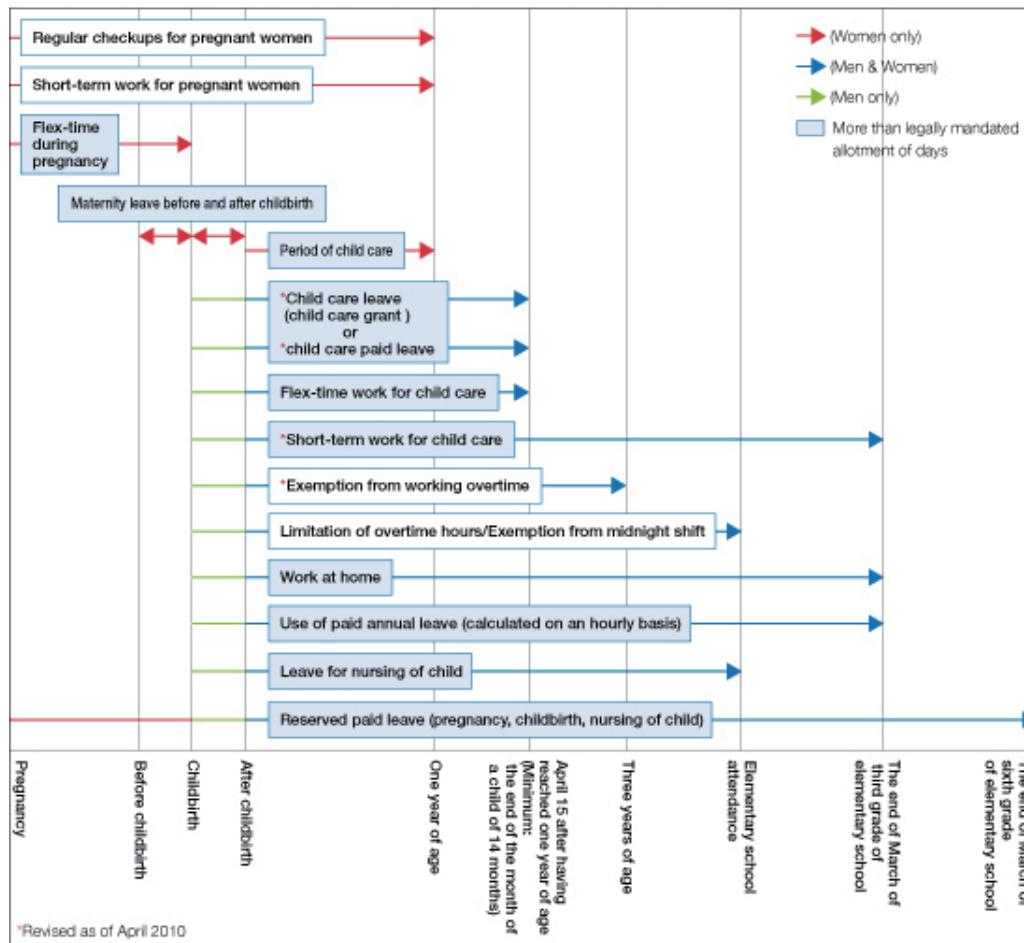
System	Introduced (FY)	Description
Child care leave	1990	<ul style="list-style-type: none"> <li>Until April 15 after child reaches 1 year of age</li> <li>Can be used in combination with special child care leave when child reaches 8 weeks of age (for men)</li> </ul>
Reduced working hours for child care	1995	<ul style="list-style-type: none"> <li>Until end of March of third grade of elementary school</li> <li>Flex-time system can also be used during period of reduced working hours for child care</li> </ul>
Child care grant	2007	Grant of ¥50,000/month during period of child care leave
Special child care leave	2007	<ul style="list-style-type: none"> <li>Provides for 20 days' paid leave</li> <li>Can be used in combination with child care leave when child reaches 8 weeks of age *2</li> </ul>
Telework system	2008	Enables employees to work at home when involved in child rearing or providing nursing care for a family member
Use of paid annual leave	2008	Enables use of paid annual leave, calculated on an hourly basis, for child rearing or providing nursing care for a family member

\*1 Figures represent employees who gave birth in fiscal year 2010

\*2 Child care systems expanded as of April 2010



## Child Care Leave Systems at Sony Corporation



In addition to establishing systems that promote work-life balance, Sony promotes a variety of career support measures for employees trying to balance the demands of child care (or nursing care) and work. Of particular note, Sony holds forums and seminars for employees featuring messages of support for work-life balance initiatives from top management. One example is the Working Parent Forum, during which female and male employees with experience in combining work and child rearing share personal experiences. Another is the Fathers' Forum, which provides an opportunity for male employees to consider how they can better participate in child rearing and features a panel discussion by male employees with direct experience. Beginning in fiscal year 2010, Sony also holds the Working Mothers' Meeting, which enables female employees who have returned, or is returning, to work after child care leave to attend lectures by guest speakers, participate in panel discussions and exchange information with other participants. Sony has also established a hotline for male and female employees trying to balance the demands of work and child rearing.



Kurumin Mark, certifying companies with next-generation child care systems, from Japan's Ministry of Health, Labour and Welfare

For employees preparing to provide nursing care for a family member, Sony offers a seminar on nursing care basics.

In 2007 and again in 2010, Sony was certified by the Tokyo Labor Bureau as a company that actively supports parenting initiatives in line with the Law for Measures to Support the Development of the Next Generation. In 2008, Sony received the grand prize in the 3rd Nikkei Parent-Friendliness Awards, sponsored by the Nikkei Shimbun. The award recognized the fact that Sony had established various systems considered usability to support child rearing and a healthy work-life balance, and that a high percentage of employees made use of these systems. The award also acknowledged the fact that Sony encourages its male employees to participate in child rearing.



Working Mothers Meeting

#### Sony Group Work-Life Balance Initiatives Around the World

Electronics (Latin America)	<ul style="list-style-type: none"> <li>• Since fiscal year 2008, Sony Latin America Inc. has held a number of events promoting work-life balance, including family days, family picnics and company tours for employees' families.</li> <li>• Sony Brasil Ltda. has declared Wednesday a "no overtime day," turning off the lights at 5:30 p.m. that day to encourage employees to return home early.</li> </ul>
Electronics (Asia Pacific)	<p>In Singapore, Sony has established a committee that is charged with considering the recreational needs of employees. Each year, the committee asks employees to vote on proposals for the following year. Since fiscal year 2009, employees have been able to participate in the committee's recreational program right from the planning stage. In recognition of this initiative, Sony received the HRM Worklife Harmony Award from HR Media, an external organization.</p>

## Human rights and equal opportunities

(Updated on October 28, 2011)

Sony is committed to maintaining a dynamic workplace where human rights are respected and equal employment opportunities allow individuals to make the most of their capabilities. In light of the increasing diversity of human rights issues facing corporations, Sony believes it is important that all employees undertake their work with a common awareness of each issue so that issues may be addressed appropriately.

The Sony Group Code of Conduct, enacted in May 2003, contains articles related to respect for human rights and maps out policies that guide human rights-related rules and activities throughout the Sony Group. The article in the Sony Group Code of Conduct that concerns equal opportunity in employment lays down a policy of recruiting, hiring, training, promoting and otherwise treating applicants and employees without regard to non-business-related characteristics, including race, religion, skin color, nationality, age, gender or physical limitation. These provisions are based on existing international standards, including the United Nations Universal Declaration of Human Rights.

Sony Corporation's Diversity Development Department of Human Resource Division spearheads initiatives throughout the Sony Group aimed at raising awareness of human rights issues. Each Sony Group company appoints a diversity officer who promotes information sharing and familiarity with basic policies through regular liaison meetings.

Sony holds an annual slogan competition on human rights-related issues to raise awareness among individual employees. This event is now well-established thanks to active promotion by Group companies, and a large number of employees

participate each year. A selection of slogans is displayed by Group companies to help raise awareness of human rights issues.

Sony provides training for new recruits through an e-learning module called "Human Rights and the Company," and holds regular training sessions for managers on human rights. In addition, Sony distributes a Human Rights Handbook.

Sony organizes a human rights forum prior to Human Rights Week, which is held every year in December. Participants include diversity officers from each Group company, and the forum features presentations on recent newsworthy human rights issues, as well as the awarding of prizes to Sony Group companies for outstanding human rights-related initiatives and slogans.

Sony Corporation has also introduced the EEO\* Counseling Service, which provides support to employees while ensuring a high level of privacy and a swift response.

\* EEO is an acronym for "Equal Employment Opportunity."

## Occupational Health & Safety

Sony strives to adopt sound labor and employment practices and to maintain a healthy, safe and productive work environment.

### Basic Policy and Management System

(Updated on October 28, 2011)

In 1998, Sony enacted a Global Policy on Occupational Health and Safety (OH&S), which serves as a group standard and reflects Sony's commitment to the health and safety of its employees. The policy not only requires compliance with countries' and regions' laws concerning OH&S, but also sets out additional activities to be undertaken through its health and safety management structure.

#### Sony's Global Policy on Occupational Health & Safety

Sony recognizes that occupational health and safety (OH&S) is an integral part of all business operations. Sony therefore secures a safe and healthy working environment for its employees. To achieve this, the following policy has been adopted. This policy applies to all Sony Group companies and organizations throughout the world.

1. To observe all local OH&S-related laws, regulations and agreements, and to establish independent standards to improve management ability of OH&S to practice OH&S activities more than just what the laws require.
2. To establish and maintain an appropriate organizational structure that clearly defines responsibility for promoting OH&S activities in all Sony Group companies and organizations.
3. To perform an OH&S risk assessment to evaluate potential dangers and hazards with a proactive science based analysis in all areas of operation.
4. To respect the voice of employees with the recognition that their health and safety is ensured by good communication between employer and employee.
5. To conduct effective OH&S training to all Sony employees, and to exchange information with outside companies performing services on Sony locations in order to secure OH&S.
6. To undertake internal promotion and information activities to enhance safety awareness.
7. To undertake periodic OH&S audits and endeavor to improve the OH&S management system.
8. To participate in public OH&S activities of both government and the local community.
9. To develop and introduce new methods and technologies for protecting the OH&S of employees.
10. To invest relevant capital in enforcing this policy, and to undertake continuous improvement of the OH&S management system.

## Establishing an OH&S Management System

(Updated on October 28, 2011)

Based on the OHSAS 18001 occupational health and occupational safety standard, and guided by its own Global Policy on OH&S, Sony is working to establish a proprietary OH&S management system for each of its sites around the world. Sony is also promoting ongoing initiatives aimed at ensuring compliance with countries' and regions' laws concerning OH&S, as well as the achievement of voluntary targets.

Under this system, Sony sites in Japan are also promoting a comprehensive approach to OH&S, including protection measures in the event of fires and earthquakes, as well as other security measures, in light of the potential threat of such occurrences to safety and health and corporate assets.

## Fire Risk Assessment

(Updated on October 28, 2011)

Sony conducts regular assessments at its manufacturing sites around the world with the aim of ascertaining the risk of fire, and cooperates with sites to implement appropriate measures to mitigate such risk. This process helps to enhance awareness of the danger of fire and encourages the use of knowledge and advanced solutions to reduce fire risk, as well as to mitigate the risk of interruption of operations as a consequence of fire.

## OH&S Initiatives

### Japan

(Updated on October 28, 2011)

Guided by its Global Policy on OH&S, Sony is working to establish a proprietary OH&S management system with standards that are based on the OHSAS 18001 occupational health and occupational safety standard, and is promoting a variety of OH&S-related initiatives. A particularly distinctive feature of this system is that it addresses OH&S from a comprehensive perspective, focusing not only on the risk of occupational accidents at Sony sites but also on risks to sites associated with earthquake damage, fire and site security. Sony has also developed consistent risk assessment tools that highlight potential risks for use by all Group companies in Japan.

On another front, Sony has mapped out major hazards of all types that exist within its sites with the aim of further integrating the management and improving the efficiency of efforts to deal with such hazards.

Sony has also established an internal auditing system for OH&S-related initiatives conducted at sites and conducts regular audits. This enables it to assess the level of initiatives at principal domestic locations, as well as to provide support for continual improvements.

#### Protecting Employee Health: Programs to Help Employees Quit Smoking

Sony's OH&S management system encompasses a number of programs, one of which supports efforts to encourage employees to quit smoking. Both site occupational health staff and local health insurance associations offer classes aimed at ensuring a proper understanding of the health risks associated with smoking.

To date, Sony has provided smoking rooms at its domestic sites to facilitate the complete separation of smoking and nonsmoking areas and protect employees from secondhand smoke. However, in fiscal year 2011 Sony will eliminate the smoking room at its headquarters and begin examining the adoption of a new policy of not facilitating smoking in the workplace, thereby promoting employee health.

#### Monitoring Legal and Regulatory Trends

To keep abreast of legal and regulatory trends in Japan in the area of OH&S, on-staff experts have developed and regularly update a database of related information and are charged with determining whether changes to laws and regulations apply to Sony sites. Sony has also created a framework for providing support to sites affected by such changes through the dissemination of crucial information, and promotes strict compliance with pertinent laws and

regulations at all Sony sites. Sony also includes information on legal and regulatory matters in the OH&S newsletter it publishes for Group companies in Japan. In addition, Sony has reinforced the component of its site audits that examines compliance with laws and regulations, whereby on-staff experts carefully examine compliance procedures and provide necessary follow-up to ensure there are no omissions.

#### Reducing Risk through Verification

With the aim of preventing the various risks at its sites from turning into actual disasters, Sony is formulating consistent internal rules and a common manual for all of its sites in Japan. For rules governing actions in the event of an earthquake or fire, in particular, Sony is including a variety of references, which it is not only citing but also verifying independently. Sony is also incorporating expertise gained through this verification process into its internal rules, thereby ensuring such rules are grounded in solid science and contribute in a quantifiable way to eliminating the root causes of risk at its sites.



Earthquake resistance test



On-site fire extinguisher inspection using flammable materials

#### Business Continuity Plan (Facility)

Sony is working to introduce and firmly entrench Business Continuity Plans (BCPs). A BCP involves establishing systems related to disaster prevention and mitigation with the objective of reducing business-interruption risk in case of a natural disaster, accident or other such event. A BCP also functions to ensure that critical business operations are not interrupted, even in the event of a disaster, as well as to facilitate the earliest possible resumption of operations should interruption be unavoidable.

At its manufacturing facilities in Japan, Sony has prioritized the implementation of disaster-prevention measures and BCPs that assume a scenario involving a large-scale earthquake. Based on a certain set of assumptions, Sony evaluates the probability of a large earthquake occurring and related disaster prevention measures, as well as the level of impact such an earthquake would have on management of the business. Concurrent with measures to prevent secondary disasters, which place the highest priority on protecting human life, as well as measures to support local communities, Sony is putting in place proactive systems to enable the rapid resumption of business operations following a disaster. To respond to disaster events beyond the scope of the BCP's assumptions, Sony has established a system to enable information to be aggregated during emergencies and facilitate management decision making. Sony has dealt with actual disaster situations based on a policy emphasizing flexible responses.

As a specific example of proactive measures, Sony has conducted earthquake risk assessments of its business sites, including the calculation of peak ground acceleration (PGA) and the creation of hazard maps. Sony has also implemented measures to ensure that buildings on its business sites maintain adequate earthquake resistance based on knowledge obtained through earthquake resistance tests and other verification experiments. In terms of equipment and facilities, Sony

has implemented a range of measures, including anchoring shelves and furniture, securing production equipment and energy supply equipment, undertaking reinforcement work and backing up important information systems. In addition, Sony has also implemented measures relating to systems and organization, including the establishment of an initial-response system in disaster scenarios and the creation of a business restoration system. Sony is pursuing various measures based on the identification of issues affecting each business segment and business site, implementing measures deemed urgent and high-priority, and regularly reviewing its BCPs. Sony also conducts training drills on a regular basis, and utilizes feedback from these drills for ongoing revision of business-continuity measures.

The Sony Group headquarters includes a General Disaster Management Center, which functions to support Groupwide aggregation of information during disaster events and coordinates frontline initial-response measures. The General Disaster Management Center receives reports from Sony Group business sites worldwide in the event of an emergency. In particular, the center constantly monitors information on natural disasters in Japan. Furthermore, in the event of a large-scale disaster or major accident, the center supports initial-response measures at affected business sites. It also supports procedures to secure the safety of employees at disaster-affected business sites, and reports on the situation to senior management at Sony headquarters, the director responsible for risk management and managers in charge of the business divisions affected. This system is designed to support management decision making. These emergency response systems during disasters and accidents aim to reduce business interruption risk for the Sony Group. To facilitate the aggregation of information, such equipment as satellite phones is deployed at the General Disaster Management Center and principal Sony Group business sites as emergency means of communication. In addition, the General Disaster Management Center provides valuable support during disaster events through a broad range of methods. These include unified management of the storage and consumption of goods stockpiled at each business site, arrangement of emergency helicopter transportation of personnel and goods when land transport routes are disrupted, and management of the "Sony Safety Information System," which enables the rapid confirmation of safety for a large number of Sony Group employees.

From immediately after the Great East Japan Earthquake, which struck on March 11, 2011, the General Disaster Management Center monitored in real-time the situation at Sony Group business sites affected by the earthquake, and supported local initial-response measures. The center also carefully gathered and analyzed information relating to frequent aftershocks and the nuclear-plant accident, and supported such activities as initial responses of disaster-affected business sites, personnel safety assurance, prevention of secondary disasters, and cleaning, maintenance and recovery activities relating to facilities and equipment being prepared for resumption of operations. The center also provided reports to senior management on the situations following frequent aftershocks within approximately 30 minutes of such events. Each disaster-affected business site implemented measures to secure the evacuation and safety of employees and customers, provided support for people unable to return home, worked to prevent secondary disasters and carried out support activities vis-à-vis neighboring areas. With regard to business restoration, led by the General Disaster Management Center, support was provided to disaster-affected business sites, and by May 30, 2011, Sony was able to achieve partial or full resumption of operations at all disaster-affected business sites.

The Sony Group intends to utilize the broad array of knowledge and lessons gained through its response to the Great East Japan Earthquake to strengthen its disaster prevention systems and business continuity measures.



## The Americas

In the Americas, there was continued emphasis on employee training and on the identification and elimination or control of potential hazards. A monthly ESH Bulletin, which summarizes activities at sites within the region, provides updates on new regulatory and Sony requirements and best practices, is distributed to all regional sites. In addition, automated external defibrillators (AEDs) have been installed at all major sites, and employees are given training in first aid, cardiopulmonary resuscitation (CPR) and the use of AEDs.

The Laredo Customer Satisfaction Center (LCSC) and the Audio Video Media (AVM) facilities, both in Nuevo Laredo, Mexico, are pursuing the voluntary adoption of the Mexican Federal Occupational Safety and Health Management System (SASST). Government audits under the system resulted in LCSC earning level 2 and AVM level 1 certification. Both sites are currently working to qualify for the next level of certification.

In Brazil, Sony's site in Manaus is engaged in a project to eradicate workplace accidents with the aim of achieving and maintaining safety on production lines. The site shares information on potential accidents with regional office and Sony in Japan, and promotes other measures tailored to the types of accidents prevalent in the region.

## Europe

### OH&S Risk Reduction Program

Sony sites across Europe have identified OH&S management as a top priority and have implemented an OH&S risk reduction program since 2004 that aims to lower OH&S risk by reducing occupational accidents and advancing the health and well-being of employees. The program also sets monthly and annual numerical targets for decreasing the number of workplace injuries resulting in lost days. Based on risk management initiatives and a systematic analysis of regional occupational accident data, each site formulates measures aimed at improving its showing. A performance review is conducted on a quarterly basis. In the European management review meetings, held in twice a year, the program implementation and performance is reviewed by top management.

### Site Chemical Program

Site Chemicals Program was initiated to minimize the risks for employees and contractors working on-site who handle chemical substances and to reduce the amounts of hazardous chemicals used on-site. One important component of this program is the training of all employees and contractors. Participants learn changes concerning the classification, labeling and packaging of chemical substances, which are coming from the new Globally Harmonized System of Classification and Labelling of Chemicals (GHS). In fiscal year 2010, training for site OH&S officers and managers was completed. Also a detailed assessment organized at European level to support each site to clarify areas requiring further improvement to facilitate further reductions in the use of chemical substances.

### Road Safety Program

On March 2, 2010, Sony Europe became signatory of the European Commission's European Road Safety Charter. As



such, Sony Europe has committed to develop a road safety program that contributes to a reduction of road accidents by implementing an interactive road safety training course for employees and on-site contractors; extending the scope of Health & Safety Reporting to include road accidents; and conducting detailed workplace risk assessments for employees, who drive a great deal during working hours. In March 2011, these efforts earned the company recognition in the form of a nomination for an Excellence in Road Safety award. As part of its Road Safety Program, Sony Europe has introduced e-learning at all regional sites, beginning with the Stuttgart Technology Center. From 2011, Sony Europe has also adopted formal reporting procedures for road accidents, enabling the collection of specific data collected on occupational road accidents.

- Sony Europe Profile on European Road Safety Charter web site  
<http://www.erscharter.eu/signatories/profile/17006>

## Pan-Asia

Sony's Pan-Asian sites employ individuals with a wide range of nationalities and cultural backgrounds. One of main OH&S activity focus is to raise awareness of safety issues and instill an appropriate mindset through training and education. In Malaysia, for example, manufacturing sites provide safety training in employees' native languages. Sites in Thailand have set up boards displaying safety records in front of factory entrance with the aim of enhancing and expanding employee awareness.

Together with these and other awareness-boosting initiatives, sites in the region promote ongoing efforts to improve OH&S management in the workplace. These include forming special HIT team (Hazard Identifications Team), which are tasked with identifying potential hazards to employee safety and/or health.

In addition to these and other individual efforts, Sony's Pan-Asian sites hold annual regional safety conference to facilitate the exchange of crucial information and the sharing of good practices. At the meeting, regional safety awards are presented to recognize sites that have implemented noteworthy initiatives.



Employee training session



Safety Record board



Regional Safety Conference

## China

Sony's manufacturing sites in China have significant annual output and a widely varied product mix. To secure and maintain the safety of production lines at such sites, Sony is promoting initiatives that capitalize on know-how and technologies accumulated at its manufacturing sites in Japan.

In fiscal year 2010, Shanghai-based Shanghai Suoguang Electronics Co., Ltd. (SSGE) was named a Shanghai City Peaceful Enterprise by the Shanghai municipal government, a Minhang Ward Public Security Qualified Enterprise by the city's Minhang District and a Social General Security Management Excellent Enterprise.

## Global Workplace Injury Statistics

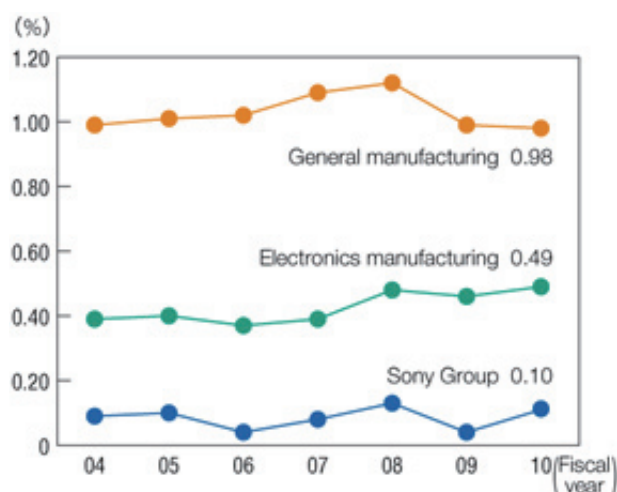
(Updated on October 28, 2011)

Since fiscal year 2001, Sony has employed a data collection system to gather annual occupational health and safety data in the countries and regions in which it has operations. Sony analyzes these statistics to gain an understanding of circumstances and trends in terms of country/region, injury, accident and illness, and the related practices of Sony Group companies in order to help prevent reoccurrences.

### Japan

For the Sony Group in Japan, the frequency of workplace injuries at sites is stable at an average of 0.1, thanks to a firm emphasis on initiatives to reduce risk. As shown in the graph below, the Sony Group has succeeded in maintaining a frequency ratio that is about 1/5 the average for general manufacturing and electronics manufacturing.

Workplace Injury Statistics for Japan\*1



\*1 Frequency ratio = Number of injuries resulting in more than one lost day ÷ Total working hours × 1,000,000 Averages for general manufacturing and electronics manufacturing are from a survey on trends in workplace injuries conducted by Japan's Ministry of Health, Labour and Welfare.

### The Americas

In the Americas, there was continued emphasis on employee training and on the identification and elimination or control of potential hazards. This is achieved through engineering reviews, self-inspections, ergonomic assessments and corporate audits at all locations. Audit recommendations are provided as a means of improving existing programs and are tracked until completed by the site. In addition, employee involvement in the safety process, including site Safety and Health Committees, help increase employee awareness of their operations.

#### Manufacturing Workplace Injury Statistics for the Americas\*2(Calendar Year)

Country	2004	2005	2006	2007	2008	2009	2010
Brazil	1.6	0.6	0.6	1.3	3.6	2.0	1.6
Canada	0.4	4.1	0.6	4.4	1.4	3.9	0.9
Mexico	2	1.4	0.7	1.6	1.7	0.8	0.9
US	1.3	0.9	1	0.8	0.4	0.1	0.3

\*2 Rate of incidence = Number of cases of injuries requiring one or more days of missed work × 200,000 ÷ Actual number of hours worked  
Rates include all Sony regular and temporary employees at manufacturing sites. The scope of data includes manufacturing sites of Sony Electronics Inc. and Sony DADC US Inc.

### Europe

In Europe, workplace injuries have declined in recent years. This achievement is attributable to OH&S Risk Reduction Program activities. (See examples of OH&S Risk Reduction Program in Europe) Specific efforts focus on ensuring the safe handling of machinery, electrical equipment and hazardous substances, as well as safe manual handling, and on-site road safety.

#### Workplace Injury Statistics for Europe\*3(Calendar Year)

Country/Region	Sony vs. National Industry	2004	2005	2006	2007	2008	2009	2010
Austria	Sony	13.5	17.7	6.5	9.3	10.1	13.1	7.5
	National Industry	39.0	38.5	39.0	38.0	43.0	N/A	N/A
France	Sony	25.4	16.7	22.3	28.1	19.4	6.6	11.2
	National Industry	39.5	39.1	39.4	39.4	38.0	N/A	N/A
Hungary	Sony	26.9	18.2	15.5	19.0	8.2	1.5	0
	National Industry	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Netherlands	Sony	N/A	N/A	0	0	0.0	0.0	0
	National Industry	N/A	18.0	N/A	N/A	N/A	N/A	N/A
Slovakia	Sony	9.46	7.7	9.1	7.5	12.4	7.7	0.8
	National Industry	10.5	9.8	9.7	11.1	10.3	N/A	N/A
Spain	Sony	120.6	123	121.3	115.1	60	17.3	5.8
	National Industry	102.4	101.7	95.8	94.3	83.8	65.7	N/A
UK	Sony	26.1	7.7	4.6	18.54	13	7.1	5.3
	National Industry	10.2	10.1	9.5	9.3	8.5	7.7	N/A

Rates include all Sony employees and Sony temporary employees in manufacturing companies.

\*3 Units used: Number of injuries per thousand employees. The definition of workplace injury varies from country to country. Statistics for Spain include both occupational and nonoccupational illnesses as required by legislation. For this reason, a direct comparison cannot be made with other European countries. Amendments were made to national industry statistics for the UK and Spain for past years. These amendments have been reflected in the table data.

#### **Pan-Asia/East Asia**

The frequency of workplace injuries has declined at sites in both China and Pan-Asia, owing to efforts to reduce risk at sites in these regions.

#### **Workplace Injury Statistics for Pan-Asia/East Asia \*4(Fiscal Year)**

Country/Region	2004	2005	2006	2007	2008	2009	2010
Malaysia	2.9	1.5	1.7	1.5	1.1	1.9	1.72
Singapore	0.7	1.3	0.0	1.0	1.3	0	0
Thailand	0.5	0.1	0.2	0.1	0	0	0
China (mainland)	0.3	0.2	0.4	0.5	0.4	0.4	0.4
South Korea	1.9	1.7	0.4	0.7	0.8	1.6	0.97

\*4 Frequency Rate = Number of injuries resulting in more than 1 lost day ÷ Total working hours × 1,000,000

## Employees

### Communication

Business activities entail extensive communication with a wide range of stakeholders. In recent years, owing to the widespread use of e-mail and other communications technologies, there is a tendency toward less face-to-face communication. Further, in people's busy daily lives, it is often difficult to convey one's feelings to the people one interacts with, sometimes leading to hurt feelings or a lack of clarity of intentions. Given its corporate culture, which values effective communication, Sony has established an environment in which it is easy to build trust among individuals and in which harassment behavior is unlikely to occur. Sony strives to maintain a healthy working environment, as well as to facilitate the smooth execution of business, by placing a high priority on communication.

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- Collaboration with External Organizations Promoting Diversity > page 90
- Collaboration with academic institutions > page 91
- Communication tools > page 91

## Employee-management communications

(Updated on October 28, 2011)

Sony's top management, including Howard Stringer, Sony's Chairman, CEO and President, believes in the importance of communication with employees. In response to the rapid deterioration in economic conditions following the onset of the global financial crisis, the entire Sony Group has carried out structural reforms in recent years with the aim of strengthening its management resilience and profitability. These reforms have involved a realignment of manufacturing sites in Japan and abroad, a review of Sony's development and design infrastructure, and a streamlining of sales and administrative functions. This has resulted in more appropriate allocation of human resources and the reallocation of employees to growth businesses, new businesses and higher value-added positions.

In undertaking these various measures, Sony takes care to communicate closely with employees to ensure their understanding of the need for structural reforms. At the same time, Sony is mindful to ensure compliance with the laws and regulations and respect for cultures and attitudes in the many countries and regions in which it operates.

Since 2005, Sony has held town hall meetings and CEO dialogues to facilitate direct communication with employees. Such initiatives enable top management to convey policies and thinking on structural reforms directly to employees, and at the same time gain an understanding of the views of employees and issues faced on the frontlines. Opinions are exchanged on a broad range of issues, under such themes as technology and management.

Sony's top management also uses intranets and e-mail to communicate with Sony Group employees. This not only facilitates the sharing of information but also helps develop a sense of unity within the Group.

### Principal Communication between Top Management and Employees

Electronics (USA)	Senior management has a strong focus on engaging and educating employees in all aspects of Sony Electronics Inc. (SEL)'s business, including its goals, mission and values, business strategies, objectives, performance issues and challenges, through internal and external news, as well as meetings with SEL's president and chief operating officer at company sites throughout the United States, where they convey quarterly results and goals and hold Q&A sessions on all topics.
Electronics (Latin America)	<ul style="list-style-type: none"> <li>• To facilitate the sharing of information between top management and employees, quarterly town hall meetings are held between the President of Sony Latin America Inc. and presidents of other Sony Group companies in the region.</li> <li>• The president of Sony Latin America also has monthly breakfast meetings with a number of employees.</li> </ul>
Electronics (China)	<ul style="list-style-type: none"> <li>• Efforts are made to promote communication with employee labor unions.</li> <li>• Management also makes use of intranets, internal newsletters and employee questionnaires to ensure information is conveyed to frontline manufacturing staff.</li> </ul>
Electronics (Asia Pacific)	General assembly meetings are held regularly to deepen understanding of management policies and key issues as well as to share best practices.

Electronics (Europe)	Since fiscal year 1995, Sony has maintained a European Information and Consultation Committee (EICC)*, in compliance with EU labor law. The EICC serves as a forum for the sharing of information between Sony Europe management and employee representatives from Sony Group companies in EU countries, and also ensures that management is able to hear employee opinions directly and engage in debate.
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\* Sony's EICC provides a forum for discussion among management of Sony Europe and employee representatives from Sony Group companies in the EU.

## Collaboration with External Organizations Promoting Diversity

(Updated on October 28, 2011)

Sony Corporation is a sponsor and active participant in the Japan Women's Innovative Network (J-Win), which was founded in 2005 and became a nonprofit organization in 2007. J-Win supports the development of a network for the promotion of women's careers and also promotes diversity management. In addition, Sony is a participant in the Support Forum for Women in Business, a project of the Japan Institute of Workers' Evolution. Moreover, Sony promotes diversity in collaboration with external organizations in each of the countries and regions in which it operates.

### Principal Diversity-related Collaboration Activities with External Organizations

Pictures	<ul style="list-style-type: none"> <li>• Sony launched Spectrum, a diversity program involving not only employees but also customer, local communities and parts suppliers.</li> <li>• Spectrum encompasses Diversity Roundtable Networking Mixers and Employee Business Resource Groups, two initiatives that support cross-business network building efforts for employees from various backgrounds. These initiatives also provide opportunities for employees to grow as professionals, as well as to interact with executives and participate in business strategy development.</li> </ul>
Electronics (USA)	<ul style="list-style-type: none"> <li>• Sony Electronics Inc. (SEL) has a total of 11 network groups: These groups have a combined total of over 2,200 employees from 5 Sony sister divisions. The mission of the network groups is to support SEL business initiatives and diversity recruiting efforts, provide networking and cross-business educational opportunities, undertake activities that support coaching and mentoring employees, provide a forum for communication and information exchange, and enhance employee morale, productivity and engagement.</li> </ul>
Electronics (Europe)	<ul style="list-style-type: none"> <li>• Professional Solutions Europe, which serves corporate clients, has launched a program to promote increased participation by women, with particular emphasis on encouraging more women to aim for the senior management level. The program, called the 50:50 Project, is Europe-wide and involves a training program for 35 women identified as future management candidates. From fiscal year 2011, a mentoring program conducted by senior management is also scheduled to commence. The 50:50 Project not only involves the participation of women but also male employees and outside stakeholders.</li> </ul>

## Collaboration with academic institutions

(Updated on October 28, 2011)

Sony participates in collaborative projects involving industry and academia with the aim of realizing innovation and contributing to the development of next-generation engineers capable of driving future science and technology R&D over the medium to long term. Since fiscal year 2009, Sony and Keio University in Tokyo have implemented three programs: (1) a donated lecture series, "Strategic Management for Innovation," for students and a symposium for the general public; (2) a medium- to long-term internship program for next-generation engineers that emphasizes manufacturing and design, engineering and R&D, together with the dispatch of lecturers with the goal of cultivating personnel with strengths from a broad perspective in R&D and education; and (3) joint research utilizing Sony facilities. As a company making an active contribution to the academic sphere, Sony's activities in this area have received substantial positive media coverage and government recognition appraising its effectiveness. In the future, as open-based R&D becomes increasingly mainstream, Sony anticipates even greater opportunities for collaboration with academic institutions.

## Communication tools

(Updated on October 28, 2011)

Sony has developed a range of tools to promote and support communication between management and employees, as well as among employees. Sony utilizes intranets for communication of information from management to employees and to provide and share information among Group companies and business groups. Furthermore, Sony maintains an electronic support system for conveying official business communications globally and across business boundaries. Many senior managers also maintain blogs on Sony's intranets to enable direct transmission of what is happening in the business as well as their thoughts on various topics. For communication among employees, Sony also utilizes its own social networking service (SNS). Use of the SNS is voluntary and helps promote a sense of unity in the organization. Approximately 10,000 employees have registered to use the SNS, which functions as a cross-functional forum in such areas as product development and problem solving across multiple business units.

As a support system for communication between diverse Sony sites globally, Sony has integrated such tools as telephone, e-mail, video conferencing and Web conferencing, thereby increasing the effectiveness of internal communications. This support system has also contributed to improved efficiency and productivity as well as to cost reduction measures. At present, employees utilize tools linked to the e-mail system, enabling information to be conveyed directly based on the optimum timing.



## Employees

### Special Columns

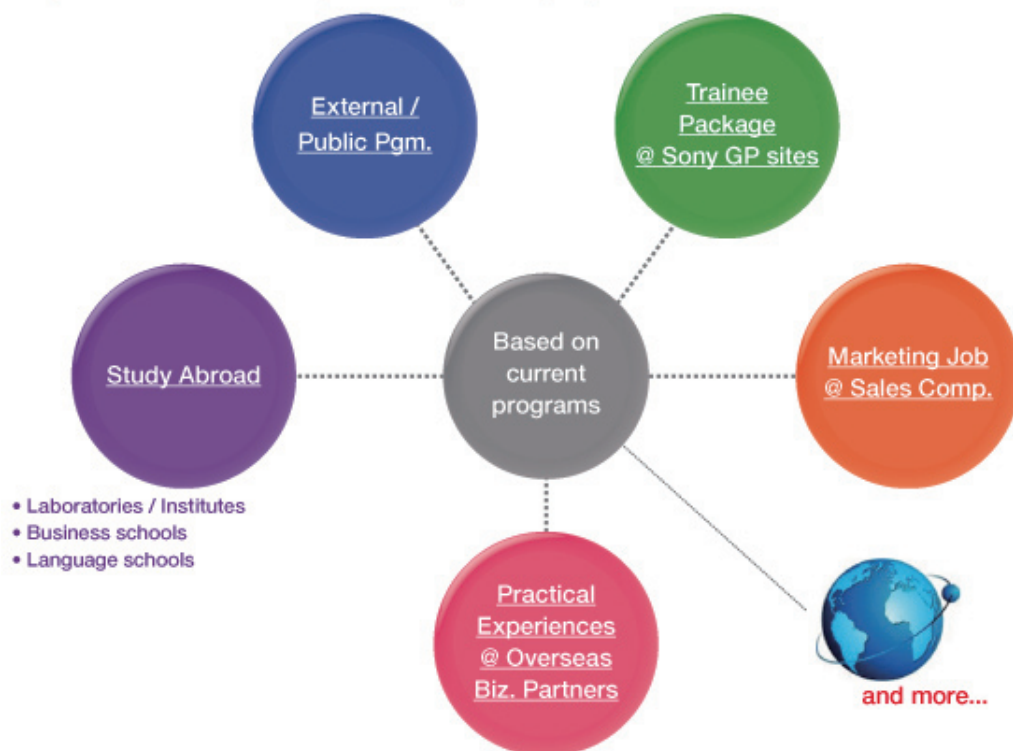
As a major corporate organization with operations around the world, Sony encompasses a diverse array of individuals. To respond to the rapid globalization of the business environment, Sony recognizes the need for its Japanese employees to further transform their thinking, acquire globally competitive skills and expand their experience. Further, Sony expects the proportion of non-Japanese employees working in Japan to expand dramatically, and is undertaking various initiatives to make workplaces in Japan more internationalized.

(Updated on October 28, 2011)

### Improving the global awareness of employees in Japan

Sony Corporation has various programs that aim to provide employees with overseas experience as they prepare to work on the international stage. Such initiatives include study abroad programs that enable employees to learn about cutting-edge technology at overseas universities and research institutions and opportunities to study for an MBA, thereby expanding participants' level of knowledge as an engineer. Sony is currently expanding its study abroad programs, in terms of host institutions and range of objectives.

#### Scheme for Young Employees to Acquire Overseas Experience (example)



To bolster English-language communication skills, Sony recently established an English training program catering to each level of the organization. Sony also provides diverse learning opportunities to enable employees to study languages based on their individual level and needs. Sony actively supports employees in their individual efforts for personal growth and learning. In fiscal year 2010, approximately 3,200 employees utilized these programs to improve their English-language capabilities. Sony has a growing number of language training programs and participants for languages apart from English, including Chinese.

Similarly, at Group companies in Japan, employees participate in a variety of programs such as "Self-Improvement," "School Attendance Support," and "In-House TOEIC®."

## Improving the global awareness of employees in Japan

In anticipation of increasing interaction with global personnel, Sony Corporation has put measures in place to enable employees whose native language is not Japanese to conduct their work in English. Such measures include commencing the conversion of intranets and human resource and administrative applications to a multilingual basis. Conversion is being done on a priority basis for high-needs areas, and Sony plans to complete this internal process by April 2012. Since the initiatives undertaken aim to establish a more conducive environment for foreign employees in Japan, Sony is working to enhance a broad range of conditions, including through setting up a specialist unit within the Human Resources Division to provide further support.



An everyday scene at the workplace

## Community

### Social Contribution Activities

Sony continues to undertake a wide variety of social contribution activities based on the Sony Group's social contribution policy, which is to undertake activities in fields where it is best able to do so to help address the needs of the communities in which Sony operates. In the phrase "For the Next Generation" to describe its CSR activities, Sony strives to have a positive impact through these activities by leveraging its products, business activities and employees, independently and in partnership with various organizations.

#### Vision of Sony's Founder



In Sony's Founding Prospectus, one of its founders, Masaru Ibuka, set as a primary goal "the promotion of education in science among the general public."

page 95

#### Social Contribution Policy, Main Scope and Structure

Sony contributes in a manner that capitalizes on its unique capabilities with the Sony Group's social contribution policy.

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#### Activities



In addition to the science education for children, as a global company, Sony is keenly aware of the importance of the MDGs and implements a diverse array of activities around the world, not only where it operates but also elsewhere, aimed at contributing to the achievement of these goals.

page 98

#### Expenditures for Social Contribution Activities in Fiscal Year 2010

In fiscal year 2010, the Sony Group spent approximately 4.6 billion yen on social contribution activities.

page 103

#### Volunteer Systems for Employees



To promote employee participation, Sony Corporation has in-house volunteer programs and employee volunteer support system.

page 104

#### Related Information

Information on Exhibitions, Foundations and Related Activities.

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## Community

### Vision of Sony's Founder

(Updated on August 31, 2011)

In Sony's Founding Prospectus, one of its founders, Masaru Ibuka, set as a primary goal "the promotion of education in science among the general public." He was convinced that enhancing scientific literacy would be critical for the recovery of post-war Japan and that science education for children was the key. In 1959, 13 years after Sony's establishment, he set up the Sony Fund for the Promotion of Science Education to support elementary schools in the pursuit of science education excellence.



Masaru Ibuka



Research presentation by schools assisted under the Sony Fund for the Promotion of Science Education (1982)

## Community

### Social Contribution Policy, Main Scope and Structure

#### Social Contribution Policy

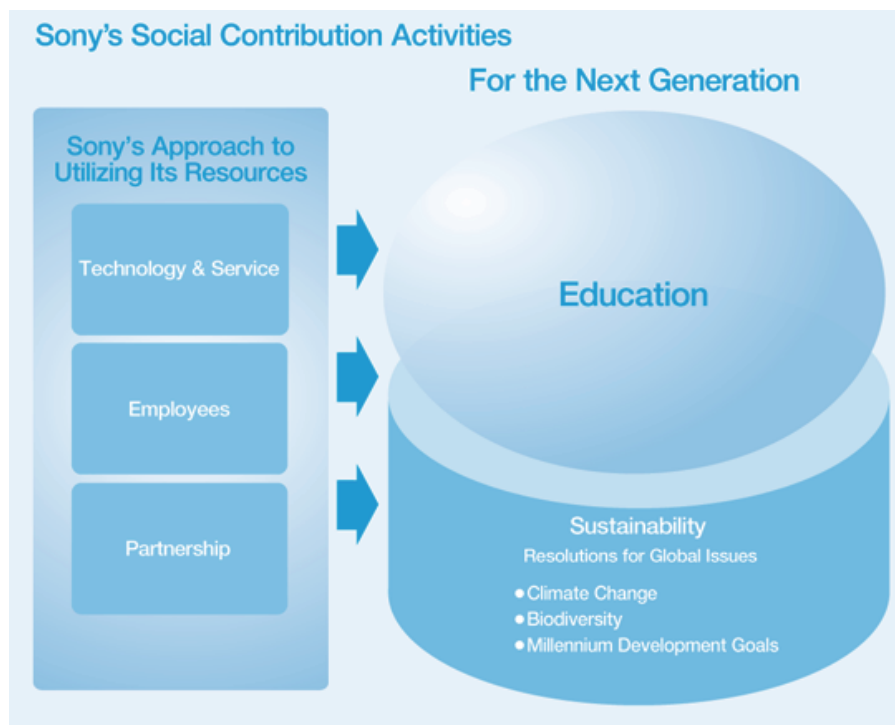
(Updated on August 31, 2011)

Sony sets its social contribution policy as "Undertaking activities in fields where Sony is best able to do so, to help address the needs of communities".

#### For the Next Generation

In the phrase "For the Next Generation" to describe its CSR activities, Sony has broadened the scope of its activities beyond the science education initiatives introduced by Masaru Ibuka to include support for arts education, leveraging its resources in the entertainment field to assist efforts in music areas. Sony also strives to fulfill its responsibilities as a global corporate citizen through efforts to support the Millennium Development Goals (MDGs),\* which seek to resolve such key global development challenges as environmental conservation and poverty, and by providing assistance in the aftermath of major disasters, thereby contributing to the realization of a sustainable society.

In addition to monetary donations, Sony contributes in a manner that capitalizes on its unique capabilities. Initiatives that take advantage of Sony technologies, products, services and content resources, as well as the approximately 200,000 Sony Group employees' volunteer involvement worldwide, serve to enhance employee awareness of global issues, as well as to enhance motivation. In this era of increased cooperation between the public and private sectors, Sony is also working with nongovernmental organizations (NGOs), international agencies and other groups that bring together networks and specialized local expertise that Sony does not have, an arrangement that yields more effective results. Such efforts also lead to new business opportunities for Sony.



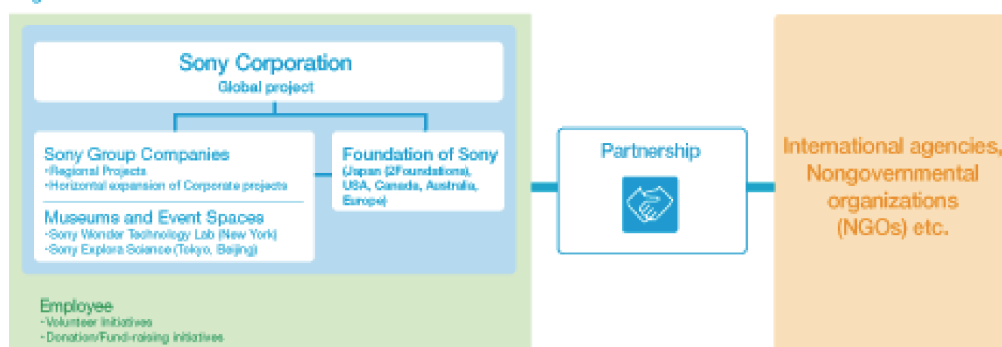
\* The Millennium Development Goals (MDGs) form a blueprint for responding to the world's main development challenges by 2015. The MDGs are drawn from the actions and targets contained in the Millennium Declaration that was adopted by 189 nations at the UN Millennium Summit in September 2000.

## Structure

(Updated on August 31, 2011)

In addition to Sony's global program, which is spearheaded by its headquarters in Tokyo, Sony Group companies worldwide, as well as six foundations, promote initiatives tailored to local needs in accordance with the Sony Group's social contribution policy, cooperating with various international organizations including NGOs. Additionally, employees are encouraged to play an active role in their communities through participation in, for example, volunteer and fund-raising programs.

Organization chart



## Community

### Activities

#### Education for the next generation

(Updated on August 31, 2011)

##### Science and Technology

Sony has provided support for science education, as envisioned by Masaru Ibuka, one of Sony's founders, for more than five decades, and currently a variety of initiatives are being mainly taken by Sony Group companies and the Sony Foundation for Education, both in Japan and overseas. In 2009, Sony launched the Sony Science Program, a series of workshops for children planned and conducted by Sony engineers that aim to teach children about the principles of science through first-hand experience, as well as to encourage curiosity and broaden the imagination. In 2010, the Sony Science Program was held not only in Japan but also in Singapore, China and elsewhere, and welcomed a total of 3,400 participants. In 2011, Sony aims to provide opportunities for more children around the world to experience science firsthand, and plans to take its workshops to areas recovering from earthquakes or dealing with other adverse circumstances. At Sony ExploraScience in Japan (Tokyo) and China (Beijing), as well as Sony Wonder Technology Lab in the United States (New York), visitors can have fun while exploring the principles of science and experiencing technology firsthand. These Sony-produced science museums attract approximately 550,000 visitors annually.



Handmade battery workshop



- Sony Science Program  
<http://www.sony.co.jp/SonyInfo/csr/ForTheNextGeneration/contentslist/ssp/>



- Sony Foundation for Education  
<http://www.sony-ef.or.jp/english/>

##### Music

Sony Music Foundation is engaged in a variety of classical music-related activities designed to nurture the artistic sensibilities of children. These include the "Concert for KIDS" series, featuring concerts aimed at preschool-age children, primary school-age and older children, as well as concerts for expectant mothers and their unborn children. The Foundation's activities also include a "Special Concert Series", featuring concerts by world-renowned musicians. In addition, Sony hosts charity concerts in support of the Japanese Red Cross Society. Also, the Foundation fosters up-and-coming musical talent through sponsorship of an international competition for young oboe players and administration of the Hideo Saito Memorial Fund Award.



© Koichi Titayama



- Sony Music Foundation  
<http://www.smf.or.jp/>



## Support for the Millennium Development Goals

(Updated on August 31, 2011)

The Millennium Development Goals is a blueprint for responding to the world's main development challenges. Sony is pursuing a variety of initiatives aimed at helping to achieve these goals.

### Dream Goal 2010

Particularly noteworthy is its efforts as an official FIFA partner to take advantage of global attention focused on Africa for the 2010 FIFA World Cup South Africa™ to launch the Dream Goal 2010, a social contribution program in Africa designed to capitalize on the power of soccer as a tool for social development. Initiatives under the Dream Goal 2010 banner included a Public Viewing project, whereby 2010 FIFA World Cup™ games featuring the Ghana and Cameroon teams were broadcast live in those countries. Implemented in cooperation with the United Nations Development Programme (UNDP) and the Japan International Cooperation Agency (JICA), this project used the public viewings as a forum for promoting awareness aimed at curbing the spread of HIV/AIDS.



Public viewing in Ghana

Sony recognizes the value of public-private partnerships and collaborates with NGOs, international agencies and government organizations. These entities bring networks and specialized local expertise to Sony that helps to produce more effective results.



- Dream Goal 2010

<http://www.sony.net/SonyInfo/csr/ForTheNextGeneration/contentslist/dreamgoal2010/>

### EYE SEE

Sponsored by the United Nations Children's Fund (UNICEF), the EYE SEE Project is a digital photography initiative that encourages children in developing countries who face significant challenges as a result of, for example, disaster or civil war to take photographs of their day-to-day lives as a means of sharing their perspectives and facilitating better understanding of the outside world. Sony provides digital camera and other equipment used in the project as well as financial support. Photographs taken by children participating in the project document their experiences, communicating the joys and turmoil that dominate their existence.



© UNICEF/NYHQ 2009-1205/Pirozzi



- EYE SEE

<http://www.sony.net/SonyInfo/csr/ForTheNextGeneration/eyesee/>



### Contributions to the international community through our business

Sony is particularly aware that emerging economies face significant development challenges and is exploring new business approaches to address them. Efforts to date include inviting experts from outside the Company to hold seminars for pertinent employees with regard to promoting BOP business.



Visiting a clinic in rural India

Additionally, Sony conducted a study in conjunction with Japan's Ministry of Economy, Trade and Industry (METI) to assess the practicality of compact decentralized power generation and storage systems in rural India in January 2010. The research sought to identify local needs and available fuel supplies, among other objects.

In addition, Sony is a participant in "Preparatory Survey for BOP Business Promotion," an initiative undertaken by the Japan International Cooperation Agency (JICA) that aims to resolve developmental issues faced by impoverished people in developing countries. This program provides JICA support for preparatory surveys related to BOP business projects undertaken by companies. Sony Computer Science Laboratories, Inc. and Sony Corporation are carrying out a survey for BOP business in Ghana related to off-grid energy solutions in unelectrified areas.

Since 1975, Sony's international cooperation activities have reflected the unwavering commitment of its founders to helping build developing countries and provide training using its position as an electronics manufacturer. Through Japan's Overseas Development Assistance (ODA) program, Sony has transferred technology to around 80 countries by providing both equipment and technical training. Recipients of this aid include state-run broadcasting organizations, open universities and other educational facilities, health organizations, libraries, theaters and art museums.



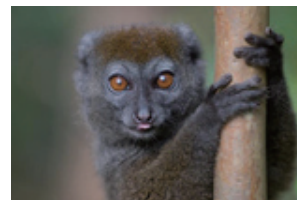
Sony will continue to promote efforts aimed at contributing to society around the world through its business activities.

## Environmental Protection

(Updated on August 31, 2011)

### Conservation International

Since 1995, Sony and Conservation International (CI), a global NGO involved in environmental protection, have worked together to make global biodiversity accessible to audiences worldwide. For the past 15 years, Sony has supplied CI with cameras and editing equipment as donation, as well as other support. Through this relationship, CI has captured rare photographs and video footage of wildlife and biodiversity scenes from around the planet using state-of-the-art technology, thereby helping to raise awareness of environmental issues among a greater number of people.



In 2010, in addition to providing digital cameras, camcorders and editing equipment, Sony supplied CI with "NEX-5" interchangeable lens digital cameras, as well as 3D Handycam® camcorders. These cameras have enabled CI to utilize 3D technology to produce compelling images that convey the wonder of biodiversity. Through image technology, Sony and CI deliver rare scenes of biodiversity to people all over the world. By communicating as widely as possible the importance of biodiversity, Sony and CI are working to ensure its protection and conservation.

- People Need Nature to Thrive  
<http://www.sony.net/SonyInfo/csr/ForTheNextGeneration/biodiversity/>

#### **Solar Bear Fund**

Sony supports the efforts of the Solar Bear Fund, a Japanese NPO striving to promote the prevention of global warming through the adoption of renewable energy for the next generation and realization of a sustainable society for future generations.

- For more information (Japanese only)  
<http://www.sony.co.jp/SonyInfo/csr/innovation/marketing/solarbear.html>

## **Disaster Relief and Humanitarian Assistance**

(Updated on August 31, 2011)

As a global corporate citizen, Sony provides disaster and humanitarian relief in the aftermath of major catastrophes.

In response to the Great East Japan Earthquake, which struck on March 11, 2011, Sony donated ¥470 million to support relief efforts for victims of the disaster, as well as provided a variety of products as relief supplies, including 30,000 radios, 500,000 batteries and 125 televisions. In addition, employees from across the entire Sony Group in the world participated in fund-raising activities for earthquake victim relief, which yielded more than ¥440 million in donations from approximately 74,000 employees and former employees from more than 50 countries and areas. Sony Group companies enrolled a special matching gift program through which employee contributions be matched, dollar for dollar, by the Company. In earthquake-affected areas, many Sony employees also participated in local support activities for earthquake relief.

- For more information regarding Sony Group companies' relief efforts for the Great East Japan Earthquake and Tsunami of March 11, 2011  
<http://www.sony.net/SonyInfo/csr/groupcsr.html>

As for the medium- to long-term support for victims of the Sichuan Earthquake in May 2008, Sony donated funds to assist in the construction of Biyu Chunnlei Earthquake-proof School in Jiangyou, Sichuan Province, by the China Children and Young People Fund, a suborganization of the All-China Women's Federation. This is one of two schools Sony has helped rebuild in Sichuan. Furniture, including desks and chairs were also donated to these schools. Children of Sony employees in Japan sent messages of encouragement to pupils to coincide with the new school's opening ceremony.



Children of Sony employees in Japan sent senbazuru (a thousand folded paper cranes) as a gesture of support to pupils of Biyu Chunnlei Earthquake-proof School

**Monetary Donations for Disaster Relief by the Sony Group**

Date	Incident	Amount	Recipient	Application
May 2008	Cyclone Nargis	Approx. 20 million yen	CARE International Japan Others	<ul style="list-style-type: none"> <li>Emergency humanitarian assistance</li> <li>Agricultural support (support for projects aimed at facilitating the early restoration of agricultural production in Myanmar)</li> </ul>
May 2008	Sichuan Earthquake	Approx. 190 million yen	Japanese Red Cross Society China Children and Teenageers Fund Red Cross Society of China Others	<ul style="list-style-type: none"> <li>Emergency humanitarian assistance</li> <li>Educational support (assistance for the construction of two earthquake-proof schools)</li> </ul>
June 2008	Iwate-Miyagi Nairiku Earthquake	Approx. 5.5 million yen	Central Community Chest of Japan	<ul style="list-style-type: none"> <li>Emergency humanitarian assistance</li> </ul>
January 2010	Haiti Earthquake	Approx. 67 million yen	Save the Children (USA, Japan) American Red Cross UNICEF (USA) Others	<ul style="list-style-type: none"> <li>Emergency humanitarian assistance</li> <li>Educational support (stationery kit)</li> </ul>
February 2010	Chile Earthquake	Approx. 5 million yen (USA) Habitat for Humanity	Save the Children	<ul style="list-style-type: none"> <li>Emergency humanitarian assistance</li> </ul>
February 2010	New Zealand Earthquake	NZ\$50,000(Approx. 3.2 million yen)	New Zealand Red Cross	<ul style="list-style-type: none"> <li>Emergency humanitarian assistance</li> </ul>
March 2011	Great East Japan Earthquake	Approx. 910million yen	Central Community Chest of Japan Others	<ul style="list-style-type: none"> <li>Emergency humanitarian assistance</li> </ul>

• Sony CSR Initiatives around the world

<http://www.sony.net/SonyInfo/csr/ForTheNextGeneration/community/>

## Community

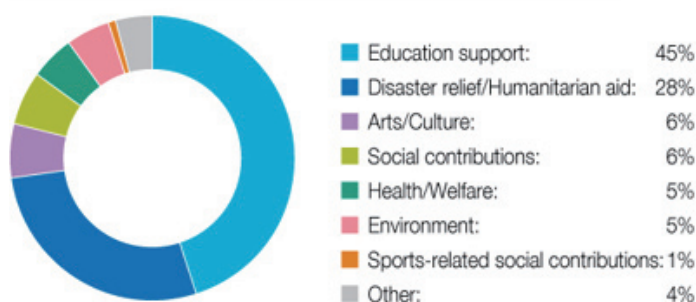
### Expenditures for Social Contribution Activities in Fiscal Year 2010

(Updated on August 31, 2011)

In fiscal year 2010, the Sony Group spent approximately 4.6 billion yen on social contribution activities.\* Sony's activities focused on education, particularly science education, as well as the arts, music and culture. In addition, Disaster Relief accounted for a substantial percentage of expenditures than usual due to the relief efforts for the Great East Japan Earthquake happened in March 2011. These activities were done by making good use of Sony's technology, products and other resources in which Sony operates.

\* Expenditures for social contribution activities include: (a) monetary donations; (b) sponsorships; (c) program expenses (facility operation expenses, etc.); and (d) the market value of donated products.

#### Social Contribution Expenditures by Field (Fiscal Year 2010)



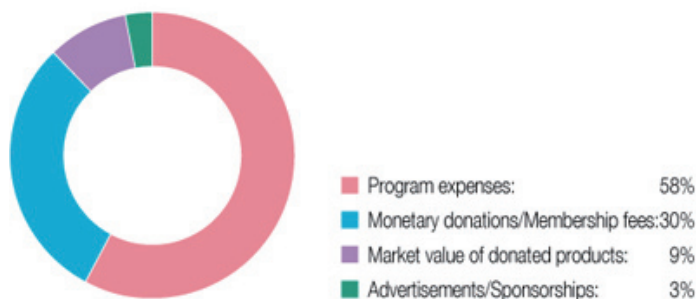
#### Social Contribution Expenditures by Region (Fiscal Year 2010)



\*1 Southeast Asia, Middle East, Africa, Oceania, Taiwan and South Korea

\*2 Mainland China, Hong Kong

#### Social Contribution Expenditures by Category (Fiscal Year 2010)



## Community

### Volunteer Systems for Employees

(Updated on August 31, 2011)

#### Employee volunteer promotion program: SomeOne Needs You

Sony has a global in-house volunteer program known as SomeOne Needs You (the name developed using the letters S.O.N. and Y), the aim of which is to encourage employee involvement in efforts to help local communities. Under this program, Sony Group companies create volunteer programs tailored to local needs and encourage continued employee participation in the community. In fiscal year 2010, a total of 200,000 Sony Group employees \* participated in volunteer initiatives through SomeOne Needs You.

\* Includes participants in fundraising efforts and blood drives

#### Leave for volunteer purposes

To support employee volunteer initiatives, Sony Corporation has an employee volunteer support system making it easier for employees to volunteer by allowing them to use accumulated holidays for initiatives requiring extended leaves of absence.

#### Matching gift programs, fund-raising initiatives

Many Sony Group companies have "matching gift programs," whereby Sony matches charitable donations made by employees up to established limits to encourage employees' fund-raising efforts.

The number of organizations recognized by Sony Group companies in Japan as being valid donation recipients has been broadened to include legal entities for social interest authorized by Japan's Ministry of Finance, foundations, aggregate corporations, authorized NGOs and social welfare corporations.

In addition to the matching gift programs, Sony has implemented several methods for donation to make it easier for employees to participate in efforts to raise funds for emergency humanitarian assistance. Donation by bank transfer became available with the cooperation of Sony Group financial services company, Sony Bank Inc. Also, donation by Edy-a prepaid electronic money service incorporating FeliCa, Sony's contactless IC card technology-is also possible.

• For more information on programs in which Sony employees participated, please see  
<http://www.sony.net/SonyInfo/csr/enlightenment/>



A Sony employee making a donation using Edy

## Community

### Information on Exhibitions and Sony Foundations

(Updated on September 2, 2011)

Sony organizes exhibitions of various kinds, including exhibitions at educational museums that are designed to stimulate interest in media, science, technology and entertainment.

#### **Sony ExploraScience (Tokyo and Beijing)**

In these science museums produced by Sony, visitors can actually see, touch and enjoy the principles and laws of science in action and the progress and fascination of digital technology.

- Sony ExploraScience (Tokyo)  
<http://www.sonyexplorascience.jp/english/>
- Sony ExploraScience (Beijing)  
<http://www.sony.com.cn/ses/>

#### **Sony Wonder Technology Lab (New York)**

This interactive museum brings technology and creativity together to make learning experiential, entertaining and fun. The Lab's exhibits showcase the positive impact technology can have on virtually any discipline, from medicine to movie-making.

- Sony Wonder Technology Lab (New York)  
<http://www.sonywondertechlab.com/>

#### **Sony Archives (Tokyo)**

Sony Archives showcases the pioneering products that Sony has given the world as well as a variety of documents.

- Sony Archives (Tokyo)  
<http://www.sony.net/SonyInfo/CorporateInfo/History/Museum/>

#### **Related Information**

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- Sony Education Foundation (Japan)  
<http://www.sony-ef.or.jp/english/>
- Sony Music Foundation (Japan)  
[http://www.smf.or.jp/company\\_info\\_e/](http://www.smf.or.jp/company_info_e/)
- Sony Foundation Australia Trustee Limited website (Australia)  
<http://www.sonyfoundation.org.au/>
- Sony Canada Charitable Foundation (Canada)  
[http://www.sony.ca/view/corporate\\_philanthropy.htm](http://www.sony.ca/view/corporate_philanthropy.htm)
- Sony Institute of Higher Education Shohoku College (Japan)  
<http://www.shohoku.ac.jp/>

## Environment

### Environment

Sony recognizes the importance of preserving the natural environment that sustains all life on the earth for future generations and thereby ensuring that all humanity can attain a healthy and enriched life. To this end, Sony strives to achieve a zero environmental footprint throughout the lifecycle of our products and business activities. By capitalizing on our superior technologies and our ability to innovate, we strive not only to reduce the environmental impact of our business activities, but also to deliver environmentally conscious products and services that enrich our customers' lives.

#### Sony's Environmental Plan "Road to Zero"



To ensure full awareness of the principles, mid- and long-term targets and compliance with internal rules of the Sony Group, we have established and continue to improve a unified global environmental management system.

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- Road to Zero: Sony's global environmental plan > page 110
- Sony Group Environmental Vision > page 112
- Green Management 2010 > page 117
- Green Management 2015 > page 123
- Environmental Management Structure > page 131

### Sony's four environmental aspects

#### Climate Change



While climate change poses a significant threat both to our corporate activities and to society in general, it also affords Sony an opportunity to become part of the solution.

page 136

- Strategy on Climate Change > page 136
- Reducing Greenhouse Gas Emissions at Sites > page 140
- Reducing Greenhouse Gas Emissions Related to Products and Services > page 150
- Reducing Greenhouse Gas Emissions by Employee Business Trips > page 161

#### Resources Conservation



In order to utilize limited resources, Sony promotes product designs that conserve materials by measures such as resources recycling and use of recycled materials.

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- Resource Conservation > page 162
- Resources Conservation at Sites > page 163
- Conservation of Resources Used in Products and Services > page 172
- Product Recycling > page 244

## Management of Chemical Substances



Sony manages the chemicals we use in products and at sites in a reliable manner which is based on precautionary approach.

page 184

- Management of Chemical Substances > page 184
- Management of Chemical Substances at Sites > page 185
- Management of Chemical Substances in Products > page 191

## Biodiversity Conservation



Sony is taking steps to protect biodiversity at its sites through site greening activities and initiatives aimed at helping to restore areas outside its sites to their natural state.

page 200

## Six stages of product life cycle

### Environmental Technologies



Taking the opportunities of minimizing environmental impact; an introduction to Sony's Technology.

page 212

### Products and Services



Sony works to create environmentally conscious products to help reduce the use of energy, resources and chemical substances.

page 221

### Procurement



To reduce environmental impact through product life cycles, Sony collaborates with its suppliers in the management of chemical substances and energy efficiency.

page 230



## Sites



Sony conducts environmental protection activities at all of its manufacturing and nonmanufacturing sites worldwide in accordance with a unified policy.

page 231

## Logistics



Sony proactively reduces greenhouse gas emissions related to the transport of products and parts.

page 237

## Product Recycling



Sony supports the principle of Individual Producer's Responsibility and promotes collection and recycling of end-of-life products and easy-to-recycle designs.

page 244

- Recycling End-of-Life Products  
> page 244
- Recycling Activities in Each Region  
> page 247
- Links for Product Recycling  
Information in Each Region > page 262

## Environmental Communication



At Sony, we strongly believe in the importance of informing stakeholders, including customers, about our environmental philosophy and initiatives. Furthermore, employees of each Sony Group company receive environmental training and have access to other self-development programs to help raise environmental awareness.

page 264

- Environmental Communication > page 264
- Communicating with Society > page 265
- Communicating with the Local Community > page 275
- Communicating within the Sony Group > page 280

## Environment

### Road to Zero: Sony's global environmental plan

As part of its drive to achieve a zero environmental footprint, Sony is actively engaged in implementing its Road to Zero global environmental plan. This plan consists of the Sony Group Environmental Vision and several sets of mid-term environmental targets which form key stepping-stones on the road to achieving the Vision.

- Sony Group Environmental Vision > page 110
- Sony's Environmental Performance > page 112
- Green Management 2010 > page 117
- Green Management 2015 > page 123
- Environmental Management Structure > page 131

## Environment

### Sony Group Environmental Vision

The Sony Group Environmental Vision presents a philosophy and principles for environmental management activities throughout the global Sony Group with the aim of contributing to the realization of a sustainable society. Since enacting the Sony Global Environmental Policy which is a predecessor of the Sony Group Environmental Vision and the Environmental Action Program, in 1993, Sony has pursued a broad range of environmental initiatives. Concurrent with the formulation of its Road to Zero global environmental plan, in 2010, Sony revised the Sony Group Environmental Vision.

### Philosophy

(Updated on August 31, 2010)

Sony recognizes the importance of preserving the natural environment that sustains all life on the earth for future generations and thereby ensuring that all humanity can attain a healthy and enriched life. In order to realize such sustainable society, **Sony strives to achieve a zero environmental footprint throughout the lifecycle of our products and business activities.**

### Principles

(Updated on August 31, 2010)

Sony reduces our environmental footprint and prevents environmental pollution throughout the lifecycle of our products and business activities by complying with all applicable environmental regulations and also by continually improving our global environmental management systems. Sony formulates the following goals in four key environmental aspects and takes proactive actions to achieve those goals.



Sony focuses on four environmental aspects

#### • Climate Change

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Sony reduces energy consumption and strives to achieve zero emissions of greenhouse gases\* generated throughout the lifecycle of our products, service and business activities.

#### • Management of Chemical Substances

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Sony minimizes the risk of chemical substances that we use causing serious harm to human health and the environment. Sony maintains strict control over the chemical substances we use, while, in line with the precautionary approach, taking steps whenever possible to reduce, substitute and eliminate the use of substances that have potentially significant impacts on the environment even in the cases where scientific evidence is not fully proven.

\* Gases that raise the temperature of the earth's surface by absorbing infrared radiation from reflected sunlight. Six typical examples are carbon dioxide (CO<sub>2</sub>), methane, nitrous oxides, hydrofluorocarbons (HFC), perfluorocarbons (PFC), and sulfur hexafluoride (SF<sub>6</sub>).

In order to realize the Environmental Vision, Sony formulates targets and concrete plans and initiates actions to implement, while contributing to a better society through partnerships and communications with internal and external stakeholders.

• Click here for more details in Sony's Global Environmental Plan's web site.  
<http://www.sony.net/SonyInfo/csr/eco/RoadToZero/index.html>

#### • Resources Conservation

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In order to minimize resource inputs for our business activities, Sony identifies "Key Resources" and strives to achieve zero usage of those virgin materials. Sony also uses water efficiently, minimizes wastes from sites and maximizes our effort for take back and recycling products from markets.

#### • Biodiversity Conservation

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Sony protects and utilizes ecosystem services in a sustainable manner, while actively promoting maintenance and recovery of biodiversity through our business and local contribution activities.

## Environment

### Sony's Environmental Performance

Sony's business activities may affect the environment in various ways. This overview looks at Sony's environmental footprint from the perspective of product life cycles. Sony is undertaking numerous activities to lower its environmental impact, with the aim of realizing the Sony Group Environmental Vision.

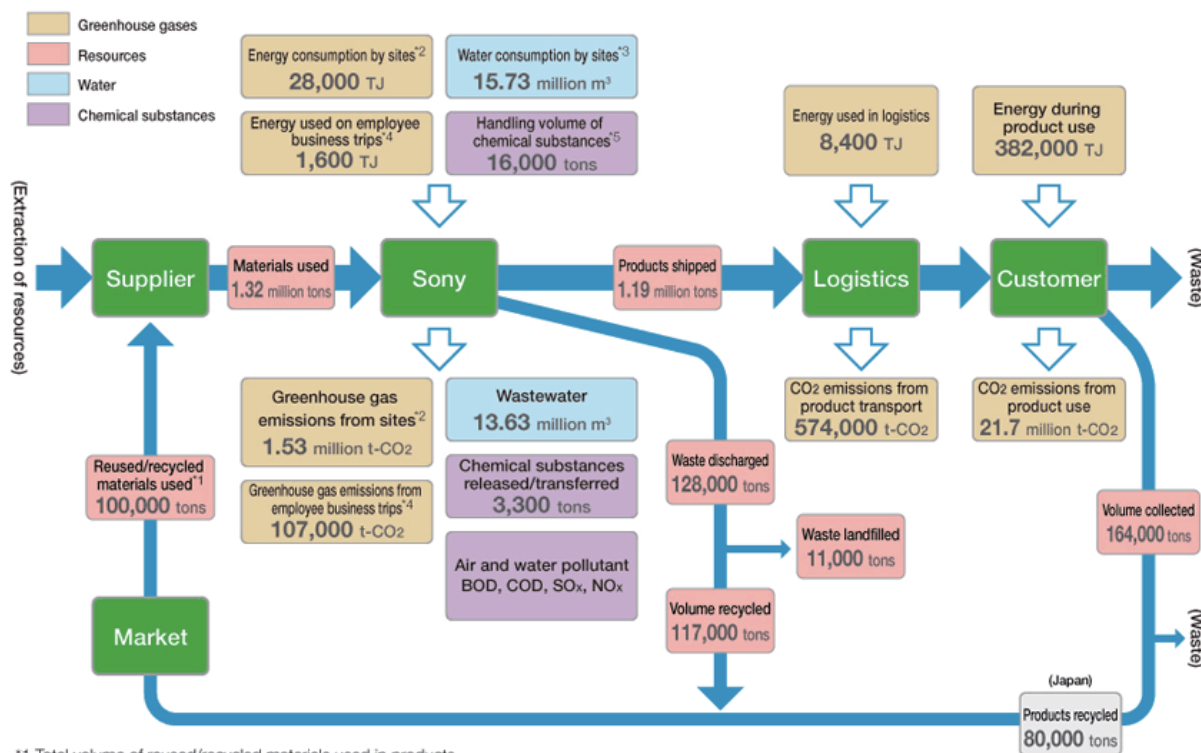
- Overview of Environmental Impact > page 113
- Environmental Indicators and Eco-Efficiency > page 115

## Environment

### Overview of Environmental Impact

(Updated on November 22, 2011)

The chart below shows Sony's impact on the environment over the entire life cycle of its business activities, including energy and resources used in business activities, energy consumed by Sony products when used by their purchasers, and the recycling and disposal of products after use. The chart shows the principal environmental impact during fiscal year 2010 for items that Sony can recognize and manage directly.



\*1 Total volume of reused/recycled materials used in products

\*2 Renewable energy is subtracted from this figure

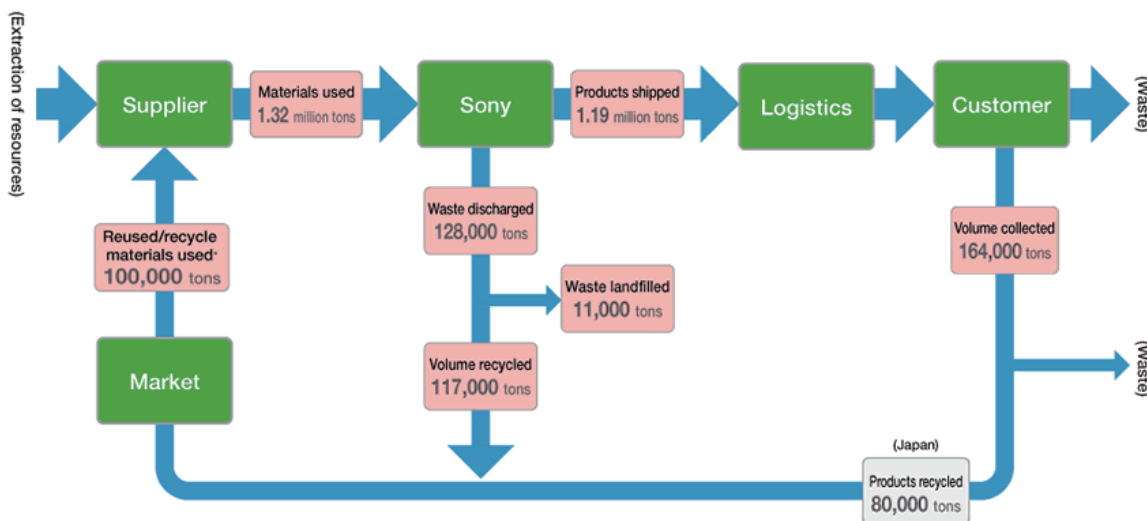
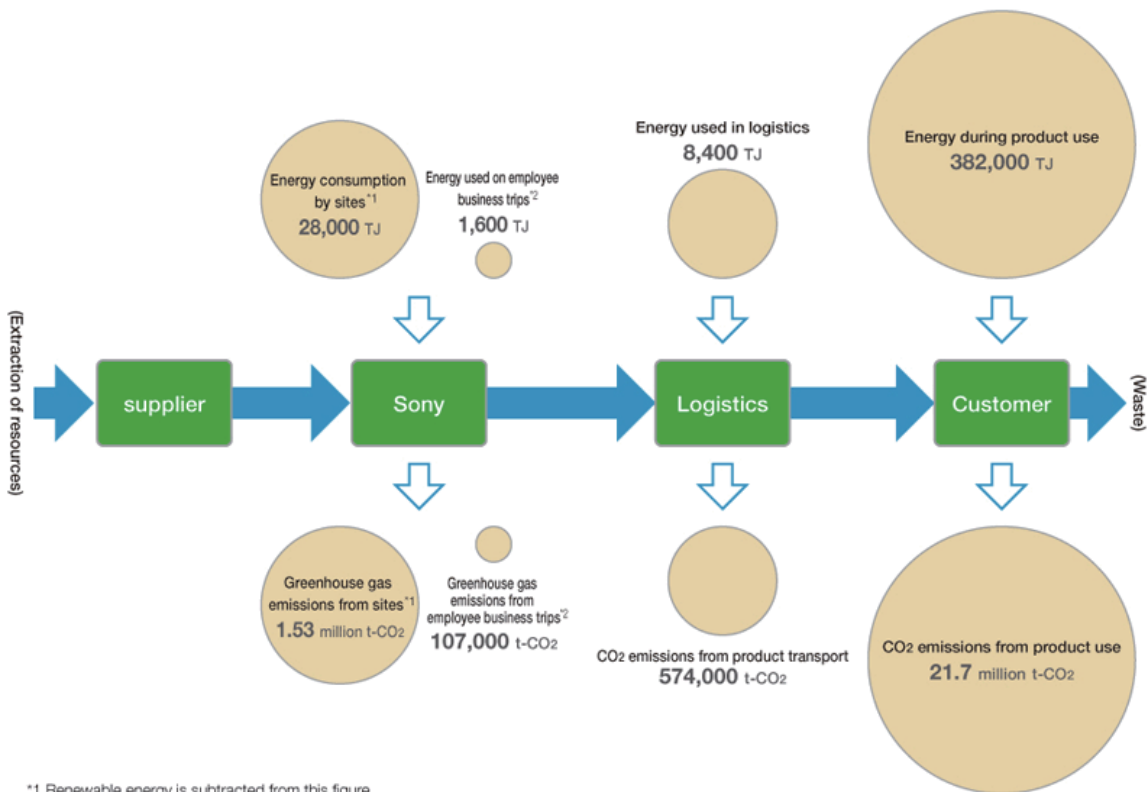
\*3 Contribution from groundwater recharge is subtracted from this figure

\*4 Relevant primarily to Sony Group companies in Japan, Europe and North America

\*5 Volume of Class 1-3 chemical substances handled

Note: Business processes other than those shown in this chart—including the production of purchased materials used and the recycling of products—may also have an impact on the environment.

## Environment



\* Total volume of reused/recycled materials used in products

- Methods and approach used for aggregating environmental data  
<http://www.sony.net/SonyInfo/csr/environment/data/method/index.html>

## Environmental Indicators and Eco-Efficiency

(Updated on November 22, 2011)

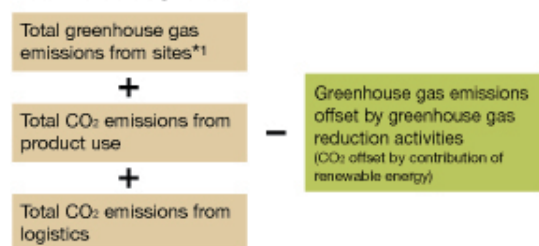
Based on careful consideration of the life cycles of the Sony Group's business activities, Sony has established its own unique set of environmental indicators. These indicators provide quantitative measurements of environmental impact, with lower numerical values signifying lower levels of impact.

Sony is taking steps to ensure the utmost accuracy of information regarding the impact of the Sony Group's business activities, and of its products and services over their entire life cycles. In addition to individual targets, Sony has set two environmental indicators -- greenhouse gas emissions and resource use -- to determine the environmental impact of the total life cycles of the Sony Group's business activities, products and services, to the maximum possible extent. The indicators are also used to monitor Sony's performance in relation to individual targets set for the reduction of environmental impact throughout life cycles. To determine whether these two indicators are effective in gauging the Sony Group's impact, given the scale of its operations, the Group uses the eco-efficiency equation below. In Green Management 2010, which lays down environmental targets through fiscal year 2010, Sony has set targets for these indicators.

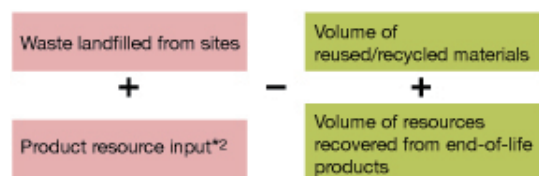
In fiscal year 2010, Sony's greenhouse gas emissions totaled approximately 24 million tons, up 9% from fiscal year 2009. This increase occurred despite the reduction of emissions from sites and was primarily attributable to an increase in CO<sub>2</sub> emissions from product use. Sony's eco-efficiency index for greenhouse gas emissions worsened in fiscal year 2010, to 0.74 times the fiscal year 2000 level, compared with 0.81 times in fiscal year 2009.

Sony's resource index for fiscal year 2010 showed that resources used during the period totaled approximately 0.94 million tons, down 3% from fiscal year 2009. This decrease occurred despite a reduced volume of resources recovered from end-of-life products and reflected declines in waste landfilled from sites and product resource input. Sony's eco-efficiency index for resources was 1.65 times the fiscal year 2000 level, on a par with 1.61 times in fiscal year 2009.

### 1. Greenhouse gas index



### 2. Resource index



\*1 Total greenhouse gas emissions, calculated in terms of CO<sub>2</sub> emissions (the total of CO<sub>2</sub> emissions from energy use and perfluorocarbon [PFC] emissions), from sites.

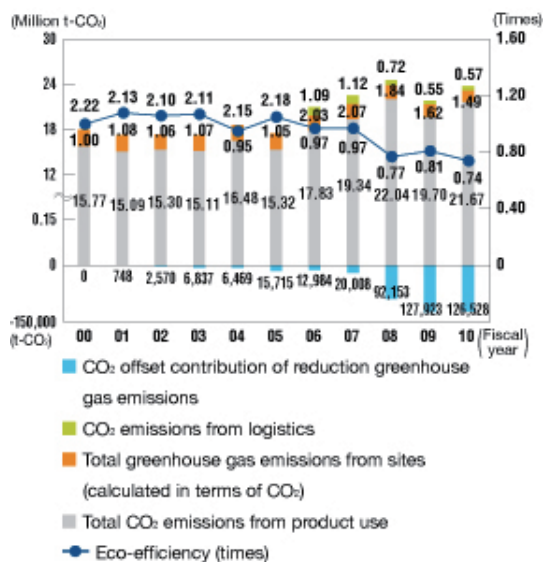
\*2 Total resources used in products, accessories, manuals and packaging materials. This total does not include resources produced from recycled Sony Group product waste.



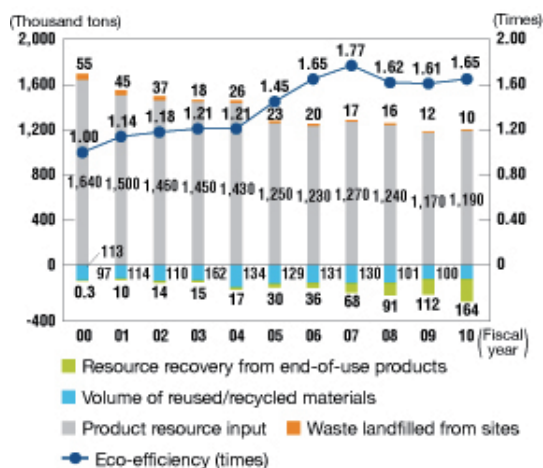
Calculation formula for Eco-Efficiency

$$\text{Eco-Efficiency} = \frac{\text{Sales}}{\text{Environmental impact (Environmental index)}}$$

Greenhouse Gas Efficiency



Resource Efficiency



## Environment

### Green Management 2010

Sony established its Green Management 2010 mid-range group environmental targets in fiscal year 2006 to guide the Sony Group in its efforts to help prevent global warming, recycle resources, ensure appropriate management of chemical substances and address a broad range of other complex environmental issues. The following is a summary of Sony's achievements under Green Management 2010, which concluded on March 31, 2011.

### Green Management 2010: Achievement Report

(Updated on November 22, 2011)

Green Management 2010 encompasses individual targets for the entire business cycle, from the procurement of parts, production and product use through to product disposal and recycling. This section looks at Sony's achievements for these targets in fiscal year 2010.

#### Prevention of Global Warming

Under Green Management 2010, Sony achieved an absolute reduction in greenhouse gas emissions from sites (calculated in terms of CO<sub>2</sub>) of more than 30% from the fiscal year 2000 level, well above of its target of a 7% reduction under Green Management 2010. Sony also met its target for reducing the annual energy consumption of products in all product categories. With the aim of reducing total CO<sub>2</sub> emissions during the transport of products and materials, Sony established a framework for ascertaining these emissions and has expanded the scope of data collection. By improving packaging and promoting modal shift, Sony continues to pursue initiatives aimed at reducing emissions.

Target	Base Fiscal Year	Target Fiscal Year	Achievement by Fiscal Year 2010
Achieve an absolute reduction in total emissions of greenhouse gases, calculated in terms of CO <sub>2</sub> , from business sites of 7% or more	2000	2010	Decrease of 31% from the fiscal year 2000 level
Reduce annual energy consumption of products	–	–	Achieved for all product categories, meeting its targets for fiscal year 2010
Ascertain and take measures to reduce total CO <sub>2</sub> emissions during the transport of products and other materials	–	–	<ul style="list-style-type: none"> <li>- CO<sub>2</sub> emissions: approx. 570,000 tons</li> <li>- Took steps to enhance efficiency of logistics by improving packaging and promoted modal shift</li> <li>- Modal shift ratio is 26.5% among arterial freight routes in Japan (increase of 2.3 points from the previous fiscal year)</li> </ul>

### Resource Conservation

Sony succeeded in reducing total waste from sites by more than 50% from the fiscal year 2000 level, exceeding its Green Management 2010 target of 40%. Additionally, Sony achieved an absolute reduction in volume of water purchased or drawn from groundwater of approximately 41%, surpassing its target of 20%. In contrast, Sony's waste reuse/recycle ratio at manufacturing sites outside Japan, at 87%, fell short of its Green Management 2010 target of 95%, despite the fact that the waste reuse/recycle ratio at manufacturing sites in Japan reached 99.6%. Sony attributes this result to the fact that while the reuse/recycle ratio for industrial waste at its overseas manufacturing sites is high, the reuse/recycle ratio for daily waste remains low. Going forward, Sony will provide meticulous guidance to these sites in an effort to boost the reuse/recycle ratio.

Sony had also set a target for increasing its reused/recycled materials utilization ratio to 12% or more. Nonetheless, its reused/recycled materials utilization ratio at the conclusion of Green Management 2010 -- 8% -- was below this target. Much of reused/recycled materials Sony uses come from cardboard packaging. Thanks to efforts aimed at, among others, shrinking the size of packaging, the volume of cardboard used declined substantially, reducing the reused/recycled materials utilization ratio. Looking ahead, Sony will continue to promote the use of such materials.

Sony attained another of its resource conservation targets under Green Management 2010 by conducting life-cycle assessments (LCAs) for all major product categories.

Target	Base Fiscal Year	Target Fiscal Year	Achievement by Fiscal Year 2010
Achieve an absolute reduction in total waste from sites of 40% or more	2000	2010	Decrease of 54% from the fiscal year 2000 level
Achieve a waste reuse/recycle ratio of 99% or more at manufacturing sites in Japan	–	2010	99.6%
Achieve a waste reuse/recycle ratio of 95% or more at manufacturing sites outside Japan	–	2010	87.1%
Achieve an absolute reduction in volume of water purchased or drawn from groundwater of 20% or more	2000	2010	Decrease of 41% from the fiscal year 2000 level
Promote the use of paper from appropriately managed forests and recycled paper	–	–	Used recycled paper for copying and for printed materials; Promoted use of Forest Stewardship Council (FSC)-certified paper and other eco-conscious papers for CSR Report and other environment-related materials

Increase reused/recycled materials utilization ratio to 12% or more*1	2000	2010	8% Reason fell short: Decrease in volume of reused/recycled materials utilized as a result of efforts to, among others, shrink packaging
Continuously increase resource recovery from end-of-life products and reused/recycled ratio*2	–	–	Resource recovery from end-of-life products*3: approx. 164,000 tons Reused/ recycled ratio: 14%
Conduct life-cycle assessments (LCA) for all major products	–	–	Conducted LCAs in all major product categories

\*1 Ratio of reused/recycled materials to product resource input

\*2 Ratio of resource recovery from end-of-life products compared to total weight of products

\*3 Value substituted by collected quantity of end-of-life products

### Chemical Substance Management

Despite having set a target of achieving an absolute reduction in released amounts of volatile organic chemicals (VOC) of 40% or more from the fiscal year 2000 level, Sony's total reduction, at 35%, was below this target. Main VOCs include solvents used in semiconductor production. While semiconductor production increases to respond demand, there are some solvents that are difficult to substitute even in the industry-wide efforts. Moreover, emitted VOC gases are so low in concentration that there are no appropriate processing measures that are technically and economically viable. Going forward, Sony will continue taking steps to reduce its released amounts of VOCs, including installing gas scrubbing equipment.

With the aim of controlling chemical substances in products, Sony has set forth standards managing substances in supplied parts and raw materials in the SS-00259, which it continues to apply to all Sony products shipped worldwide.

Sony also continues to press forward to reduce its use of polyvinyl chloride (PVC) and brominated flame retardants and has expanded the range of products for which it is promoting such efforts.

Target	Base Fiscal Year	Target Fiscal Year	Achievement by Fiscal Year 2010
Prohibit, reduce or control use of controlled chemical substances at sites Achieve an absolute reduction in released amounts of volatile organic compounds (VOCs) into the atmosphere of 40% or more	2000	2010	Decrease of 35% from the 2000 level. Reason fell short: As production increased in semiconductors business, there are some VOCs difficult to replace and no viable measure was available to process VOCs technically and economically. Will continue taking steps to reduce its released amounts of VOCs, including installing VOC treatment systems.

Management of chemical substances: Reduce water pollutants: Voluntarily control biological oxygen demand (BOD) and chemical oxygen demand (COD)	-	-	BOD: 254 tons COD: 96 tons
Reduce atmospheric pollutants at sites: Reduce emissions of nitrogen oxides (NOx) and sulfur oxides (SOx)	-	-	NOx: 163 tons SOx: 8 tons
Develop and continue to implement measures to prevent environmental accidents	-	-	Continued to implement measures to prevent; nothing particularly worthy of note or of reporting
Complete the appropriate disposal of all large equipments that contain high concentrations of polychlorinated biphenyls (PCBs)	-	-	Disposed of 151 such units by fiscal year 2010; Continued to plan timing of disposal in cooperation with Japan Environmental Safety Corporation, to which disposal is subcontracted
Control chemical substances in products Prohibit, reduce or control use of controlled environmental substances in products	-	-	For all supplied parts and raw materials, a ban on the use of controlled chemical substances, and the associated reduction schedule, is stated in SS-00259 and is applied to all Sony products shipped worldwide; survey response tool (JGPSSI format) is applied to collect data on chemical substances in parts and materials purchased from suppliers, and data is managed using databases

Reduce use of polyvinyl chlorides (PVCs) and brominated flame retardants	–	–	PVCs: · Completed the switch to alternatives: product packaging materials, casings, sheets/laminates of speaker housings, contactless IC cards, carrying bags/cases for products (excluding those for professional use), flexible flat cables (FFC), insulating plates and heat shrink tubes · Continuing category of PVC-free products · not used in casings of all notebook and integrated PCs and major printed wiring boards · Continuing category of BFR-free products
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**Communication, Partnerships, Education, etc.**

Target	Base Fiscal Year	Target Fiscal Year	Achievement by Fiscal Year 2010
Promote green procurement of nonproduction materials	–	–	Purchased environmentally conscious products through purchasing system for nonproduction materials. In the US, launched project to promote green procurement and managed the progress; in Europe, applied green procurement standards and used recycled and FSC-certified paper
Reduce environmental impact of construction and modification of plants and other sites	–	–	Sony's new Sony City Osaki office building boasts an evaporative cooling system, a high-efficiency thermal reservoir system and a host of other advanced energy-saving features, minimizing its impact on the environment
Conduct environmental conservation activities tailored to the needs of local communities and support environmental initiatives in local communities	–	–	Most sites in Japan and overseas conducted such activities (execution rate in Japan: 92%)

Seek environment-friendly parts, products and services from suppliers and business partners; Request environment-conscious operations	-	-	Amended standards for management of chemical substances by suppliers and sought strict observance thereof. Encouraged waste disposal firms to which it subcontracts to conduct periodic on-site checks, thereby tightening waste management procedures, and selected firms exhibiting superiority as determined using check sheets
Ensure regular disclosure of information, improve communications with stakeholders and provide environment-related information about products	-	-	Published CSR report, disclosed information via the Internet, responded to inquiries and disclosed environmental information in product brochures. Announced global environmental plan, Road to Zero, and Green Management 2015 mid-term environmental targets to the Japanese media. Publicized environmental activities at leading domestic and international trade shows. Ran environmental advertisements in Japan, including one disclosing corporate policy
Promote environment-conscious research and development	-	-	Achieved industry-leading efficiency for dye-sensitized solar cells. Succeeded in developing technologies, including for bio-derived flocculants for wastewater and biocarbon-based water purification, and such products as heat retroreflective film, which mitigates the heat island effect, and light-control film
Ensure employees achieve a level of competence that enables them to perform their assigned duties while taking environmental concerns into consideration through environmental education	-	-	Promoted sharing of latest information using environment-related publications and the intranet; Encouraged enlightenment of employees by conducting training programs employing e-learning and in-house events

## Environment

### Green Management 2015

Since the 1990s, the Sony Group has focused on a variety of environmental activities. These include developing environmentally conscious products, reducing the environmental impact of its sites and promoting product recycling. Since 1998, Sony has formulated uniform environmental mid-term targets that encompass its operations around the world, and has revised these targets every few years. At the end of fiscal 2009, Sony formulated Green Management 2015, a set of new mid-term targets that will serve as a yardstick for the environmental activities of Sony Group companies and divisions worldwide until fiscal 2015. Green Management 2015 will go into effect in fiscal 2011 and Sony will disclose its progress periodically.

- Basic Stance of Green Management 2015 > page 124
- Basic Policies for Achieving Green Management 2015 > page 126
- Targets of Green Management 2015 > page 128



## Environment

### Basic Stance of Green Management 2015

(Updated on November 22, 2011)

Sony has continuously provided people with a vast array of products, services and entertainment. Such corporate activities are only possible if the global environment, which sustains all life on earth, is healthy. We must address such environmental issues as climate change, resource exhaustion and the need for effective management of chemical substances both as risks to business continuity and as business opportunities. In doing so, it is important that we act strategically and with a medium- to long-term perspective.

Recognizing this, we aim to be a leader in the environmental arena by ensuring that we conduct our business in a sustainable manner. To this end, we will also collaborate with others wherever possible to ensure our ability to provide innovative environmentally conscious products and services that enrich our customers' lives.

Taking these sentiments into account, we have set forth the Sony Group Environmental Vision, the goal of which is a "zero environmental footprint," that is, reduction of the environmental footprint of our corporate activities and of every Sony product throughout its life cycle to zero, and we continue to pursue a wide range of related initiatives. We will strive to achieve this by 2050; our goals for the first phase, which continues through 2015, are outlined in Green Management 2015.

Green Management 2015 focuses on four key environmental perspectives-climate change, resources, chemical substances and biodiversity-which it refers to as "environmental aspects." To formulate appropriate goals for 2015, we estimated our current status vis-à-vis our ultimate goal of "zero environmental footprint" for each of these aspects, after which we employed backcasting to determine desirable levels for 2015 and analyze the differences between these figures and our actual forecasts. In setting these goals, we exchanged opinions and ideas with relevant nongovernmental organizations (NGOs) and experts.



Sony focuses on four environmental aspects

At present, every Sony product negatively affects the environment to some degree throughout its life cycle or at different stages thereof. To ensure our ability not only to conduct our business in a responsible manner, but also to take responsibility for the environmental impact of every Sony product at each stage of its lifecycle, we have divided the product lifecycle into six stages: Research and development, product planning and design, procurement, operations, logistics, and take back and recycling. We have also set specific goals for each stage.



Six stages of product life cycle

## Environment

### Basic Policies for Achieving Green Management 2015

(Updated on November 22, 2011)

Our efforts to achieve the targets of Green Management 2015 will be guided by three basic policies.

**1. Achieve targets through unrelenting efforts to increase efficiency**

We will strive to minimize our impact on the environment by improving the efficiency of production processes, logistics and office activities, among others.

**2. Place a high priority on creativity and innovation and implement environmentally conscious actions that are approved and supported by our customers**

To date, the Sony spirit of creativity and innovation has enabled us to amuse and delight a wide range of customers. The same spirit guides our environmental activities. By ensuring our corporate activities are environmentally conscious, we will continue to provide life-enriching products that are not only superior in terms of functionality, performance and quality, but also exert very little impact on the environment.

**3. Communicate and establish partnerships with stakeholders within and outside the Company**

In addition to Sony innovation, cultivating renewable energy and other such new elements of social infrastructure, developing technologies and creating mechanisms for reducing environmental impact require collaboration with other companies, NGOs and nonprofit organizations (NPOs), universities and research organizations. It is also crucial that everyone at Sony, from front-line production personnel to top management, is actively involved in this endeavor, and that we encourage such efforts by promoting environmental education and training.

## Philosophy behind Target Setting

### Current Observations

- The environment which sustains all life on earth has become severely degraded.
- Sony cannot continue its present business activities and provide products that enrich customers' experiences without a healthy planet.
- Environmental issues offer both risks and opportunities.



### Basic Stance

- Conduct our business in a sustainable manner.
- Provide innovative environmentally conscious products and services that enrich our customers' lives.
- Be a leading company in the environmental area.



### Vision

Sony strives to achieve a zero environmental footprint throughout the lifecycle of our products and business activities.



### Green Management 2015

Sony Group's mid-term environmental target towards the year 2015 to achieve the above vision.

### Strategies

1. Achieve targets through streamlining and improved efficiency.
2. Pursue environmentally conscious activities with creativity and innovation that benefit customers.
3. Establish partnerships with internal and external stakeholders by proactive communication.



### Scope of Implementation



## Environment

### Targets of Green Management 2015

(Updated on November 22, 2011)

With the aim of reducing the environmental footprint of our corporate activities and our products throughout their life cycle to zero, we have set targets for four environmental aspects-climate change, resources, chemical substances and biodiversity-over the six stages of the product life cycle.

#### 1.Research and Development

To date, we have developed technologies that have enabled us to build environmentally conscious products that are small, light and energy efficient. Looking ahead, we will continue to develop innovative, industry-leading technologies that contribute to environmentally conscious lifestyles.

##### Targets

<b>Climate Change</b>	1.Develop technologies that reduce energy consumption of products and facilitate the use of renewable energy-e.g., technologies for managing the generation, storage and supply of energy-and thus improve energy self-sufficiency at the individual level 2.Develop information and communications technologies that support the sorts of lifestyles necessary for the realization of a low-carbon society
<b>Resources</b>	3.Develop and refine “3R” (Reduce,Reuse,Recycle) technologies that reduce the use of nonrenewable resources and water and the generation of waste throughout product life cycles
<b>Chemical Substances</b>	4.Develop technologies that reduce the use of chemical substances of very high concern (SVHCs) and facilitate the use of alternative substances

#### 2.Product Planning and Design

Since our establishment, the Sony spirit of creativity and innovation has enabled us to amuse and delight a wide range of customers. The same spirit guides our environmental activities. By ensuring our corporate activities are environmentally conscious, we will continue to provide life-enriching products that are not only superior in terms of functionality, performance and quality, but also exert very little impact on the environment.

##### Targets

<b>Overall</b>	1.Continuously launch Environmental Flagship models and services in each business category
<b>Climate Change</b>	2.Reduce annual per-product energy consumption by 30% from the fiscal 2008 level
<b>Resources</b>	3.Reduce utilization ratio of virgin oil-based plastics in products by 5% from the fiscal 2008 level 4.Reduce mass per product by 10% from the fiscal 2008 level
<b>Chemical Substances</b>	5.Eliminate Environment-related Substances to be Controlled <sup>1</sup> which are of very high concern, polyvinyl chloride (PVC) and brominated flame retardants (BFRs) in certain specified applications

<sup>1</sup> “Environment-related Substances to be Controlled (‘Controlled Substances’)”: Among the substances contained in parts and devices, “Environment-related Substances to be Controlled (‘Controlled Substances’)” are those which, according to Sony’s judgment, have significant environmental impact on both humans and the global environment.

### 3.Procurement

To reduce environmental impact throughout the product life cycle, it is necessary to adopt a broad perspective that also takes into account the procurement of materials and parts. We have always worked with suppliers to ensure the proper management of chemical substances. Moving forward, we will also actively seek the cooperation of suppliers on other fronts, including the reduction of energy and resource use.

#### Targets

<b>Climate Change</b>	1.Establish a mechanism for determining suppliers' greenhouse gas emissions 2.Contribute to the development of a common industrywide reporting format
<b>Resources</b>	3.Employ procurement practices that facilitate the achievement of targets at the "Product Planning and Design" and "Logistics" stages
<b>Chemical Substances</b>	4.Employ procurement practices that facilitate the achievement of targets at the "Product Planning and Design" stage
<b>Biodiversity</b>	5.Conduct biodiversity assessments at resource extraction and harvesting sites

### 4.Operations

Lowering our impact on the environment demands an approach that targets absolute reductions. Having formulated consistent global targets for the absolute reduction of greenhouse gas emissions and waste generation, among others, we will take steps to minimize the impact of operations at factories, offices and other sites. We will also promote regional environmental contribution initiatives.

#### Targets

<b>Overall</b>	1.Conduct environmental assessments (including biodiversity assessments)
<b>Climate Change</b>	2.Reduce greenhouse gas emissions by an absolute value of 30% from the fiscal 2000 level
<b>Resources</b>	3.Achieve an absolute reduction in waste from sites of 50% from the fiscal 2000 level 4.Increase the waste recycling rate Groupwide to more than 99% 5.Achieve an absolute reduction in the total volume of water used of 30% from the fiscal 2000 level
<b>Chemical Substances</b>	6.Manage designated chemical substances (Class 1-4) in accordance with prescribed regulations Class 1: Prohibit use Class 2: Eliminate by specified date Class 3: Reduce amounts released and transferred >Reduce amounts of Class 3 designated substances, including volatile organic compounds (VOCs) released into water and transferred as waste or into sewers by 14% from the fiscal 2008 level >Reduce emissions of VOCs into the atmosphere by 50% from the fiscal 2000 level Class 4: Comply with relevant laws and regulations and ensure adequate control over use

<b>Biodiversity, Contribution to Local Communities, Others</b>	7.Promote environmental contribution activities that respond to the needs of local communities
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### 5.Logistics

Considerable resources are used in the transport of parts and finished products. Accordingly, we will promote the use of compact packaging, increase loading efficiency and shift to rail, sea and other modes of transport that have only minimal environmental impact. By doing so, we will reduce the use of such resources as well as CO2 emissions.

#### Targets

<b>Climate Change</b>	1.Reduce CO2 emissions from logistics by 14% from the fiscal 2008 level
<b>Resources</b>	2.Reduce waste from packaging for incoming parts by 16% from the fiscal 2008 level

### 6.Take Back and Recycling

In order to take responsibility for our products even after their usage, we will continue to design products that are easy to recycle. We will also continue to develop recycling systems suited to local needs and promote the collection and recycling of end-of-life products.

#### Goals

Respecting the principle of extended producer responsibility (EPR), we will continue to promote the development and efficient operation of low-environmental-impact recycling systems suited to the needs of local communities. At the same time, we will actively advance the collection and recycling of end-of-life products. With the aim of reducing resource use, we will step up efforts to design products that are easy to recycle, as well as to promote the establishment of legislation that enshrines the concept of individual producer responsibility (IPR) and the building of an infrastructure for recycling Sony products.

## Environment

### Environmental Management Structure

Sony is implementing and continually improving its globally integrated environmental management system with the aim of realizing the Sony Group Environmental Vision, achieving its mid-term environmental target and complying fully with legal requirements, regulatory demands and internal policies established for the Group.

- Global Environmental Management System > page 132
- Governance Structure > page 133
- Linked to Business Activities > page 133
- Environmental Audits > page 134



## Environment

### Global Environmental Management System

(Updated on November 22, 2011)

Since the 1990s, Sony sites throughout the world have sought certification under ISO 14001, an environmental management system based on the rationale of the Plan-Do-Check-Act\*1 (PDCA) cycle. Acquisition of ISO 14001 certification at all sites\*2 was completed in fiscal year 2000.

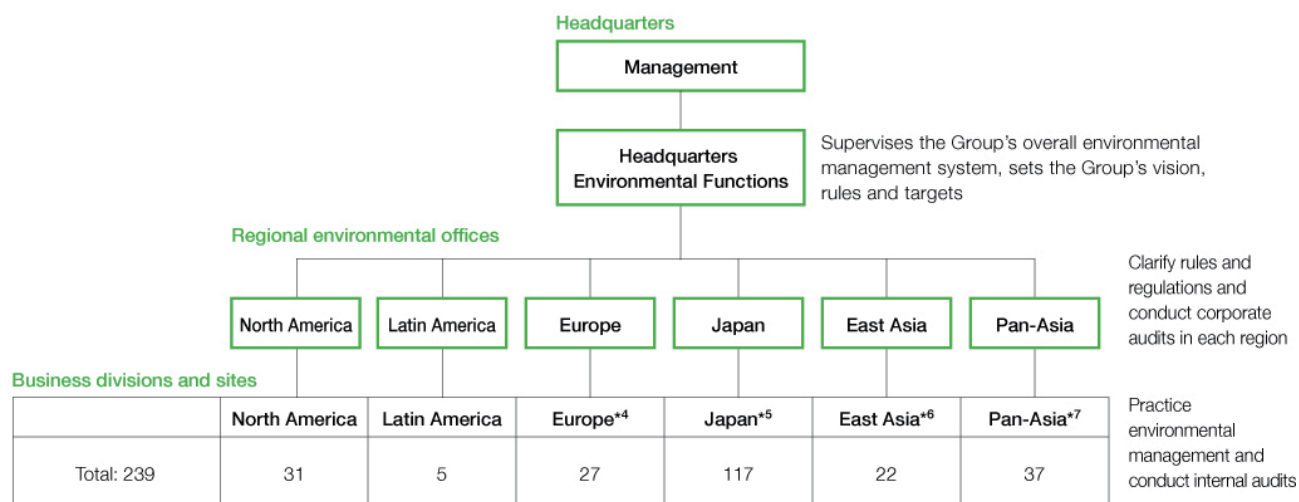
Since then, Sony has expanded this effort, integrating Group headquarters with overseas environmental departments, business units and sites, while taking advantage of the management systems already operational at each business site, and acquiring integrated ISO 14001 certification\*3 for the entire Sony Group in fiscal year 2005.

\*1 Repeating the cycle of making policies and plans (Plan), executing the plans (Do), assessment (Check) and review by management (Act)

\*2 "Sites" refers to manufacturing and non-manufacturing sites

\*3 The scope of integrated ISO 14001 certification is all manufacturing sites and non-manufacturing sites with 100 or more employees.

#### The Sony Group Global Environmental Management System (As of April 1, 2011)



\*4 Coverage area: Europe including Turkey, Russia and former Soviet Union

\*5 Coverage area: Japan, Taiwan and South Korea

\*6 Coverage area: Mainland China and Hong Kong

\*7 Coverage area: Mongolia and other parts of Asia (excluding the aforementioned countries in Asia), Middle East, Oceania and Africa

• Click to enlarge

<http://www.sony.net/SonyInfo/csr/environment/management/structure/8ido18000002ih5c-img/8ido18000002ihdv.jpg>

## Environment

### Governance Structure

(Updated on November 22, 2011)

To deal with increasingly diverse and complex environmental issues that may affect Sony's operations, such as manufacturing and sales of environmentally conscious products, recycling and environmental management at sites, Sony has established specialized functions at the Sony Group's environmental headquarters, specifically in the areas of environmental management related to energy, resource conservation, chemical substance management, procurement, logistics, technological development and communications, which the Representative Corporate Executive Officer is in charge of overseeing.

Each of these specialized functions works together with regional offices and departments that specialize in such areas as product quality, customer satisfaction, occupational health and safety, and disaster prevention, to achieve a uniform and effective management system. Each specialized function issues targets to the operating units, divisions and sites and reviews their progress. To promote integrated environmental management globally, Sony has established regional environmental offices to facilitate region-wide environmental management activities, such as a better understanding of local, legal and regulatory trends, effective communication of standards and instructions set forth by headquarters to the regional divisions and sites, and effective performance of audits at all regional business divisions and sites.

### Linked to Business Activities

(Updated on November 22, 2011)

Sony's corporate headquarters conducts annual assessments of the environmental impact of the entire Sony Group and, after identifying risks and opportunities, incorporates its findings into mid-range environmental targets and annual plans. In line with these plans, individual business units and sites establish and implement their own annual plans, incorporating essential elements of guiding principles established by the headquarters. Progress on the implementation of these business plans is reviewed regularly by a committee that is headed by the officer in charge of environmental affairs, contributing to ongoing improvement efforts. Awards are given annually at the regional and global levels to recognize outstanding activities in core businesses. These activities are counted as part of overall annual performance evaluations for main business units and sites and the results of these assessments are reflected in the bonuses awarded to management-level employees. To gauge the progress of these environmental activities, Sony has developed an online data system for periodically collecting performance for, among others, power consumption by products, energy used by sites and volume of waste generated.

To ensure the effective functioning of the Plan-Do-Check-Act (PDCA) cycle for environmental policies and standards, Sony has created an environmental document structure in line with requirements of ISO 14001, the global standard for environmental management systems. The system is covering overall elements of environmental management such as management procedures on site and in the business groups, internal environmental communications and efforts to make products more environmentally conscious. To date, approximately 30 environmental documents have been issued and distributed throughout the Sony Group.

Another means by which the Sony Group facilitates environmental action is to provide a broad environmental education for employees that is tailored to specific objectives or the type of work they perform. Sony also organizes environmental lectures by outside keynote speakers with the aim of raising the environmental awareness of its employees.

**Links to Related Items:**

- Environmental Data Collection Methods and Rationale > page 284
- Environmental Communication > page 264

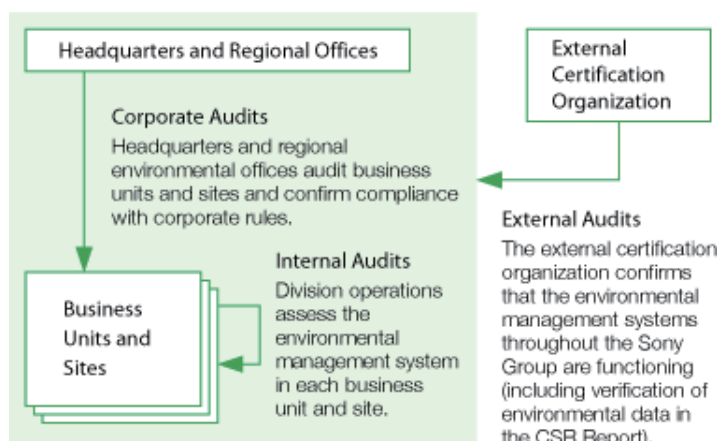
**The Sony Group Environmental Management System PDCA Cycle**



## Environmental Audits

(Updated on November 22, 2011)

Sony has established an integrated environmental audit system that combines three kinds of audits -- internal, corporate and external -- and aims to facilitate continual improvements to the Sony Group's environmental management system, prevent environmental accidents at sites, and ensure the reliability of environmental data.



**Examples of Improvements Resulting from Audits****• Clarification of environmental management functions of Sony Group headquarters**

The position of the procurement departments--which play a key role in the management of chemical substances in products--was clarified.

**• Reinforcement of performance review system**

The frequency and contents of performance reviews for site and product aspect for both the Sony Group headquarters and individual business units were improved.

**• Facilitating application of best practices identified through audits**

By effectively applying the globally consolidated audit system, steps were taken to share best practices on environmental management such as environmental audit methods and environmental education, and to address common issues across the Sony Group.

**• Administrative efficiency**

Management system document structure has been simplified, improving the administrative efficiency of individual groups.

## Environment

### Strategy on Climate Change

While climate change poses a significant threat both to our corporate activities and to society in general, it also affords Sony an opportunity to become part of the solution. Sony proactively pursues to tackle the climate change issue.

- Policy on Climate Change > page 137
- Collaboration with NGOs > page 138
- Program and Targets for Reducing Greenhouse Gas Emissions by Suppliers > page 139

## Environment

### Policy on Climate Change

#### Targets

(Updated on August 31, 2011)

Sony undertakes environmental activities according to specific environmental mid-range targets which are formulated periodically. Currently, under Green Management 2010 - a set of environmental targets drafted in 2006 - the Company is spotlighting a climate change goal to cut total CO<sub>2</sub>-equivalent greenhouse gas emissions from all facilities by 7% or more compared to fiscal year 2000 levels. In setting this goal, Sony was reviewed by the World Wide Fund for Nature (WWF) and third-party experts and subsequently joined the Climate Savers Programme promoted by the WWF. This goal has been incorporated into Green Management 2015, a set of new environmental mid-term targets that the Sony Group aims to achieve by fiscal year 2015.

In its Road to Zero global environmental plan, Sony has set forth a long-term goal of achieving a zero environmental footprint throughout the life cycle of its products and its business activities. Curbing climate change is identified as a key challenge under this plan - one which Sony is addressing through decisive efforts to reduce energy consumption, develop and provide superior, environmentally conscious products, and minimize direct and indirect emissions of greenhouse gases. In addition, Sony will maximize future innovations to achieve carbon neutrality.

Sony will continue to address issues associated with climate change in its drive to achieve its long-term targets.

#### Understanding Risk and Opportunity

(Updated on August 31, 2011)

Tackling climate change is a tremendously important commitment, not only to make certain of a sustainable society but to ensure business continuity at Sony itself.

Sony firmly believes in the need for efforts to protect the environment, which include measures to avert climate change. Further, responses and eco-conscious actions can carry latent risk that could adversely impact operations if not executed properly.

For example, new or amended laws and regulations might elicit a higher carbon tax or impose tougher energy-saving standards on products. Rising sea levels and abnormal weather caused by climate change could require certain measures with underlying physical risk. Markets might go through a correction, as consumers' evolving perceptions trigger different purchasing trends.

Sony realizes that flawed responses could have major social and financial ramifications. To deal with legal and regulatory developments, the Company is evaluating underlying risks and making preparations to address probable risk.

For example, the Company has established and maintains a system for collecting information on laws and regulations in force in countries around the world to ensure that activities and products comply with existing requirements.

However, alongside the challenges that climate change presents to Sony's businesses exist opportunities. A notable example is the widespread use of products boasting improved energy efficiency ratings to help reduce the factors that spur climate change. It is likely that governments will implement policies designed to encourage demand for such products, and heightened consumer interest may create new market needs as a result.

Fully recognizing these risks and opportunities, the companies of the Sony Group are rallying together to address the issue of climate change on a global scale. The Group is pursuing broad-based initiatives that include - but are by no means limited to - engagement with NGOs and participation in emissions trading programs, efforts to appeal to its suppliers and the implementation of measures to reduce its own emissions.

This is a wonderful chance to contribute to enhanced consumer lifestyles and to society through eco-conscious products infused with Sony innovation. New business opportunities related to energy and the environment - such as the application of dye-sensitized solar cells already a focus of research and development - are likely to increase, helping to reduce greenhouse gas emissions.

## Collaboration with NGOs

(Updated on August 31, 2011)

In July 2006, Sony joined the Climate Savers Programme that partners the WWF (World Wide Fund for Nature) with companies to plan and carry out efforts to reduce greenhouse gases emissions. Under the program Sony is committed to reducing emissions of greenhouse gases from all of its sites and lowering product annual energy consumption, as well as to work with the WWF to communicate with consumers.



碳减排先锋  
Defensores do Clima  
クライメート・セイバーズ  
Climate Savers

In February 2008, Sony and the WWF jointly held the Climate Savers Tokyo Summit 2008 at the Sony headquarters in Tokyo that was attended by current and intended program participants. In addition to the WWF's annual assembly, the summit for the first time welcomed participants representing industry and government, as well as the press. The summit featured presentations highlighting the efforts and achievements of program participants, as well as panel discussions featuring leading experts, and a keynote address by James Leape, Director General of WWF International. The highlight of the event was the announcement by Sony Chairman and CEO Howard Stringer of the Tokyo Declaration, signed by 12 companies that participate in Climate Savers Programme. As a representative of the signatory companies, he declared support for the Intergovernmental Panel on Climate Change (IPCC) report on climate change and its conclusion that global greenhouse gas emissions need to peak and begin to drop in the next 10-15 years, to well below half of the level recorded in 2000, by the middle of the 21st century, and that in order to realize a low-carbon society, the companies will take further actions such as to "try to widen the scope of emission reduction activities in partnering with the business partners" and to "promote a low-carbon lifestyle to consumers and customers".

For climate change targets beyond 2011, Sony has formulated a new set of targets which were announced publicly in November 2009. The new targets are: (1) to target absolute 30% reduction in greenhouse gas emissions from Sony Group sites in CO2 emissions by the end of the fiscal year ending March 31, 2016, compared to the level of the fiscal year ended March 31, 2001; and (2) target 30% reduction of power consumption per product by the end of the fiscal year ending March 31, 2016, compared to the level of the fiscal year ended March 31, 2009. The above targets were reviewed and approved by the WWF as a renewal of the present Climate Savers Programme commitments.

## **Program and Targets for Reducing Greenhouse Gas Emissions by Suppliers**

(Updated on August 31, 2011)

Recent heightened awareness of climate change issues has prompted corporations to pursue improvement in data reliability and further extend the scope of their efforts to grasp the extent of their greenhouse gas emissions. In response to such social expectations, the Carbon Disclosure Project (CDP), an organization promoting the disclosure of corporate greenhouse gas emissions, and the Electronic Industry Citizenship Coalition (EICC), which advocates the establishment of common environmentally and socially responsible procurement practices, have each initiated pilot projects to ascertain the volume of greenhouse gases emitted throughout the supply chain. Sony has participated in both projects, starting in fiscal year 2009 with trials conducted on the emissions from its main contracted original equipment manufacturers (OEM) and original design manufacturers (ODM). From this trial, the emissions from ODMs and OEMs associated with Sony products in fiscal year 2009 were partially captured, which amounted to be approximately 640,000 tons.

Looking ahead, Sony will expand the scope of application to include other suppliers and examine the methods it uses to ascertain greenhouse gas emissions throughout its supply chain.



## Environment

### Reducing Greenhouse Gas Emissions at Sites

- Greenhouse Gas Emissions > page 141
- Promoting Efficient Energy Use > page 142
- Reducing Energy Consumption by Sony-Owned Business Vehicles > page 146
- Use of Renewable Energy > page 146
- Emissions Trading > page 148

## Environment

### Greenhouse Gas Emissions

(Updated on August 31, 2011)

Sony had set a target to achieve an absolute reduction in greenhouse gas emissions (calculated in terms of CO<sub>2</sub>CO<sub>2</sub>) of 7% or more from the fiscal year 2000 level by fiscal year 2010. To this end, Sony strove to lower energy consumption and emissions of perfluorocarbons (PFCs) and other greenhouse gases. In fiscal year 2010, Sony's emissions of greenhouse gases\*1 (calculated in terms of CO<sub>2</sub>) totaled approximately 1.53 million tons, down 90,000 tons from the fiscal year 2009 level. This represents a 31% decrease from the fiscal year 2000 level, well above the aforementioned mid-term target.

Emissions related to energy use at Sony sites\*2 accounted for approximately 1.38 million tons, down roughly 120,000 tons from fiscal year 2009. This decline was attributable to measures implemented at sites to reduce energy consumption, together with production adjustments and the closure and consolidation of sites--a consequence of the persistent global economic downturn.

CO<sub>2</sub> emissions resulting from the use of energy at sites in Japan amounted to approximately 850,000 tons\*3, a decline of approximately 40,000 tons from fiscal year 2009. This was largely due to efforts to restrict greenhouse gas emissions through infrastructure-related measures, including the installation of high-efficiency equipment and the promotion of energy recycling, and to efforts to enhance nonstructural measures, notably the introduction of training programs designed to foster energy saving leaders.

CO<sub>2</sub> emissions resulting from energy use at Sony sites include emissions from fuel used by Sony-owned business vehicles. In fiscal year 2010, CO<sub>2</sub> emissions resulting from fuel used in vehicles amounted to approximately 33,000 tons.

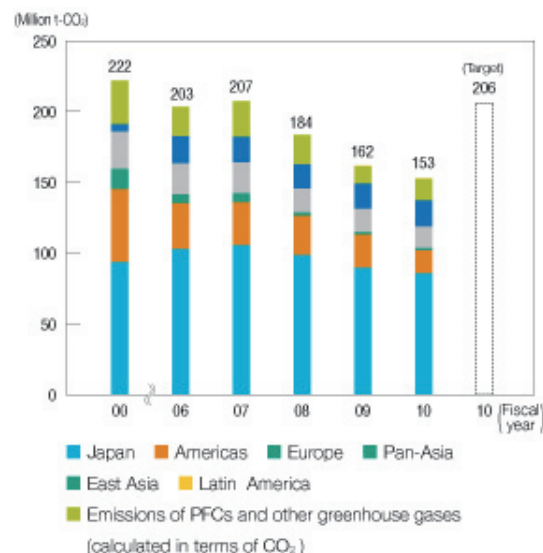
PFCs and other greenhouse gases are used in cleaning and etching processes in the manufacture of semiconductors and LCD panels. Emissions of PFCs and other greenhouse gases in fiscal year 2010 (calculated in terms of CO<sub>2</sub>) totaled approximately 150,000 tons, up about 26,000 tons from fiscal year 2009. This increase was largely attributable to higher production volumes at semiconductor and LCD panel manufacturing sites, which countered ongoing efforts to reduce emissions of PFCs and other greenhouse gases by, among others, installing gas abatement equipment.

\*1 Greenhouse gas emissions figures in this section represent total emissions after the subtraction of emissions offset by the use of renewable energy.

\*2 This includes CO<sub>2</sub> emissions from fuel use of business vehicles owned by Sony.

\*3 Taking into account changes in the CO<sub>2</sub> conversion rate for the energy purchased in Japan, the amount of CO<sub>2</sub> emitted by the use of energy in fiscal year 2010 was approximately 760,000 tons.

Greenhouse Gas Emissions from Sites  
(Calculated in Terms of CO<sub>2</sub>)



## Environment

### Promoting Efficient Energy Use

(Updated on August 31, 2011)

Sony sites around the world are implementing a variety of measures aimed at increasing the efficiency of energy used in their various operations.

### Global Initiatives

Since fiscal year 2007, Sony Group Experts have been conducting energy-saving assessments in each global region. During fiscal year 2010, these assessments were conducted at 3 Sony sites in Japan, bringing the total number of assessments to 14 Sony sites worldwide. At Sony Energy Devices Corporation, an assessment recommendation was implemented in the construction and operation of a new building by installing a heat pump chiller. This enabled the company to establish an energy recycling system, thus making effective use of waste heat.

### Japan

At Sony Chemical & Information Device Corporation, under the supervision of top management, all employees can experience their environmental contribution through an ongoing energy saving program "Eco Attack 30". In this program, the hardware (facility) aspects of installing highly-efficient machinery and timers, as well as central surveillance and automatic control equipment has been complemented with a software aspect where all employees are able to monitor energy consumption in real time -"Visualization", discover and improve unnecessary air conditioning, lighting usage and so forth through inspection patrol, and by encouraging awareness an optimizing production operation program was put into practice.



Inspection patrol

Such programs are not limited to Japan with a rollout to overseas sites in progress, Sony will continue with its comprehensive Energy Saving Environmental program.

## China

Sony sites in China continue to implement a variety of measures based on the results of energy-saving assessments. These sites have introduced solar water heaters and solar panel streetlamps and also have promoted the management of air conditioner temperatures and the recovery of waste heat.

In fiscal year 2010, measures were focused on improving building insulation, introducing energy-efficient lighting, replacing refrigerants and controlling compressors. For example, Shanghai Suoguang Electronics Co., Ltd., replaced ordinary glass windows with double-glazed windows, while Shanghai Suoguang Visual Products Co., Ltd., applied insulating paint on its roof. Sony Electronics (Wuxi) Co., Ltd., Sony Digital Products (Wuxi) Co., Ltd., and the Shanghai Technology Center also installed roof insulation.



Insulating paint on the roof of Shanghai Suoguang Visual Products

Since fiscal year 2008, many Sony sites in China have been reducing energy consumption of air conditioners by replacing their refrigerants and in fiscal year 2010, the addition of 2 companies, including Sony Precision Devices (Huizhou) Co., Ltd., implementing this measure contributed to a combined reduction of 620 tons in CO2 emissions.



Inverter refrigeration unit at Sony Electronics Huanan

Sony continues to promote the installation of high-efficiency inverters at its sites in China. As well as adding inverter controls to its existing chiller pump systems, Sony Electronics Huanan Co., Ltd., installed a single new energy-efficient inverter chiller unit. Together, these measures are expected to support a reduction of 780 tons in the company's annual CO2 emissions.

## Europe

Sony's sites in Europe continue to implement a variety of measures based on the results of energy-saving assessments, continuous improvement approach and close cooperation. In the UK, the Sony Group has formed a joint organization, operating under the framework of its Environmental Management System (GEMS), to enable local companies to comply with the requirements of the UK's Carbon Reduction Commitments (CRC) Energy Efficiency Scheme. The formation of the CRC Working Group (WG) has led to a new level of cooperation and coordination in the development of energy efficiency projects between all Sony Group companies. It was fundamental for the successful joint registration in CRC scheme. A joint energy management system was implemented in 2010, achieving BSI's Carbon Reduction Kite Mark Accreditation\*. With the accreditation audits, BSI has also verified that between 2008 and 2010, Sony's CRC WG companies in the UK achieved more than 9% energy savings according to CRC requirements. UK Technology Center in Pencoed had a relevant contribution with their energy saving program initiated in 2007, with the study of engineering solutions developed with the support of Carbon Trust in Wales.

Sony DADC Austria carried out several projects aimed at enhancing the efficiency of production lines and enhancing building management that included such measures as introducing new cooling systems, improving compressed air system and energy efficiency awareness campaign for employees. As a result, Sony DADC Austria succeeded in saving of 9% of the absolute amount of electricity usage in 2010 in comparison to the previous year while at the same time the electricity consumption per finished product was decreased by 10% versus previous year.

- BSI's Kitemark Energy Reduction Verification is based on the implementation of key elements of an energy management system using BS EN 16001 and will independently verify the management and measurement of the system as well as verify the reductions CO2 emissions resulting from energy use. A company achieving a reduction of at least 2.5% per annum calculated from three years worth of data will be awarded the prestigious Kitemark.

## North America

Sony Electronics Inc. (SEL) worked with a local electric power utility to install solar panels on the roof of the parking lot building at its headquarters building in San Diego, California. The building's environmentally conscious features also earned it Leadership in Environmental Design (LEED) Gold Certification from the U.S. Green Building Council Institute.

- [Click here for details on Activities at Sony Sites > page 231](#)

Concentrated efforts by Sony Pictures Entertainment Inc. (SPE) to improve the energy efficiency of its head office and projects outlined below yielded a significant reduction in the company's CO2 emissions in fiscal year 2009.

The company is experimenting with LED lighting, which consumes 50% less electricity and emits 70% less heat than traditional lighting, and other lower energy profile technologies to aid in reducing its production footprint. In addition, production of such movies as Quantum of Solace, Angels & Demons and 2012 and the television shows Jeopardy! and Wheel of Fortune incorporated LED lighting.

SPE also continues to invest in energy-efficient lighting retrofit projects. In 2009, all of the studio lot's sound stages were retrofitted with energy-efficient lights, with motion detection saving over 400,000 kWh of energy annually. SPE continues to track and report its carbon footprint and recently achieved a 21% decrease in overall emissions in the four years from fiscal year 2007 through fiscal year 2010.

In collaboration with Sony DADC and key vendor partners, Sony Pictures Home Entertainment Inc. continues to pursue initiatives in all areas of the supply chain that help to support its goals of reducing greenhouse gas emissions and minimizing the impact on the environment. Making case, display and facility changes have resulted in avoiding approximately 25 million pounds (11,340tons) of CO2.

## Singapore

Sony Electronics (Singapore) Pte. Ltd., Energy Technology Singapore has implemented several key measures to enhance lighting efficiency, including removing redundant lights, reducing operating hours, installing mirror reflectors for better light diffusion and installing motion sensors in low-usage areas. Additionally, the factory has started replacing fluorescent lights, including those in the building's "SONY" sign, with LED lights that consume 40–50% less energy. By replacing just 1,900 tubes with LED lights, CO2 emissions can be reduced by up to 200 tons annually.



Sony sign with new LED light

## Malaysia

Sony EMCS (Malaysia) Sdn. Bhd.'s Penang TEC has improved their chiller system and air handling unit (AHU) by overhauling, removal of auto brush system, impeller modification and replacing key components such as the condenser pumps. The AHU's air bag filter and pre-filter were also replaced to reduce pressure drop while the cooling coil was cleaned to facilitate better heat exchange. Through these measures, Penang TEC has reduced its annual greenhouse gas emissions by 700 tons. Additionally, Sony Technology (Thailand) Co., Ltd.'s Ayutthaya Technology Centre and Chonburi Technology Centre have installed variable speed drive (VSD) controls for their water motor pumps (cooling tower, chiller system and water supply) to allow control of water flow in the system based on load demand. This prevents the system from using more energy than is needed, reducing annual greenhouse gas emissions by 110 tons and 93 tons, respectively, at the Ayutthaya and Chonburi facilities.



Overhauling Penang TEC's chiller system

## Environment

### Reducing Energy Consumption by Sony-Owned Business Vehicles

(Updated on August 31, 2011)

Sony is taking steps to reduce the amount of energy used by Sony-owned business vehicles, including reducing the number of vehicles in its fleet and replacing existing vehicles with hybrids. In Japan, for example, as of March 31, 2011, 51% of Sony-owned business vehicles were environmentally conscious, that is, either hybrids or fuel-efficient vehicles.

Sony Electronics (SEL) USA currently operates a fleet of over 600 vehicles, which are used primarily by field sales and service personnel. In an effort to proactively address the challenges of global warming and reduce gasoline consumption, SEL USA has completed a four-year plan to convert many of its corporate fleet from existing four- and six-cylinder conventional vehicles to hybrid vehicles. At the end of fiscal year 2010, SEL USA's existing fleet was composed mainly of hybrid vehicles, a result of a program-wide initiative to bring hybrids into the fleet to replace older vehicles. SEL USA expects to have reduced CO2 emissions by an estimated 38.1 metric tons per year as a result of this plan.

Sony Europe has formulated a company car policy including environmental criteria, such as CO2 emissions, for selecting the newly leased vehicles.

### Use of Renewable Energy

(Updated on August 31, 2011)

The use of renewable energy\*1 is a key part of Sony's effort to reduce greenhouse gas emissions. In fiscal year 2010 the use of the Green Power Certification System and the introduction of solar power generation systems helped reduce Sony's CO2 emissions by approximately 127,000 tons. Renewable energy accounts for 9% of the total amount of electricity that Sony purchases worldwide each year.

\*1 Energy obtained from resources that are essentially inexhaustible, including solar power, wind power and energy produced from biomass products

### Japan

(Updated on August 31, 2011)

In Japan, Sony uses the Green Power Certification System to promote the introduction of green power\*2, that is, the use of power produced by renewable energy resources. Even if the user is located far from a power plant, acquisition of a Green Power Certificate signifies recognition that the user is purchasing green power generated by using renewable energy. Sony signed a Green Power Certification system purchase contract in October 2007 for 16 million kWh annually from Noshiro woody biomass power plant in Akita Prefecture, in July 2008 for 18 million kWh (the largest in Japan) annually from Tsubetsu woody biomass power plant in Hokkaido, and also in July 2009 for 16 million kWh annually from Morigasaki biomass power plant in Tokyo.

As of March 2011, the Sony Group finalized a Green Power Certification system purchase contract for 60.87 million kWh annually, equivalent to around 3% of the Group's total domestic power use. Sony Group companies in Japan began using

the Green Power Certification System in 2001. Since 2008, approximately 90% of electricity used by the Sony Building, as well as all the electricity used by the data center at Sony Global Solutions where Sony's servers are managed, are derived from green power. At Sales company Sony Marketing, logistics company Sony Supply Chain Solutions, and Sony Bank, all the sites that are certified under ISO 14001 operates on 100% green power.

Moreover, as a part of its efforts to conserve forests through the Green Power Certification System, Sony has donated 6 million yen annually to Akita Prefecture since 2008 to fund the transport of timber produced by tree thinning to the woody biomass electric power plant in the city of Noshiro, thereby ensuring the plant has a stable supply of fuel. The disposal of leftover timber and the promotion of tree thinning are also expected to contribute to the conservation of Akita's forests.

Sony actively supports further introduction of renewable energy in the society as well. "Green Energy Partnership" was formed by Ministry of Economy, Trade, and Industry (METI), and manufacturers, retailers, green power generation companies, Green Power Certificate issuers, and representatives of consumers in 2008. R. Chubachi, who was the president of Sony Corporation at the time, inaugurated as the first chairman of the Partnership. In the inauguration speech, Chubachi said, "Under this Partnership, we hope to raise awareness of green energy use among all people of Japan. By all of us cooperating and considering good ways to use green energy, we'd like to make Japan the proudest country in the world regarding green energy use."

• Click here for METI's press release on the Green Energy Partnership.  
[http://www.meti.go.jp/english/press/data/nBackIssue20080611\\_01.html](http://www.meti.go.jp/english/press/data/nBackIssue20080611_01.html)

\*2 Electricity produced using renewable energy sources

## Europe

(Updated on August 31, 2011)

In Europe, Sony has been using renewable energy since 2002. Thanks to efforts since fiscal year 2008 to promote the use of power supplied by renewable energy sources where possible and the purchase of Renewable Energy Certificates by sites unable to purchase renewable energy directly, renewable energy currently accounts for 100% of total electricity consumption by Sony's European sites (excluding those sites with fewer than 100 employees). In fiscal year 2010, Sony sites in Europe used a total of approximately 143 million kWh of renewable energy.

## North America

(Updated on August 31, 2011)

Since April 2008, four of Sony's sites in the United States -- Sony DADC US Inc.'s Pitman and Terre Haute plants, New York Office of Sony Corporation of America (SCA) and San Diego Office of Sony Electronics Inc. (SEL) -- have signed Renewable Power Certification System contracts. They were joined in January 2009 by Sony DADC's distribution centers at Carrollton, Bolingbrook and Fresno and SEL's Carson distribution center. This year Sony DADC, Sony Electronics and Sony Pictures Entertainment in the U.S., under the umbrella of Sony Corporation of America, came together to purchase more than 143 million kWh of green power annually for 2011. This is enough green power to meet an estimated 49 percent

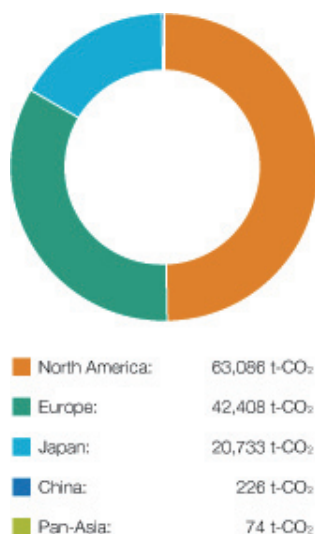


U.S. Environmental Protection Agency's (EPA's) National Top 50 list of the largest green power purchaser.

All of Sony Electronics Inc. and DADC US ISO 14001 certified sites (sites with 100 or more employees) are covered under this contract. 100% of the electricity consumed at Sony Electronics sites is offset by certified renewable energy.

Sony Pictures Entertainment Inc. (SPE)'s headquarters in California generates 310,000 kWh of power using its own solar power generation facility. Also, 100% of total energy used by SPE's data center in Arizona is renewable.

Quantity of Renewable  
Energy Use by Region  
(Fiscal Year 2010)



## Emissions Trading

(Updated on August 31, 2011)

As a measure to prevent global warming, Sony carries out activities related to emissions trading, simultaneously with implementing energy conservation measures at its sites.

### United States

In addition to its own energy saving initiatives, Sony's global warming countermeasures include participating in emissions trading programs. In the United States, Sony Electronics Inc. (SEL) has joined the Chicago Climate Exchange (CCX), a voluntary greenhouse gas emissions allowance trading system. Under CCX guidelines, SEL is committed to achieving a 6% reduction in direct CO<sub>2</sub> emissions\* from energy used at its sites in the United States from the 2000 level by 2010. Under this system, participating companies are committed to achieving CO<sub>2</sub> emission reduction targets, spread over two phases, by 2010. Audit results confirmed that as of the end of 2009, SEL had achieved a 5% reduction in CO<sub>2</sub> emissions compared with the base level, thereby surpassing the company's 2009 target for Phase II.

\* Emissions referred here are the direct emissions of CO<sub>2</sub> from the burning of fuel and do not include indirect emissions from the use of electric power.

## Japan

In April 2010, the Tokyo metropolitan government enacted mandatory emissions reduction regulations with a cap-and-trade emissions trading scheme, based on the Tokyo Metropolitan Ordinance on Environmental Preservation. At business sites covered by these regulations, Sony is steadily working to meet the mandated requirements through such measures as the formulation of emissions reduction plans based on collaboration among Sony Group companies and business sites.

In 2008, Japan launched a pilot national emissions trading scheme. An experimental undertaking designed to set necessary standards and detect problems, this scheme was instituted to prepare Japan for the possible introduction of a full-scale emissions trading scheme at some time in the future. Sony has set targets for reducing the absolute volume of CO2 emissions from its semiconductor fabrication operations -- its principal source of CO2 emissions in Japan -- for fiscal year 2010, and participated in this pilot scheme as the Sony Group.

Sony is also an investor in the Japan Greenhouse Gas Reduction Fund (JGRF), a carbon fund established in December 2004 to acquire certified emissions reductions from greenhouse gas reduction projects in developing countries in the form of credits for distribution to investor companies. As of the end of April 2011, Sony had purchased credits worth approximately 17,700 tons of CO2.

In addition, Japan operates a domestic Clean Development Mechanism (CDM), a framework under which large companies become joint implementation partners in greenhouse gas emissions reduction projects executed by small and medium-sized companies in Japan, and purchase carbon credits generated by such projects. Under this system, Sony has received certification as a joint implementation partner in two emissions reduction projects, and in fiscal year 2010 purchased credits worth approximately 500 tons of CO2. One of these projects, an emissions reduction project in Tokamachi, Niigata Prefecture, involves not only an initiative carried out by the Tokamachi municipal government but also emissions reduction projects implemented by small and medium-sized companies operating in Tokamachi, with which the municipal government has become a joint implementation partner. Sony plans to purchase credits generated by these projects from the Tokamachi municipal government.

## Environment

### Reducing Greenhouse Gas Emissions Related to Products and Services

- Greenhouse Gas Emissions from Product Use > page 151
- Reducing Product Operating Power Consumption > page 151
- Development of Energy Storage Modules > page 157
- Systems Solutions that Help Reduce CO2 Emissions > page 157

## Environment

### Greenhouse Gas Emissions from Product Use

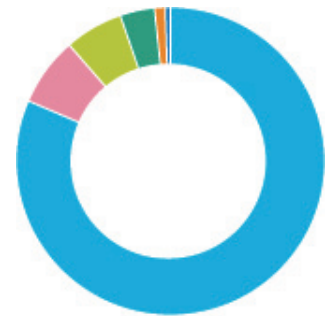
(Updated on August 31, 2011)

Sony products consume electrical power while used in the hands of their owners, resulting in indirect emissions of CO<sub>2</sub>. The CO<sub>2</sub> emissions from use over the lifetime of products sold in fiscal year 2010 increased approximately 10% from fiscal year 2009, to 21.7 million tons.

Sony strives to reduce CO<sub>2</sub> emissions from product use by adding energy-saving features to products. Sony's sales volume of LCD televisions, which account for the majority of its emissions from product use, increased by 44%, however through reductions in power consumption of individual units, the overall increase in CO<sub>2</sub> emissions was suppressed to just 10%.

\* In theory, emissions during product use in the current fiscal year should be calculated from the total quantity of electrical power consumed by previously sold Sony products that are still in use by consumers in the current fiscal year. However, given the difficulty of determining how many previously sold Sony products are still in use by consumers of the total number of Sony products sold to date, Sony uses the total quantity of electrical power consumed while in use over the lifetime of Sony products sold in the current fiscal year as an indicator for CO<sub>2</sub> emissions during use.

Greenhouse Gas Emissions from Product Use



Television	17.68 million t-CO <sub>2</sub>
Professional use	1.55 million t-CO <sub>2</sub>
Audio	1.31 million t-CO <sub>2</sub>
Game	0.77 million t-CO <sub>2</sub>
Video	0.26 million t-CO <sub>2</sub>
Information and communications	0.10 million t-CO <sub>2</sub>

### Reducing Product Operating Power Consumption

(Updated on August 31, 2011)

Sony reduces the power consumption of individual products by setting specific annual targets for each product category. In fiscal year 2010, Sony achieved the targets it had set for all of its product categories.

Regulations governing the energy efficiency of products are being enforced in countries all over the world. For example, from 2010, the subsequent enforcement of various product categories began in the European Union through the Energy-related Products Directive (ErP), a legislation which in addition to electrical products, covers windows, insulation materials and other energy related products, demanding a wide range of environmental consciousness compliance. Electrical products, in particular, must comply with strict energy-reduction standards. All Sony products comply with the energy efficiency regulations in every country where they are required. Products where no regulations exist, Sony has established product specific energy reduction targets and is active in achieving these targets.

## Reduction of Power Consumption of Blu-ray Disc™ Player

(Updated on Augst 31, 2011)

Sony is working to reduce power consumption of the Blu-ray disc players it sells worldwide during both operation and standby mode. In January 2008, BDP-S350 received the Eco-Design & Sustainable Technology Award at the Consumer Electronics Show (CES) in Las Vegas, the largest trade show of its type in the world. Since then, Sony has continued to actively pursue further reductions in power consumption for its Blu-ray Disc players.



Blu-ray Disc™/DVD Player  
BDP-S370

For example, through efficiency improvements in the way main device power is controlled, operational power consumption since 2008 has been reduced each year by 10-15%. Also standby power consumption since 2008 has been reduced to less than 0.5W. From the launch of BDP-S360 in 2009, there is a function that automatically switches the player to standby mode after a certain amount of time elapses without operation (auto power-off mode), thereby avoiding unnecessary power consumption if users forget to switch the player off. Although this function will be required under the EU ErP directive taking effect in January 2013, and has already been required under the Energy Star program in the United States from July 2010, Sony included the function ahead of the mandated schedule.

All Sony Blu-ray Disc players launched in the U.S. market between 2009 and 2010 complied with the Energy Star program requirements (Version 1.0). Although from July 2010 the requirements were revised with much stricter standards, all Sony products fulfilled requirements for standby mode, operation mode and for the inclusion of auto power-off mode.

In addition, applicable to Blu-ray Disc recorders mainly sold in Japan, products launched in fall 2010 included both quick start-up and energy conservation features. These functions have been highly appraised, and 2010 models\*1 of the Blu-ray Disc recorders that include BDZ-AT300S received the "Green IT Award 2011" which is backed up by the Ministry of Economy, Trade and Industry of Japan in October 2011.



Green IT Award 2011

\*1 Award-winning models: BDZ-AX2000, BDZ-AX1000, BDZ-AT900, BDZ-AT700, BDZ-AT500, and BDZ-AT300S.

## Reducing Power Consumption of BRAVIA™ LCD Televisions

(Updated on Augst 31, 2011)

The BRAVIA LX900 Series of LCD televisions, launched in summer 2010, includes Intelligent Presence Sensor with Face Detection. Using a camera sensor equipped with movement-detection and face-detection technology, this system not only recognizes whether someone is in front of the television, but also detects whether the person is watching the television screen and automatically responds by adjusting the picture brightness or by turning off the screen, further contributing to active power-saving.



KDL-46HX800 BRAVIA™ LCD television

The BRAVIA HX800 Series LCD television controls individual groups of the LED backlight, and according to the scene being displayed unnecessary illuminations are withheld, thereby realizing high contrast. Furthermore, by dividing the whole image into individual blocks and controlling the LED light output, the HX800 Series maintains an optimal level of brightness. Controlling illumination in individual groups not only reproduces beautiful images but also reduces power consumption. The HX800 Series and many other series are equipped with an automatic picture-quality sensor that is able to sense the type of light sources in the room--including natural light from windows, fluorescent lighting and light stands--and optimizes color temperature and brightness accordingly. By adjusting the television's image to the optimal quality and brightness in response to day and night changes in room light sources and levels, it is able to reproduce the natural color tones of the original image and reduce unnecessary power use.



KDL-46HX800 BRAVIA™ LCD television

For televisions marketed in North America, Sony is actively promoting to meet the requirements of the International Energy Star® program. All models launched in the United States and Canada in 2011 \*2 complied with the International Energy Star® program requirements (Version 4.2), while 100% of models achieved the program's sleep mode power consumption requirements by a margin of 50% or more. Moreover, approximately 79% (37 models) of U.S. and Canada models launched in 2011 \*2 complied with the new requirements (Version 5.3) effective September 30, 2011.

### List of models that complied with the requirements of the International Energy Star® program (Version 5.3)

KDL-32EX521	KDL-32EX520	KDL-32EX523
KDL-40EX520	KDL-40EX521	KDL-40EX523
KDL-46EX520	KDL-46EX521	KDL-46EX523
KDL-32EX720	KDL-32EX729	KDL-40EX720
KDL-40EX723	KDL-40EX729	KDL-40EX620
KDL-40EX621	KDL-46EX720	KDL-46EX723
KDL-46EX729	KDL-46EX620	KDL-46EX621
KDL-55EX720	KDL-55EX723	KDL-55EX620

KDL-55EX621	KDL-46NX720	KDL-55NX720
KDL-60EX720	KDL-60EX723	KDL-60NX720
XBR-46HX929	KDL-55HX820	KDL-46HX820
XBR-55HX920	XBR-55HX929	KDL-55HX729
KDL-46HX729	-	-

\*2 Models launched by July 31, 2011

## Reducing the Power Consumption of VAIO® PCs

(Updated on August 31, 2011)

The VAIO® S Series launched in 2011 realizes both low power consumption and high performance by fully leveraging the latest technologies.

For example, users in long meetings, travelling or other situations where there is no access to a power outlet for a long time, the S Series includes a "Performance Switch" enabling users to choose between SPEED mode and STAMINA mode, depending on usage requirements. This feature makes extended use possible without suffering a large loss in performance. STAMINA mode enables external graphics power consumption to be reduced to almost zero, providing the maximum battery operation time possible in situations where high-level graphics rendering is not needed. In the SPEED mode, external graphics display performance is fully utilized, offering the use of advanced rendering capabilities.



VAIO® S Series

Also, to type naturally in environments with limited illumination such as an aircraft cabin, the keyboard has a backlight function. In the event where there is no keyboard operation after a certain time elapses, the backlight automatically shuts off to save power.

In addition, the VAIO® S Series senses the level of ambient light and is able to automatically adjust the LCD screen brightness accordingly. For example, in offices or similar places, by automatically dimming the screen brightness from maximum to two levels below, power consumption declines. This action may be preset using the automatic brightness-control panel, by visually adjusting to the required level of brightness.

Sony is actively promoting to meet the requirements of the International Energy Star® program for personal computers, with 100% of new models launched in fiscal year 2010 complied with the program's Version 5.2 requirements that came into effect in July 2009. As a result, 100% of new models released after July 2009 have been Version 5.2 compliant. Of those models, 303 models (approximately 23%) exceeded the Version 5.2 requirements by a margin of 50% or more in TEC (Total Energy Consumption) value.

**List of models that complied with the requirements of the International Energy Star® program (Version 5.2) by a margin of 50% or more in TEC value**

VGN-G3YCDZ	VPCCA15FX/W/D/G	VPCCA17FX/W
VPCCB15FD/B/D/G/P/W	VPCCB17FX/B/W	VPCEA37FD/B/G/L/P/V/W
VPCEA37FX/B/G/L/P/V/W	VPCEA43FB/B/G/L/P/V/W	VPCEA45FA/B/W
VPCEA45FG/B/L/P/W	VPCEA45FH/B/L/P/W	VPCEA45FK/B/W
VPCEA45FL/B/L/P/V/W	VPCEA46FG/B/L/W	VPCEA47EC/B/L/P/W
VPCEA4S1E/B/G/L/P/V/W	VPCEB34EN/BI/WI	VPCEB35FG/B/G/L/P/W
VPCEB35FH/B/L/W	VPCEB35FK/L/P/W	VPCEB35FW/P/W
VPCEB3L0E/BQ	VPCEB3L1E/BQ/PI/T/WI	VPCEB44EA/BI/WI
VPCEB44EG/BI/WI	VPCEB44EN/BI/WI	VPCEB45FF/B
VPCEB45FG/B/G/L/P/W	VPCEB45FH/B/L/W	VPCEB45FK/B/P/W
VPCEB45FW/B/P/W	VPCEB4J1R/BQ/WI	VPCEB4M1E/BQ/PI/T/WI
VPCEB4X0E/BQ	VPCEB4Z0E/BQ	VPCEC3E9E/BJ
VPCEC3L1E/WI	VPCEC3S0E/WI	VPCEC4E9E/BJ
VPCEC4L1E/WI	VPCEC4S0E/WI	VPCJ120FL/B
VPCJ125EC/BI/NI	VPCJ125FL/B	VPCJ126EC/BI/NI
VPCJ128FC/B	VPCJ128FG/B	VPCJ128FH/B
VPCJ12AFJ	VPCJ12L0E/B	VPCJ12M0E/B
VPCJ12M1E/B/W	VPCJ12M1R/B	VPCJ12ZFJ
VPCJ13AFJ	VPCJ13ZFJ	VPCL14J9E/S
VPCL14M1E/S	VPCL14M1R/B	VPCL14M2E/S
VPCL211FX/B	VPCL212FX/B	VPCL213FX/B
VPCL214FX/B	VPCL215FD/B	VPCL215FL/B
VPCL215FX/B/W	VPCL216FX/B	VPCL218FC/B
VPCL218FG/B	VPCL218FJ/BI/WI	VPCL218FK/B
VPCL218FW/B	VPCL218FX/B	VPCL2190X
VPCL219FJ/W	VPCL21AFJ	VPCL21AHJ
VPCL21M1E/B	VPCL21M1R/B	VPCL21M9E/B
VPCL21S1E/B	VPCL21S1R/B	VPCL21ZHJ
VPCSA190X	VPCSB190X	VPCSB11FX/B/L



VPCSB11FX/P/W	VPCSB15GB/B	VPCSB15GL/B/S
VPCSB16FA/B	VPCSB16FF/B	VPCSB16FG/B/L/P/S/W
VPCSB16FH/L/P/W	VPCSB16FK/B/P/W	VPCSB16FW/B/S/W
VPCSB17GG/B/S	VPCSB17GK/B	VPCSB17GW/S
VPCSB18FJ/B/P/W	VPCSB18GA/B	VPCSB18GG/B/S
VPCSB18GH/B	VPCSB18GW/B	VPCSB190L
VPCSB19FJ/B	VPCSB19GG/B	VPCSB19GK/B
VPCSB19GW/B	VPCSB1A9E/B	VPCSB1A9R/B
VPCSB1ADZ/B	VPCSB1AFJ	VPCSB1AGJ
VPCSB1AGJA	VPCSB1AHJ	VPCSB1B9E/B
VPCSB1C5E	VPCSB1Q1E/S	VPCSB1S1E/S/W
VPCSB1V9E/B	VPCSB1V9R/B/S	VPCSB1X9E/B/S
VPCSB1Z9E/B	VPCSB1Z9R/B	VPCSC1AFD/S
VPCSC1AFM/S	VPCSD100C	VPCSD18EC/B/L/P/W
VPCSD19EC/B/P	VPCYA15EC/B/R	VPCYA15FG/B/R
VPCYA15FH/B/R	VPCYA15FK/B	VPCYA16EC/B/R
VPCYA16FW/B/R	VPCYA17GG/B/R	VPCYA17GH/B/R
VPCYA17GW/B/R	VPCYA19FJ/B	VPCYA1A7E/R
VPCYA1B7E/R	VPCYA1C5E	VPCYA1C7E/R
VPCYA1D7E/R	VPCYA1E7E	VPCYA1F7E
VPCYA1V9E/B	VPCYA1V9R/B	VPCYA25EC/B/R
VPCYA26EC/B	VPCYB10AL/P/S	VPCYB13KD/S
VPCYB13KX/G/P/S	VPCYB14KX/P/S	VPCYB15AB/P/S
VPCYB15AG/G/P/S	VPCYB15AH/G/P/S	VPCYB15AL/P/S
VPCYB15JC/G/P/S	VPCYB15KX/P/S	VPCYB16KG/G/P/S
VPCYB16KK/P/S	VPCYB16KW/P/S	VPCYB19KJ/G/P/S
VPCYB1S1E/S	VPCYB1S1R/S	VPCZ139FJ/S

Also, all new AC adapters sold from fiscal year 2009 meet the efficiency requirements for No Load and Active modes, specified in the ENERGY STAR® (2.0).

Environmental information, including power consumption and ENERGY STAR qualified products, is available for each model on the VAIO® websites for Europe and Japan.

## Environment

### Development of Energy Storage Modules

(Updated on August 31, 2011)

Increasing energy efficiency is a particularly pressing environmental issue. In addition to facilitating the stable use of natural energy, energy storage modules can be used for load leveling during peak electricity periods.

In April 2011, Sony commenced shipments of newly developed 1.2 kWh-capacity energy storage modules that use rechargeable lithium-ion batteries made with olivine-type lithium-ion iron phosphate as the cathode material. Compared with conventional batteries using lead or nickel-cadmium (NiCd), used widely in the energy storage systems market, lithium-ion batteries boast higher energy efficiency, higher power density, and superior storage characteristics. In addition, because iron (lithium-ion iron phosphate) is used as the electrode material, these batteries have considerably lower impact on the environment than other types of rechargeable lithium-ion batteries that use "rare" metals -- the metals which are rare in reserves and supplies.



Energy storage module (IJ1001M)

### Systems Solutions that Help Reduce CO2 Emissions

(Updated on August 31, 2011)

In addition to taking steps to lower greenhouse gas emissions from its operations, Sony is developing energy-saving products and IT technologies that help reduce CO2 emissions from Sony products during use by customers.

#### Digital Cinema Systems

The movie industry is shifting rapidly to digital technology. Sony developed the world's first digital cinema camera, the HDW-900, in 2000, an achievement that brought dramatic changes to the front lines of filmmaking. The use of high-definition video (HDV) rather than film greatly improves efficiency on several fronts. For example, one reel of film holds only about 10 minutes' worth of action, whereas one reel of digital video allows 50 minutes of consecutive filming. Moreover, shots can be reviewed on the spot, greatly simplifying the post-production editing process, thereby making production more efficient and reducing associated costs.



SRW-9000 high-definition camcorder (HDCAM-SR series)

Released in 2009, the SRW-9000 -- the first digital high-definition camcorder in the HDCAM-SR series -- delivers superb image quality and performance and outstanding maneuverability. The unit is approximately 60% smaller and lighter than would be the case with a comparable separate camera and camcorder and uses only about half the energy.\*1

Moreover, because digital data is delivered to digital cinema-compatible movie theaters on a hard disk drive (HDD), there is no need to develop film, substantially reducing the need for water and chemicals used during the developing process. Further, whereas a single two-hour movie on film requires six reels of positive film, the same movie made with digital cinema needs only one HDD, thus increasing the efficiency of shipping and contributing to the reduction of associated CO2 emissions.

Total emissions of CO<sub>2</sub> associated with a two-hour movie made using digital cinema -- from production of complete digital cinema package through to distribution to and showing at 300 digital cinema-compatible movie theaters across Japan and final disposal -- are estimated to be approximately 160 tons lower than those associated with a movie made using film.\*2

\*1 Compared with the Sony F23 and SRW-1 combined

\*2 Based on Sony data; premise for calculation is as follows:

#### Movie made using film

CO<sub>2</sub> emissions from the following processes associated with a two-hour movie made using film, assuming six rolls of film per movie theater:

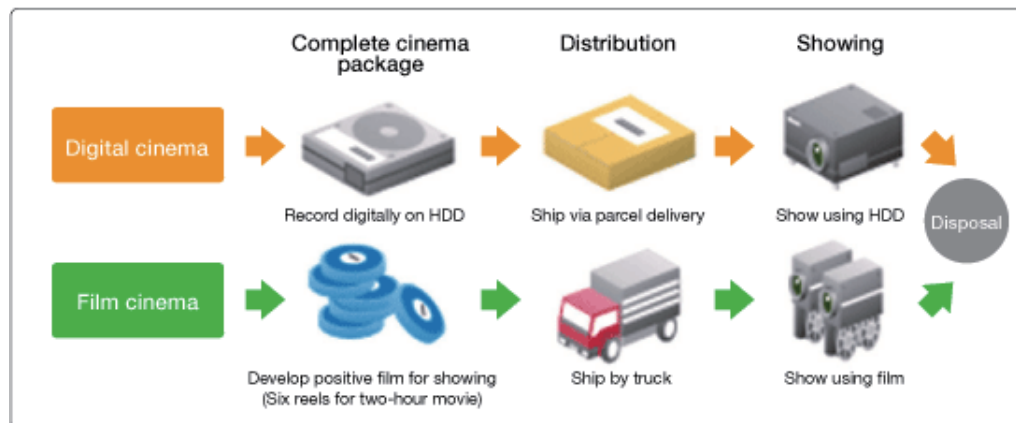
- CO<sub>2</sub> emissions during manufacture and developing of film
- CO<sub>2</sub> emissions during transport of film  
Calculated in ton-kilometers assuming round-trip between Tokyo and each movie theater in a two-ton truck: Weight x distance traveled x fuel used per ton-kilometer x coefficient of CO<sub>2</sub> emissions per unit of fuel used
- CO<sub>2</sub> emissions from projectors during showing of movie  
Power consumption by projectors during showing of two-hour film x coefficient of CO<sub>2</sub> emissions per unit of power consumed
- CO<sub>2</sub> emissions from disposal of film Calculated assuming incineration of all positive film used

#### Movie made using digital cinema

CO<sub>2</sub> emissions from the following processes associated with a two-hour movie made using film, assuming one HDD per movie theater:

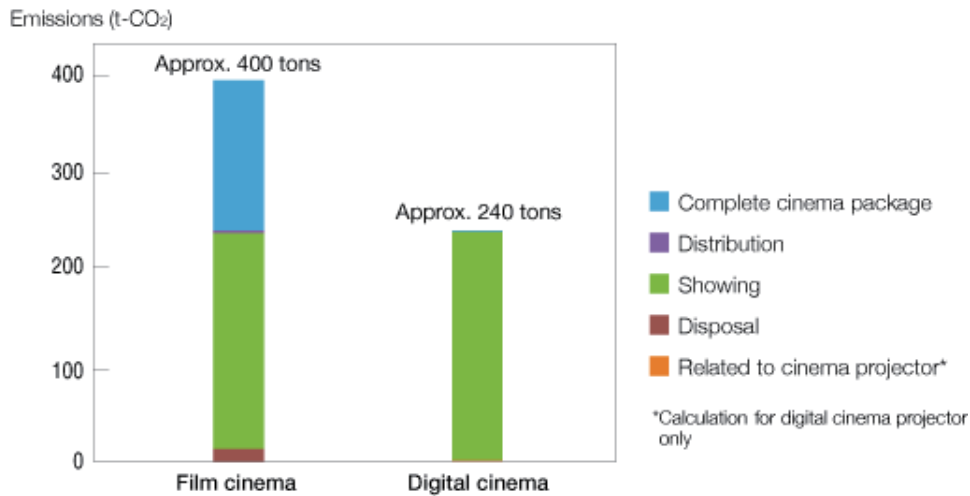
- CO<sub>2</sub> emissions during manufacture of HDDs  
Distributed proportionally assuming one HDD can be used for a total of 120 movies
- CO<sub>2</sub> emissions during transport of HDDs  
Calculated in ton-kilometers assuming round-trip between Tokyo and each movie theater in a two-ton truck: Weight x distance traveled x fuel used per ton-kilometer x coefficient of CO<sub>2</sub> emissions per unit of fuel used
- CO<sub>2</sub> emissions from projectors during showing of movie  
Power consumption by projectors during showing of two-hour film x coefficient of CO<sub>2</sub> emissions per unit of power consumed
- CO<sub>2</sub> emissions from disposal of HDDs  
Calculated assuming landfilling of HDDs
- CO<sub>2</sub> emissions over the life cycle of digital cinema projectors (except during showing of movie)

#### Comparison of life cycle of movie made using digital cinema and movie made using film



### Comparison of CO<sub>2</sub> Emissions at Each Lifecycle Stage

(From creating a complete cinema package for a 2-hour movie, to distributing, showing, and disposing at 300 theaters around Japan)



### Video Conferencing Systems

Meetings involving individuals from different locations generate significant CO<sub>2</sub> emissions -- the principal component of which is emissions from travel. The use of video conferencing systems can greatly reduce CO<sub>2</sub> emissions associated with employee business trips and other travel. For example, CO<sub>2</sub> emissions associated with a single meeting involving two employees each from five cities across Japan and held using Sony's PCS-XG80 HD video conferencing system are estimated to be approximately 1.1 tons\*3 lower than would be the case if the same two employees from each of the five cities were to travel to Tokyo to participate in the meeting in person. For a meeting held 24 times a year, therefore, the total annual reduction would amount to approximately 26 tons.

\*3 Based on Sony data; premise for calculation is as follows:

#### CO<sub>2</sub> emissions associated with meeting in which employees participate in person

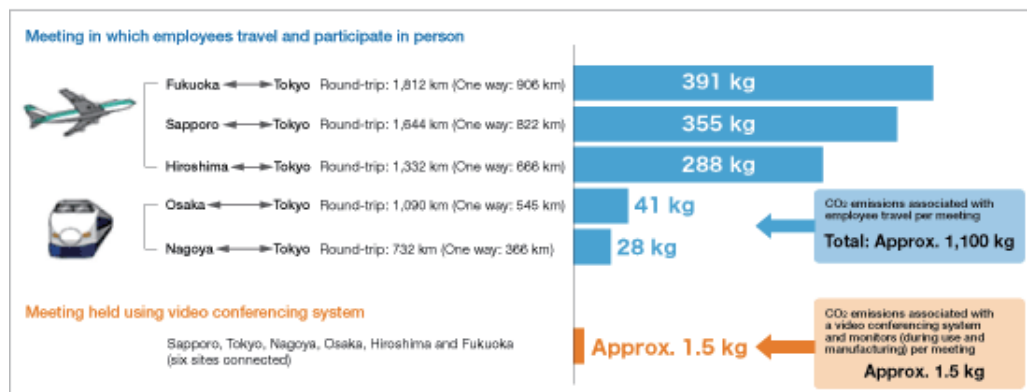
- Meeting with participation of two employees each from five cities (Fukuoka, Sapporo, Hiroshima, Osaka and Nagoya) traveling to Tokyo
- Participants traveling between Tokyo and Fukuoka, Tokyo and Sapporo, and Tokyo and Hiroshima, by air; participants traveling between Osaka and Tokyo, and Nagoya and Tokyo are by Shinkansen. Emission coefficient is taken from "CO<sub>2</sub> Emissions per Unit of Transport (Passengers) – fiscal year 2008 data" by Ministry of Land, Infrastructure, Transport and Tourism. emission coefficient for emissions for aircraft: 0.108 kg of CO<sub>2</sub>/passenger kilometer; emission coefficient for Shinkansen: 0.019 kg of CO<sub>2</sub>/passenger kilometer.

#### CO<sub>2</sub> emissions associated with meeting held using video conferencing system

- CO<sub>2</sub> emissions from meeting held associated with use of PCS-XG80 HD video conferencing system linking six locations and six displays (KDL-32EX300) for two hours plus CO<sub>2</sub> emissions during manufacture of equipment distributed proportionally over the number of times the equipment is used (assuming 24 times annually for 10 years)

Emission coefficient is taken from "The Federation of Electric Power Companies of Japan's calculation for emissions per unit of end-user electricity for actual figures in fiscal year 2008"; emission coefficient : 0.444 kg of CO<sub>2</sub>/kWh.

Comparison of CO<sub>2</sub> emissions associated with meeting that involves employee business travel to meeting held using video conferencing system



PCS-XG80 HD video conferencing system

## Environment

### Reducing Greenhouse Gas Emissions by Employee Business Trips

Sony proactively reduces greenhouse gas emissions from employee business trips.

#### Greenhouse Gas Emissions from Employee Business Trips

(Updated on August 31, 2011)

In fiscal year 2008, Sony began measuring a new category of greenhouse gas emissions generated by the Sony Group, that is, CO2 emissions from employee business trips.

In a study of business trips requiring air travel taken by employees in Japan, Europe and North America, these emissions totaled approximately 107,000 tons in fiscal year 2010.\*

Moving forward, Sony will take measures to reduce CO2 emissions on a wide-ranging scale, including expanding the use of teleconferencing, thereby reducing the need for business trips. Some sites are already advancing such measures.

In North America, Sony Electronics Inc. (SEL) of the United States issued guidelines aimed at reducing international business travel by 80% and domestic business travel by 50% in each of its departments. These guidelines encourage departments to send fewer employees on business trips and to instead using teleconferencing whenever possible.

At some sites in Japan and the United States, Sony is also promoting reductions in CO2 generated as a result of employee commutes by providing support for employees who carpool or cycle to work. For example, in the United States -- where commuting by car is popular -- Sony promotes carpooling and provides assistance for the purchase of commuter passes for public transportation.

\* Emissions are calculated for business trip data managed centrally, which account for the largest share of business trips taken by employees of Sony Corporation and Sony Group Electronics Business companies in Japan, Europe and North America. (In the case of Japan and North America, some music-related companies are included.) CO2 emissions are calculated by multiplying the distance traveled by the number of employees traveling and the emission intensity proposed by the GHG Protocol.

## Environment

### Resource Conservation

To ensure the efficient use of limited resources, Sony is working to minimize waste generation and to make use of recycled resources.

#### Policy on Resources Conservation

(Updated on August 31, 2011)

To promote the efficient use of resources in its businesses and in the product lifecycle, Sony aims at minimizing its resource input and maximizing the use of recycled resources.

To this end, Sony is promoting reduction of waste generation and recycling at sites. Sony is also advancing the recycling of resources by introducing recycling-conscious design, establishing routes for the collection of end-of-life products and conducting R&D in the area of recycling technologies.

## Environment

### Resources Conservation at Sites

- Waste from Sites > page 164
- Waste Reduction > page 165
- Reducing Use of Paper at Sony Sites and Offices > page 169
- Water Consumption by Sites > page 170
- Reduction of Water at Sites > page 170



## Environment

### Waste from Sites

(Updated on August 31, 2011)

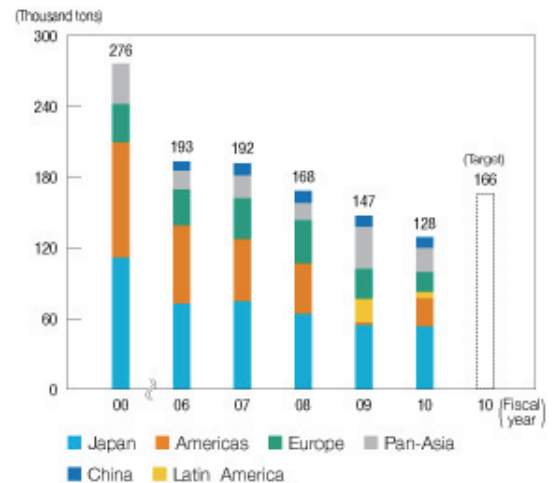
Sony implemented a variety of measures to reduce waste and use materials more effectively in line with its targets to achieve an absolute reduction in waste from Sony sites of 40% or more from the fiscal year 2000 level and achieve a reuse/recycle rate of 99% or higher for manufacturing sites in Japan and 95% or higher for manufacturing sites outside Japan by fiscal year 2010.

In fiscal year 2010, waste from Sony sites totaled approximately 128,000 tons. This means 19,000 tons down from fiscal year 2009 and 54% less from fiscal year 2000, and Sony reached the aforementioned mid-term target. This decline was largely attributable to a reduction in the volume of packaging materials used when shipping parts -- a major component of waste generated by production sites -- and the promotion of reuse and recycling within

the Sony Group, as well as to production adjustments and the closure and consolidation of sites, both consequences of the global economic downturn. Sony's waste reuse/recycle rate in fiscal year 2010 was 99.6% for manufacturing sites in Japan and 87.1% for manufacturing sites outside Japan. While Sony achieved its mid-term target for its waste reuse/recycle rate for manufacturing sites in Japan, it fell short of its target for manufacturing sites overseas. Sony attributes this result to the fact that while the reuse/recycle of industrial waste at its overseas manufacturing sites is high, the reuse/recycle rate for daily waste remains low. Going forward, Sony will provide meticulous guidance to these sites in an effort to boost the reuse/recycle rate.

Sony takes precautions to ensure waste from its sites is not inappropriately disposed of. For example, in Japan Sony has set consistent internal standards for selecting waste disposal firms and inspecting disposal sites on an ongoing basis. It has also established an internal system of accreditation for disposal site inspectors, and is stepping up efforts to minimize risks associated with contracting out waste disposal. In fiscal year 2010, Sony further reinforced this system by implementing periodic on-site inspections, thereby tightening waste management procedures, and selecting firms exhibiting superiority as determined using check sheets.

Waste from Sites



## Environment

### Waste Reduction

(Updated on August 31, 2011)

The Sony Group is implementing a wide range of waste reduction measures at its sites worldwide.

### Global Initiatives

(Updated on August 31, 2011)

Sony is promoting efforts worldwide to reuse waste from its sites in Sony products, as well as in packaging materials for Sony products. Of particular note, Sony is actively promoting the recycling of cardboard cartons, which account for the largest share of the waste it generates. In fiscal year 2010, Sony recycled a total of 13,000 tons of cardboard cartons, equivalent to 40% of the total volume of cardboard waste generated by the Sony Group that year.

In Malaysia, for example, Sony EMCS (Malaysia) Sdn. Bhd.'s Kuala Lumpur TEC worked with packaging manufacturers to recycle cardboard waste generated during production for use as pulp molding and in cardboard cartons for packaging new BRAVIA™ LCD televisions. At present, 3,600 tons of cardboard waste annually is thus recycled and used in new packaging for BRAVIA™ LCD televisions at the site. Around 720 tons of cardboard waste generated by the site annually is similarly recycled into pulp, which is used to make cushioning materials for DVD players and Blu-ray Disc™ players.

### Japan

(Updated on August 31, 2011)

Sony actively recycles precious metals and plastics contained in discarded substrates and other waste from its sites as raw materials for Sony products.

In fiscal year 2010, 28 kg of gold was extracted and recycled for use as bonding wire for semiconductors, 12 kg of silver was used as solder in certain professional-use products and 2,400 kg of copper as a coating material for substrates, thereby contributing to a reduction in the use of virgin materials.

Waste polycarbonate resin from the optical film production line of Sony Chemical & Information Device Corporation's Tagajo plant is transported to the Toyosato site of the company's Tome Plant, where it is pulverized and processed back into a raw material state for use in Sony televisions, digital still cameras and professional-use Blu-ray Disc™ cases. In fiscal year 2010, this initiative facilitated the reuse and recycling of approximately 670 tons of polycarbonate resin.

Sony EMCS Corporation KISARAZU TEC is working to reduce costs and eliminate waste associated with Blu-ray Disc™ recorders, its principal product. The bulk of waste generated by the site is packaging materials used for components. Recognizing that because many of the components used in Blu-ray Disc™ recorders are imported, switching to ordinary reusable shipping containers would be difficult, various departments within Sony EMCS got together to address this challenge. As a result, the company took steps to revamp its standards for acceptance of components, including shifting to

materials that enhance the efficiency of logistics and appealing to parts suppliers to adopt simplified packaging. In collaboration with Sony Supply Chain Solutions, Inc., the company in charge of Sony Group logistics, the site began using returnable containers. Because returnable containers are folded up before being returned to their point of origin, the cost for shipping is only about 1/10 that for regular containers. Moreover, returnable containers are reusable, thus eliminating waste.

As a consequence, the volume of waste from Sony EMCS Corporation KISARAZU TEC in fiscal year 2010 was down approximately 60% from fiscal year 2009, while the types of waste generated were halved. Costs for packaging materials were reduced by around 40%, logistics costs by 20% and waste processing costs by 24%. Additionally, waste receptacles were no longer necessary on production lines and were thus eliminated.

## China

Sony's sites in China are actively promoting the reuse of component packaging and trays. Sites are also advancing the use of reusable shipping containers. By switching from conventional cardboard shipping containers to plastic containers that have a usable life of 12 months, Sony Chemicals (Suzhou) Co., Ltd., achieved an annual reduction in the volume of waste generated of 10 tons per product model. A switch from stretch film to flexible bands to secure cargo reduced the volume of waste stretch film generated by sites in China.

Sony Electronics (Wuxi) Co., Ltd., succeeded in recycling waste from solvent recovery equipment into usable materials. Waste from solvent recovery equipment accounts for 50% of waste generated by the company, which has to date contracted out disposal by incineration. By dividing such waste into high-concentration waste liquid, which has significant recycle value, and low-concentration waste liquid, the recycle value of which is minimal, on site prior to recovery, Sony Electronics (Wuxi) is now able to recycle waste from solvent recovery equipment into 500 tons of usable high-concentration waste liquid annually.

(Updated on August 31, 2011)



The use of flexible bands to secure cargo reduced the volume of waste stretch film



Sony Electronics (Wuxi)'s waste liquid recovery

## Europe

(Updated on August 31, 2011)

Sony's Digital Audio Disc Corporation (DADC) operations in Austria and the United Kingdom (UK) have begun recycling waste cardboard and plastic into new products and packaging in cooperation with local recycling firms. Waste cardboard from Sony production facilities in Anif (Austria) and Southwater (UK) is now being recycled into new cardboard packaging, which is used in the transport of Sony DVD and CD products. Additionally, in Anif Sony DADC is recycling waste polypropylene and polystyrene into new DVD and CD cases. In fiscal year 2010, both locations combined plan to reduce their cardboard and plastic waste by 1300 tons and 130 tons, respectively.



Travel cases produced from re-used promotional banners

Sony sites in Europe are also helping to conserve resources by re-using printed advertisements and promotional materials. In fiscal year 2010, Sony Italy re-used World Cup promotional banners to create 800 travel cases, which it distributed to customers. These banners were slated for disposal as waste by the advertising firm that had produced them. The cooperation between Sony Italy and the advertising firm was instrumental in the success of this effort to reduce waste and conserve resources.

## North America

(Updated on August 31, 2011)

Sony Pictures Entertainment Inc. (SPE)'s efforts to conserve natural resources include the use and reuse of various television and feature film production sets. SPE has also instituted a system whereby used sets can be rented by anyone in the industry via an online web catalogue. Currently, there are more than 15,000 such sets to choose from. In 2010, it was estimated 6,700 set pieces were reused, saving approximately 330 tons (720,000 pounds) of material and helping reduce impact on natural resources. In addition, SPE is a top supplier of goods and materials to Habitat for Humanity, a nonprofit international organization building housing in partnership with people in need. SPE has donated over a thousand tons of unused set material and props and averages a full tractor trailer of materials each week.

SPE is striving for zero waste. Since the launch of its composting program, SPE has achieved some substantial milestones. For example, the studio lot and adjacent building's solid waste diversion rate averages over 90%, meaning less than 10% is being sent to landfill. By spring of 2010, SPE completed a closed loop system with compost created from our own organic waste delivered back for landscaping. A compost employee giveaway program was launched in late 2010 resulting in the distribution of approximately 8 tons (18,000 pounds) of compost. Finally in December 2010, the company's Imageworks office buildings, also in Culver City, were added to the compost program.

Additionally, in an effort to reduce the waste of disposable water bottles, Sony Pictures Entertainment provides reusable water bottles to individuals working on its productions. The studio, which shoots productions worldwide, takes local needs into consideration. For example, during the shooting of The Karate Kid in China, the studio provided the crew with reusable thermoses of tea or water and chopsticks.

In 2010, 180 water coolers that use reverse osmosis were installed in place of the traditional five-gallon water coolers throughout the pantries on the lot resulting in an annual savings of about \$80,000 and eliminating approximately 32,000 bottles. The new coolers utilize tap water without compromising the taste and eliminated the need of a five gallon plastic bottles. (Five gallon is approximately 19,000cm<sup>3</sup>.)

Other Sony Group companies in the United States are implementing similar measures. Sony Electronics Inc.'s San Diego and San Jose offices and Sony Music Entertainment's affiliate RED Distribution are reducing waste by issuing employees with reusable drinking mugs or asking employees to bring in their own mug from home.

For Sony Electronics Headquarters alone, this action will eliminate seven tons of paper cup waste entering the landfill per year while reducing CO<sub>2</sub> emissions and resource use created during the manufacture and distribution of disposable cups.

## Thailand

(Updated on August 31, 2011)

Sony Technology (Thailand) Co., Ltd., has implemented activities to reduce waste from its canteen operations. The company's initiatives include redesigning the overall flow of canteen to allow a greater range of sizes of rice servings and to add a Thai fast food shop. Through these initiatives, the Ayutthaya Technology Center has succeeded in reducing food waste by more than 40%, despite an increase in the number of employees. In addition to these reduction efforts, the Ayutthaya Technology Center and the Chonburi Technology Center have installed biogas systems that convert food waste into methane gas, enabling both facilities to reduce the amount of food waste they generate and facilitating the use of liquid propane gas in food preparation. The Ayutthaya Technology Center installed a completely stirred-tank reactor (CSTR) system that is capable of processing up to 800 kg of food waste daily, yielding 74 kg of methane gas. The Chonburi Technology Center opted for a Dry Fermentation Machine with a maximum daily processing capacity of 800 kg, which yields 49 kg of methane gas, thereby contributing to reduction of LPG for 32 kg per day. The solid and liquid byproducts are used onsite as plant fertilizer, while the organic fertilizer from bio gas process is used for public greenery activities conducted in cooperation with Amata Nakorn Industrial Estate. Sony EMCS in Malaysia is also producing biogas in this manner at its site in Kuala Lumpur.



Sony Technology (Thailand)'s Ayutthaya Technology Center



Sony Technology (Thailand)'s Chonburi Technology Center

## Malaysia

Sony EMCS (Malaysia) Sdn. Bhd.'s Penang TEC has taken steps to reduce the amount of wood used in the speaker production process. By improving work quality, the site has reduced the number of defects during production. Wood waste, where possible, is cut into smaller pieces to be used for other parts of speakers. Also, the saw dust generated is sent out to be transformed into particle board. All of these measures have resulted in a 40% reduction of waste disposed of as landfill.

## Singapore

Sony Supply Chain Solutions Singapore uses a carton shredder that shreds cardboards into 'spongy' strips that are then used as reusable chocking materials for product packaging during transportation. This process not only reduces the use of new chocking materials, but also cuts down on the generation of carton waste from vendors' packing materials.

## Reducing Use of Paper at Sony Sites and Offices

(Updated on August 31, 2011)

To reduce the volume of paper used by its sites and offices, Sony is making concerted efforts to use both sides of printer paper, shrinking documents for copying and using dual-sided copying, as well as digitizing business forms and internal handouts. At Sony's corporate headquarters in Tokyo, for example, printer drivers with default settings for black-and-white, dual-sided printing are installed in all employee computers to reduce the volume of paper usage. The volume of paper used in fiscal year 2010 amounted to the equivalent of approximately 320 million sheets of A4-sized paper and 3% below the fiscal year 2009 level., with around 140 million of these sheets being used in Japan , a reduction of 6% from fiscal year 2009.

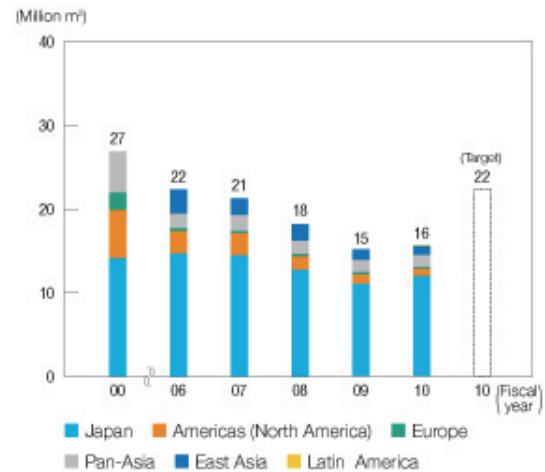
## Environment

### Water Consumption by Sites

(Updated on August 31, 2011)

Sony took steps to reduce water used by its sites in line with its target of achieving an absolute reduction of 20% or more in volume of water purchased or drawn from groundwater for manufacturing purposes at sites from the fiscal year 2000 level by fiscal year 2010. Measures included recycling of discharged water. In fiscal year 2010, Sony sites used approximately 15.7 million m<sup>3</sup> of water, up 520,000 m<sup>3</sup> from fiscal year 2009, but a decrease of 41% compared with the fiscal year 2000 level. Accordingly, Sony met its mid-term target for water consumption by sites.

Water Consumption by Sites



### Reduction of Water at Sites

#### China

(Updated on August 31, 2011)

In 2010, Sony Digital Products (Wuxi) Co., Ltd., installed a system for recycling industrial water from its site. General industrial water and industrial water containing metals, nickel and phosphoric acid are pretreated and then treated using high-pressure reverse osmosis membrane and hydrophobic adsorbent resin filtration, enabling them to be used in manufacturing processes requiring pure water. Sony Digital Products (Wuxi) currently recycles 71% of the wastewater from its facility and expects to boost this to a maximum of 93% in the future. This recycling system for industrial effluents has enabled Sony Digital Products (Wuxi) to reduce its annual water consumption by 19,000 m<sup>3</sup>, as well as to significantly lower the volume of wastewater and waste effluents it generates.



Sony Digital Products (Wuxi)'s system for recycling industrial water

In 2008, Sony Electronics (Wuxi) Co., Ltd., introduced a system for recycling sewage effluents into water for use in toilets. The site has further reduced the volume of water it requires by using rainwater as makeup water in its cooling towers.

Sony is also taking steps to promote the recycling of water in southern China. By using water recycled from sewer effluents in its toilets, Sony Precision Devices (Huizhou) Co., Ltd., has succeeded in reducing its annual water consumption by 23,000 m<sup>3</sup>.



## Japan

(Updated on August 31, 2011)

In the past, Sony Semiconductor Kyushu Corporation Kumamoto Technology Center (Kumamoto TEC) simply discharged the wastewater it produced into the sewer. However, by measuring the quality of water to be released through different discharge routes, Kumamoto TEC is now able to identify and recover water that is of a high enough quality to reuse, thereby increasing its water recovery rate. Kumamoto TEC also puts water not of a high enough quality to be recovered as is through a wastewater neutralization process, thereby also facilitating its recovery and reuse. Kumamoto TEC also uses specialized filtration equipment to remove impurities from well water and industrial water, thereby making it usable in production processes requiring pure water. Because a quick recovery to peak filtration capacity is essential after water has been run through it for a specified period, Kumamoto TEC assessed filter clogging and made operational improvements that enabled it to reduce filtration frequency, a step that reduced the center's annual water consumption in fiscal year 2010 by 160,000 m<sup>3</sup> and its annual discharge of wastewater to the sewer by 220,000 m<sup>3</sup>.

As part of its effort to conserve water, Kumamoto TEC works with local residents, an environmental NGO, agricultural organizations and agricultural cooperatives to promote groundwater recharge using nearby rice paddies.

• [Click here for details on Ground Water Recharge.](#) > page 200

## North America

(Updated on August 31, 2011)

At Sony Pictures Entertainment (SPE) in the United States, a pilot project to install waterless urinals at the company's offices and production studios was successfully completed in 2008. To date SPE has saved a total of approximately 240,000 m<sup>3</sup> of water by using lower flow faucets and toilets, waterless urinals, and drought resistant plants. SPE continues to find ways to contribute in its own small way to efforts to ease the severe water shortages that frequently plague California, and plans further installations where possible.

At its new head office, Sony Electronics Inc. in San Diego has installed water-saving toilets and dishwashers; reuses wastewater from air-conditioning systems in fountains; and has planted greenery to counter drought.



## Environment

### Conservation of Resources Used in Products and Services

- Use of Resources in Products > page 173
- Using Recycled Plastics in Products > page 174
- Developing and Utilizing Vegetable-based Plastics > page 177
- Promoting Environmentally Conscious Packaging > page 179
- Reduction of Packaging Materials in Logistics > page 180
- Resource Conservation of Disc Packaging > page 181

## Environment

### Use of Resources in Products

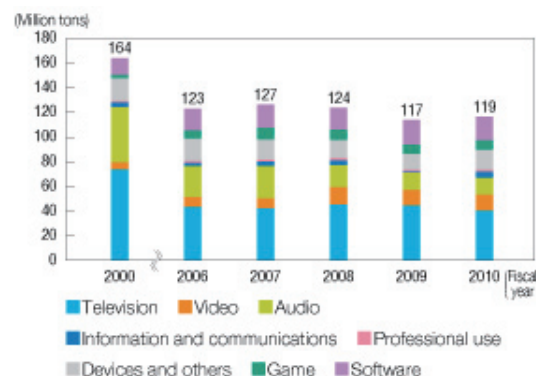
(Updated on August 31, 2011)

For products sold in fiscal year 2010, Sony used 1.19 million tons of resources, up approximately 2% from fiscal year 2009, and approximately 100,000 tons of reused/recycled materials, on a par with fiscal year 2009.\*1 Despite an increase in resources used in certain products, including televisions, owing to an increase in sales volume, the total volume of resources used by the Sony Group remained on a par with fiscal year 2009, reflecting a dip in production and sales volume for audio, video and other products.

Under Green Management 2010, Sony targeted an increase in its reused/recycled materials utilization rate\*2 to 12% or higher.

Accordingly, Sony promoted the use of both reused/recycled materials and the reduction of product weight. In fiscal year 2010, Sony achieved a reused/recycled materials utilization rate of approximately 8% by increasing the amount of recycled materials used in a broad range of product categories, including televisions, audio units, camcorders, game consoles and PCs. The bulk of reused/recycled materials comes from cardboard boxes. Owing to efforts to minimize packaging, the volume of cardboard boxes for reuse/recycling declined. As a consequence, the volume of reused/recycled materials decreased, pushing down the reuse/recycle rate. Sony continues to increase the use of reused/recycled materials.

Total Volume of Resources Used in Products



\*1 Total volume of resources used: Total weight of resources used in products, accessories, instruction manuals and packaging. The weight of total products shipped is substituted for this value.

\*2 Reused/recycled materials utilization rate: Reused/recycled materials used as a percentage of total materials used.

## Environment

### Using Recycled Plastics in Products

(Updated on August 31, 2011)

Sony aims to minimize consumption of the earth's exhaustible resources by making concerted efforts to use recycled plastics in its products. The Sony Group currently uses more than 24,000 tons of recycled plastics annually in various products\*1, including televisions, recording media, audio products, PCs and digital video cameras. Approximately 2% of the total volume comes from the production processes at manufacturing sites, while approximately 98% is from used products, containers, etc. To further increase the use of such plastics, Sony continues to promote the introduction of recycled plastics in products, as well as to pursue active technological development efforts. In the environmental mid-term targets "Green Management 2015" which came into force since April 2011, we implement measures to achieve the following target: "Reduce utilization ratio of virgin oil-based plastics in products by 5% from the fiscal 2008 level." This is equivalent to saying "Increase the utilization ratio of recycled plastics in products by 5% from the fiscal 2008 level." (Note that in order to reduce the volume of virgin plastics used, there are possibilities that materials such as metals that are not recycled plastics may be used.)

\*1 Gross value including virgin plastics and additives that are mixed with recycled plastics.

### Development and Use of SoRPlas (Sony Recycled Plastic)

(Updated on August 31, 2011)

To date, Sony has actively pursued the effective reuse of waste plastic generated within and outside the Sony Group as recycled polycarbonate.

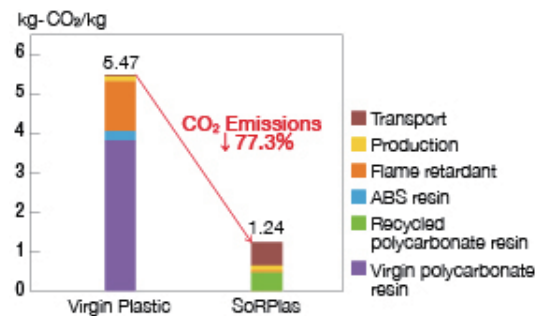
In February 2011, Sony developed SoRPlas\*2, which uses more than 99% recycled materials, giving it the highest recycled materials rate in the world\*3. SoRPlas also has fire-retardant properties. SoRPlas is a blend of waste optical sheets generated during the production process by Sony Group manufacturing facilities, and recycled polycarbonate resin derived from waste DVDs generated by optical disc factories--within and outside the Sony Group--during the manufacturing process. Sony also adds a sulfur-based flame retardant developed at its own laboratories. As a flame-resistant polycarbonate resin (comprising new and recycled materials), SoRPlas realizes world-leading levels of heat resistance and durability. By utilizing SoRPlas in the bezel (screen rim) components of three BRAVIA™ LCD television models launched in 2011 (KDL-40EX52H, KDL-32EX42H/B and KDL-22EX42H/B), Sony expects to reduce CO2 emissions during the plastic manufacturing process (including shipment) by approximately 80% compared with conventional products.

The sulfur-based flame retardant developed in-house by Sony provides increased flame-inhibiting properties compared with conventional phosphorus-based flame retardant. Consequently, SoRPlas realizes a high level of flame resistance despite its extremely low flame retardant content of less than 1% (conventionally, the flame retardant ratio is less than 10%). By reducing the additive ratio to such a low level, Sony was able to prevent impairment of the plastic's unique characteristics. This enabled SoRPlas to be used for the television screen bezel components, which require vivid color and luster. Furthermore, SoRPlas achieves durability and heat resistance equaling or surpassing plastic made from non-recycled materials\*4.



From left: Waste optical sheet, waste DVD, sulfur-based flame retardant developed by Sony and BRAVIA™ LCD TVs with SoRPlas bezels

Comparison of CO<sub>2</sub> Emissions from SoRPlas and Virgin Plastic



Emissions from recycled raw materials are not included in emissions related to new resources. Accordingly, only emissions from processing and transport are calculated.



Recycling of Polycarbonate

\*2 "SoRPlas" is a registered trademark in Japan of Sony Corporation.

\*3 As of February 8, 2011, according to research conducted by Sony. Conventionally, recycled plastics with fire-retardant properties used in electronics devices have a recycled materials rate of 60% or less.

\*4 Virgin plastic made from polycarbonate/ABS resins using a phosphorus-based flame retardant.

• For more information, see Environmental Technology>Technologies for ensuring the effective use of waste optical discs. > page 212

## Introducing Post-Consumer Recycled Plastics

(Updated on August 31, 2011)

Sony actively introduces post-consumer recycled plastics into our products. For example, LCD TV BRAVIA™ KLV-32BX320 utilizes polystyrene foam collected from the market for parts such as its rear cover. The ratio of post-consumer recycled plastics used for this product is approximately 30% \*5.

\*5 Ratio of post-consumer recycled plastics (net weight) in the total plastics used in the product excluding packaging and accessories.

## Using Plastics Recycled Internally

(Updated on August 31, 2011)

For the past decade, Sony has promoted eco-conscious product designs with a view toward recycling. This approach has enabled to remove contaminants from scrap recovered from cathode ray tube (CRT) televisions, facilitating the recycling of plastic components. Sony has also developed a technology that makes it possible to recycle polystyrene foam waste from component packaging into polystyrene materials with improved impact- and flame-resistance by using a proprietary additive.

Sony is able to use general polystyrene foam waste from food trays in its products through a process that imparts impact-resistant and flame-retardant properties.

## Environment

### Developing and Utilizing Vegetable-based Plastics

(Updated on August 31, 2011)

Vegetable-based plastics are derived from biomass, i.e., plant matter-based resources, and are therefore superior to conventional plastics because they:

- reduce petroleum consumption
- contribute to the reduction of greenhouse gas emissions\*1



Body cap of the α 900 DSLR camera

Sony continues to promote ambitious efforts to develop and utilize vegetable-based plastics, taking care in its selection of biomass to avoid edible vegetation. Sony led the industry with its adoption in 2000 of vegetable-based plastics as packaging materials. Applications to date include unit bodies, including components, for WALKMAN® music players, DVD players, XEL-1 organic light-emitting diode (OLED) televisions\*2 and other products.

Since fiscal year 2007, Sony has used a castor oil-based plastic for the body caps of its α("alpha") series of digital single-lens reflex (DSLR) cameras. More than simply vegetable-based, this plastic offers superb resistance to abrasion, thereby enhancing cap performance.

Sony is also advancing vegetable-based plastics for applications other than electronics products. For the surface of its original "Join the Team!" soccer ball, developed with the aim of helping children in Africa enjoy soccer for years to come, Sony selected a vegetable-based plastic material that both reduces the ball's negative impact on the environment and imparts exceptional durability\*3.

- Click here for details Dream Goal 2010.

<http://www.sony.net/SonyInfo/csr/ForTheNextGeneration/contentslist/dreamgoal2010/originalball/03.html>

Sony's health insurance union has also produced 150,000 membership cards using vegetable-based plastics.

In another initiative, student and staff at Shohoku College in Japan have adopted contactless IC identification cards made from vegetable-based plastics. This represents the first-ever use of vegetable-based plastics in a FeliCa-based contactless IC student identification card.

Sony is currently promoting the development of technologies to facilitate the use of vegetable-based plastics in credit cards and has succeeded in resolving technical challenges related to embossing and the mounting of IC chips, among others.

In June 2010, vegetable-based plastics were adopted for use in credit cards issued by Sony Bank Inc. that allow settlement in two different currencies.\*4 These are the first FeliCa-based credit cards in the world made with vegetable-based plastics.

In addition to using vegetable-based plastics, Sony is engaged in the development of proprietary production technologies. For example, Sony has developed a technology for adding cotton fibers to polylactic acid (PLA), a type of vegetable-based plastics, thereby



Shohoku College student ID card (FeliCa-based technology contactless IC card)

imparting a sufficient level of thermal resistance to facilitate use in electronics equipment.\*5  
This technology facilitates the production of vegetable-based plastics with excellent thermal resistance and durability.



Credit card for customers of Sony Bank Inc. (FeliCa-based contactless IC card, issued in Japan; ratio of vegetable-based plastic used is indicated on the backside of the card)

- \*1 The use of vegetable-based plastics ensures much lower CO2 emissions over a product's life cycle -- i.e., from the production of raw materials to the disposal of the finished product -- because the plant matter from which the raw materials are derived absorbs CO2 through photosynthesis during cultivation.
- \*2 Reference: Website for XEL-1 (Sony UK)
- \*3 Based on tests conducted by Sony
- \*4 Reference: Website for Sony Bank's credit card made with vegetable-based plastic (in Japanese only)
- \*5 A related paper, titled "Vegetable-based plastics for electronic casing – Improvement of heat resistance by the addition of fiber" was presented at the Japan Society of Polymer Processing's 17th autumn symposium.

- Click here for related details on Sony's vegetable-based plastics.  
[http://www.sony.net/SonyInfo/csr/SonyEnvironment/products/resource/vegetable\\_based\\_plastics.html](http://www.sony.net/SonyInfo/csr/SonyEnvironment/products/resource/vegetable_based_plastics.html)

## Environment

### Promoting Environmentally Conscious Packaging

(Updated on August 31, 2011)

By making the size of product packages smaller, Sony can increase the number of products it can load per container, thereby enhancing transport efficiency. Sony sees such efforts as not only reducing the volume of packaging materials it uses, but also helping to reduce the environmental impact of logistics. Focusing on televisions and other large items, Sony is reconsidering the layout of main unit and its accessories in the packaging, with package design and product design teams working as one to promote decisive improvements in transport efficiency.

- For more information on Sony's efforts to reduce the environmental impact of logistics through improvement of package design, see > page 237

Further, Sony is minimizing its use of petroleum-based materials, such as polystyrene, in packaging, opting instead to use recycled plastic materials and paper materials for which well-established recycling systems exist.

In fiscal year 2010, Sony used a total of 124,000 tons of packaging materials worldwide. This total includes all packaging materials used for products worldwide at time of shipment.



Amending the positioning of products and accessories in cartons has enabled Sony to use smaller cartons, resulting in a reduction of approximately 21% in materials used and a 33% increase in logistics efficiency.

Left: 2009 model (left); right: 2010 model



Modifying the shape of cartons and cushioning materials used has contributed to efforts to reduce the size of cartons, boosting logistics efficiency 63%.

Left: 2011 model (left); right: 2010 model





Modifications facilitated a 70% reduction in the amount of plastic used in Bluetooth laser mouse packaging.

Left: Previous packaging

Right: Modified packaging

## Reduction of Packaging Materials in Logistics

(Updated on August 31, 2011)

Sony strives to reduce the amount of resources such as packaging materials used in logistics through improvement of packaging technology.

### Links to Related Items:

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- Logistics > Reducing the Environmental Impact of Logistics through Improvement of Package Design > page 237

## Environment

### Resource Conservation of Disc Packaging

(Updated on August 31, 2011)

Sony is implementing measures to reduce the packaging used for disc-based products, including music and movies.

#### North America

In collaboration with Sony DADC and key vendor partners, Sony Pictures Home Entertainment (SPHE) pursued initiatives in all areas of the supply chain that help to support its goals of reducing greenhouse gas emissions (GHG) and minimizing the impact on the environment.

Key projects contributing to continued supply chain success include additional roll out of light weight cases across DVD and BD formats, the implementation of the multi-disc stacking hub cases and other packaging optimization efforts, water and electricity usage reductions, transportation optimization and continued vendor engagement. Material consumption reductions in FY2010 include: 123 tons (270,300 lbs) of paper, 319 tons (703,200 lbs) of board and 1,028 tons (2,267,000 lbs) of plastic. The light weight DVD packaging uses approximately 20% less plastic than a standard-weight single-disc DVD case and 32% less plastic than a standard-weight two-disc DVD case. The new light weight BD packaging uses 20% less plastic in both the single and double disc case. The multi-disc stacking hub reduces polypropylene, board, and paper consumption significantly.



New light weight DVD packaging

Sony Pictures Home Entertainment and Sony DADC jointly completed the first global supply chain carbon footprint study for both single disc DVD and single disc BD. The study includes data from operating territories in all regions of the world and utilizes the PAS 2050 measurement protocol. Additionally, the data was collected in a manner that would allow maximum flexibility as calculation methodologies evolve. The results of the study are currently being reviewed.

Since 2008, Sony Music Entertainment Inc. (SME) has issued new and catalog releases in plastic-free environmentally conscious CD packages, many of which use recycled materials. In the United States, titles continue to be released in eco-conscious paperboard based packages, including (but not limited to): DBS Disc box slider packs and softpacks. Legacy's Essential 3.0 series is available in an eco-conscious digi-pack for the environmentally- and budget-conscious consumer.

## Environment

### Europe

In fiscal year 2008, Sony DADC in Austria developed its proprietary Bend-it Green disc packaging, which is made of 100% recycled cardboard or FSC/PEFC-certified material and uses a variety of environmentally sustainable inks, glues and varnishes. Carbon emissions generated in the production of Bend-it Green are between 26% and 40%\*1 less than those generated in the production of other types of disc packaging, depending on what it is replacing, e.g., polypropylene (used for DVD packaging) or polystyrene (used for CD packaging). Bend-it Green is also easy to recycle, as there is no need to separate components. The brand name describes the unconventional bend-out disc holder, which makes handling very easy.



Bend-it Green

Because it reduces the environmental impact of albums so effectively, Bend-it Green has been recognized by Julie's Bicycle, a UK-based music industry-led NPO set up to recognize commitment to reducing green house gas emissions and promote environmental sustainability. Sony Music's BRIT Awards Album 2009, which was packaged in Bend-it Green, was the first of its kind to receive the Industry Green Standard for CD packaging, branded as the Music Industry Green Mark.

In addition to Sony Music's CDs, Bend-it Green is helping to reduce the carbon footprint of other copyrighted products in the music, movie and marketing industries.

\*1 Calculation based on Sony DADC data (measured using PAS-2050)

### Japan

Sony Pictures Entertainment (Japan) Inc. (SPEJ) was the first company in the DVD industry in Japan to use environmentally conscious rental DVD cases as part of its ongoing effort to respond to environmental issues. SPEJ delivers DVDs to rental stores in protective cases "Secolo™", made from paper, an innovative cardboard-based packaging developed in-house, instead of conventional plastic cases. The switch to Secolo™ enabled SPEJ not only to cut back on the amount of plastic it uses annually by approximately 21 tons, but also to reduce cubature by about one-fifth and total weight by about 60%, yielding a commensurate reduction in CO2 emissions during transportation. By extending the use of Secolo™ to DVDs for retail sale, in 2010 SPEJ further reduced the amount of plastic it used by four tons from the 2009 level. To commemorate the International Year of Biodiversity in 2010, SPEJ released a special series of DVDs featuring the biologies of a diverse range of species. When designing the packaging for the series, SPEJ addressed the challenge of reducing greenhouse gas emissions from printing and disc production--seen as difficult to accomplish directly--through carbon offsetting\*2, achieved through the use of green energy.

In 2010, SPEJ became the first company in the movie industry to participate in the Eco Products Exhibition, where it introduced visitors to its environmental initiatives both in Japan and overseas.



Carbon offset product for BBC EARTH  
"LIFE".



Cardboard-based packaging Secolo™

\*2 Using a measured reduction in emissions of greenhouse gases to mitigate equivalent emissions made elsewhere. For corporate entities, carbon offsets can be achieved through, for example, participation in afforestation initiatives or in Clean Development Mechanism (CDM) emissions reduction projects.

## Environment

### Management of Chemical Substances

In line with its Road to Zero global environmental plan, Sony is taking decisive steps to maintain strict control over chemical substances. In products, Sony specifies applications for which alternatives to high-risk substances can be used and strives to eliminate such substances wherever possible, thereby reducing potential impact on the environment. Sony has also set the standards for managing high-risk substances at its sites and is working to reduce and eventually eliminate these substances.

### Policy on Management of Chemical Substances

(Updated on August 31, 2011)

In conformance with its medium-term targets, Sony maintains stringent control over the chemical substances it uses. This enables Sony to minimize the risk of chemical substances it uses causing serious harm to human health and the environment.

Sony gathers information on restrictions in different countries and on environmental impact from Sony Group companies around the world, as well as from industry associations and specialized agencies in Japan, the United States and Europe, among others. Group technical committees then investigate relevance to Sony electric and electronics products, specific applications and instances of actual use.

Based on information thus obtained, as well as on risk assessment information from specialized programs such as the United States Environmental Protection Agency's Design for the Environment partnership program\*1, Sony classifies individual chemical substances as either to be eliminated or to be controlled. Sony also monitors information on controlled chemical substances used in parts and finished products, eliminating use in specific applications that assessments have identified as high-risk. Considering the interests of its various stakeholders, Sony adopts a precautionary approach and takes steps to eliminate the use of substances considered to be high-risk, even in cases where scientific evidence is insufficient, thereby reducing potential impact on the environment.

Similarly, regarding chemical substances used at Sony manufacturing and nonmanufacturing sites, Sony specifies the types of substances and applications and has designated standards for managing individual substances assessed to be high-risk, classifying them as "prohibit use," "eliminate use by a specified date" or "reduce amounts released and transferred."

- Click here for details on United States Environmental Protection Agency's Design for the Environment partnership program  
<http://www.epa.gov/dfepubs/projects/index.htm>

## Environment

### Management of Chemical Substances at Sites

- Chemical Substances Used by Sites > page 186
- Environmental Risk Management at Sony Sites > page 188
- Response to Soil and Groundwater Contamination > page 189

## Environment

### Chemical Substances Used by Sites

(Updated on August 31th, 2011)

The Sony Group has developed a group-wide common approach to the management of chemicals used at sites where the use of these chemicals is controlled by legislation; designated as having a potentially harmful impact on the environment; or used in large quantities.

In line with Green Management 2010, which outlines Sony's targets for chemical substances requiring management, such substances are divided into four classes. Sony has implemented measures aimed at managing not only the amounts of these chemicals used, but also the amounts transferred and released into the air, water and soil as emissions or waste.

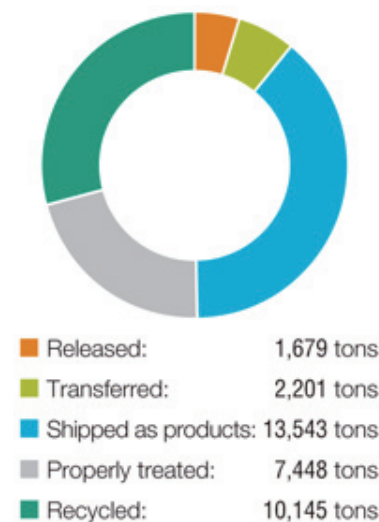
In countries where no legal reporting systems exist for chemical management, Sony sites apply internal standards based on Japan's Pollutant Release and Transfer Register (PRTR).

Class 1 chemical substances are those whose use is prohibited. Among Class 1 substances, in fiscal year 2010 Sony used 321 kilograms of mercury as an additive in button batteries and 15 kilograms of lead solder, which is used in certain exceptional cases, including automotive applications.

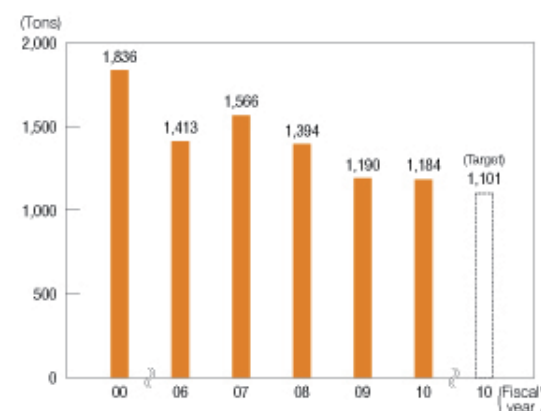
Class 2 chemical substances are those that are to be phased out. Sony previously used perfluorooctane sulfonate (PFOS) in semiconductor fabrication, but ceased using the substance in March 2010.

Class 3 chemical substances are volatile organic compounds (VOCs) and greenhouse gases. The Sony Group's target for the release of VOCs into the atmosphere was to achieve a reduction of 40% or more from the fiscal year 2000 level by fiscal year 2010. In fiscal year 2010, Sony released approximately 1,184 tons of Class 3 chemical substances into the atmosphere. This was a decrease of 6 tons from in fiscal year 2009 and 35% lower than in fiscal year 2000, which means that the target has not been achieved. Main VOCs include solvents used in semiconductor production. While semiconductor production increases to respond demand, there are some solvents that are difficult to substitute even in the industry-wide efforts. Moreover, emitted VOC gases are so low in concentration that there are no appropriate processing measures that are technically and economically viable. Going forward, Sony will continue taking steps to reduce its released amounts of VOCs, including installing treatment system.

Volume of Class 1, 2 and 3  
Chemicals Used  
(Fiscal Year 2010)



Release of VOCs into the Air



## Reduction of Chemical Substance Emission at Sony Sites

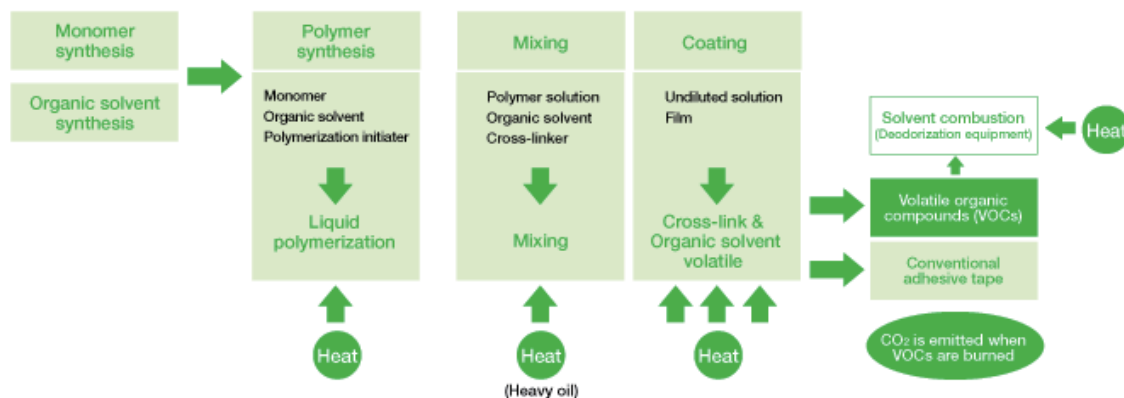
(Updated on August 31th, 2011)

### Japan

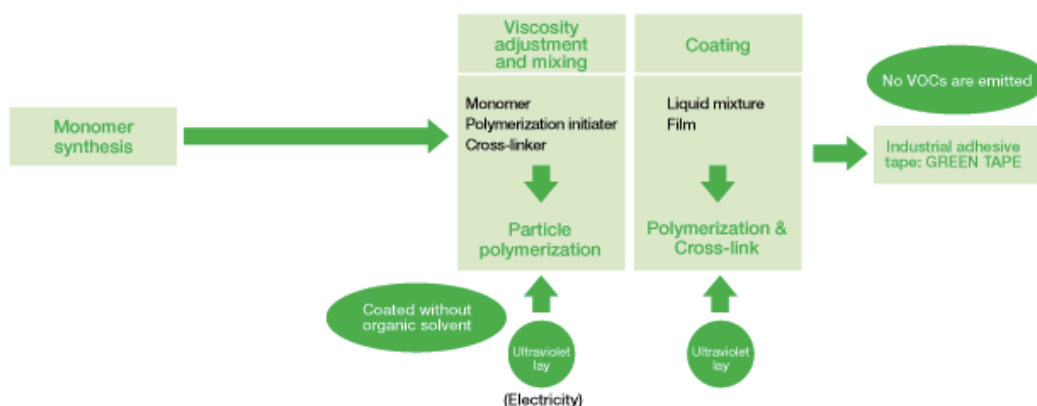
Sony Chemical & Information Device Corporation's Kanuma Plant reduced the volume of organic solvents it uses in the production of industrial adhesive tapes by amending a key production process. Previously, the site employed a process that used ethyl acetate in the synthesization of polymer, an adhesive, and as a solvent in the application of the adhesive to the substrate. However, with this process, organic solvents were discharged into the atmosphere during the drying period, producing organic solvent vapor. To resolve this issue, the site developed a new adhesive layer that employs UV curing, which it succeeded in employing in mass production in 1997. As a consequence, the total annual volume of organic solvents used by the site declined 2,300 tons compared with the volume used with the former process. This shift also reduced the amount of electricity used annually by the site to approximately 1/13 of the volume previously used, significantly lowering CO<sub>2</sub> emissions.

Adhesive tapes manufactured using the new process were first commercialized in 1997. Since then, Sony has gradually switched over completely to this process. In fiscal year 2009, the Kanuma Plant received the Minister of Economy, Trade and Industry Award, the top prize given in the Resource Recycling Technology and System Awards, sponsored by the Clean Japan Center, in recognition of this long-term undertaking.

#### Conventional manufacturing process



#### Manufacturing process using ultraviolet polymerization method



Abolishment of the use of organic solvent in the industrial adhesive tape production process through ultraviolet polymerization



## Ozone-Depleting Substances

(Updated on August 31th, 2011)

Sony succeeded in completely eliminating first-generation chlorofluorocarbons (CFCs) from its manufacturing processes in 1993 and banned the use of second-generation hydrochlorofluorocarbons (HCFCs) at the end of fiscal year 2000. At present, Sony uses CFCs as a refrigerant in some air-conditioning units only. Strict care is taken to prevent leakage of CFCs from these units during maintenance.

### Links to Related Items:

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- Climate Change > Reducing Greenhouse Gas Emissions at Sites > Greenhouse Gas Emissions > page 141
  - Environmental Data > Emissions of Air and Water Pollutants (Worldwide) > page 320
  - Environmental Data > List of Controlled Substances at Sites > page 327
  - Environmental Data > PRTR Data for Japan
- <http://www.sony.co.jp/SonyInfo/csr/environment/data/prtr/index.html>

## Environmental Risk Management at Sony Sites

(Updated on August 31th, 2011)

To carry out effective risk management of chemical substances and emergency responses, the Sony Group enacted the Sony Group Standards for Site Environmental Risk Management, which set forth specific accident prevention policies and emergency response procedures. These include prohibiting the burial of tanks and pipes and the prevention of leaks. The Sony Group works to prevent environmental accidents through the appropriate management of chemical substances. To this end, in fiscal year 2009 Sony put together a handbook detailing examples of environmental risk management improvements as an appendix to the Sony Group Standards for Site Environmental Risk Management. Sony has established a system whereby its sites are required to promptly report environmental accidents to the authorities and to take appropriate countermeasures.

In April 2010, Sony DADC Australia Pty Ltd.'s site was found to have exceeded the maximum daily discharge limit for nickel by 32 grams, or 40%. The local bureau of waterworks issued a notice of noncompliance, but did not assess penalties given the minor nature of the breach. The site took swift steps to resolve the problem, and as a result, there has been no further breach of the limit. Since then, Sony DADC has made continuous efforts to amend its wastewater treatment processes and has maintained its daily discharge of nickel at a limit that is approximately 1/10 the maximum limit. Efforts to improve these processes are ongoing.

Certain Sony Group facilities in Japan's Tohoku and northern Kanto regions were damaged in the Great East Japan Earthquake, which struck on March 11, 2011. There were no incidents of chemical substances being discharged or leaking from any of the damaged facilities.

## Environment

### Response to Soil and Groundwater Contamination

(Updated on August 31th, 2011)

When incidents of soil or groundwater contamination are identified at Sony sites through voluntary assessments, etc., decontamination processes are implemented to conform with pertinent local laws and ordinances. For example, Sony Group companies in Japan deal with the occurrence of contamination of soil and groundwater at Group sites by taking steps in line with the Sony Group Procedure Manual for Assessing Soil and Groundwater, an internal document that sets out procedures that comply with domestic laws and ordinances. This manual stipulates that issues be addressed through the following three steps (or phases):

Phase 1: Investigate past and present chemical use and confirm the existence or otherwise of used or unused underground tanks, buried piping and other similar previous incidents at the site. Perform an inspection of the site to ascertain whether there is any residual soil or groundwater contamination.

Phase 2: Based on the investigations undertaken in Phase 1, carry out an assessment of the areas which are potentially contaminated. Undertake measurements at these locations in line with the Soil Contamination Countermeasures Act.

Phase 3: If any contamination is identified based on these results, carry out prevention and remediation procedures.

Sony continues to submit regular reports to the authorities and to implement remediation measures at three sites in Japan - the Haneda Technology Center, Sony Haneda Corporation and Sony EMCS's Inazawa TEC - where incidents of soil and groundwater contamination were previously confirmed.

#### Progress of Soil and Groundwater Remediation

Site	Date Contamination Confirmed	Substance(s) Detected	Cause	Response/Current Status
Sony Corporation Haneda Technology Center (Japan)	March 2006 (Result of assessment conducted in line with Tokyo bylaws)	Fluorine Lead		Petition filed in line with Japan's Soil Contamination Countermeasures Act
Sony Haneda Corporation (Japan)	September 2004 (Result of assessment conducted in line with Tokyo bylaws)	Fluorine Boron Lead Trichloroethylene Cis-1,2-dichloroethylene	Leak in area where substances had previously been used	Pumping of groundwater from July 2005 revealed concentrations of cis-1,2-dichloroethylene of 0.16 mg/l (four times the maximum limit) and boron of 1.3 mg/l (1.3 times the maximum limit)  • Petition filed in line with Japan's Soil Contamination Countermeasures Act

Sony EMCS Corporation Inazawa TEC (Japan)	June 2001 (Result of voluntary assessment)	Fluorine	Leak from crack in drainage pipe	Drainage pipes equipped with sensors to detect leaks installed Decontamination and monitoring continue Degree of contamination has been reduced to 1.2mg/l, from peak level of 58mg/l
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## Environment

### Management of Chemical Substances in Products

- Management of Chemical Substances in Products > page 192
- Three Core Principles for Managing Chemical Substances in Products > page 193
- Reduction and Replacement of Chemical Substances of Very High Concern > page 195
- Management of Chemical Substances in Packaging Materials > page 199

## Environment

### Management of Chemical Substances in Products

(Updated on August 31, 2011)

Many of Sony's electronics products contain between a few hundred and a few thousand parts that are made of a variety of chemical substances, some of which may be classified as hazardous and may harm the environment if they are not properly controlled prior to product disposal.

To prevent such environmental harm, some countries and regions have introduced laws and directives-such as the European Union's Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (RoHS) Directive\*1 restricting certain chemical substances in products. In Japan, products containing certain chemical substances are required to carry the J-Moss mark\*2.

In light of the global nature of its markets and supply chains, Sony has established its own global standards for management of chemical substances, titled "Management Regulations for Environment-related Substances to be Controlled which are included in Parts and Materials" (SS-00259).<sup>\*3</sup> These standards take into account applicable local and regional laws and regulations, such as the RoHS Directive and the Management Methods on the Pollution Control of Electronic Information Products\*4 in China, and the opinions of various stakeholders. In line with these standards, Sony ensures globally consistent management of chemical substances in parts and materials.

Moreover, Sony has set up necessary procedures to comply with the EU's Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) Regulation\*5 requirements. In order to comply with "registration" requirements, Sony manages chemical substance inventories at Sony's sites in Europe. Furthermore, to implement "information communication" and "notification" duties required under the REACH Regulation, Sony utilizes the common declarable substance list developed by the global JIG initiative (Joint Industry Guide)\*6 to collect comprehensive data on certain chemical substances in parts and materials purchased from suppliers and manages this information in an internal database. To this end, Sony applies the JGPSSI survey response tool.\*7

- \*1 Directive on the restriction of the use of certain hazardous substances in electric and electronic products (RoHS)  
> <http://www.sony.net/SonyInfo/csr/ForTheNextGeneration/about/word/rohs.html>
- \*2 Japanese Industrial Standards (JIS) for marking the presence of certain chemical substances in electrical and electronic equipment
- \*3 Sony standards that are used to give direction to suppliers on chemical substances for items procured by Sony (tenth edition published in March 2011). These standards classify chemical substances as those that must be banned immediately, those for which a period for phase-out is individually set and those for which no deadline is set for ban of use but phasing out is planned. (For details, visit: Management Regulations for the Environment-related Substances to be Controlled which are included in Parts and Materials (SS-00259)) > <http://www.sony.net/SonyInfo/procurementinfo/ss00259/>
- \*4 "Management Methods on the Pollution Control of Electronic Information Products" A regulation passed on March 1, 2007, in China, to regulate the use of six substances, including lead and mercury, in electronic products and components sold in the Chinese market. Currently, all electronics and information devices sold in China must bear the "Environmental pollution control mark," "Information on chemical substances content," and "packaging materials recycling mark."
- \*5 REACH (Registration, Evaluation, Authorisation and Restriction of Chemicals): New regulations for managing chemical substances introduced in the EU effective June 1, 2008, whereby companies that meet certain conditions are required to, among others, register, apply for authorization, notify, restrict and communicate information on certain chemical substances. Information on REACH can also be found at <http://www.sony.eu/eco> (EU national language versions).

- \*6 CEA > <http://www.ce.org/> (Consumer Electronics Association, US), DIGITALEUROPE > <http://www.digitaleurope.org/index.php?id=1> (Europe) and JGPSSI > [http://www.db1.co.jp/jeita\\_eps/green/](http://www.db1.co.jp/jeita_eps/green/) (Japanese Green Procurement Survey Standardization Initiative, Japan) issued the "Joint Industry Guide > [http://www.ce.org/Standards/browseByCommittee\\_6365.asp](http://www.ce.org/Standards/browseByCommittee_6365.asp) - Material Composition Declaration for Electrotechnical Products - JIG-101", an industry materials declaration guide that facilitates reporting of material content information across the global electrotechnical supply chain.
- \*7 Electronic data format defined by JGPSSI > [http://www.db1.co.jp/jeita\\_eps/green/](http://www.db1.co.jp/jeita_eps/green/) (Japanese Green Procurement Survey Standardization Initiative) for material declaration that includes information on mass contained in parts, purpose of use, sites where used, etc., of declarable substances.

## Three Core Principles for Managing Chemical Substances in Products

(Updated on August 31, 2011)

To guide its efforts to manage chemical substances in products in compliance with Sony's own global standards for management of chemical substances, titled "Management Regulations for Environment-related Substances to be Controlled which are included in Parts and Materials" (SS-00259)\*, Sony has established three core principles:

- Sony standards that are used to give direction to suppliers on chemical substances for items procured by Sony (tenth edition published in March 2011). These standards classify chemical substances as those that must be banned immediately, those for which a period for phase-out is individually set and those for which no deadline is set for ban of use but phasing out is planned. (For details, visit: Management Regulations for the Environment-related Substances to be Controlled which are included in Parts and Materials (SS-00259)) > <http://www.sony.net/SonyInfo/procurementinfo/ss00259/>

## Upstream management

(Updated on August 31, 2011)

In 2002, Sony established the Green Partner Environmental Quality Approval Program, which outlines Sony's Green Partner Standards for chemical substance management. Sony audits suppliers based on these standards. Sony purchases electronic parts only from suppliers who have passed this audit and have been certified as Green Partners. Sony also applies the Green Partner Environmental Quality Approval Program to OEM suppliers, who produce for Sony according to Sony specifications. To further enhance the efficiency of the system to manage chemical substances, in autumn 2003 Sony introduced the Green Book, a raw materials database, which was made available to Sony's direct suppliers via its electronic supplier portal.

In the Green Book, Sony has registered only those materials that it has confirmed comply with the SS-00259 standards for molding resins, inks, insulated electric wires, printed wiring boards, steel sheets, adhesives and other basic materials that are commonly used by multiple primary suppliers. Primary suppliers are not required to submit measurement data when they use materials registered in the Green Book. As of April 2011, the Green Book contained approximately 21,000 materials. To assist REACH compliance, Sony started by October 2008 to collect for raw materials listed in Green Book data on the content of certain chemical substances and makes these data available to its suppliers.

## Management in Quality Control/Quality Assurance processes

(Updated on August 31, 2011)

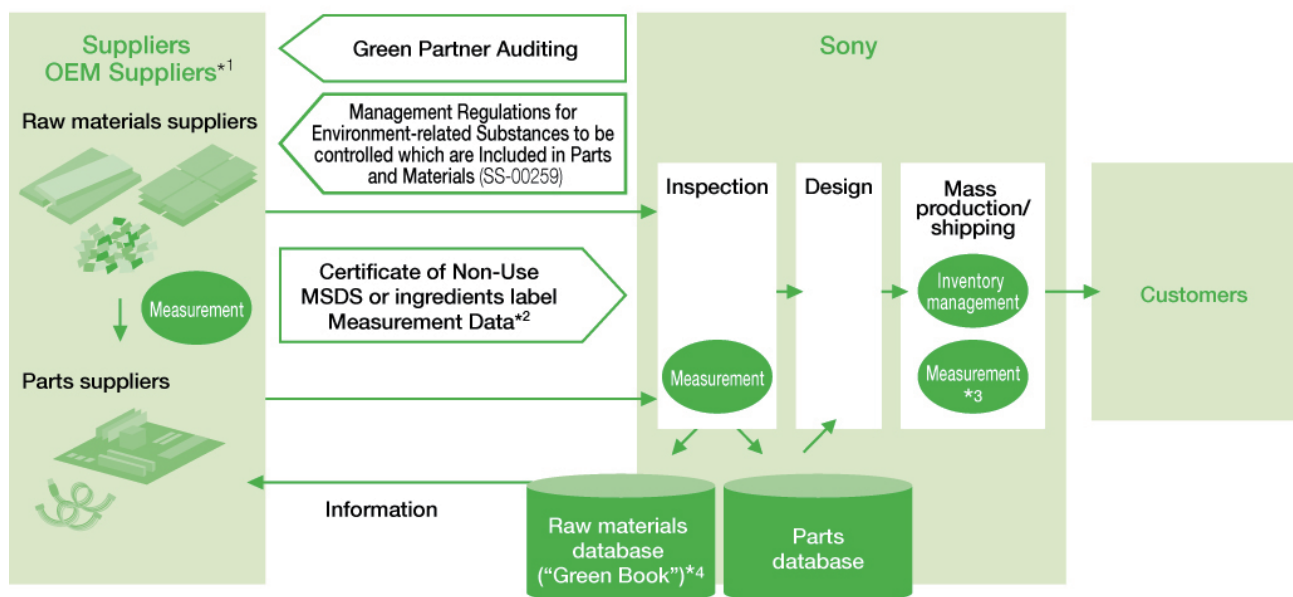
New parts and materials are tested to ensure conformity with SS-00259 standards and compliance with conventional quality control standards. Data collected from suppliers based on JIG are also thoroughly evaluated. At the mass production stage, products are sampled and inspected regularly, and in North America, inspections are conducted in warehouse prior to shipment. By implementing these strict management procedures worldwide, incompliant products are prevented from entering the market.

## Utilization of chemical analysis

(Updated on August 31, 2011)

To prevent prohibited substances from accidentally entering products, suppliers are required to submit certificates of non-use attesting that the parts and materials they supply do not contain prohibited chemical substances as well as measurement data for certain high-risk substances contained in products. For these high-risk substances Sony has also implemented internal control systems that involve using, for example, X-ray fluorescence (XRF) and other measurement devices, to Sony sites worldwide, to help confirm that prohibited substances are kept out of products.

### System for Managing Chemical Substances in Products



\*1 Companies that manufacture OEM (original equipment manufacturer) products on behalf of Sony

\*2 Applicable to cadmium and lead present in plastics (including rubber), paints and inks, as well as cadmium, lead, hexavalent chromium and mercury present in packaging components and materials

\*3 Measurement takes place at the commencement of mass production

\*4 For direct suppliers, the Green Book was made available via its electric procurement system in autumn 2003

## Environment

### Reduction and Replacement of Chemical Substances of Very High Concern

(Updated on August 31, 2011)

Sony defines "Environment-related Substances to be Controlled" (hereafter "Controlled Substances") as certain chemicals that Sony has determined to have significant impact on both humans and the global environment, including substances that may not be controlled by laws. (Refer to the list "Controlled Substances" Defined by Sony.) Sony either prohibits the use of these substances in parts or phases them out wherever a viable alternative that meets all product quality and technical requirements is available. In its Green Management 2015 medium-term management targets, Sony specifies high-risk applications from collected application- and content-related information, considering the hazardous nature and extent of exposure(volume)as risk factors, and plans to prohibit the Controlled Substances in the specified use.

#### "Controlled Substances" Defined by Sony

Cadmium and cadmium compounds
Lead and lead compounds
Mercury and mercury compounds
Hexavalent chromium compounds
Polychlorinated biphenyls (PCB),
Polychlorinated naphthalenes (PCN),
Polychlorinated terphenyls (PCT)
Short-chain chlorinated paraffins (SCCP)
Polyvinyl chloride (PVC) and PVC blends
Tris(2-chloroethyl) phosphate (TCEP)
Other chlorinated organic compounds
Polybrominated biphenyls (PBB)
Polybrominated diphenylethers (PBDE)
(including decabromodiphenyl ether [DecaBDE])
Hexabromocyclododecane (HBCDD)
Other brominated organic compounds
Trisubstituted organotin compounds
(including tributyltin (TBT) compounds
and triphenyltin (TPT) compounds)
Dibutyltin (DBT) compounds
Dioctyltin (DOT) compounds
Asbestos
Specific azo compounds
Formaldehyde
Specific benzotriazole
Dimethyl fumarate (DMF)
Beryllium oxide
Beryllium copper
Cobalt dichloride
Diarsenic trioxide, Diarsenic pentaoxide
Bis (2-ethylhexyl)phthalate, Dibutyl phthalate,
Benzyl butyl phthalate, Diisobutyl phthalate
Di-isononyl phthalate, Di-isodecyl phthalate,
Di-n-octyl phthalate, Di-n-hexyl phthalate
Hydrofluorocarbon (HFC), Perfluorocarbon (PFC)
Ozone depleting substances (ODS)
Perfluorooctane sulfonates (PFOS)
Boric acid, specific sodium borates

\* Control level varies depending on application



## Polyvinyl Chloride (PVC)

(Updated on August 31, 2011)

PVC may pose a risk to the environment if disposed of improperly. Another concern is that PVC might contain various other chemical substances, including plasticizers and stabilizers, which could pose risks to the environment and human health.

Although PVC is not currently regulated by any laws that apply to chemical substances used in electronics products, Sony continues to promote the use of alternatives. As a result, Sony does not use PVC in product packaging materials, casings, sheets/laminates of speaker housings, contactless IC cards and carrying bags/cases for products (excluding those for professional use). Sony has also been successful in replacing PVC by a developed alternative in several internal components such as flexible flat cables, insulation plates, and electrical heat shrink tubes all of which are difficult to remove prior to recycling.

Sony is concerned with the possibility that, in particular, its small electronics products could be collected for obtaining valuable materials, and then the unwanted parts could be improperly incinerated and disposed of in landfills. Considering the impact of these activities on the environment, Sony is promoting the replacement of PVC with alternative substances (for products where quality, technological and supply problems have been resolved).

As of the end of March 2011, for the following products Sony replaced PVC with alternative substances in new products and new models. For more information, refer to the table titled "Examples of PVC-free Products and BFR-free Products."\*

> <http://www.sony.net/SonyInfo/csr/environment/data/replace/index.html>

- Personal Computer "VAIO" Laptops
- MP3 players "WALKMAN"
- Personal Navigation System "nav-u"
- IC recorders/Portable Radio Recorders/Linear PCM Recorders
- Video Camera "Handycam"
- Mobile HD Snap Camera "bloggie"
- Digital Still Camera "Cybershot"
- Digital Photo Frame "S-Frame"
- Interchangeable lens digital camera "α"
- PSP® (PlayStation®Portable)
- Digital Book Reader "Reader"
- Portable CD/DVD players
- Portable Blu-ray Disc™/DVD players

\* No use of PVC in casing and cables for internal wiring, excluding accessories

## Brominated Flame Retardants (BFRs)

(Updated on August 31, 2011)

Some BFRs are harmful to human health and tend to remain in the environment and accumulate in living organisms.

As is the case with PVC, improper incineration of BFRs carries a risk of releasing harmful substances into the environment. Sony replaced BFRs with alternative substances in new products and new models (for products where quality, technological and supply problems have been resolved).

As of the end of March 2011, for the following products Sony replaced BFRs with alternative substances in new products and new models. For more information, refer to the table titled "Examples of PVC-free Products and BFR-free Products."\*

> <http://www.sony.net/SonyInfo/csr/environment/data/replace/index.html>

- Personal Computer "VAIO" Laptops
- MP3 players "WALKMAN"
- Personal Navigation System "nav-u"
- IC recorders/Portable Radio Recorders/Linear PCM Recorders
- Video Camera "Handycam"
- Mobile HD Snap Camera "bloggie"
- Digital Still Camera "Cybershot"
- Digital Photo Frame "S-Frame"
- Interchangeable lens digital camera "α"
- PSP® (PlayStation®Portable)
- Digital Book Reader "Reader"
- Portable CD/DVD players
- Portable Blu-ray Disc™/DVD players

\* No use of BFRs in casing and main PWBs of products, excluding accessories

For example, all VAIO personal computers currently released contain no BFRs in their casings and main printed wiring boards (PWBs).

Under the Tenth Edition of the SS-00259, which was released by Sony in 2011, Hexabromocyclododecane (HBCDD) is listed among "Environment-related Substances to be Controlled ('Controlled Substances')." Consequently, Sony plans to ban the use of HBCDD as a flame retardant used in plastics in its products, effective from 2015. This is in addition to the ban already in place on the use of polybrominated diphenylethers (PBDEs) and polybrominated biphenyls (PBBs). Furthermore, Sony plans to ban the use of tris(2-chloroethyl) phosphate (TCEP), which is a chlorinated flame retardant identified as carrying risks similar to BFRs, effective from 2014.

Sony also developed an environmentally conscious flame retardant that contains no bromine, to be used for polycarbonate plastic with high flame-retardant and thermal-resistant properties. This flame retardant is used, for example, in casings and components for interchangeable lens digital cameras, including α55, and in internal parts of Cyber-shot digital still cameras.



Main PWB of the VAIO S-series contains no BFRs

## Mercury

(Updated on August 31, 2011)

Conventionally, button batteries require a minute amount of mercury to suppress the generation of hydrogen gas inside the battery. Eliminating the use of mercury in button batteries had proven very difficult from a technical standpoint. However, Sony was strongly determined to remove the environmental burden presented even by such a tiny amount of mercury. Leveraging its proprietary technologies, Sony succeeded in developing a mercury-free alkaline button battery. Sony launched sales of its mercury-free alkaline button batteries in Japan in October 2009 and commenced a worldwide rollout in August 2010. Together with the mercury-free silver oxide batteries that Sony began shipping in 2005, as of the end of 2010, Sony was shipping mercury-free batteries in 31 countries around the world. Sony will continue to promote further reductions in the volume of mercury it uses.



Mercury-free alkaline button battery

## Phthalates

(Updated on August 31, 2011)

Sony is working to eliminate specific phthalates, which are used as plasticizers in PVCs, among others. Among these specific phthalates (phthalic esters), Sony plans to ban the use of four types (DEHP, DBP, BBP and DIBP)\* as plasticizers in cables and cords beginning in 2014. For example, Sony has already eliminated the use of phthalates in the bodies of PSP® (PlayStation®Portable) units and in the AC adapters packaged with those units shipped to Europe.

- \* DEHP: Bis(2-ethylhexyl) phthalate, Di(2-ethylhexyl) phthalate;
- DBP: Dibutyl phthalate, Di-n-butyl phthalate; BBP: Benzyl butyl phthalate, Butyl benzyl phthalate;
- DIBP: Diisobutyl phthalate, Di-i-butyl phthalate.

## Beryllium compounds

(Updated on August 31, 2011)

Sony designated beryllium oxide and beryllium copper as "Controlled Substances" since 2007 and is working to eliminate these substances. No beryllium oxide is used in our products.

## Arsenic Compounds

(Updated on August 31, 2011)

Under the Tenth Edition of the SS-00259, which was released by Sony in 2011, diarsenic trioxide and diarsenic pentaoxide are listed among "Environment-related Substances to be Controlled ('Controlled Substances')." Consequently, Sony plans to ban the use of these two compounds as antifoam agents for LCD panels, effective from 2014.

## Environment

### Management of Chemical Substances in Packaging Materials

(Updated on August 31, 2011)

Sony also takes precautions to increase the safety of its packaging materials and ensure that hazardous substances, including heavy metals, are not mixed into packaging materials by managing materials in line with its proprietary "Management Regulations for Environment-related Substances to be Controlled which are included in Parts and Materials" (SS-00259). The packaging section of SS-00259 is based on, among others, EU directives on packaging and packaging waste. Sony is also actively making use of inks that comply with "Voluntary Regulation Concerning Printing Inks (Negative List Regulations)" put forward by the Japan Printing Ink Makers Association, as well as inks that do not contain volatile organic compounds (VOCs) (less than 1% use of VOCs).

## Environment

### Biodiversity Conservation

Sony is taking steps to protect biodiversity -- the foundation of ecosystem services -- through ongoing greening activities and active environmental initiatives at its sites and in the community, among others. Sony has formulated biodiversity guidelines for the implementation of such initiatives.

- Basic Policy on Biodiversity > page 201
- Activities Related to COP10 > page 201
- Evaluation of Biodiversity at Sony Group Sites through the Green Star Program > page 202
- Conserving Water Resources > page 204
- Site Greening Activities > page 205
- Building Neighborhood Ecological Networks > page 206
- Employee Education Program: "Search for Living Things" > page 207
- Tree Planting and Conservation of Indigenous Species > page 208
- Creating a Wildlife Sanctuary > page 210
- Harpy Eagle Conservation > page 211

## Environment

### Basic Policy on Biodiversity

(Updated on November 22, 2011)

Sony benefits from ecosystem services in the implementation of its various business activities. At the same time, Sony recognizes that these same business activities exert an impact on the natural environment. To help keep balance among all life forms on the planet, business activities with conservation of the natural environment, Sony is working to maintain and recover biodiversity both from its business and social contribution activities thereby protecting the ecosystem services and ultimately benefiting from their sustainable use.

### Activities Related to COP10

(Updated on November 22, 2011)

In October 2010, the 10th Conference of Parties to the Convention on Biological Diversity (COP10) was held in Nagoya, Japan. Sony conducted presentations at several side events as part of programs undertaken by private sector companies.

At a side event organized by the International Union for Conservation of Nature and Natural Resources (IUCN), titled "From Carbon Negative to Biodiversity Positive: A New Paradigm for Business Responsibility?," Sony gave a presentation on its Road to Zero global environmental plan. Sony's long-term drive to achieve a zero environmental footprint was highly appraised.

At another side event, Sony Semiconductor Kyushu Corporation's Kumamoto Technology Center (Kumamoto TEC) introduced its groundwater recharge initiative, which received significant praise as an example of an advanced approach by a Japanese company.

- For more information on conserving water resources, refer here. > page 204

In addition, a display booth organized by the NGO Conservation International (CI), as a COP10 side event, featured an exhibition of 3D wildlife photography captured using cameras and other equipment provided by Sony. This COP10 exhibition was the first time the images had been shown publicly.

- For more information on CI's exhibition, refer here. > page 100

## Environment

### Evaluation of Biodiversity at Sony Group Sites through the Green Star Program

(Updated on November 22, 2011)

Business sites are closely connected to their surrounding natural environment and the local ecosystem. In April 2011, Sony introduced the Green Star Program as a means of assessing and promoting the eco-consciousness of its sites. Sony will continue to use this program in its biodiversity-related activities and promote a range of initiatives.

- For more information on the Green Star Program, refer here. > page 232

Biodiversity section of the Green Star Program uses the criteria shown in figure below to classify specific policies necessary when carrying out measures relating to biodiversity. Such activities include biodiversity conservation and land use, green space management and greening activities undertaken from a biodiversity perspective at business sites. Each item is ranked on a scale of one to five depending on the content of the measure, enabling self-assessment of measures undertaken by sites. Through this process, each site embarks on a step-by-step approach to proactively enhance its biodiversity in line with the local area's unique characteristics. To date, greening activities carried out at sites had a tendency to focus on the size of natural landscapes and setting aside areas as green belts. These activities did not necessarily take into account biodiversity issues. However, to address biodiversity conservation properly, sites must not only increase the size of green belts but also enhance their quality. By indicating specific policies and the level of initiatives, Sony is building a system that will facilitate quality improvements.

Items		Measures
Basics		<ul style="list-style-type: none"> <li>• Set a policy regarding biodiversity conservation</li> <li>• Set a purpose, target, and a plan for biodiversity and ecosystem conservation</li> <li>• Designate the organization and person responsible for implementation</li> <li>• Comply with laws and regulations</li> </ul>
Maintain, manage and Monitor	1. Monitor and plan the land usage	<ul style="list-style-type: none"> <li>• Monitor site land usage</li> <li>• Monitor land usage around the site premises</li> <li>• Investigate land usage history prior to establishment of the site</li> <li>• Monitor plans on biodiversity in the region</li> </ul>
	2. Maintain, manage and monitor ecosystems on site premises	<ul style="list-style-type: none"> <li>• Implement assessment of living creatures</li> <li>• Implement wood/vegetation assessment</li> <li>• Consider influence (disturbance) of discharge to the ecosystem</li> <li>• Acknowledge and protect endangered species</li> <li>• Manage chemical substances appropriately</li> <li>• Use organic resources effectively</li> </ul>
	3. Consider when purchasing goods	<ul style="list-style-type: none"> <li>• Purchase goods that lead to biodiversity conservation</li> <li>• Introduce paper that takes biodiversity into account</li> </ul>
	4. When building a new site, or extend/demolish an existing site	<ul style="list-style-type: none"> <li>• Implement environmental assessment that includes biodiversity assessment</li> </ul>
Create the Natural Environment	5. Create a place where diverse life forms can live	<ul style="list-style-type: none"> <li>• Measures against alien organisms</li> <li>• Adopt indigenous</li> <li>• Maintain good environment for living creatures to inhabit</li> <li>• Take ecological network into account</li> <li>• Consider steric vegetation</li> </ul>
	6. Avoid, minimize, recover, improve, offset	<ul style="list-style-type: none"> <li>• Recover, improve or offset the ecosystem to the condition prior to site establishment</li> </ul>
Communi cate	7. Engage in educational activities on biodiversity	<ul style="list-style-type: none"> <li>• Implement biodiversity education</li> <li>• Cooperate with stakeholders</li> <li>• Train future PICs in the company</li> <li>• Information disclosure</li> </ul>
	8. Engage in regional contribution activities on biodiversity conservation	<ul style="list-style-type: none"> <li>• Implement environmental regional contribution activities</li> <li>• Provide support to organizations that implement biodiversity conservation activities</li> <li>• Acquire designation for wildlife sanctuary</li> </ul>

Biodiversity Assessment for the Green Star Program



## Environment

### Conserving Water Resources

(Updated on November 22, 2011)

Kumamoto, home to Sony Semiconductor Kyushu Corporation's Kumamoto Technology Center (Kumamoto TEC), was originally blessed with abundant groundwater resources. However, these resources have diminished sharply in recent years, attributable to a decline in the amount of land under cultivation and an increase in land used for residential purposes. Recognizing groundwater as an important ecosystem service -- and its own responsibility as a manufacturer that uses significant quantities of water in the fabrication of semiconductors -- Kumamoto TEC has been working since 2003 with local residents, an environmental NGO, agricultural organizations and agricultural cooperatives on ground water recharge\*1. Nearby paddy fields are filled with water pumped from a river prior to summer and fall plantings and after harvesting, causing the water to penetrate into the soil and ultimately return to the aquifer. Such practices are referred to as "Payment for Ecosystem Services (PES)"\*2 and are recognized as playing a key role in efforts to protect biodiversity. In fiscal year 2010, Kumamoto TEC replenished approximately 2.04 million m3 of groundwater.



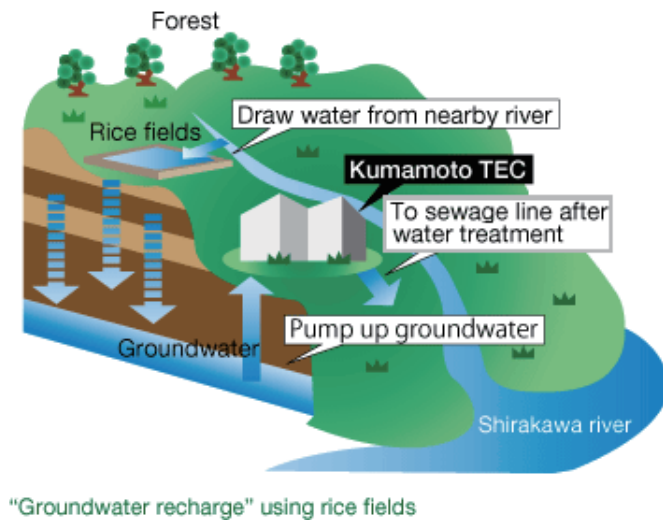
Rice growing in a paddy field belonging to a local farmer working in cooperation with Kumamoto TEC

A presentation on this initiative was made at a side event at COP10, held in Nagoya, Japan, in October 2010. The initiative received wide praise as a new example of the effective application of PES.

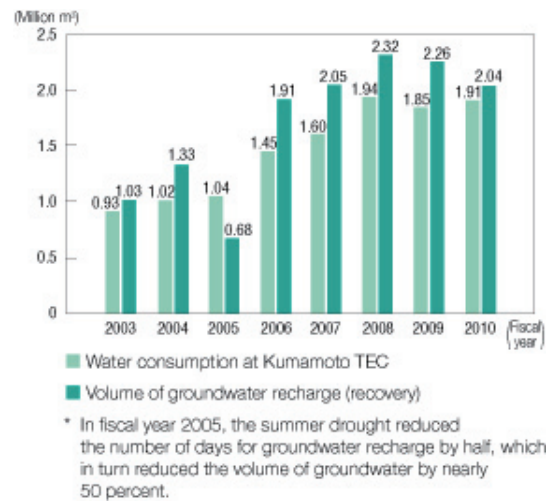
Kumamoto TEC purchases a portion of the rice harvested each year from the paddies within the groundwater recharge area to serve in its staff cafeteria. There is also a program in place enabling Kumamoto TEC employees to purchase the rice individually. These programs contribute to the local community by supporting the area's farmers while also promoting the conservation of groundwater resources.

\*1 Groundwater recharge: The process by which surface water (precipitation and river water) permeates into an aquifer to replenish groundwater

\*2 PES (Payment for Ecosystem Services): The practice of paying for ecosystem services or for the cost of maintaining such services as a means of contributing to their preservation



Comparison of Water Used and Water Replenished by Kumamoto TEC



## Site Greening Activities

(Updated on November 22, 2011)

Since its establishment in 1972, the Kohda site of Sony EMCS Corporation's Tokai TEC has sought to cultivate and expand onsite greenbelts. In 1998, the Kohda site established Sony Forest, which is composed of trees originally growing on its factory grounds, and has added an observation deck and an obstacle course for the enjoyment of the local community. To promote the protection of biodiversity, in 2008, employees launched a voluntary initiative that included thinning the forest to encourage owls to build their nests there.

In recognition of these efforts, in February 2011 the Kohda site received 2011 Superlative Stage certification under the Social and Environmental Green Evaluation System (SEGES)\*, the first such site in Japan to receive the highest level of certification. In 2010, the Kohda site was selected for "Japan's Top 100 Cases of Enterprise's Green Space that Contributes to Biodiversity" by SEGES.



Sony employees participate in a volunteer maintenance initiative at Sony Forest (Kohda site)



Kohda site received SEGES Superlative Stage certification

Sony Semiconductor Kyushu Corporation's Oita Technology Center works to protect precious natural woodland within its grounds. Some trees here are more than 100 years old, and the woodland is the habitat for such small wild animals as Japanese raccoons and hares as well as a large number of insect species, including Japanese rhinoceros beetles and stag beetles. In 2003, a part of the Center's land was transformed into Sony Shionoka Park and opened to the local community. In recognition of this initiative, the Oita Technology Center received the Prime Minister's Award for greenery promotion in 2008, and in 2010 was selected, along with the Kohda site, as one of "Japan's Top 100 Cases of Enterprise's Green Space that Contributes to Biodiversity" by SEGES.



Sony Shionoka Park, which is open to the local community (Sony Semiconductor Kyushu Corporation's Oita Technology Center)

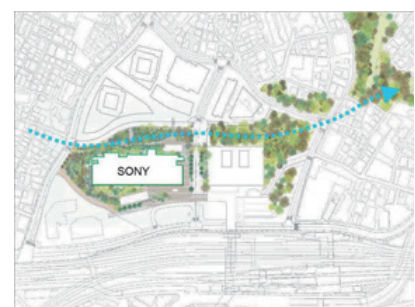
Oita Technology Center maintains SEGES Excellent Stage 3 certification

\* The Social and Environmental Green Evaluation System (SEGES) is an evaluation and certification program run by the Urban Green Space Development Foundation. SEGES evaluates businesses' green belts and the contribution to society and the natural environment these businesses are making through the protection and nurturing of such spaces. SEGES recognizes outstanding initiatives by businesses.

## Building Neighborhood Ecological Networks

(Updated on November 22, 2011)

The term "ecological network" refers to an interconnecting web or network of green spaces and other habitats. In urban settings in particular, ecological networks are seen as a potential key to the restoration of ecosystems and biodiversity conservation. In March 2011, an ecological network was included in the design of a newly opened Sony-owned building near Osaki Station in Tokyo's Shinagawa Ward, as an initiative to promote biodiversity conservation in central Tokyo. For example, the project created a cool spot by planning buildings so that they do not shield and stop the wind blowing from Tokyo Bay and by connecting neighboring green belts in the region to form "Osaki Forest". Thanks to these efforts, heat island effect is alleviated and the richness of habitat in the area has greatly improved. In addition, Sony has planned the layout and lines of movement through the site to actively draw people from the station vicinity and the building's environs into the site. As a result, the area provides a place where people can come into contact with nature during their daily lives, even in the heart of the city.



The "Wind Pathway" for sea breeze (blue line) and Osaki Forest

By planning the tree layout to anticipate future growth, the planted areas realize natural-looking forest tree forms. The planting layout considered continuity with the surrounding area, and included such scenery-defining species as Oshima cherry, camphor and shirakashi (Japanese evergreen oak). Tall broadleaf species often seen in wooded areas were used to enhance the site's seasonal appeal. These included Japanese maple, Japanese snowbell, downy Japanese maple and sawtooth oak. Simultaneously, various shrubs and groundcover plants were distributed in the gaps between large trees. This gives the walkways a seasonal feel, and provides seasonal changes for people in the neighborhood. It also creates a continuous space (ecological network) connected with local green areas and incorporating an abundant variety of indigenous species.



Building an ecological network for the future

## Employee Education Program: "Search for Living Things"

(Updated on November 22, 2011)

For office workers in Tokyo and its surrounding regions, where a rich natural environment is not close at hand, gaining a firsthand understanding of the importance of biodiversity conservation and participating in conservation activities have in the past been difficult to achieve. With this in mind, from fiscal year 2010, Sony launched a new biodiversity education program for Sony Group employees in Japan called "Search for Living Things." Utilizing the website of a Japanese environmental NGO, the Nature Conservation Society of Japan (NACS-J), the program involves participants posting online their observation records on six types of flora and fauna: common dandelion, bur marigold, goldenrod, red-eared slider turtle, dragonfly and seven autumnal flowers.



Nature watching held at the Sony headquarters

In October, the program held an early-morning nature watching in Takanawa Park near the Sony headquarters as a location for nature observation. Nature observation was also incorporated at the annual walking events that Sony also holds for employees and their families as a way to promote healthy lifestyles. At an event for the Tokyo-Kanagawa area held at Zoorasia Zoo in Kanagawa Prefecture, approximately 100 participants got firsthand experience of biodiversity together with nature-watching guides in a satoyama (upland valley bordering a cultivated area) conservation area.



## Environment

### Tree Planting and Conservation of Indigenous Species

(Updated on November 22, 2011)

To combat climate change, as well as to promote communication with local residents, Sony Group sites around the world are engaged in a variety of tree planting initiatives. Sony also promotes the conservation of indigenous species and the removal of invasive species.

#### Japan

Since 2009, Sony Chemical & Information Device Corporation's Kanuma site has been working with Ashio Green Growing Association (AGGC), which is putting efforts into planting trees on barren lands in the nearby mountains that are thought to have been devastated by smoke and other pollutants emitted from the smelting furnaces of the former Ashio Copper Mine. In 2009, employees and their families took part in spring planting, grass clearing, caring for saplings and other activities. In 2010, 300 trees were planted and in 2011, already 500 trees have been planted. The site also provides onsite education for employees focusing on local environmental issues with the aim of increasing employees' environmental awareness.



A group from Sony Chemical & Information Device Corporation's Kanuma site conducts tree-planting activities

Sony Chemical & Information Device Corporation has also signed a three-way "Agreement relating to Forest Development" with Tochigi Prefecture and the city of Yaita, under which the company has accepted the loan of prefectural forest in Yaita. Over a period of five years, the company will conduct tree-planting activities on the land, which has been named "Creation Forest." The land is within the boundaries of Nikko National Park and is blessed with abundant greenery and seasonal beauty. Approximately 1,500 tree seedlings comprising 15 species have been planted in accordance with the altitude and ecosystem, including indigenous Tochigi Konara oak, Japanese maple, water oak and wild cherry blossom.

Sony is also involved in local tree-planting activities at other sites, including Sony Semiconductor Kyushu Corporation's Kumamoto TEC and Kagoshima TEC and Sony Chemical & Information Device Corporation's Tome site.

The facilities at Firefly Satoyama Park in Kosai City, Shizuoka Prefecture, have deteriorated in recent years, owing to a lack of management and the impact of illegal garbage dumping, which has resulted in fireflies no longer being seen in the park. In response, since summer 2009 volunteers from Sony EMCS Corporation Tokai TEC Kosai site have been working with a local volunteer group to remove garbage from the neglected park and cut weeds from around the ponds. Kosai site employees also took over the care of firefly larvae that were hatched locally and continued rearing the larvae in a water tank on the Kosai site. In March 2010, the volunteers released the larvae into a stream on the park. In June, observers were



Nursery school children watch the release of the firefly larvae

once again able to confirm the presence of fireflies in the park when the adult fireflies emitted light while they swarmed. The Sony Group employees plan to continue their conservation activities.

## Thailand

Sony Technology Thailand Co., Ltd.'s Chonburi Technology Center embarked on an initiative called "1,000 Seedlings for Mangrove Forest" in which employees and their families planted 1,000 mangrove seedlings at the Bangpu Nature Education Center. Sony Thai Co., Ltd. planted another 400 mangrove seedlings at Khlong Khon mangrove forest located at Samut Songkhram Province, central of Thailand.



Chonburi Technology Center employee plants seedlings

## China

In 2003, Sony (China) Ltd. launched a tree planting program with the aim of planting 5,000 new trees over a 10-year period. To date, the company has planted about 3,600 oak and pine trees on the outskirts of Beijing, in Yanqing and Huairou, as a result of which the company's own Sony Forest is gradually becoming lush and green.

These measures are helping to prevent dust storms. Shanghai Suoguang Electronics Co., Ltd., Sony Precision Devices (Huizhou) Co. Ltd., Sony Electronics Huanan Co., Ltd. and other Group companies are also engaged in local afforestation activities.



Sony (China) employees planting trees

In Huizhou, the location of Sony Precision Devices (Huizhou) Co. Ltd., an invasive and extremely prolific species of water hyacinth has covered the surface of the Dongjiang River in recent years, seriously threatening the river's ecosystem. In response, the site organized an event called "Conserving the Dongjiang River and Maintaining the Ecosystem." After implementing in-house employee training on biodiversity, the company released indigenous fish species into the river and carried out activities to remove the invasive water hyacinth. The company plans to continue pursuing these programs.



Collecting invasive water hyacinth from the river

## Poland

In October 2009, Sony Poland Sp. z o.o. planted 5,600 lime, pine and other trees near Warsaw in cooperation with Poland's Department of Forestry. To support the growth of the planted forest areas, the company has continued to provide aid to help cover costs.



Sony Poland employees plant trees near Warsaw

## United States

Sony Pictures Entertainment Inc., which is based in the United States, plants trees in locations where it films, with the number of trees planted equivalent to the number of days spent filming. As part of this initiative, the company has planted trees in places as varied as State of Tennessee, Los Angeles, California, and Bali, Indonesia.

## Creating a Wildlife Sanctuary

(Updated on November 22, 2011)

In 2006, Sony DADC Inc.'s factory in Pitman, New Jersey, USA, signed an agreement with the state of New Jersey to transform a portion of its site into a wildlife sanctuary. The area, a piece of forested land approximately 48,500 m<sup>2</sup> containing several ponds, is home to wild deer, fox, birds and pond life. The presence of coyotes has also recently been confirmed. The site received the Environmental Stewardship recognition award from the state of New Jersey for efforts it has made to ensure a sustainable environment.

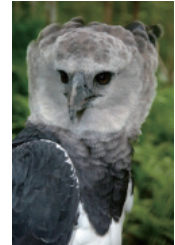


Wildlife sanctuary at Sony DADC's Pitman Plant

## Harpy Eagle Conservation

(Updated on November 22, 2011)

Since 1995, Sony Inter-American, S.A. (SIA), Sony's sales company in Panama, has promoted an educational initiative named "Education for Conservation." The program brings back the consciousness to the population about the protection and conservation of the harpy eagle, Panama's national bird, which is a symbol of the serious loss of forest habitat and biodiversity in Latin America.



Harpy Eagle

Ten years ago, SIA sponsored the Harpy Eagle Center in Panama, to help increase awareness among local residents and visitors from around the world of harpy eagle conservation efforts. In commemoration of its 10th anniversary, the Center was remodeled in 2008. State-of-the-art technologies were mounted, including a video wall featuring Sony's BRAVIA™ LCD televisions, a home theatre system and remote cameras connected to VAIO™ PCs, enabling visitors to the Center to enjoy an interactive virtual experience of the harpy eagle's natural environment. To promote conservation efforts, the Center holds an annual Harpy Eagle Festival.

SIA also invites local residents to participate in conservation and research efforts to achieve the Harpy Eagle Center's principal goal, that is, to protect the harpy eagle, by supporting the Harpy Eagle Patronage. Patrons include biologists, scientists, ecologists and other individuals who volunteer to work together to communicate the importance of protecting this bird and its environment.

In 2009, a photography contest with the theme "Harpy Eagle and Its Environment," using Sony's DSLR camera Alpha, was held to raise funds for the Harpy Eagle Patronage. More than 150 photos were submitted.



Harpy Eagle Center, Summit Municipal Park, Panama



## Environment

### Environment technology

Sony conducts research aimed at developing proprietary technologies that contribute to the reduction of environmental impact and can be applied to new products and services, as well as to manufacturing processes. We first determine a research theme that will contribute to the reduction of our environmental footprint, in line with our medium-term environmental targets. We then conduct basic research at one of our headquarters technology centers. Finally, we transfer the practical applications of this research to our operating divisions. An example of Sony's research involving proprietary technologies can be found at its Advanced Battery Development Center, which was established in fiscal year 2009 to develop and commercialize storage batteries for automotive and industrial applications.

In fiscal year 2009, Sony designated "energy and the environment" as core R&D themes and resolved to invest decisively. Principal areas of endeavor include energy-related technologies, namely those for power generation and storage battery devices; materials technologies that help reduce resource consumption; and information and media technologies that support environmentally conscious lifestyles.

- Development Aimed at Environmental Technologies of the Future > page 213
- Sony's Proprietary Technologies Used in Manufacturing Processes > page 218

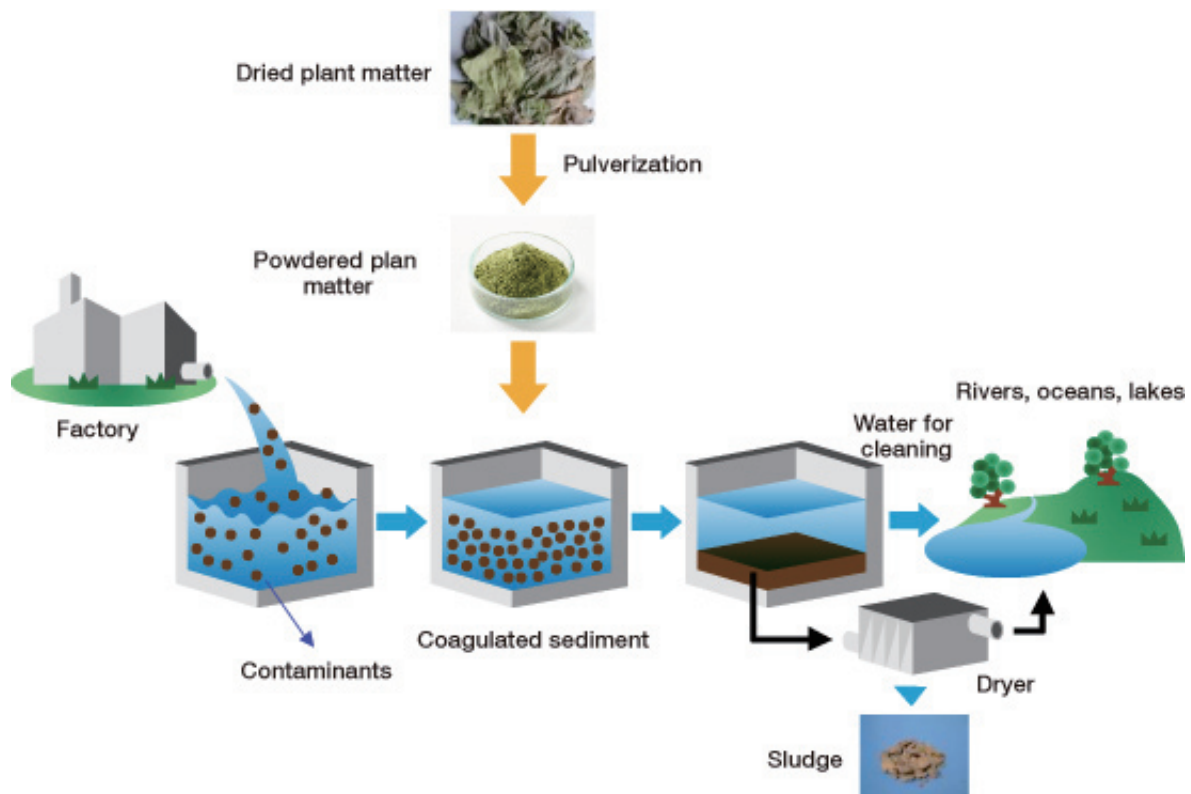
## Environment

### Development Aimed at Environmental Technologies of the Future

#### Plant-Derived Flocculants for Wastewater Treatment

(Updated on November 22, 2011)

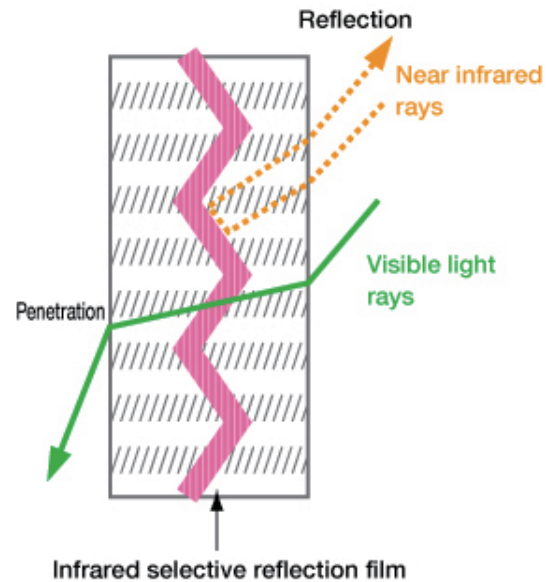
Sony is also stepping up efforts for the development of water purification technologies. Sony has focused its attention on the properties of a particular plant-derived material for binding together waterborne pollutants. Based on this material, Sony has developed a flocculant for rapidly flocculating and settling sludge in wastewater that contains heavy metals and other hazardous substances by binding these pollutants into larger flocs. Compared with conventional synthetic polymer flocculants, this newly developed flocculant provides enhanced heavy-metal-removal performance even when less quantity is added and results in less sludge generation. Sony Group sites are currently conducting pilot trials with the new flocculant, which offers a wide range of environmental and cost-related advantages, including a reduction in CO<sub>2</sub> emissions owing to it being plant-derived, resource conservation thanks to the need for less flocculant to be added, and reduction of waste output since it generates less sludge.



Wastewater purification process using plant-derived flocculant

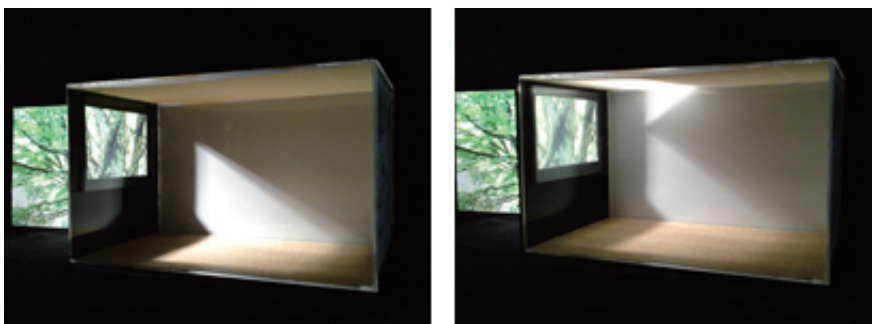
## Upward Heat Reflection Film for Curbing the Heat Island Effect and Light-Control Film

Recent years have seen a rapid increase in the number of glass-walled buildings - a type of design utilized for its aesthetic advantages as well as a means of realizing a more lightweight building structure. However, from an energy-conservation perspective, it is essential to include in such buildings features to limit the level of solar heat penetration through windows. However, by protecting the building interior from solar heat there is the risk that the sun's heat (infrared rays) and sunlight may be reflected onto the ground or nearby buildings, contributing to an urban heat island effect. To address such issues, Sony successfully developed the world's first-ever heat-shielding film for window glass, which selectively reflects (using upward reflection) the heat component of the solar rays back toward the sky while letting visible light penetrate the glass. Hence, this film contributes to an enhanced urban environment. At present, Sony is conducting simulations and field testing of the film at Sony Group sites and is aiming for commercialization of the product within the next few years.



The underlying principle of upward heat reflection film

Sony is also working on the development of light-control film that can deflect and distribute incident light, thereby illuminating a room's ceiling so that natural light may be utilized for interior lighting. It is hoped that the use of such film will lead to power savings by increasing the amount of time during which natural light can provide comfortable interior lighting conditions without the need for artificial lighting. Sony is studying not only office-lighting uses for such film, but also a broad range of other applications.



A window with conventional glass (left) and a window with light-control film applied to the glass (right). In the room on the right, the light-control film deflects light onto the ceiling.

## Dye-Sensitized Solar Cells

(Updated on November 22, 2011)

Sony is engaged in research in the area of dye-sensitized solar cells, which use photosensitive organic dyes adsorbed on the porous electrode surface to convert light energy to electrical energy. Unlike conventional silicon-based solar cells, dye-sensitized solar cells do not require a large vacuum process machine for fabrication. Fabrication costs less than for conventional solar cells, owing to the use of a coating and a printing process, and exerts less of an impact on the environment because fewer materials and less energy are required. Dye-sensitized solar cells have the additional advantage of providing excellent power generation, especially in low-light situations, such as indoors or under cloudy skies. Depending on the dye color, these cells can even provide color variations. Owing to these advantages, dye-sensitized solar cells are viewed as one of the most promising next-generation solar cell technologies.

While Sony's prototype dye-sensitized solar cell module has already achieved industry-leading results in terms of electric power generating efficiency, Sony will continue to conduct research to further enhance efficiency and ensure reliability with a view to future commercialization.



Demonstration of Hana-Akari, a concept model of a lantern-like interior lamp powered by colorful, see-through dye-sensitized solar cells (December 2008)



Power-generating window prototype that incorporated dye sensitized solar cell was integrated with energy storage module in the demonstration of "Room of the Future" concept ("ECO PRODUCTS Exhibit 2010" in December 2010)



Demonstration of the use of a prototype dye-sensitized solar cell/Li-ion battery hybrid charger to power a Walkman digital music player (December 2009)

## Bio Battery

Sony continues to conduct research in the area of bio batteries, new energy devices that generate power from glucose, which is degraded by enzymes. Human beings get power by both breathing and consuming food (carbohydrates). Sony's bio batteries apply the same mechanism, taking in glucose and oxygen and using the enzymatic reaction to generate power. Glucose is a renewable energy source produced by plants through photosynthesis, taking in sunlight and CO<sub>2</sub>. Furthermore, glucose is safe and ubiquitous substance contained in fruit, vegetables, and in the juices. Glucose also has an extremely high energy density. The energy contained in the glucose in a single 150-gram serving of rice is equivalent to that of 96 alkaline AA batteries. Sony aims to create environmentally conscious energy devices by utilizing energy potential of glucose. In August 2007, Sony became the first company to succeed in playing a Walkman digital music player by using prototype bio batteries to power.

Sony continues to improve the performance of its bio battery. In February 2009, Sony introduced a new prototype with twice the power density of its predecessor by the developing materials that improved the electric current. Having adopted a new electrode structure, in January 2010 Sony showcased a new prototype with double the energy density of the 2009 prototype.

Simultaneously, Sony is exploring ways to develop new applications for its bio batteries. In collaboration with leading toy manufacturer TOMY Company, Ltd. in Japan, for example, Sony demonstrated a prototype toy powered by cola drink at a toy industry exhibition (TOY Forum 2010). Looking ahead, Sony will accelerate R&D aimed at enhancing performance and durability and at ultimately developing batteries suitable for practical application in Sony's mobile devices and other consumer electronics equipments.



Powering a Walkman digital music player using a prototype bio battery that generates power from a glucose solution (February 2009); this new prototype is half the size of the previous prototype.

Prototype toys fabricated by TOMY mounted with prototype bio batteries (January 2010)



Using cola drink to drive a propeller



Toy car with glucose-powered remote control

## Organic TFT-driven flexible OLED display

Sony is promoting R&D in the area of organic transistors, that is, transistors fabricated using organic semiconductor materials. Organic transistors offer three key advantages over conventional silicon transistors. First, process temperatures are low, meaning transistors can be fabricated directly on plastic films and other flexible substrates. Second, using coating and printing processes in fabrication of thin film devices, enables to produce low-cost and large size devices. Third, materials are flexible, resulting in transistors that are resistant to impact, breakage and bending. In addition, production potentially exerts less of an environmental impact than that of conventional transistors in terms of, for example, materials and energy used. In the future, application to the fabrication of thin-film transistors (TFTs) -- used primarily to control pixels on displays -- will make it possible to fabricate organic TFTs on plastic and other flexible substrates, rather than glass, which is currently predominant. This will reduce the need for components to protect displays from breakage, and, as a result, enables production of mobile displays that are significantly thinner and lighter.

In May 2010, Sony demonstrated a TFT-driven organic LED display, which is flexible enough to be rolled up to a radius of 4mm. This performance is achieved by utilizing a PXX-derivative organic semiconductor material developed by Sony as well as coated organic insulation layers.

Sony is also promoting the development of technologies for fabricating TFTs by printing or coating with "ink" created by dissolving organic materials in organic solvents. In May 2011, Sony successfully trailed a 13.3-inch organic TFT-driven flexible electronic paper display. Excluding the wiring, the organic semiconductor layer and insulation layers were produced entirely using this coating technology.

Going forward, Sony will strive to commercialize thin, lightweight and unbreakable electronic paper and flexible film displays that can be rolled-up and put away by pressing ahead with efforts to illuminate the mechanisms of organic transistors, and develop organic materials and device processes, and further enhance reliability.



An organic TFT-driven EL display capable of video playback while being rolled up to the size of a pen (May 2010)



Organic TFT-driven flexible electronic paper produced using coating technology (May 2011)



## Environment

### Sony's Proprietary Technologies Used in Manufacturing Processes

#### Recycling Waste Chemical Mixture at a Semiconductor Plant

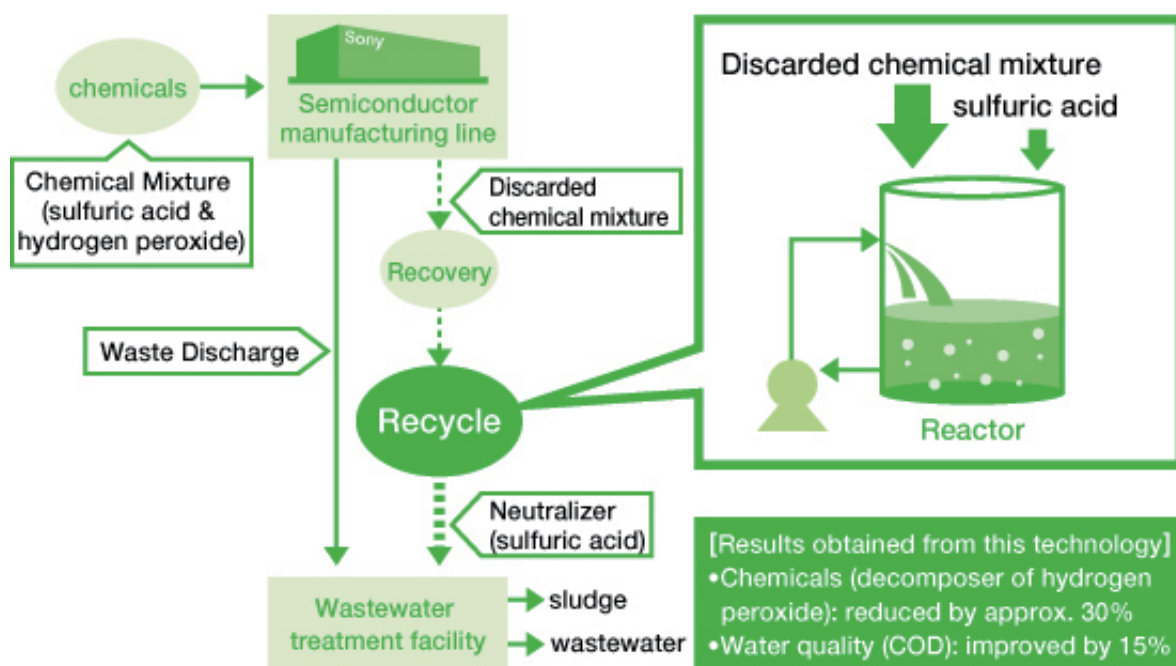
(Updated on November 22, 2011)

A mixture of sulfuric acid and hydrogen peroxide is widely used to clean silicon wafers in semiconductor manufacturing processes. The waste mixture is treated with large amounts of water and other chemicals, generating large volumes of sludge and wastewater. Sony discovered that by adding a trace of nitric acid, the residue of hydrogen peroxide in the waste mixture decomposed into oxygen and water effectively. Using this phenomena Sony developed a technology to extract highly concentrated sulfuric acid containing no hydrogen peroxide from the waste mixture.

Sony Semiconductor Kyushu Corporation has been using this technology at its plant since 2001, and the extracted concentrated sulfuric acid is being put to good use as a neutralizer for wastewater treatment within the plant.

This process does not require heating or cooling and so contributes to savings in the energy consumed by the recycling equipment. In addition, the introduction of this equipment has reduced the volume of chemicals required for treating wastewater and it has also led to quality improvements of the treated water.

#### Recycling Waste Rinse Liquid into Neutralizer



## Environment

### Technologies for Recycling of Waste Optical Discs

(Updated on August 31, 2011)

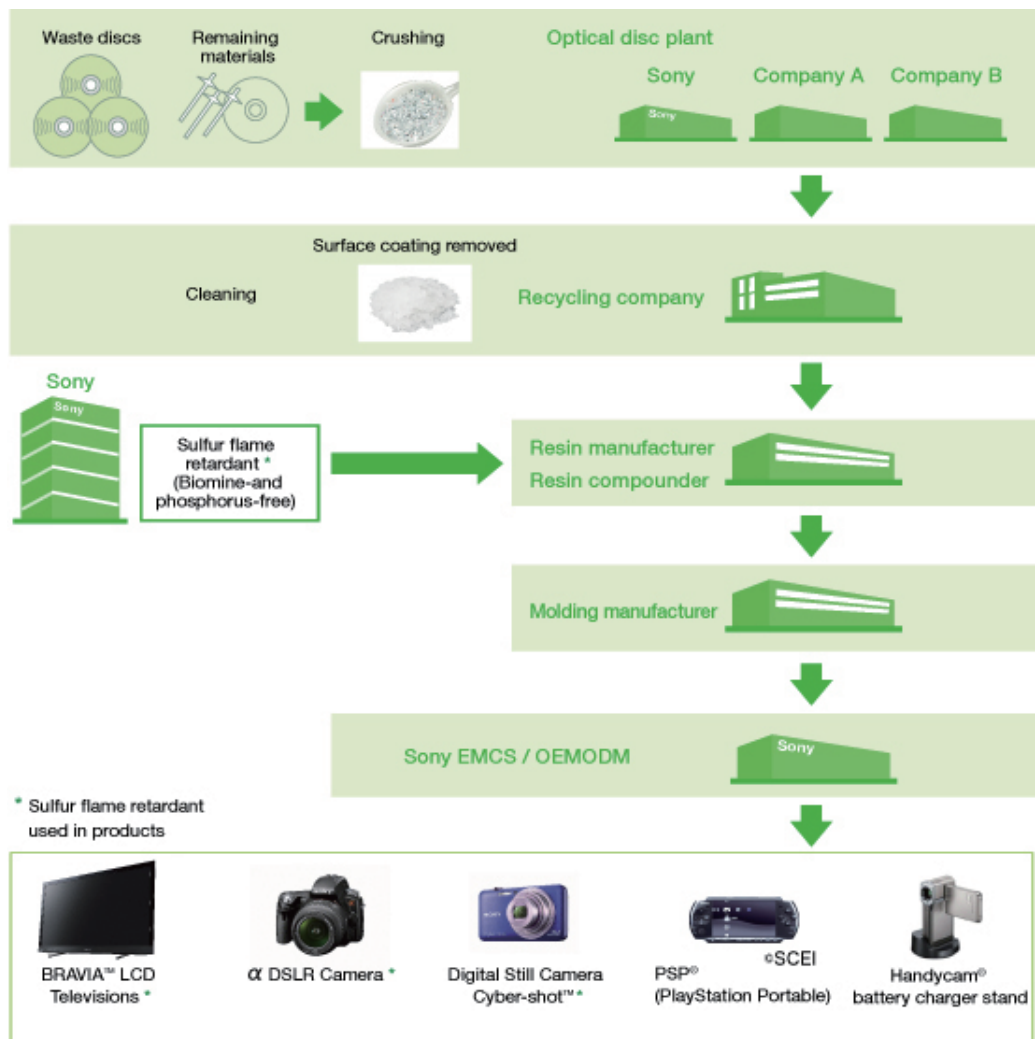
Sony makes effective use of waste optical discs from its disc manufacturing facilities by recycling them into polycarbonate resin. Waste discs are crushed, and then washed with chemicals and water to remove the coated film on the surface of the discs, resulting in clear flakes of polycarbonate resin. This recycling process, which involves the cooperation of recycling firms, yields a recycled polycarbonate resin that is almost equal in quality to virgin polycarbonate resin. A resin manufacturer working in cooperation with Sony blends the recycled polycarbonate resin with appropriate additives so that it is suitable for use in Sony products. One of the additives is a new environmentally conscious sulfur flame retardant, which is free of bromine and phosphorus developed by Sony. Polycarbonate resin containing this new flame retardant has outstanding flame retardancy and thermal resistance and is used in housings of digital single-lens reflex (DSLR) cameras and in components of digital still cameras.

In February 2011, Sony developed SoRPlas (name derived from Sony Recycled Plastic), a high-quality, low-cost, recycled plastic with flame retardant properties, which may be recycled several times. SoRPlas is a blend of waste optical sheets generated during the production process by Sony Group manufacturing facilities, and recycled polycarbonate resin derived from waste discs generated by optical disc factories -- within and outside the Sony Group -- during the manufacturing process. Sony also adds the described above new flame retardant it developed at its own laboratories. SoRPlas realizes high heat resistance and excellent durability. Ordinarily, the level of recycled materials contained in recycled plastics is less than 25%, but SoRPlas used in the bezel (screen rim) of BRAVIA LCD television KDL-40EX52H and other models contained the world's highest ratio of 99% recycled-materials, thereby contributing to a significant reduction in CO2 emissions.

- For more information, refer to the section on recycled plastic. > page 174



Introduction of Recycled Plastic from Waste Optical Discs



## Environment

### Reducing the Environmental Impact of Products and Services

The Sony Group's Green Management 2010 mid-term environmental targets included targets for the reduction of annual energy consumption, resource conservation, the management of chemical substances and the implementation of life cycle assessments. Sony sets targets and conducts product environmental assessments for each of its existing products, while at the same time striving to develop new products that are more environmentally conscious.

CO<sub>2</sub> emissions over the lifetime of Sony products sold in fiscal year 2010 amounted to approximately 2.17 million tons, up about 10% from those for products sold in fiscal year 2009. For products sold in fiscal year 2010, Sony used approximately 1.19 million tons of resources, around 2% more than in fiscal year 2009, and approximately 100,000 tons of reused/recycled materials.\*1 As a consequence, Sony's reused/recycled materials utilization rate was approximately 8%, short of its mid-term target of 12%.

The bulk of reused/recycled materials Sony uses are from cardboard packaging. Thanks to efforts aimed at, among others, shrinking the size of packaging, the volume of cardboard used declined substantially, hampering the reused/recycled materials utilization rate. Looking ahead, Sony will continue to promote the use of such materials.

Sony also understands the importance of recovering and reusing the resources of end-of-life products. As a manufacturer, Sony acknowledges its responsibility for ensuring the appropriate disposal and treatment of end-of-life products, and promotes the collection and recycling of its products in compliance with the laws and regulations of countries and regions around the world. In fiscal year 2010, Sony recovered approximately 164,000 tons of resources from end-of-life products. This includes resources recycled from televisions and PCs collected in Japan, the reuse/recycling rate\*2 for which was approximately 108%. Owing to the end of analog broadcasting, as well as to Japan's eco-point scheme, recovery of used televisions rose significantly.

\*1 Use of resources in products: Total resources used in products, accessories, manuals and packaging materials. The total weight of products shipped is used for the purpose of calculation. The value for Europe in fiscal year 2010 partially includes estimates.

\*2 This calculation assumes an average period of use from time of sale of 10 years for televisions and seven years for PCs. The resulting percentage is the total weight of Sony televisions and PCs recovered by Sony in fiscal year 2010 as a percentage of the total weight of all Sony televisions and PCs sold 10 years and seven years ago, respectively.

- Developing Environmentally Conscious Products > page 222
- Standards for Eco-Conscious Products > page 222
- Examples of Eco-Conscious Sony Products > page 223
- Reducing Environmental Impact Through Product Life Cycle Assessment > page 228

## Environment

### Developing Environmentally Conscious Products

(Updated on November 22, 2011)

The Sony Group's mid-term targets include targets for products, which involve the reduction of annual power consumption, the promotion of resource conservation, the management of chemical substances and life-cycle assessments. Business groups formulate annual targets that are consistent with Sony Group's environmental targets and reflect the unique characteristics of each product category, and regularly review progress toward achieving these targets, subsequently reporting their findings to the department in charge of environmental functions at Sony's headquarters. In turn, the environmental functions at the headquarters evaluate the targets and progress of each business group, using these evaluations as the basis for its review of the Sony Group's progress toward achieving its environmental targets. Based on the results of this review, Sony determines areas of focus and revises targets for the subsequent fiscal year. By thus setting specific targets and conducting environmental assessments for all products, Sony is stepping up efforts to develop eco-conscious products.

#### Headquarters (Department in charge of environmental functions)



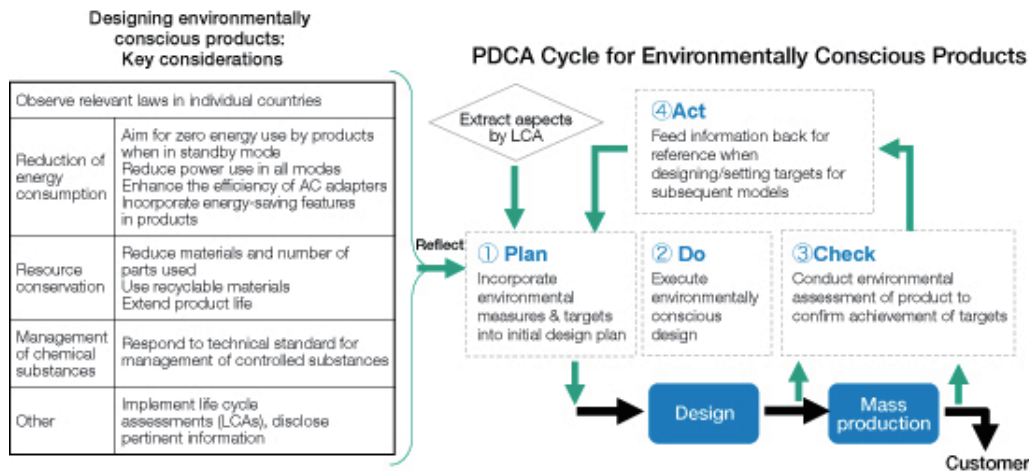
Management Structure for Eco-Conscious Product Development

### Standards for Eco-Conscious Products

(Updated on November 22, 2011)

With the aim of developing life-enriching products that are not only superior in terms of functionality, performance and quality, but also exert very little impact on the environment, Sony has formulated its own standards for eco-conscious products, which it applies to all products. Guided by these standards, Sony is working to develop industry-leading flagship eco-conscious products equipped with world's first features and technologies and simultaneously, top-notch environmental performance.

## Sony's Environmentally Conscious Products



Outline of Design Standards for Eco-Conscious Products

## Examples of Eco-Conscious Sony Products

(Updated on November 22, 2011)

Sony is incorporating efforts to conserve energy and resources and to reduce controlled chemical substances into the product development process.

### BRAVIA™ LCD television EX52H



#### Environmentally Conscious Features

A highly flame-retardant recycled plastic with a recycled materials rate in excess of 99% -- the highest in the world\*1 -- has been employed for the bezel.

\*1 As of February 8, 2011, according to research conducted by Sony. Conventionally, recycled plastics with fire-retardant properties used in electronics devices have a recycled materials rate of 60% or less.

• For more information on "Development and Use of SoRPlas (Sony Recycled Plastic)", refer here. > page 174

### BRAVIA™ LCD television LX900



This series includes an Intelligent Presence Sensor with Face Detection feature, which not only recognizes whether someone is in front of the television but also detects whether the person is watching the television screen. It then automatically responds by adjusting picture brightness or by shutting the picture off if no one is watching, thereby enhancing power-saving performance.

• For more information on "Reducing Power Consumption of BRAVIA™ LCD Televisions", refer here. > page 153

#### VAIO® PC S Series



A Performance Switch lets the user choose SPEED mode, or STAMINA mode, depending on his or her performance requirements, thereby extending battery operating time.

- For more information on "Reducing the Power Consumption of VAIO® PCs", refer here. > page 154

#### Blu-ray Disc™ player BDP-S370



By controlling power used by the main device, this model uses 15% less power when in use than 2010 models. Power consumption when in standby mode is only 0.1 W.

- For more information on "Reduction of Power Consumption of Blu-ray Disc™ Player", refer here. > page 152

#### Mercury-free alkaline button batteries



By using proprietary technology that minimizes the generation of hydrogen gas, Sony eliminated the use of mercury in its alkaline button batteries.

- For more information on reduction of mercury used in our products, refer here. > page 198

#### Mercury-free silver oxide button batteries



By using proprietary technology that minimizes the generation of hydrogen gas, Sony eliminated the use of mercury in its alkaline button batteries. Sony commercialized a mercury-free silver oxide battery in 2004 \*2, which is first in the world.

- \*2 As of September 29, 2004, according to research conducted by Sony.

#### Data Projector VPL-EX100 Series



- Employs a new lamp drive technology that achieves a useful lamp life 20% longer than previous Sony models \*3 ; one of the longest in the industry.

\*3 Comparison is with VPL-EX130 using low lamp mode.

- Features a handy Eco Button that enables the user to switch to eco conscious mode; when used in a standard British classroom, the unit achieved a 40% reduction in power consumption \*4.

\*4 Comparison is with VPL-EX145 at 220-240V.

#### Energy Storage Module IJ1001M



- Contributes to stable use of natural energy and load leveling during peak power consumption periods.
- Employs olivine-type lithium-ion iron phosphate as the cathode material, eliminating use of cobalt and other rare metals.
- For more information on "Development of Energy Storage Modules", refer here. > page 157

#### αSeries DSLR camera SLT-A55VL



Polycarbonate resin recycled from waste optical discs from disc manufacturing facilities is used in the body and mechanical device unit in this camera.

- For more information on "Technologies for Recycling of Waste Optical Discs", refer here. > page 219

#### Digital Still Camera DSC-WX7



Polycarbonate resin recycled with a recycled material rate of 10% is used in the body and mechanical device unit in this camera.

#### Digital HD Video Camera Recorder HDR-PJ40



- 10% \*5 power consumption reduction was achieved by introduction of newly-developed super low power consumption system.

\*5 Compared to HDR-CX350V

- Polycarbonate/ABS resin recycled with a recycled material rate of 10% is used in the body

#### Digital Photo Frame DPF-VR100



- Reduced unnecessary power consumption induced by forgetting to turn off power by employing "auto power on/off setting" which sets power switch of this digital photo frame by the clock.
- Achieved operating power consumption of 5.2W by employing low power consuming circuits.

#### FM/AM Portable Radio ICF-B02

(Sold in Japan only)



Employed a function that generates electricity by turning handle manually. Can charge various domestic mobile phones in Japan \*6 and has highly luminescent LED light that can be used in case of a blackout

\*6 Does not have charging function for certain mobile phones.

#### Stereo IC Recorder ICD-AX412F



Achieved battery operating time of 84 hours with two AA batteries by employing energy-efficient LSI and devising its use.

#### Active Speaker System SRS-D4



Recycled plastic is used in parts of the body.

#### Multiple Media 7-Inch Motor Touch Screen Head

##### Unit XAV-72BT



By employing microcontroller that uses less dark currents, standby power consumption of 0.71 mA is achieved.

- Click here for related details on Sony's eco-conscious products.  
> <http://www.sony.net/SonyInfo/csr/SonyEnvironment/products/lineup/index.html>



## Environment

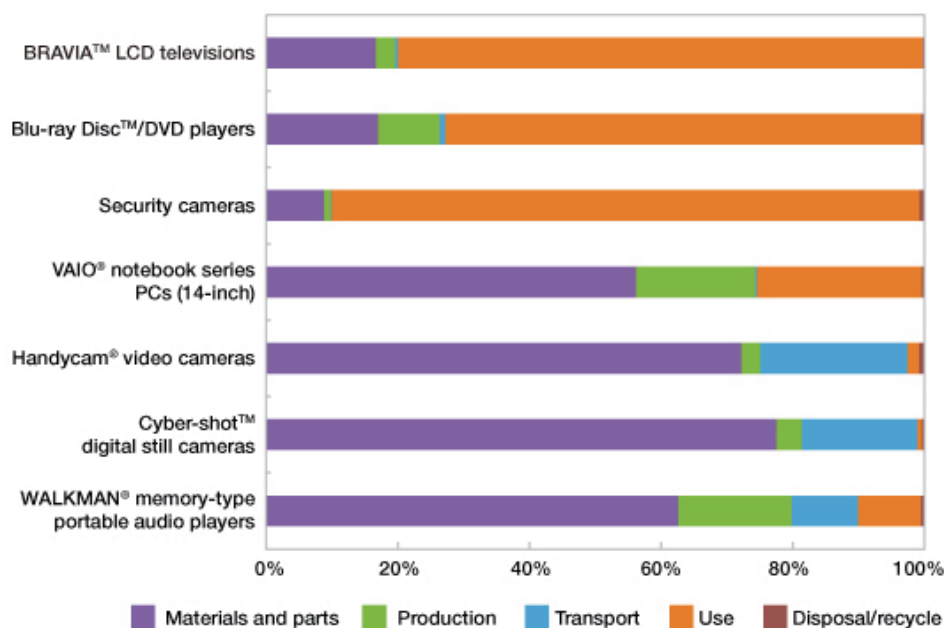
### Reducing Environmental Impact Through Product Life Cycle Assessment

(Updated on November 22, 2011)

With the aim of identifying the environmental impact of products at all stages of their life cycles, Sony conducts product life cycle assessments (LCAs) that quantify the impact of materials and parts production, product assembly and transport, product use and standby mode, and end of life (i.e., disposal and recycling). LCAs help us to clarify priorities for product improvement and environmental impact reduction measures.

As shown in the chart titled "Breakdown of CO2 Emissions Over the Life Cycle of Sony Products," we see that the life cycle stages responsible for generating a large portion of a product's CO2 emissions differ depending on the product category. For example, for product categories in the upper part of the chart, emissions during product use account for a large proportion of total emissions. For this reason, reducing the power consumption of these products during use is particularly important. Conversely, among the product categories in the lower part of the chart, rather than during use, a large portion of CO2 emissions occur at the manufacturing stage and in the production of materials and parts. For these products, such measures as reducing the parts count are crucial in lowering life cycle CO2 emissions.

Breakdown of CO2 Emissions Over the Life Cycle of Sony Products



Sony calculated the emissions based on the following assumptions:

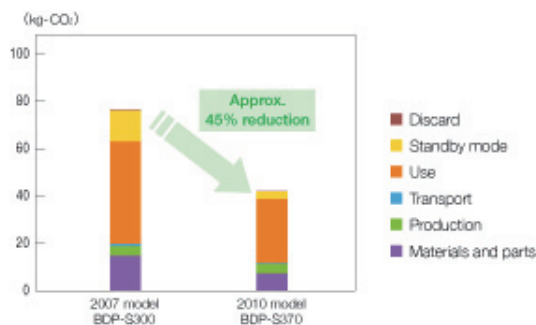
- Place of sale: Japan.
- Product transportation: 500 kilometers by truck in Japan; by ship or by air for international transport
- Years of use: portable audio player Walkman® Memory Type: 5 years; compact digital camera Cyber-shot™: 2.7 years; digital camcorder Handycam®: 6.4 years; personal computer "VAIO" (14 inches): 4 years; security camera: 7 years; Blu-ray Disc™/DVD Player: 7 years; LCD TV BRAVIA®: 10 years

\* This chart shows the proportion of CO2 emissions at each stage of the life cycle. It does not indicate the size of environmental impact of these products.

\* The assumptions (usage assumptions, shipping distance, mode of shipping, manufacturing site assumptions, etc.) used for calculation of CO2 emissions differ among products.

Sony Blu-ray Disc™ players provide an effective case study of measures that Sony has implemented to reduce environmental impact. As the chart titled "Comparison of 2007 and 2010 Models of Blu-ray Disc™ Players" indicates, in addition to reducing CO2 emissions during product use, Sony has also worked to lower CO2 emissions during the production of materials and parts. Compared with the 2007 model BDP-S300, the 2010 model BDP-S370 achieves approximately 60% lower CO2 emissions during product use, a result of reduced power consumption. A similar comparison of CO2 emissions related to materials and parts for these two models shows a reduction of approximately 50%, attributable to efforts focused on reduction of product size and weight, parts count and packaging materials. As a result, over the entire life cycle, Sony succeeded in cutting CO2 emissions by approximately 45%. By using product LCAs in this way, Sony is able to gain a quantitative understanding of a product's life cycle environmental impact, which is valuable for verifying the efficacy of its efforts as well as in setting new design goals. Sony will continue to quantify the environmental impact of products at each life cycle stage using LCAs, and thereby strive to further reduce the impact of the entire life cycle.

Comparison of 2007 and 2010 Models of Blu-ray Disc™ Players



BDP-S370 Blu-ray Disc™ Player

#### Calculation Assumptions

- Years of use: 7
- Product transportation: 14,200 kilometers by ship

## Environment

### Reducing the Environmental Impact of Procurement

Sony believes that reducing environmental impact throughout the life cycle of its products is a commitment that must extend to the procurement of materials and parts. To date, Sony and its suppliers have cooperated closely in the management of chemical substances. Efforts have now been expanded to include measures to save energy. Sony will continue working closely with its suppliers as it strives to achieve its goal of a zero environmental footprint.

- Program and Targets for Reducing Greenhouse Gas Emissions by Suppliers > page 139
- Three Core Principles for Managing Chemical Substances in Products > page 193

## Environment

### Environmental Protection Activities at Sony Sites

Sony applies an integrated perspective to environmental activities that covers all sites worldwide, whether they are involved in manufacturing activities or not, based on Green Management 2010 mid-term targets and policies issued by the department in charge of environmental functions at the Tokyo headquarters.

On the topic of greenhouse gases, Sony has spotlighted efforts to cut absolute greenhouse gas emissions, calculated in terms of CO<sub>2</sub>, from all sites by 7% or more from the 2000 level by fiscal year 2010. To this end, Sony is promoting energy-saving measures at its sites, introducing renewable energy as alternative power sources and limiting the use of greenhouse gases, such as perfluorocarbons.

In addition to emission reduction measures taken, production adjustments and the closure and consolidation of sites -- both prompted by the global economic downturn -- led to the reduction of greenhouse gas emissions. Total CO<sub>2</sub>-equivalent greenhouse gas emissions at sites reached about 1.53 million tons in fiscal year 2010, down about 31% from fiscal year 2000. Waste generated at sites amounted to about 128,000 tons in fiscal year 2010, down about 54% from the fiscal year 2000 level; and water used by sites came to about 15.7 million m<sup>3</sup>, down about 41% from fiscal year 2000. Sony released approximately 1,184 tons of volatile organic compounds (VOCs) into the atmosphere, down about 35% from fiscal year 2000.

In addition, Sony seeks to conserve biodiversity through such approaches as site greening; undertakes environmental communications; embraces green technologies in manufacturing processes; promotes green purchasing; and assumes an environment-conscious perspective in the construction of its buildings.

- Introduction of Green Star Program > page 232
- Promoting Green Purchasing > page 233
- Construction of Environment-Conscious Buildings > page 233

Please visit the links listed below for details on the activities undertaken at Sony sites.

#### Links to Related Items:

- Climate Change >Reducing Greenhouse Gas Emissions at Sites > page 140
- Resources >Resources Conservation at Sites > page 163
- Management of Chemical Substances >Management of Chemical Substances at Sites > page 185
- Biodiversity Conservation > page 200
- Environmental Technology > page 212
- Environmental Communication >Communicating with the Local Community > page 275

## Environment

### Introduction of Green Star Program

(Updated on November 22, 2011)

As of fiscal year 2011, Sony initiated the "Green Star Program", developed in house to assess the environmental performance of Sony Group manufacturing and nonmanufacturing sites worldwide. The program is an initiative to achieving Sony's "Road to Zero" global environmental plan, where each site's activities are evaluated comprehensively through quantitative and qualitative assessments in four key perspectives -- climate change, resource conservation, chemical substance management and the preservation of biodiversity.

Until 2015, aiming to achieve the Sony Group mid-term environment targets (Green Management 2015), the criteria for evaluating numerical goals and the counter measures will have been developed, while managing the attainment level and promoting activities for reducing environmental impacts. The attainment of the mid-term target in 2015 has been rated with "Four Stars", all sites are striving to obtain Four Stars in 2015.



Evaluation scheme

#### Example of evaluation criteria

Climate change	Hardware	Monitor energy use with monitoring system, introduce highly efficient systems and equipment
	Software	Monitor energy use, raise employee awareness
Resources	Waste	Reduce waste, promote resource recovery and recycling, ensure correct processing by waste companies
	Water	Monitor water use, raise conservation awareness, take steps to conserve water
Chemical substances		Monitor handling amount, amount released and transferred, replace with alternative substances
Biodiversity		Promote sustainable use of ecosystem services, conduct land use management and greening activities <a href="#">Click here for more details in Evaluation of Biodiversity at Sony Group Sites through the Green Star Program. &gt; page 202</a>

## Environment

### Promoting Green Purchasing

(Updated on November 22, 2011)

Having set internal standards for green purchasing, Sony makes a conscious effort to choose nonproduction materials when procuring printing paper, stationery and OA equipment, among others. Sony employs the same parameters when purchasing finished products, and is mindful when deciding purchasing volume to consider volumes used and inventory levels. In Japan, Sony chooses from among recommended products, giving consideration to environmental impact at all stages of a product's life, from resource extraction through to production, distribution, use and disposal. Information on recommended products is included in Sony's purchasing system of nonproduction goods, making it possible for individuals in charge of purchasing decisions to give priority to environmentally conscious products. Since 2009, Sony Electronics Inc. in the United States has also used a green purchasing catalog, in compliance with the US Environmental Protection Agency and pertinent free trade agreements. In fiscal 2010, Sony's green purchase rate for stationery and office supplies in Japan was 64.6%.\*

\* Based on purchasing data for Sony Corporation and 11 Sony Group companies

### Construction of Environment-Conscious Buildings

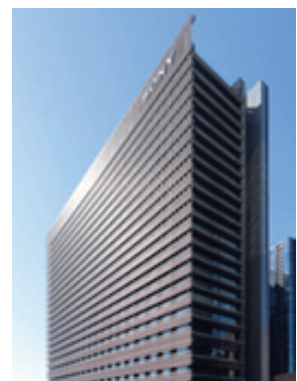
(Updated on November 22, 2011)

Sony gives environmental concerns a high priority when constructing its buildings.

#### Japan

(Updated on November 22, 2011)

Completed in March 2011, Sony City Osaki, an R&D facility, is equipped with a wide range of energy-saving features that ensure an outstanding environmental performance. These include an evaporative cooling system, a high-efficiency thermal storage system and other systems that utilize solar panels and heat pump water heaters using natural refrigerant that make use of CO<sub>2</sub> and heat in the atmosphere. Other advanced energy-saving features include the use of renewable energy including solar power, and LED lighting in common areas. As a result, water for the building's kitchen, for example, is heated not with conventional electric hot water heater but rather with solar energy and a heat pump water heaters using natural refrigerant. Moreover, scheduled planting facilitates the creation of green belts\*1 that continue seamlessly from the building's site into surrounding areas, thus contributing to the preservation of biodiversity.



Sony City Osaki

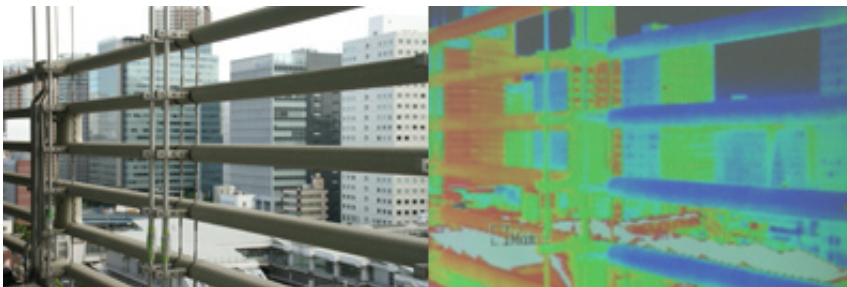
The building has terracotta louvers installed on the outside. Water -- predominantly rainwater -- flows inside the louvers. Water seeping from the surface evaporates and absorbs heat, thus cooling the surrounding air -- similar to uchimizu, or the traditional Japanese practice of sprinkling water -- and reducing the burden of the building's air conditioning on the

environment and lowering CO2 emissions. Reducing the temperature of the air surrounding the building also helps to relieve the heat island effect. Many buildings use louvers made of aluminum or terracotta to keep out direct sunlight, but Sony City Osaki is the first building in the world to install a louver system that uses water to cool the surrounding air.



South-facing solar panels

\*1 [Click here for more details in Building Neighborhood Ecological Networks.](#) > page 206



Infrared thermographic image of Sony City Osaki's terracotta louvers (right). The surface of the portion of the louver where the water flows (blue) is approximately 10 degree C cooler than the rest of the louver.

Practices employed during the construction of Sony City Osaki also reflected environmental considerations. Examples include the use of green power by construction site offices, the use of recycled building materials, the use of fewer dump trucks -- thanks to an increase in the efficiency of excavation work -- and more efficient haulage of excavated earth, owing to the use of sea transport, facilitating the transport of a larger volume of earth per trip than is possible with trucks.

Completed in October 2006, Sony's headquarters building -- Sony City -- features a highly efficient integrated heating system, which was developed in semiconductor facilities and other manufacturing operations and applied here, as well as a variety of energy-saving technologies. One of these technologies recycles treated wastewater from an adjacent treatment facility -- which would otherwise be discharged into rivers -- back into the building and harnesses the untapped energy therein to power air conditioning and heating systems, reducing the building's cooling systems requirements and mitigating the heat island effect. Sony's efforts here, particularly its use of new energy-saving technologies and information technology, have garnered high praise and in December 2008 earned Sony the Minister of Economy, Trade and Industry Prize at the Green IT Awards 2008.

In fiscal year 2010, the government of Tokyo, where Sony City is located, implemented a mandatory emissions reduction bill with a cap-and-trade emissions trading scheme for large emitters, in line with the Tokyo Metropolitan Ordinance on Environmental Protection. Compulsory reductions for emitters given the rank "top-level office" -- assigned to those recognized as having the very best programs for reducing global warming -- are lower than for other emitters. In early fiscal year 2011, Sony was designated a "top-level office."

## Americas

(Updated on November 22, 2011)

Sony Pictures Entertainment in Culver City, California joined the U.S. Green Building Council to announce the studio's official receipt of the Leadership in Energy and Environmental Design (LEED®)\*2 Gold Certification for the LOT Project building.

These standards were developed by the U.S. Green Building Council in order to improve the performance of buildings across all metrics, including CO2 emissions reduction, water efficiency, improved indoor environmental quality and stewardship of resources.

Trees selected for planting around the building can withstand dry conditions and are native to the area. More than 95% of wood waste generated in the construction of the building is being recycled. A wide variety of environmentally conscious features incorporated into the building include lighting with automatic sensors, low-flow toilets that use less water, and the installation of a rainwater filter system. Chemical-free products are being used for the building's exterior walls, paints and carpets, and construction materials are sourced locally to help reduce the amount of CO2 emissions produced in the transportation process.

This building will replace four less-efficient office buildings located across Los Angeles and is expected to save approximately 300 tons of carbon per year. In addition, the coinciding upgrade of the central plant will reduce energy use by an estimated 894,000 kWh per year (290 tons- CO2).

Sony Electronics Inc.'s new head office building in San Diego, California, which was completed in the summer of 2009, was awarded Leadership in Environmental Design (LEED®) Gold Certification from the U.S. Green Building Council Institute. As an environmental initiative, the company worked with a local electric power utility to install solar panels on the parking building's rooftop to generate power. Also, considering how precious water resources are, the company opted for a system that routes water discharged by the air-conditioning system to the fountain in the atrium and has placed sensors in the toilets, among others. These efforts are expected to cut the use of water resources 47% more than that required for conventional buildings.

In addition, the company chose architectural features -- including a layout that allows natural light to filter in over 90% of the floor space -- that will result in a 17.5% reduction in energy consumption.

In 2010, Sony Electronics' US headquarters implemented an online energy "dashboard" in an effort to continuously monitor, track and eventually reduce energy consumption. This dashboard gives employees a behind-the-scenes look into just how much electricity the building and parking structure are consuming in near real-time. The purpose of this system is to provide more awareness and transparency into the building's energy consumption with a goal of finding ways to reduce it. The feature-rich dashboard includes energy statistics, a green conversion center that provides easily recognizable frames of reference, top green attributes of



Sony Electronics' new head office building in San Diego, California



Energy consumption displayed on the online energy dashboard



the building and tips on ways to reduce our environmental footprint at work and home and a LEED green building checklist that explains all the criteria Sony needed to meet in order to have the building certified LEED Gold.

\*2 LEED® is a green building certification system developed by the U.S. Green Building Council to encourage buildings and communities to improve their environmental performance in terms of CO2 emissions reductions, natural resources and resource stewardship, and indoor environmental quality.

## Europe

(Updated on November 22, 2011)

In March 2011, Sony Switzerland moved to a building designed and developed during a period of 2.5 years in strong cooperation between Sony, the city of Schlieren, investors and developers. This new building meets the highest energy efficiency and environment consciousness standards. Compared with the old building, Sony Switzerland estimates an electricity saving potential of 20%, heating energy decrease of 15% and CO2 saving of 10%. The facility is a Swiss MINERGIE house, which means that it was given a registered quality label for being a low-energy-consumption building. This is due to the implementation of several measures. For example, CO2 emissions from energy use are minimized because the building is connected to a district heating and cooling grid system. Solar panels were installed on the roof, with 1/3 of the energy produced reserved for Sony, which occupies 1/3 of the building.

Moreover, energy for the building is produced from waste incineration, while energy consumption is reduced through a wastewater heat recovery system. The use of automatic controlled sun blinds; a glass façade, which lightens the offices sufficiently during the day; and an indirect lighting system and light control via movement sensors, will contribute to the estimated savings above. Thanks to a modern air filtering and cooling system, the glass building does not need windows that can be opened by the employees.



Sony Europa/ Switzerland moved to new building in Schlieren

## Environment

### Reducing the Environmental Impact of Logistics

Reducing the amount of energy consumed, the volume of greenhouse gases emitted, and the amount of cardboard and number of pallets used in the transportation of parts and finished goods is significant to reduction of the environmental footprint of products over their entire life cycle.

Sony is decreasing transportation weight by means of products' weight reduction. At the same time, Sony is striving to optimize logistics supply chain efficiency by means of shrinking the size of set packaging, improvement of loading efficiency and simplifying parts packaging, and also to switch to environmentally conscious modes of transportation such as modal shift and Intra-industry collaboration of transportation and distribution in order to achieve reduction of CO2 emissions and packaging materials used in transportation.

Japan's Law Concerning the Rational Use of Energy requires consignors to implement measures to reduce the environmental impact of logistics. In particular, companies designated as "special consignors," which have particularly large shipping volumes, are obliged to report energy used. Effective from April 2010, Sony EMCS Corporation was designated as a special consignor. Sony has reinforced its ongoing efforts to reduce the environmental impact of logistics activities to respond to this move.

Sony's logistics are principally handled by Sony Supply Chain Solutions, Inc. (SSCS). In fiscal year 2010, total CO2 emissions generated by SSCS's transportation operations and other companies operations were approximately 570,000 tons. These operations cover more than 40 countries worldwide, including Japan, the United States, Europe and Asia, and include the shipment of products internationally and the operations of principal affiliates regionally.

- Reducing the Environmental Impact of Logistics through Improvement of Package Design > page 238
- Reduction of Packaging Materials Used in Transferring Products and Parts in Factories and Warehouses > page 240
- Promoting Modal Shift > page 240
- Enhancing Transportation Efficiency by Intra-Industry Collaboration and Milk Run Transportation > page 242
- By changing unloading port, shortening truck haul distance in Japan > page 242
- Introduction of Environmentally Conscious Vehicles > page 243

## Environment

### Reducing the Environmental Impact of Logistics through Improvement of Package Design

(Updated on November 22, 2011)

Within the Sony Group, product design, procurement, manufacturing and logistics departments are working together to promote a packaging improvement initiative to realize optimization of total costs -- i.e., costs for design, procurement, manufacturing and logistics -- for products and components, and concurrently to reduce environmental impact of CO2 emissions and packaging materials used.

During the course of improving product packaging, product loading efficiency to container is increased by shrinking package sizes, and optimization of loading efficiency can be achieved depending on transportation variation, thereby contributing to reduction of environmental impact.



Left: 2009 model; right: 2011 model

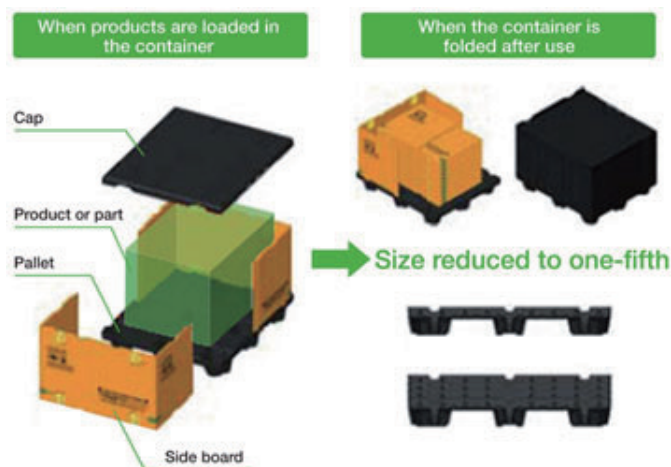
In the area of product packaging used for LCD televisions, from 2008 (2009 models) onward Sony has continued to implement reductions in packaging volume. In 2010 (2011 models), Sony achieved average packaging volume reductions of 25% compared with the previous year's models. As a result, CO2 emissions generated in transportation were reduced by approximately 6,800 tons. For example, Sony reduced the packaging volume for the NX720 Series 40-inch model by 53%\*1 compared with the previous model by packing the stand and neck in a configuration separate from the display. This resulted in reductions of transportation CO2 emissions of approximately 60%\*2 per set.

\*1 In the case of a comparison between the NX720 Series 40-inch model and the BRAVIA V5 Series 40-inch model launched in February 2009

\*2 In the case of an approximate 450 km haul distance from factory to warehouse using a domestic transportation trailer fully loaded the same size model

In addition to the above efforts, Sony has reduced packaging material usage by the utilization of returnable containers, which Sony first introduced in Japan in 2005. Due to shift the production factories to overseas, Sony is promoting the use of returnable containers mainly Asia regions.

In fiscal year 2010, Sony used approximately 29,000 returnable containers in the world, thereby contributing to a reduction of 450 tons of packaging materials and one-way pallets.

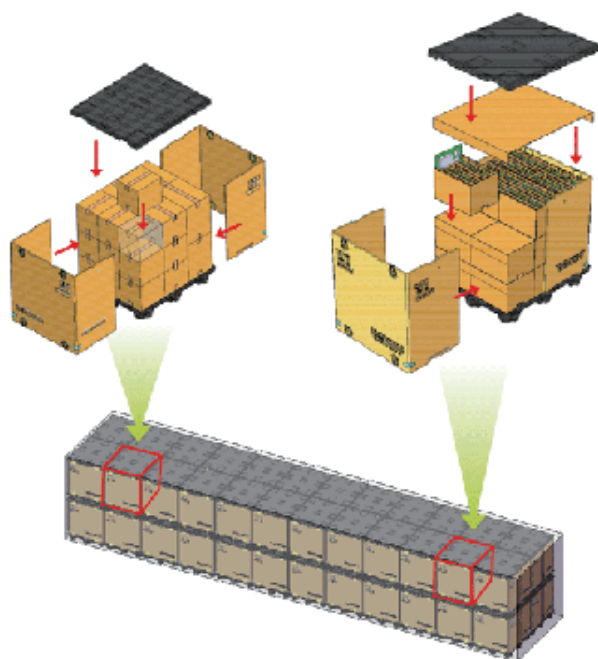


Structural overview of a returnable container



Returnable container

Returnable containers are designed to enable efficient loading onto sea freight containers. Since 2009, Sony has introduced modular size (standardized) cartons, which efficiently fit into returnable containers. By using modular cartons matching the storage requirements of each parts, Sony has increased parts storage efficiency and optimized the number of units shipped in each container.



Returnable containers packed with modular cartons and a shipping container efficiently loaded with returnable containers

## Environment

### Reduction of Packaging Materials Used in Transferring Products and Parts in Factories and Warehouses

(Updated on November 22, 2011)

When transporting parts and products in factories and warehouses, Sony uses reusable eco-bands as packaging materials for preventing the collapse of stacked cartons. Since eco-bands may be reused many times over compared with conventional, disposable stretch film, their use contributes to volume reductions in both packaging materials consumption volume and wastes volume.



Examples of eco-band usage

### Promoting Modal Shift

(Updated on November 22, 2011)

As part of Sony's efforts to reduce the environmental impact of finished goods transportation, Sony is promoting modal shift from sea transportation mode of high negative environmental impact to further low impact mode

#### Modal Shift in International transportation

For example, for VAIO notebook PC, Sony changed over to sea shipment for approximately 23% of total shipments. For shipment of European and North American models in particular, by changing from air shipment to sea shipment and rail transportation, Sony reduced CO2 emissions by approximately 10,000 tons.

For numerous finished goods shipped from Shanghai, China to Japan, Sony changed from air shipment to a combination of sea and rail transportation or sea and truck transportation. As a result, Sony reduced CO2 emissions by approximately 360 tons.

#### Modal Shift in Regions

Sony is actively promoting modal shift in each region. For example, in China, by expanding the use of rail transportation

with sea containers for transporting finished goods from manufacturing plants in southern China to export ports, Sony reduced CO2 emissions by approximately 360 tons compared with transportation by truck.

In Brazil, for shipment from its factory in Manaus to São Paulo, Sony Brasil Ltda. changed to cabotage shipment, thereby reducing CO2 emissions by approximately 100 tons compared with transportation by truck. In France, Sony changed to using barge\* and rail from Le Havre port to Éragny warehouse in the suburb of Paris. For shipment to the south of France, compared with transportation by truck, this change reduced CO2 emission of approximately 170 tons.

\* Barges are used for transporting heavy cargoes near ports and via canals.



Modal shift from truck to cabotage in Brazil

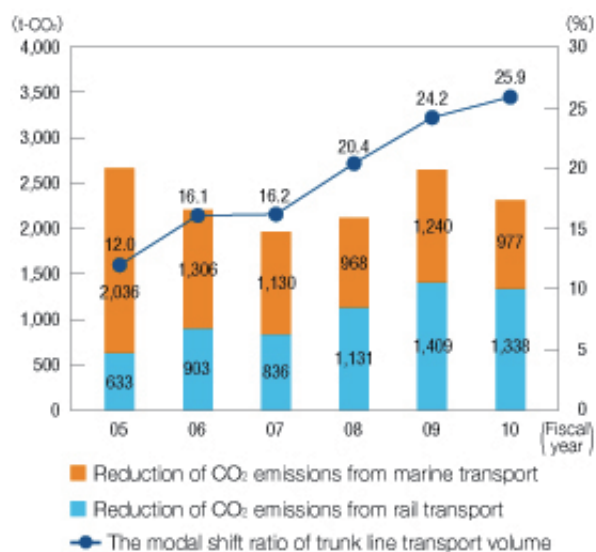


Modal shift from truck to barge shipment and rail for South France area

Also in Japan, Sony is continuing to promote modal shift from truck to rail or ferry.

In fiscal year 2010, Sony promoted modal shift for approximately 19,000 tons transportation weights of finished goods in Japan, which resulted in reductions of CO2 emissions by approximately 2,300 tons compared with transportation by truck. This amount is equivalent to approximately 26% of the volume of Sony's transportation weights by truck in main line transportation.

Modal shift Ratio and Reduction of CO2 Emissions of Logistics with Japan





## Environment

### Enhancing Transportation Efficiency by Intra-Industry Collaboration and Milk Run Transportation

(Updated on November 22, 2011)

One method of reducing environmental impact is to increase the transportation volume of products and parts loaded into a truck, thereby enhancing transportation efficiency. As part of its efforts to increase transportation efficiency, Sony works with other companies of intra-industry to utilize such methods as cooperative transportation and milk run\* transportation.

To date, Sony has implemented cooperative transportation with others in its truck transportation and distribution in the Hokkaido, Fukuoka and Okinawa areas and as well as in rail transportation between Tokyo and Osaka. And in February 2010, Sony also began cooperative transportation in the Osaka area. In fiscal year 2010, these measures resulted in reductions of approximately 110 tons CO2 emissions.



Sony trucks run round trip as a means of contributing to increased transportation efficiency.

In the environs of Shanghai, China, for transportation relating to parts procurement and finished goods, Sony Supply Chain Solutions (Shanghai) Ltd is utilizing a combination of milk run route and round trip trucks run to realize transportation efficiency increases, which are also contributing to reduce transportation CO2 emissions.

\* In a milk run, a truck follows a route to collect parts from several suppliers, thereby improving transportation efficiency compared with the routing method of separate runs to each supplier.

### By changing unloading port, shortening truck haul distance in Japan

(Updated on November 22, 2011)

When Sony ships LCD televisions to Japan that were manufactured in other regions of Asia, Sony changes the unloading port from Tokyo to Osaka or from Osaka to Tokyo by depending on the demand conditions of sales, even after the vessel has departed from its origin port. By this operation, Sony is able to shorten truck haul distance in Japan after the LCD TV unloaded at the arrival port. Compared with all shipment unloading at the same port, Sony reduced CO2 emissions of approximately 600 tons in fiscal year 2010.

## Environment

### Introduction of Environmentally Conscious Vehicles

(Updated on November 22, 2011)

Sony is promoting the introduction of vehicles with low environmental impact (fuel-efficient vehicles, low-emission vehicles, etc.). In Thailand, approximately one-third of the vehicles operated by Sony Supply Chain Solutions Thailand Ltd have been converted to run on compressed natural gas (CNG), thereby reducing greenhouse gas (CO<sub>2</sub>) emissions and such air pollutants as NO<sub>x</sub> gases.



A CNG-powered truck in Thailand



## Environment

### Recycling End-of-Life Products

Sony supports the principle of individual producer responsibility (IPR). Accordingly, Sony promotes the collection and recycling of end-of-life products and incorporates consideration for recycling into product design.

For policy, please refer to Basic Policy on Resource Conservation. > page 162

Specifically for end-of-life products recycling, Sony supports the principle of individual producer responsibility (IPR), as it provides incentives to producers to take responsibility over the entire life cycle of their products. Accordingly, Sony promotes the collection and recycling of end-of-life products and the design of products suitable for recycling. Sony is also committed to the development and efficient operation of recycling systems that accommodate the customs and needs of different regions and countries.

- Sony's Recycling Record > page 245
- Improving Product Recyclability > page 246

## Environment

### Sony's Recycling Record

(Updated on November 22, 2011)

Sony is promoting the collection and recycling of end-of-life products in compliance with the legislative requirements of different countries and regions, including the Home Appliance Recycling Law in Japan, the EU Directive on Waste Electrical and Electronic Equipment (the WEEE Directive) in Europe and the each state's Electronic Waste Recycling Act in the United States.

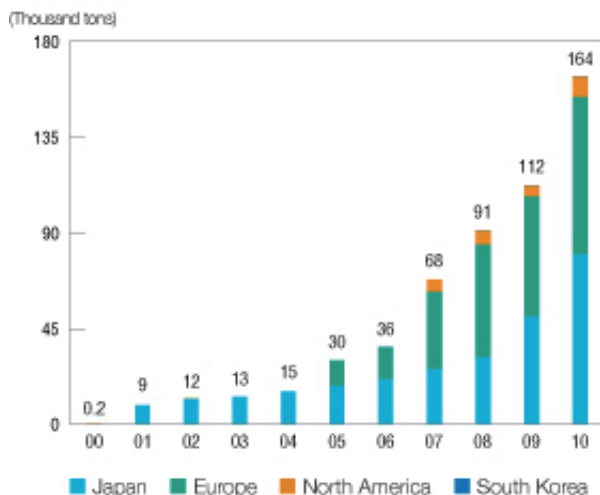
Under Green Management 2010, targets related to product recycling included continuously increasing resource recovery from end-of-life products.

To facilitate the increase in the resource recovery volume of end-of-life products, Sony has incorporated considerations to recycling at the stage of product development and design.

In fiscal year 2010, Sony recovered resources from 164,000 tons of collected end-of-life products, including televisions and personal computers collected from Japanese consumers, putting Sony's collection rate\*1 in Japan for this period at approximately 108%. Owing to the end of analog broadcasting, as well as to Japan's eco-point scheme, recovery of used televisions rose significantly.

\*1 This collection rate is expressed as a percentage of the actual weight of TVs and PCs collected in fiscal year 2010 in Japan and the sum of the weight of TVs sold in Japan in fiscal year 2000 and PCs sold in Japan in fiscal year 2003 (assuming an average period of use of 10 years for televisions and seven years for PCs).

Weight of End-of-Life Products Collected



## Environment

### Improving Product Recyclability

(Updated on November 22, 2011)

As part of its effort to design more environmentally conscious products, Sony is working to make its products more conducive to recycling. For example, Sony has formulated guidelines summarizing crucial points for consideration in creating environmentally conscious televisions and has incorporated these guidelines into the product planning and design stage. These guidelines encompass considerations for making televisions more conducive to recycling: making units easy to disassemble; clearly marking the position of screws and indicating the number of screws; and labeling to indicate materials and flame retardants used in plastic parts. This facilitates the recycling process by making it easier to pull end-of-life televisions apart and separate constituent materials. To enhance the suitability of televisions for recycling, Sony is making use of feedback from Green Cycle Corporation, a recycling firm in which Sony is the principal shareholder.



Label listing optical sheet materials

## Environment

### Recycling Activities in Each Region

(Updated on November 22, 2011)

- Recycling Activities in Japan > page 248
- Recycling Activities in Europe > page 252
- Recycling Activities in North America > page 254
- Recycling Activities in Asia > page 256
- Recycling Activities in South America > page 258

## Environment

### Recycling Activities in Japan

Sony recycles televisions and personal computers in line with applicable recycling-related laws in Japan. Sony also bears the cost of recycling lithium batteries and other small batteries, as well as packaging materials, as required by law.

### Recycling of Television Sets

(Updated on November 22, 2011)

Japan's Home Appliance Recycling Law, which came into effect in April 2001, initially covered four major home appliances: televisions, refrigerators, washing machines and air conditioners. In April 2009, the law was revised to also cover LCD and plasma televisions and clothes dryers. Among applicable products, Sony manufactures televisions (CRT, LCD and plasma models, including products bearing the Aiwa brand). The Home Appliance Recycling Law requires that consumers to pay collection, transport and recycling fees when disposing of applicable home appliances, retailers to take back such appliances and return them to manufacturers, and manufacturers to recycle these appliances.



Collected TVs at Green Cycle Corp.

Sony has established a nationwide cooperative recycling network with five other manufacturers.

As a consequence, Sony-manufactured televisions are now recycled at 15 recycling plants across

Japan. Sony Corporation is the principal shareholder in one of the 15 plants, Green Cycle Corp., in Aichi Prefecture. In fiscal year 2010, approximately 3.158 million CRT televisions and 91,000 flat-screen televisions manufactured by Sony were recycled. The Home Appliance Recycling Law obliges manufacturers to maintain recycling rates of at least 55% for CRT televisions and at least 50% for flat-screen televisions. Sony has consistently exceeded these rates since fiscal year 2001. In fiscal year 2010, the recycling rate for Sony-manufactured CRT televisions was 91%, while for Sony-manufactured flat-screen televisions it was 82%.

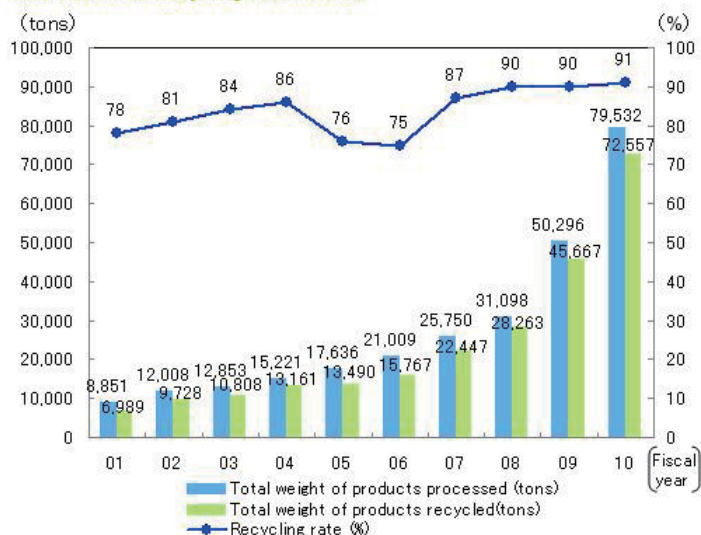
#### Television Recycling in Japan (Fiscal 2010)

	Units	CRT televisions	LCD and plasma televisions
Number of products brought into plants	Thousand	3,158	91
Number of products recycled	Thousand	2,901	79
Total weight of products processed	Tons	78,573	959
Total weight of recycled products and materials	Tons	71,762	795
Recycling rate	%	91%	82%

Notes:

1. Figures have been truncated.
2. The number of products recycled and total weight of products processed refer to the number and weight of products for which recycling processes were implemented in fiscal year 2010.
3. The number of products brought into plants and number of products recycled do not include products for which responsibility for recycling is undecided owing to, for example, the entry of incorrect information in tracking sheets.

#### CRT Television Recycling Performance



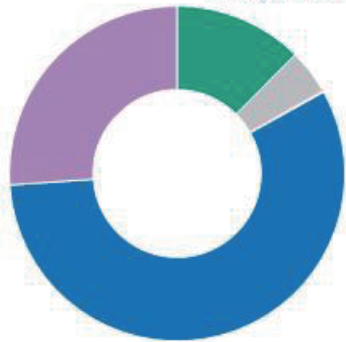
#### Parts and Resources Recycled from Televisions (Fiscal Year 2009)

Total weight of parts and resources which were processed to become possible to be transferred to someone for profit or free of charge who use these as parts or materials of their products

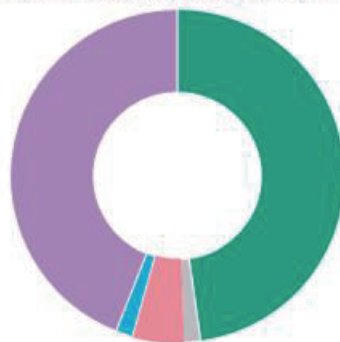
	Units	CRT televisions	LCD and plasma televisions
Iron	Tons	8,925	379
Copper	Tons	3,071	13
Aluminum	Tons	35	39
Nonferrous and ferrous compounds	Tons	110	13
CRT glass	Tons	40,899	-
Other valuable resources	Tons	18,719	349

Notes:

1. Figures have been truncated.
2. Other valuable resources include plastics, among others.

**Resources Recycled from CRT Televisions  
(Fiscal Year 2010)**


Icon:	8,925 tons
Copper:	3,071 tons
Aluminum:	35 tons
Non-ferrous and ferrous compounds:	110 tons
CRT glass:	40,899 tons
Other valuable materials:	18,719 tons

**Resources Recycled from LCD and Plasma Television (Fiscal Year 2010)**


Icon:	379 tons
Copper:	13 tons
Aluminum:	39 tons
Non-ferrous and ferrous compounds:	13 tons
Other valuable materials:	349 tons

## Recycling of PCs

(Updated on November 22, 2011)

In October 2003, Sony began collecting and recycling PCs and displays discarded by private citizens, in line with the Law for the Promotion of Effective Utilization of Resources, in addition to its well-established recycling program for units discarded by corporate users. Products collected included desktop and notebook PCs, and both CRT and LCD displays. These products are recycled by Green Cycle Corp. In fiscal year 2010, 47,953 Sony-manufactured PCs and displays were collected, generating approximately 284 tons of metals, plastics, glass and other materials.

### PC and Display Recycling in Japan (Fiscal 2010)

	Units	Desktop PCs	Notebook PCs	CRT displays	LCDs
Units brought into plant	Units	13,189	12,670	7,768	14,326
Total weight of products processed	Tons	140.8	30.5	135.0	77.2
Total weight of recycled products/material	Tons	150.4	15.0	97.8	53.2
Recycling rate	%	75%	49%	73%	69%

## Environment

### Collection of Small Electronics Equipment

(Updated on November 22, 2011)

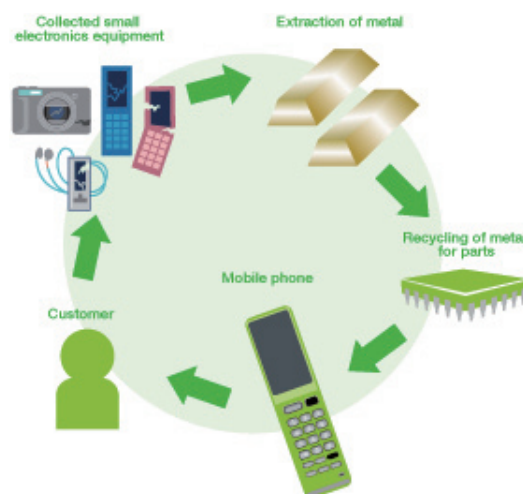
Sony Corporation has established a specialized section within its procurement group that is tasked with promoting the recycling of resources. Since September 2008 Sony--led by this section--and the city of Kitakyushu have cooperated to conduct proving tests for the recovery and effective use of valuable metals recovered from used digital still cameras, video cameras, portable digital music players, mobile phones and other small electronic products collected for this purpose. With the ultimate objective of creating a permanent recycling system, the proving tests included an assessment of the overall business feasibility of the scheme for resource recycling (collection → treatment → recovery). Gold extracted from small electronics collected in fiscal year 2008 was subsequently recycled for use in semiconductors for mobile phones. These semiconductors were mounted in mobile phones launched by Sony Ericsson Mobile Communications in February 2010, underscoring the steadily expanding use of metal recovered from small electronics equipment in commercial products. In June 2010, the proving tests were expanded to include the city of Fukuoka, and, in addition, in April 2011 the city of Nogata near Kitakyushu, with the aim of increasing the volume of metals thus recovered.



Recovering metal resources from small electronics equipment



Collection box for used small electronics equipment



Recovering metal resources from small electronics equipment



## Environment

### Recycling Activities in Europe

(Updated on November 22, 2011)

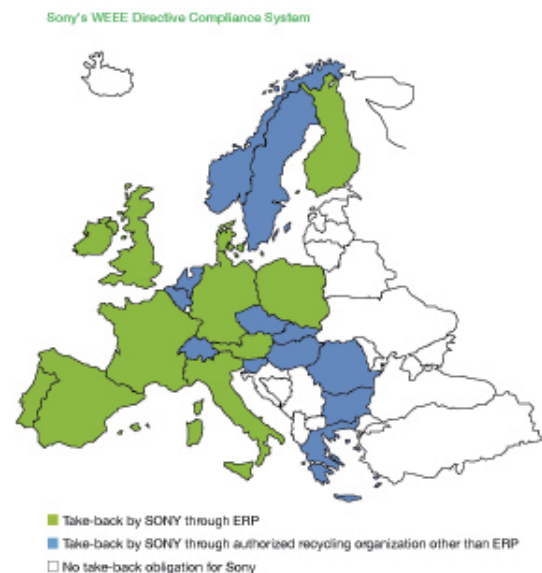
Take-back legislation in Europe - in particular, the European Union (EU) directives on Waste Electrical and Electronic Equipment (WEEE), batteries and packaging - requires manufacturers to organize and finance the collection and recycling of end-of-life products and packaging.

Sony takes full responsibility for its take-back obligations in all those European countries where it has sales bases.\*

In December 2002, Sony joined forces with Braun GmbH, AB Electrolux and Hewlett Packard Europe S.A., to form the European Recycling Platform (ERP). The aim of ERP was to establish efficient and cost-effective systems for the collection and recycling of end-of-life electrical and electronic products to enable member companies to fulfill their obligations as manufacturers.

The ERP operates WEEE collection and recycling services in Austria, Denmark, Finland, France, Germany, Ireland, Italy, Norway, Poland, Portugal, Spain and the United Kingdom and conducts regular on-site audits of all contracted recyclers to ensure compliance with the WEEE directive as well as to prevent illegal shipments of WEEE outside the EU. For European countries other than the 12 listed above and Norway, Sony cooperates with authorized recycling organizations that undertake recycling in lieu of manufacturers to ensure its products are recycled in a manner that complies with the WEEE directive or related legislation and regulations in each country. In 2010, Sony financed the costs of recycling around 74,000 tons of waste electrical and electronics products in Europe. Sony discloses for all its products placed on the market in Europe information on substances and components that require special treatment to facilitate safe recycling

Sony's WEEE Directive Compliance System



The EU battery directive enacted in September 2008 replaced existing national legislation and expanded mandatory producer take-back and recycling of batteries for the entire EU. The directive encompasses all types of batteries. Sony complies with this directive by making use of the ERP and other battery recycling services.

Sony's Battery Compliance System



In numerous European countries, producers are legally obliged to collect and recycle waste from packaging. Sony fulfills this obligation through participation in authorized collection and recycling organizations wherever applicable.

Sony's Packaging Compliance System



\* Sony has sales bases in the following European countries: Austria, Belgium, Bulgaria, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Italy, the Netherlands, Norway, Poland, Portugal, Romania, Russia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

## Environment

### Recycling Activities in North America

(Updated on November 22, 2011)

Sony Electronics Inc. (SEL) in the United States and Sony of Canada Ltd. continue to contribute to the development of the recycling infrastructure in North America. All recycling and support activities are committed to a responsible recycling process which complies with a growing mandate of state and provincial legislation.

### Americas

(Updated on November 22, 2011)

In the United States, Sony Electronics Inc. (SEL) continues to expand its voluntary recycling sponsorship program. On September 15, 2007, the company introduced The Sony Take Back Recycling Program, which aims to further encourage consumers to recycle and dispose of electronics equipment in an environmentally sound manner. Developed in collaboration with waste administration and recycling companies in the United States, the program allows consumers to drop off Sony products at designated collection centers free of charge. Products from other manufacturers can also be recycled for a nominal fee. From 75 collection centers initially, the program has expanded and today has 553 such centers in operation.\*1 In fiscal year 2010, these centers collected 8,700 tons (19,200,000 pounds) of used consumer electronics. SEL aims eventually to provide a collection center within 20 miles of the homes of 95% of the country's population. SEL has also set a goal of recycling the equivalent weight of recovered consumer electronics for every new product sold.



Recycling activities (United States)



Recycling activities (United States)

\*1 Includes recycling centers established under the GreenFill initiative, among others

SEL also conducts the Sony Green Glove program, whereby consumers purchasing a new 37" or larger BRAVIA LCD television from a direct retailer are eligible to have their old televisions removed and hauled away for recycling free of charge. This program was launched nationwide in November 2008. Used televisions thus collected are recycled in a cooperative effort involving SEL's logistics- and environment-related departments and Sony Store, facilitating a low-cost sustainable service for customers. To date, a total of 44 tons (97,000 pounds) of used electronics have been collected through this project.

Complementing these efforts, in April 2009 SEL established the GreenFill program, which enables consumers to recycle unneeded digital cameras, mobile phones, portable media players, notebook PCs and other small electronics equipment from any manufacturer free of charge, simply by placing it in the collection box at participating retail locations. To date, 112 stores and 139 kiosks have signed on to the GreenFill program, and Sony expects this number of participants to increase in the coming months. Participating locations are listed on the environment page of SEL's website.

Consumers can drop off mobile phones, and rechargeable batteries can be dropped off for collection at direct retailers and participating kiosks. As a member of the Rechargeable Battery Recycling Corporation (RBRC)\*2, SEL recycles rechargeable batteries free of charge in line with RBRC's recycling scheme.

In addition to conducting its own independent audits of recyclers and the downstream processing firms to which they subcontract, SEL has set forth a recycling policy whereby all recyclers it does business with must obtain Responsible Recycling (R2) or e-Stewards certification by July 1, 2012. R2 and e-Stewards are certification systems for recyclers organized in part by the U.S. Environmental Protection Agency (EPA) that evaluate such factors as environmental management performance and workplace environment.

\*2 RBRC is a nonprofit public service organization that conducts and manages rechargeable battery recycling programs and provides related consulting services in the United States and Canada.

## Canada

(Updated on November 22, 2011)

Since 2003, Sony of Canada Ltd. (Sony Canada) has worked with provincial governments\*3 to set up recycling programs for end-of-life electronics equipment. To date, these programs have recycled more than 170,000 tons(370,000,000 pounds) of such equipment.

In April 2008, Sony Canada expanded its recycling program for small electronic equipment across Canada, enabling consumers to take such products to any of its 53 direct retailers across the country for collection and recycling at no charge. Like its counterpart in the United States, Sony Canada also conducts the Sony Green Glove Program. In 2010, Sony Canada increased its network of nonretail locations where it collects televisions and other large Sony electronics products for recycling free of charge from 26 to 58. Since fiscal year 2008, Sony Canada has collected and recycled 450 tons (990,000 pounds) of consumer electronics.



Recycling Activities (Canada)

• Click here for more details in Sony Canada's website  
<http://www.eco.sony.ca/>

In accordance with electronics recycling standards set forth by Electronics Product Stewardship Canada (EPSC), which prohibits the export of waste to countries not in the Organisation for Economic Co-operation and Development, Sony Canada conducts its own independent audits of recyclers and the downstream processing firms which they subcontract.

\*3 British Columbia, Alberta, Saskatchewan, Ontario, Nova Scotia, and Prince Edward Island

## Environment

### Recycling Activities in Asia

(Updated on November 22, 2011)

Sony conducts a broad range of recycling programs in Asia.

### Regionwide Activities

(Updated on November 22, 2011)

At VAIO service centers in Asian region, Sony is promoting the Go Green Campaign for the reuse of parts collected during repairs and servicing. Parts that are identified as being suitable for reuse are returned to the manufacturing plant, while only those parts determined to be non-reusable are sent for disposal. In addition to curbing resource consumption, this program contributes to the reduction in environmental pollution caused by waste disposal. In fiscal year 2010, 23 tons of parts were reused under this program.



A Go Green Campaign poster

### Korea

(Updated on November 22, 2011)

Sony Korea collects and recycles PCs, televisions, printers and audio products in line with recycling legislation that came into force in the Republic of Korea in 2003. In recent years, by utilizing directly managed Sony Stores, Sony has increased the number of pieces of electronic equipment it collects directly. Sony Korea has also exchanged a memorandum with an NGO, the National Council of Green Consumers' Networks in Korea, regarding the implementation of Sony's Road to Zero global environmental plan, including programs aimed at achieving zero waste-electronic equipment. These programs are designed to conserve resources through the collection of products for recycling. As part of these activities, Sony Korea has developed an educational program for students and teachers, and students at the 100 schools in which the program has been introduced participated in product collections.



Educational program developed by Sony Korea

## China

(Updated on November 22, 2011)

In China, the Regulations on Administration of Collection and Disposal of Waste Electrical Appliances and Electronic Products came into force on January 1, 2011. Although detailed rules for the implementation of these regulations are expected to be issued during fiscal year 2011, Sony China has commenced various initiatives to ensure compliance. Sony has already introduced a collection and recycling program for professional-use equipment used for broadcasting. Sony is also participating in an industrywide initiative in Hong Kong -- which began in 2008 -- to promote the collection and recycling of used PCs.

## Taiwan

(Updated on November 22, 2011)

Sony Taiwan carries out the collection and recycling of televisions and PCs in accordance with relevant legal requirements effective since 1998.

## Thailand

(Updated on November 22, 2011)

Sony Thailand and Sony Supply Chain Solutions (Thailand) have installed battery collection boxes at their offices as well as at the Bangkok Sony Service Center. In Thailand, as there is still no law mandating the collection of used batteries, this program may be seen as taking the initiative in advance of compliance requirements. From October 2010 to March 2011, Sony collected 52 kilograms of used batteries under this program. The collected batteries were disposed of appropriately in an environmentally conscious manner.



Sony Thailand's battery collection boxes

## Environment

### Recycling Activities in South America

(Updated on November 22, 2011)

Sony promotes various recycling programs in South America.

### Regionwide Activities

(Updated on November 22, 2011)

In 2010, Sony sales companies in South America--including Sony Mexico, Sony Panama, Sony Colombia, Sony Peru, Sony Chile and Sony Argentina--launched the GREEN SERVICE Program. Under this initiative, discarded products and components still under warranty are repaired using participating companies' service networks, facilitating appropriate recycling. This program marks a shift in focus from simple disposal to the proper management and repair of discarded products, helping Sony fulfill its responsibility to reduce the environmental impact of its products after they are sold and respond to the expectations of customers.

### Colombia

(Updated on November 22, 2011)

In fiscal year 2011, Sony Colombia launched its free-of-charge end-of-life product and battery collection program. End-of-life products and batteries are collected through collection box set up by Sony Colombia at 6 Sony Style stores. Bigger electronics are collected at four authorized service centers. Called "Proyecto Ambiente," the program, applies to audio and video equipment, televisions, cellular phones and all other Sony-branded products. This initiative is unique in the electronics segment in Colombia and has the support of Colombia's Ministry of the Environment, Housing and Territorial Development.

Collected products and batteries are turned over to an authorized recycling firm, LITO, which treats e-waste in an environmentally sound manner. The recycling process begins when customers drop off their used electronics or batteries at the recycling points. LITO then transports collected used products to their recycling plants, where materials are classified and grouped according to their destination.

Marcela Bonilla, Advisor at the Ministry of the Environment of Colombia, Sony Colombia and LITO representatives, and various journalists attended a press event to announce the program's launch in April 2011. David Tezna, from Sony Colombia, commented, "The major benefit for the participants is to feel that they are contributing to sustaining a cleaner and healthier planet for the next generation."



Press event announcing the launch of Colombia's voluntary collection program (center: Advisor, Ministry of the Environment of Colombia)

- Click here for more details in Sony Colombia's web site (in Spanish only)  
<http://www.sony.com.co/corporate/CO/gestionambiental/cuidado.html>



## Mexico

(Updated on November 22, 2011)

Sony Mexico has launched a trade-in program whereby customers purchasing new products can bring old products in for recycling. This initiative, dubbed "D-evolution," enables customers to earn credits on items brought in for recycling, which they can then use toward the purchase of a new Sony product. The program accepts used headphones, digital still cameras, digital video cameras and digital single-lens reflex cameras.



Collecting used headphones as part of the "D-evolution" program

- Click here for more details in Sony Style Mexico's web site (in Spanish only)  
<https://www.sonystyle.com.mx/backstage/devolution.html>

## Brazil

(Updated on November 22, 2011)

In fiscal year 2006, Sony Brazil launched its own end-of-life battery collection program in cooperation with retailers. Batteries are gathered via collection posts set up at retailers and business offices across the country. These batteries are then turned over to a recycling firm, where they are disposed of in an appropriate manner.



Sony Style battery collection post in Brazil



## Argentina

(Updated on November 22, 2011)

In December 2008, the city of Buenos Aires introduced regulations regarding the disposal of end-of-life batteries. In fiscal year 2009, Sony Argentina established 11 battery collection posts in Buenos Aires and launched an end-of-life battery collection program.



Battery collection box in Buenos Aires

## Chile

(Updated on November 22, 2011)

From December 5–6, 2009, Sony Chile cooperated with local waste collection firms to organize Chile's first-ever television trade-in event, which was staged in three separate locations. The event invited consumers to bring in old televisions of any make for recycling, in exchange for which they received a coupon to use toward the purchase of a new Sony television. The event also served to publicize the importance of recycling televisions in an environmentally conscious manner.



Poster for television trade-in event in Chile

## Costa Rica

(Updated on November 22, 2011)

In March 2010, Sony Costa Rica sponsored a recycling event for waste electronics equipment organized by local disposal firms. During the event, customers brought in a total of 15 tons of used electronics equipment, which was disposed of in an environmentally conscious manner.



Sony Costa Rica recycling event poster

## Environment

### Links for Product Recycling Information in Each Region

Please refer to the following websites for information on the recycling of Sony products in each region.

This list includes links to third parties' websites.

(Updated on August 31, 2011)

#### Japan

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- PC and Display Recycling in Japan (Japanese only)  
<http://www.sony.co.jp/SonyInfo/pcrecycle/index.html>
- TV Recycling in Japan (Japanese only)  
<http://www.sony.co.jp/SonyInfo/csr/eco/recycle/>

#### Europe

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Austria, France, Germany, Ireland, Italy, Poland, Portugal, Spain, United Kingdom

- ERP  
<http://www.erp-recycling.org/>

Belgium

- Recupel  
<http://www.recupel.be/Startpagina.html>

Czech Republic

- Asekol  
<http://www.asekol.cz/>

Denmark

- NERA-DK  
<http://www.nera.dk/>

Finland

- NERA-FI  
<http://www.erp-recycling.fi/>

Greece

- Appliances Recycling SA  
<http://www.electrocycle.gr/gb/>

Hungary

- Elektro-Coord  
<http://www.electro-coord.hu/>

Netherlands

- ICT Milieu (IT)  
<http://www.ictoffice.nl/>

Norway

- El Retur  
<http://www.elretur.no/>

Slovakia

- SEWA  
<http://www.sewa.sk/>

Sweden

- El Kretsen  
<http://www.el-kretsen.se/>

Switzerland

- SWICO  
<http://www.swico.ch/de/home.asp>

**North America**

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United States

- E-cycling Central  
<http://www.ecyclingcentral.com/>
- Sony Recycling Programs  
<http://green.sel.sony.com/pages/recycle-2.html>
- RBRC  
<http://www.call2recycle.org/call2recycle/index.html>

**South America**

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Colombia

- LITO  
<http://www.litoltda.com/>

## Environment

### Environmental Communication

Sony provides a wide variety of stakeholders with environmental information in an accurate, timely and continuous manner. Sony also aims to reduce its environmental impact by implementing environmental activities and capitalizing on its partnerships and interactive communications while paying serious attention to the opinions of those both within and outside the Company.

## Environment

### Communicating with Society

- Environmental Information on Websites > page 266
- Disclosing Environmental Information on Products > page 267
- Events and Exhibitions > page 268
- Promoting Dialogue with Stakeholders > page 273
- Cooperation with NGOs > page 273
- Environmental Initiatives through Music, Artists and Events > page 274
- Activities Involving Popular Characters > page 274

## Environment

### Environmental Information on Websites

#### Japan

(Updated on November 22, 2011)

To convey information about the Sony Group's environmental initiatives implemented around the world, Sony has launched a website in Japan called "Sony's Eco." The website introduces initiatives through reports on visits by artists to the front lines of environmental protection and on the activities of Sony Group employees, as well as environment-related news within the Sony Group. The content is also available in My Sony E-Mail Magazine (in Japanese only). Comments and opinions expressed by visitors to these websites are used as references in the production of Sony's in-house magazine, Eco Press (in Japanese only).

- Japan's website: Sony's Eco  
<http://www.sony.co.jp/SonyInfo/csr/eco/>

#### Pan Asia

(Updated on November 22, 2011)

Sony's Pan Asia environmental website, which was newly launched in December 2010, aims to tell both consumers and employees about Sony's global environmental plan "Road to Zero," and the environmental activities and products in the region.

The website consists of three main sections. "Our Green Journey" talks about Sony's eco commitment, regional environmental milestones and our environmental initiatives throughout the lifecycle of each Sony product. "Play Your Part" aims to educate consumers on how they can reduce their environmental impact by sharing eco tips, which are supported by actual examples from Sony. "What's Happening" updates consumers on the latest eco-conscious products, environmental initiatives and events in the region.

- Pan Asian website: Sony's Green Journey  
<http://www.sony-asia.com/microsite/eco/>

#### Europe

(Updated on November 22, 2011)

Sony Europe's sustainability website provides information about its environmental and social activities in all major European languages. The website covers Sony's commitment to the environment, including its efforts to incorporate environmentally conscious features into Sony products; reduce the environmental footprint of products over the entire product life cycle, from materials procurement through to manufacturing and recycling; and lower its total impact on the earth. It also provides information about different environmental and social initiatives that Sony supports, as well as tips for saving energy and other useful information for Sony customers, to help them play their part.

- Sony Europe website  
<http://campaign.odw.sony-europe.com/hub/eco.html>

In fiscal year 2010, Sony Europe launched Open Planet Ideas, an online platform where anyone can share, develop and source ideas for tackling some of the world's most important environmental issues by using or repurposing existing Sony technologies, either on their own or in unique combinations. The final idea that was chosen to be developed further is a new kind of volunteering application using geo-tagging and social gaming functionality to make "ad hoc"-style volunteering easier and more fun. The application will be built and tested by Sony engineers and then released in open source format into the public domain for anyone to use. In May 2011, Open Planet Ideas was awarded a prestigious Guardian Sustainable Business Award, which recognizes and rewards innovative sustainability practices, from the The Guardian, a major UK newspaper. The program was named as winner in the "Communicating Sustainability" category, which honors creative communications projects that have actively engaged consumers and demonstrably driven sustainable behaviors.

- Open Planet Ideas Website  
<http://www.openplanetideas.com/>

## United States

(Updated on November 22, 2011)

In 2008, Sony Electronics Inc. (SEL) in the United States launched a website to publicize Sony's environmental efforts. The site provides information on the Sony Take Back Recycling Program, which is a voluntary recycling initiative in the United States, and introduces environmentally conscious Sony products, product innovations and other sustainability initiatives and programs with the aim of conveying Sony's commitment to reducing its environmental impact.

- SEL's environmental website: Sony® Green09  
<http://green.sel.sony.com/index.html>

## Disclosing Environmental Information on Products

(Updated on November 22, 2011)

In addition to providing environmentally conscious products in markets around the world, Sony provides environment-related information on these products in a manner that takes into account regional and national differences. In fiscal year 2008, beginning in Japan, Sony began affixing a new eco logo to products classified as environmentally conscious -- notably BRAVIA™ LCD televisions -- thereby making it easier for customers to recognize the environmental benefits of these products. Currently featured on offerings that satisfy standards for reducing energy and resources consumption, the eco logo will gradually be expanded to encompass other product categories. In Europe, Sony provides information on the environmentally conscious features of its new products in press releases and on the product pages of its website, in line with the "3Ps" (i.e., "product," "process" and "planet") framework.



## Environment

### Events and Exhibitions

Sony holds events and exhibitions related to the environment as a means of informing the public about the Sony Group's environmental activities and technologies.

### Global Initiatives

#### Press Conference on Sony's Road to Zero Global Environmental Plan

In April 2010, Sony held a press conference at the Sony Building in Tokyo, where it outlined its Road to Zero global environmental plan. During the press conference, Sony described its environmental activities to date, as well as its mid-term targets for the years up to and including 2015. The event also featured displays showcasing various environmental initiatives and products, including dye-sensitized solar cells, bio batteries, the VAIO W series "eco edition" PC and energy-efficient Sony BRAVIA EX700 series LCD televisions equipped with Sony's Intelligent Presence Sensor. The event was well attended and earned high marks from journalists who participated.

Sony held a similar press conference in Beijing, also in April. In addition to members of the Chinese press, individuals representing various NGOs, as well as members of the Chinese government, came to hear Sony speak about its environmental initiatives and its global environmental plan.



Explaining "Road to Zero" at the Tokyo press conference



President of Sony (China) Limited presents "Road to Zero" at the Beijing press conference

## Japan

(Updated on November 22, 2011)

### International Biodiversity Forum

In September 2010, International Biodiversity Forum, sponsored by The Asahi Shimbun, publisher of a leading Japanese news daily, was held in Nagoya, Japan, with special support from Sony. During the Forum, K. Takamatsu, the head of Sony Environmental Center, gave a presentation on its "Road to Zero" global environmental plan. The presentation, which emphasized Sony's efforts to preserve biodiversity, explored "Sony Forest," an initiative undertaken by the Kohda site of Sony EMCS Corporation's Tokai TEC, which maintains a naturally growing forest on its grounds that it opens to the local community, and also focused on a groundwater recharge project whereby Sony works with the residents of Kumamoto to improve groundwater recovery, facilitating the replenishment of groundwater through idle rice paddies.



Presentation at the International Biodiversity Forum

Keynote speakers at the International Biodiversity Forum included Russell Mittermaier, president of global environmental NGO Conservation International, whose presentation -- titled "Biodiversity Conservation: Priorities, Challenges and Opportunities" -- expressed the hope that private-sector companies will take a greater interest in biodiversity in the years ahead. Sony has provided cameras and related equipment to Conservation International since 1995 for use in the organization's research efforts. The forum also featured a video message from Sony artist MISIA, Honorary Ambassador for the Tenth Meeting of the Conference of the Parties (COP10), further underscoring Sony's commitment to the preservation of biodiversity.

### Eco-Products 2010 Exhibition

In December, Sony participated in Eco-Products 2010, Japan's largest exhibition of environmentally conscious products and services. The main focus of the Sony booth was an "eco workshop" geared towards elementary and junior high school students, where participants learned how fallen leaves enrich forest soil over time. The workshop included video in 3D explaining the history of the "Sony Forest" at the Tokai TEC Kohda site. Products on display included energy-efficient Sony BRAVIATM LCD televisions with Presence Sensor; α series digital single-lens reflex (DSLR) cameras, the bodies of which are made with plastics recycled from discarded CDs and DVDs, and mercury-free batteries. Sony's exhibit also included a display of a concept room called "Room of the Future" which envisions a zero environmental footprint living space in the future. The display featured products leveraging Sony's distinctive technologies, including a solar power-generating window containing prototype dye-sensitized solar cells and a tile wall made with recycled optical discs that has a built-in storage capability (concept product). The display also included Sony's first public display of resource-efficient flexible electronic paper and other products expected to play an important role in future lifestyles.



Sony's booth at the Eco-Products 2010 exhibition

## China

(Updated on November 22, 2011)

Beginning in March 2010, Sony ExploraScience which is located in Beijing's Chaoyang Park staged a three-month special exhibition titled "Green x Eco." The exhibition focused on environmentally conscious technologies in daily life, including those related to sound, lighting and electric power. Booths were divided into four themed zones -- "Home," "Campus," "City" and "Factory" -- and featured models, billboards, videos and interactive displays, among others. The "City" zone, for example, introduced a variety of energy-saving devices, including traffic signals powered by solar cells. The exhibition also showcased Sony's "odo" design concept devices, powered by kinetic energy, which attracted considerable attention. Children visiting the exhibition were heard to express appreciation for the beauty of "Hana-Akari," a lantern-like interior lamp powered by dye-sensitized solar cells, and amazement at water purification technologies employed at factories. The exhibition welcomed approximately 56,000 visitors, predominantly children.

In addition to exhibitions, Sony ExploraScience also actively seeks to teach local children about environmental issues by, for example, organizing birdwatching events in Shidu Town, in Beijing's Fangshan district, to observe the Eurasian crane and other species protected in China, and organizing waste separating games.



"Green x Eco" Special Exhibition Held at Sony ExploraScience in Beijing



Children observe the Eurasian crane

In November 2010, Sony (China) invited the Chinese media to tour its sites in Suzhou and Wuxi. Participants learned about Sony's "Road to Zero" global environmental plan and, by touring the plant, were able to observe Sony (China)'s efforts to reduce its use of resources and to effectively manage chemical substances. The tours earned high marks from participants.

In December 2010, K. Takamatsu, the head of Environmental Center at Sony Corporation, gave a presentation on the Sony Group's environmental initiatives at an environmental forum in Dongtan sponsored by the Shanghai Morning Post, a leading Shanghai-based news daily. The forum provided an excellent opportunity for Sony to explain its environmental philosophy and related activities to the Chinese public.



Presentation at Dongtan environmental forum

## United States

(Updated on November 22, 2011)

In January 2011, Sony participated in the 2011 International Consumer Electronics (CES) exhibition, the United States' largest consumer electronics trade show, with exhibits showcasing Sony's proactive efforts to address environmental issues. Corporate-wide efforts on display included a video explaining Sony's "Road to Zero" environmental plan as well as 3D images of nature reserves in Brazil and Suriname taken by NGO Conservation International with the Sony NEX-5 camera. Products on display included energy-efficient Sony BRAVIA LCD televisions; α series digital single-lens reflex (DSLR) cameras, the bodies of which are made with plastics recycled from discarded CDs and DVDs, and mercury-free batteries. A new "Home Energy Management" portion was added this year, featuring Home Automation & Energy Management solutions, and a live demo of Energy Storage System powering a portion of the Green Wall display.



Sony's booth (left) and Energy Storage Servers on display (right) at the 2011 CES exhibition

## Canada

(Updated on November 22, 2011)

In April 2011, Sony of Canada Ltd. organized an exhibition of Sony's local and global environmental initiatives and environmentally conscious products at the Japanese Canadian Cultural Centre in Toronto. The exhibit included LED-backlit VAIO notebooks, paper-saving Reader Digital Books and energy-saving BRAVIA EX720 LCD televisions displaying Sony's "Road to Zero" global environmental plan and a 3D documentary video about the "Sony Forest" at the Kohda site of Sony EMCS Corporation's Tokai TEC in Japan.



Sony of Canada's environmental exhibition at Toronto's Japanese Canadian Cultural Centre

## Europe

(Updated on November 22, 2011)

In September 2010, Sony took part in the IFA 2010 electronics show in Berlin, Germany. Sony's booth included an environmental exhibit featuring Sony's "Road to Zero" global environmental plan, the BRAVIA LX905 LCD television with the Intelligent Presence Sensor, VAIO W and S series' LCD televisions, which contain recycled materials, GreenHeart mobile phones, mercury-free batteries and rechargeable batteries and the new Open Planet Ideas website. Open Planet Ideas, operated by Sony Europe and the Worldwide Fund for Nature (WWF), invites the public to submit ideas on how to repurpose existing Sony technologies to address environmental challenges.



Sony's booth at IFA 2010

- Click here for details on Open Planet Ideas.  
<http://www.openplanetideas.com/>

## Brazil

(Updated on November 22, 2011)

In March 2010, Sony Brasil Ltda. conducted a press conference to inform the public about Sony's environmental activities and to help promote the VAIO W series "eco edition" PC. Logistics for the event were also organized to be environmentally conscious: CO2 emissions associated with electric power consumption by the event was offset, all free gifts and promotional materials for products, including eco bags and T-shirts, were made with material recycled from PET bottles and all printed materials associated with the event were made with recycled or Forest Stewardship Council (FSC) certified paper.



Greenbest Award (Brazil)

As a result of this effort, the VAIO W series "eco edition" PC was nominated for the "Greenbest Award," which recognizes a wide range of sustainable initiatives and products in Brazil. The VAIO W series "eco edition" PC was selected as one of 16 eco-conscious products of note in the technology category.

## Singapore

(Updated on November 22, 2011)

In March 2011, a month-long eco exhibition was held at the Sony Style Paragon store in Singapore. The exhibition featured displays of numerous environmentally conscious products, including Sony's Bio-Battery, as well as a 3D documentary video about the "Sony Forest" at the Kohda site of Sony EMCS Corporation's Tokai TEC in Japan. To draw attention to this exhibition, a contest was held for My Sony members in Singapore, the winners of which were presented with passes to a Family Eco Adventure Photography event in April 2011, participants in which used Sony DSLR alpha 55 cameras to capture shots of nature and learn about biodiversity.



Displays at Sony's eco exhibition in Singapore

## Promoting Dialogue with Stakeholders

(Updated on November 22, 2011)

Sony places a high priority on dialogue with its stakeholders, that is, its customers, shareholders, employees and local residents, regarding environmental issues. Accordingly, Sony strives actively to create opportunities for such dialogue, including organizing events at its sites in which local residents are invited to the sites to participate. As part of the process for formulating its new mid-term environmental targets, in March 2010 Sony invited representatives of nongovernmental organizations (NGOs), including the World Wide Fund for Nature (WWF), and leading experts from outside the Company for a frank exchange of views.

## Cooperation with NGOs

(Updated on November 22, 2011)

In its role as a corporate participant in the WWF's Climate Savers Programme, Sony has engaged in a variety of initiatives aimed at reducing greenhouse gases since July 2006. Under the terms of Sony's agreement with the WWF, the Company's role in this initiative is to reduce emissions of greenhouse gases from all of its sites and lower product energy consumption, as well as to work with the WWF to communicate with consumers.

- For further information, see CSR Stakeholder Engagement and Partnership > page 354

Sony and global environmental NPO Conservation International (CI) have worked together for many years to communicate the importance of biodiversity. Since 2010 Sony has supplied 3D cameras and related equipment to CI, which utilizes Sony's 3D technology to produce compelling 3D images of wildlife in an effort to promote awareness of biodiversity.

- For further information, see CSR Environmental Protection > page 100



Sony uses cause-related marketing as a way to assist the efforts of NPOs and other organizations. One example is its support of the Solar Bear Fund, which funds environmental education for children by promoting the use of renewable energy.

• For further information, see Innovation for Sustainability: Marketing > page 350

## Environmental Initiatives through Music, Artists and Events

(Updated on November 22, 2011)

In March 2010, MISIA, an artist managed by Ariola Japan Inc., a subsidiary of Sony Music Entertainment (Japan) Inc., was named an honorary ambassador for the Tenth Meeting of the Conference of the Parties (COP10) by the United Nations.

In August 2010, MISIA and world-famous music producer David Foster collaborated to create LIFE IN HARMONY, a new song on the theme of biodiversity, which MISIA performed at the COP10 opening ceremony.

MISIA was also named a member of the board of mudef, a generally incorporated foundation established in May 2010. In May 2011, MISIA and mudef launched the MISIA Forest Project, the aims of which include providing environmental education for children and publicizing information pertaining to environmental issues.



MISIA named as honorary ambassador for COP10

## Activities Involving Popular Characters

(Updated on November 22, 2011)

In Japan, Sony Creative Products Inc. sponsors a traveling ecology-themed event featuring popular character PINGU, for which the company holds master license rights in Japan.

Based on the fact that glacier melt -- a consequence of global warming -- threatens PINGU's home, the event enables participants to have fun learning about ecology with PINGU. The event's official website has an "Eco Corner" and allows visitors to view PINGU's Eco Book, copies of which are also given out as part of the traveling event.



PINGU's Eco Book © 2011 The Pygos Group

## Environment

### Communicating with the Local Community

- Management of Risks Related to Chemical Substances > page 276
- Environmental Education > page 276



## Environment

### Management of Risks Related to Chemical Substances

(Updated on November 22, 2011)

As a company that uses chemical substances, Sony discloses information on emissions of such substances and exchanges views on safety issues with residents in the vicinity of its sites, as well as with local authorities, with the aim of reinforcing mutual understanding. For example, Sony Semiconductor Kyushu Corporation holds presentations at all of its technology centers on the management of chemical substances for local residents and authorities, which include a tour of environment-related facilities.

### Environmental Education

(Updated on November 22, 2011)

Sony provides opportunities for learning about environmental conservation, mainly for elementary and junior high school students.

### Japan

(Updated on November 22, 2011)

In July 2010, Sony Student Project Abroad (China), one of Sony's social contribution special projects, was held in Japan, with 30 high school students from China invited to visit Japan for a week. This project aims to increase awareness of environmental issues among China's younger generation, nurture future leaders and promote deeper mutual understanding among all those involved in the program from both Japan and China. The theme adopted in 2010 was "Generating new ideas from a young perspective: Discovering lifestyles that will help realize a low-carbon society." The week's program comprised numerous activities that involved thinking about environmental issues, including a visit to Sony EMCS Corporation Tokai TEC Kohda site to learn about biodiversity.



Students work in groups making bird nest boxes

The visit began with a study session covering such topics as "What is biodiversity?"; "The relationship between enterprises and biodiversity"; "Sony's philosophy on biodiversity"; and "Initiatives at the Kohda site." Following that, the students experienced nature firsthand by visiting Sony Forest, which is located within the Kohda site, after which they participated in a group activity, making bird nest boxes.

## Singapore

(Updated on November 22, 2011)

The years from 2005 to 2015 are designated as the International Decade for Action "Water for Life" by the United Nations to focus attention on the long-term sustainable water management and on improving sanitation. The annual "Water for Life" event was held again by Sony Group companies in Singapore in March 2011. This year, Dr. Amy Khor, the former Minister of State for Environment and Water Resources, participated in this event. About 100 mini rain gardens\* were built and donated by students and Sony group employees who attended the event. The event was also mentioned in the Singapore's World Water Day media report.



Dr. Khor at the World Water Day in Singapore (third from right)

\* A planted soil bed used to treat rain water runoff from urban areas like paved streets by allowing it to be absorbed.

## China

(Updated on November 22, 2011)

In the past, Sony Group sites in China have pursued a variety of independent environmental protection activities. With the aim of transforming these endeavors into nationwide initiatives, in fiscal year 2009 Sony Group companies in China selected environmental education as a common theme and expanded their activities to include social contribution. The theme adopted for fiscal year 2010 was "Low-carbon Home, Eco City," with seven sites participating. The program encompassed an abundant array of activities that suit the particular needs of each local community, including environment-themed lectures delivered by Sony Group employees, local eco fairs held with Sony's cooperation and student visits to Sony plants to learn about environmental facilities. As a result, a total of approximately 1,700 students and children took part in the program, which was highly appraised by local communities and organizations.



Ecology-themed competition sponsored by Sony for school students in Shanghai

For example, in 2010 Shanghai Suoguang Visual Products Co., Ltd., again partnered with Shanghai Nanyang Junior High School to sponsor an ecology-themed competition. This was the third consecutive year the competition has been held in partnership with Sony, having grown in scale each year to become a citywide event. In 2010, approximately 1,330 participants from 136 kindergarten, primary and junior high schools in the city of Shanghai took part.

## North America

For 20 consecutive years, Sony Group companies in North America have been sponsoring the annual Children's Earth Day artwork contest. The aim of this contest is to educate and raise awareness of Sony Group employees across the North American companies and the communities in the region about the importance of the environment. The winning artworks are used in Earth Day calendar that Sony creates and distributes to its employees. This year a child sponsored by an employee from Sony Nuevo Laredo was the grand-prize winner and her artwork is featured on the cover of the Earth Day calendar.

(Updated on November 22, 2011)



Earth Day calendar

## Brazil

On April 2010, Sony Brasil's site in Manaus launched a project aimed at expanding environmental education in the community with the aim of broadening its commitment to society. Conducted in partnership with a municipal school called Happiness Village, this project sought to enhance students' awareness of the necessity to preserve the environment through talks given by Sony representatives.

Another initiative launched by Sony Brasil involves the planning of student visits to key tourist sites in Manaus, including parks, the zoo and "Science Wood" with the aim of motivating and involving students in environmental preservation efforts.

(Updated on November 22, 2011)



Children of Happiness Village School

## United Kingdom

(Updated on November 22, 2011)

The Environmental Centre of Sony UK Technology Centre, which opened in 2003 and was built using indigenous timber from renewable sources by a team of people from the Day Services Centre for Adults with Learning Difficulties. The Centre consists of an Environmental Lodge and a nature trail and is used by local primary schools for environmental field trips.

Approximately 25 Primary Schools visit the Centre each year. Over 4,000 primary schoolchildren have visited the Environmental Centre since 2003 accompanied by teachers and assistances from each of the schools. Each child is provided with an Environmental Workbook created by Sony UK Technology Centre and learns about the threats on environment such as habitat destruction and invasive species.



The Environmental Centre at Sony UK Technology Centre

## Environment

### Communicating within the Sony Group

- Sharing Information through an Internal Environmental Magazine and Environmental Education > page 281
- Sharing Information through Events and Site Tours > page 281

## Environment

### Sharing Information through an Internal Environmental Magazine and Environmental Education

(Updated on November 22, 2011)

To raise the awareness of employees concerning environmental issues, Sony distributes Eco Press, an in-house environmental magazine, to employees of the Sony Group in Japan. Sony also shares information as it becomes available with employees worldwide through dedicated environmental websites. Environmental education via e-learning is mandatory for all Sony Group employees in Japan. In fiscal year 2010, approximately 90% of employees of Sony Corporation participated in such e-learning programs. E-learning is also used at overseas sites for training new employees.



Eco Press

### Sharing Information through Events and Site Tours

(Updated on November 22, 2011)

Sony Group companies in Japan and overseas hold exhibitions and events for employees that introduce Sony's environmental initiatives at sites across the country. Sony Corporation holds a regular "Environment Management Meeting," which is attended by top management, including Sony's President, and provides an opportunity for Sony executives to share information about important group-wide issues related to the environment. Sony also holds an annual "Environmental Symposium" for regular employees with the aim of ensuring common awareness of environmental issues. The 2010 symposium included a heated debate about environmentally conscious products. Sony also organizes similar symposia overseas.

In March 2011, Sony (China) Limited's headquarters and Sony sites across China took part in Earth Hour, a global event organized by the Worldwide Fund for Nature (WWF) whereby participants turn off lighting and electrical appliances for one hour at the same time on the same day worldwide as a way to raise awareness of the issue of climate change. Several Sony sites in China have participated in this event in previous years, but this was the first time all sites in China were involved. The event also spurred employees into taking action to promote public awareness and to promote in-house initiatives, with the aim of helping to achieve the targets set out in Sony's Road to Zero global environmental plan and to undertake efforts across China, including submitting its declaration of intent to take part in Earth Hour to the WWF's branch in China.



Employee participating Earth Hour at home

In November 2006, Sony began organizing employee tours of a consumer electronics recycling factory. To date, more than 400 Group employees have taken part in these tours to learn about recycling. These tours also play a useful role in helping engineers learn about environment-conscious design, as well as in enhancing the environmental awareness of both employees and managers.



Employees observing the dismantling line during a recycling factory tour

## Environment

### Environmental Data

Introduction to the Environmental data of the entire Sony Group

Environmental Data Collection Methods and Rationale

ISO14001 Certified Sites

Sony's Environmental Performance

Environmental Data for Sites

Greenhouse Gas Emissions from Sites

Emissions of Air and Water Pollutant

Environmental Data for Products

Product Recycling Data

Examples of Polyvinyl chloride (PVC) -free Products  
and Brominated Flame Retardant (BFR) -free Products

Environmental Cost

List of Controlled Substances at Sites

Independent Verification Report

History of Environmental Activities at Sony



## Environment

### Environmental Data Collection Methods and Rationale

- Worldwide Data Collection System > page 285
- Scope, Collection Period, and Accuracy of Compiled Data > page 285
- Greenhouse Gas Index Data Collection Methods and Rationale > page 286
- Resource Index Data Collection Methods and Rationale > page 288
- Other Data Collection Methods and Rationale > page 289

## Environment

### Worldwide Data Collection System

(Updated on November 22, 2011)

Sony uses an intranet-based data collection system to monitor and manage the progress of the environmental impact of all sites in the Sony Group. This system permits headquarters to collect data monthly from sites around the world.

Persons in charge at each site use the data collection system to input data concerning energy, water, waste, chemical substances and environmental costs, which is then checked by supervisors. Regional data administrators for Japan, the Americas, Europe, Pan Asia and East Asia also check the data. To ensure efficient collection and tabulation, in addition to checks at several points during the process, data checks are executed by the system at data input, thereby reducing the possibility of errors.

### Scope, Collection Period, and Accuracy of Compiled Data

(Updated on November 22, 2011)

#### Collection period: April 1, 2010-March 31, 2011

Data from some business sites includes estimates.

#### Scope of data collection

Business site data: All ISO 14001-certified sites as of March 31, 2010

- In principal, data is collected for ISO 14001 certification from consolidated Sony Group non-manufacturing sites with 100 or more employees and consolidated Sony Group manufacturing sites, as well as from certain joint venture companies in which Sony holds a capital stake of 50%.
- Data is not included for certain sites certified under ISO 14001 that are located outside of Japan. Data is included for certain sites not certified under ISO 14001 that voluntarily compiled and submitted such data.

#### Product data:

Data covers all products manufactured by the Sony Group and sold outside the Group. Accessories, semi-manufactured products and components are included. Weight data includes the weight of packaging materials.

#### Data accuracy

##### Data for sites:

Chemical substance data and environmental cost data collected from certain sites may be slightly less accurate than other data.

##### Data for products:

Data for some semi-manufactured products, components, and some products produced and sold overseas may be slightly less accurate than other data.

## Environment

### Greenhouse Gas Index Data Collection Methods and Rationale

(Updated on November 22, 2011)

The greenhouse gas index is calculated as follows.

Greenhouse gas index

(1) Total greenhouse gas emissions from sites (calculated in terms of CO<sub>2</sub>) + (2) Total CO<sub>2</sub> emissions from product use +  
(3) Total CO<sub>2</sub> emissions from logistics - (4) Greenhouse gas emissions offset by greenhouse gas reduction activities

#### (1) Total greenhouse gas emissions from sites

Quantity of power, heat, and fuel usage and quantity of green house gases used for manufacturing process and within facility are collected.

#### < CO<sub>2</sub> emissions from energy consumption >

CO<sub>2</sub> emissions from energy consumption are calculated by multiplying the quantity of electrical power and fuel (including fuel for motor vehicles, etc.) used at sites by the CO<sub>2</sub> conversion rate.

#### < Emissions of PFCs and other greenhouse gases >

Emissions of PFCs and other greenhouse gases are converted to CO<sub>2</sub> by multiplying greenhouse gas emissions from each site by global warming potentials.

Global warming potentials are based on the Third Assessment Report of the Intergovernmental Panel on Climate Change (IPCC).

#### < CO<sub>2</sub> Conversion Rates >

Japan: Rates announced under the Law concerning the Promotion of the Measures to cope with Global Warming

Overseas: Rates proposed by the GHG Protocol\*

For CO<sub>2</sub> conversion rates for electricity, the rates of each country in fiscal year 2000 are used.

- Internationally accepted accounting and reporting standards for companies and other entities to report their greenhouse gas emissions, operated under the umbrella of the World Business Council for Sustainable Development (WBCSD) and the World Resource Institute (WRI)
- Systems for Calculation, Reporting and Public Disclosure of Greenhouse Gas Emissions(Japanese only)  
<http://www.env.go.jp/earth/ghg-santeikohyo/>
- GHG Protocol  
<http://www.ghgprotocol.org/>

#### (2) Total CO<sub>2</sub> emissions from product use

CO<sub>2</sub> emissions from product use are calculated by multiplying the quantity of electrical power consumed throughout the lifetime of products sold in the current fiscal year by the CO<sub>2</sub> conversion rates. (In other words, it is not the actual quantity of CO<sub>2</sub> emitted in the current fiscal year.) CO<sub>2</sub> emissions from product use are calculated by the following equation.

Sales x (Operating power consumption x Hours of operation per year + Power consumption during standby time x Standby time per year) x  
Years of product use x CO<sub>2</sub> conversion rate

- In theory, emissions during product use in the current fiscal year should be calculated from the total quantity of electrical power consumed by previously sold Sony products that are still in use by consumers in the current fiscal year. However, given the difficulty of determining how many previously sold Sony products are still in use by consumers of the total number of Sony products sold to date, Sony uses the total quantity of electrical power consumed while in use over the lifetime of Sony products sold in the current fiscal year as an indicator for CO2 emissions during use.

The hours of operation per year, standby time per year, and years of product use are calculated based on data obtained by various surveys. The same conversion rates as CO2 emissions from sites for each country in fiscal year 2000 are used. However, as for the data up to fiscal year 2003 outside of Japan, the factors of the following countries are used according to the destination of the products. North America: United States Europe: Germany Other regions: Singapore

### **(3) Total CO2 emissions from logistics**

Total CO2 emissions from logistics include emissions arising from domestic and international logistics handled by Sony Supply Chain Solutions, Inc., and logistics associated with the business activities of major Japanese affiliates.

CO2 emissions from logistics are primarily calculated by multiplying ton-kilometers transported (weight of goods transported x distance traveled) by the CO2 conversion rate. In certain instances, CO2 emissions arising from transport by truck are calculated by multiplying the amount of fuel used (fuel consumption per kilometer x number of kilometers traveled) by the CO2 conversion rate.

For Japanese domestic transport by truck, CO2 emissions calculations multiply the weight of freight transported by two factors: the amount of fuel used per unit of freight transported, as defined in the Law concerning the Rational Use of Energy, and the emissions factor of fuel type used, as defined by the Law concerning the Promotion of Measures to Cope with Global Warming. In the United States, calculations incorporate factors set forth by the U.S. Environmental Protection Agency (EPA) in the SmartWay Transport Partnership, while in Europe calculations incorporate factors set forth by the U.K. Department for Environment, Food and Rural Affairs (DEFRA).

For international logistics, CO2 emissions are calculated by multiplying ton-kilometers transported (weight of goods transported x distance traveled) by CO2 emissions per unit of production as proposed by the Greenhouse Gas Protocol (GHG Protocol). For international logistics involving transport by ship, the calculation uses the weight of goods transported including the weight of shipping containers.

### **(4) CO2 Emissions from Employee Business Trips**

Emissions are calculated for business trips undertaken by employees in central departments, which account for the largest share of business trips taken by employees of Sony Corporation and Sony Group Electronics Business companies in Japan, Europe and North America. (In the case of Japan and North America, some music-related companies are included.)

CO2 emissions are calculated by multiplying the distance traveled by the number of employees traveling using the basic unit of output proposed by the GHG Protocol.

### **(5) Greenhouse gas emissions offset by greenhouse gas reduction activities**

Greenhouse gas emissions offset by greenhouse gas reduction activities primarily include electrical power produced from renewable energy sources, purchases of electrical power produced from renewable energy sources and CO2 emission reductions realized through the purchase of power under the Green Power Certification System.

## Environment

### Resource Index Data Collection Methods and Rationale

(Updated on November 22, 2011)

The resource index is calculated as follows.

Resource index

((1) Waste landfilled from sites - (2) Waste reused/recycled from sites) + ((3) Product resource input - (4) Volume of reused/recycled materials - (5) Volume of resource recovery from end-of-life products)

#### (1) Waste landfilled from sites

Total weight of wastes generated at Sony sites.

#### (2) Waste reused/recycled from sites

Volume of reused/recycled waste from sites

#### (3) Product resource input

Total volume of resources used in products, accessories, manuals and packaging materials. Total weight of products shipped is used as a substitute.

#### (4) Volume of reused/recycled materials

Total volume of recycled/reused materials and vegetable-based plastics used for products, accessories, manuals and packaging

#### (5) Resource recovery from end-of-life products

Resource recovery from end-of-life products is calculated as the weight of products collected from recycling multiplied by the reused/recycled ratio.

The volume of products collected from recycling is the total volume of cardboard in all areas and packaging containers in Japan that Sony is obliged to collect and recycle as a percentage of the total volume of recycled packaging materials resulting from logistics in Japan, Europe, the United States and South Korea.

Some amounts calculated based on the recycling expenses are included.

The reused/recycled ratio is the volume used/recycled compared with the total volume collected. The amount of collected end-of-life products is substituted under the current situation.

## Environment

### Other Data Collection Methods and Rationale

(Updated on November 22, 2011)

#### (1) Volume of chemical substances handled/emitted

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Class 3 and Class 4 chemical substances for which the amount handled annually is 100kg or more are subject to reporting.

- The volume of chemical substances handled represents the volume of chemical substances used at sites; purchase volume is substituted when exact volume of usage cannot be determined.
- Volume of chemical substances released from sites in relation to their operation; calculations are based on purchase volume x distribution coefficient

#### (2) Volume of water consumption/discharged

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- The volume of water consumption represents the total volume of water used at sites (public water, water for factories, groundwater); for public water and water for factories, purchase volume is substituted for the purpose of calculation
- The volume of water discharged represents the sum of discharges of water to waterways and to sewers. For Sony sites where it is not possible to accurately grasp actual discharge volume, a calculation based on the volume of water used x average per-site rate for volume of water discharged is substituted.

#### (3) Emissions of water pollutants (BOD, COD)

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Concentrations in water emitted x volume of water emitted

#### (4) Emissions of air pollutants (NOx, Sox)

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Volume calculated by multiplying emission volume by emission concentration, or by multiplying volume of fuel use by a coefficient.

## Environment

### ISO14001 Certified Sites

Since the early 1990s, Sony sites throughout the world have sought certification under ISO14001 and this was achieved in early fiscal 2000.

In fiscal 2003, Sony further developed this activity by implementing a group-wide, globally integrated environmental management system.

In fiscal 2005, all Sony Group sites, including the Sony Group's headquarters, which represents the core of this management system, acquired integrated ISO14001 certification in accordance with the fundamental requirements of this integrated management system.

### ISO14001 Certification Status

(Updated on August 31, 2011)

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(As of April 1, 2011)
- List of ISO14001 Certification - Europe Region > page 293  
(As of April 1, 2011)
- List of ISO14001 Certification - North America Region > page 294  
(As of April 1, 2011)
- List of ISO14001 Certification - Latin America Region > page 295  
(As of April 1, 2011)
- List of ISO14001 Certification - Pan Asia Region > page 296  
(As of April 1, 2011)
- List of ISO14001 Certification - East Asia Region > page 298  
(As of April 1, 2011)

### Site with ISO14001 Certification

The scope of ISO14001 is all manufacturing sites and non-manufacturing sites with 100 or more employees.

## Environment

### List of ISO14001 Certification - Japan Region (As of April 1, 2011)

#### ISO14001 Global Environmental Management System (GEMS) Certification

(Updated on November 22, 2011)

##### Headquarters/Business Unit

Name of Organization	Acquired (Global EMS)
Sony Corporation HQ Environmental Office	2004/06
Sony Corporation Consumer Products & Services Group Home Entertainment Business Group	2004/09
Sony Corporation Professional, Devices & Solutions Group Professional Solutions Business Group	2004/09
Sony Corporation Professional Devices & Solutions Group Semiconductor Business Group	2004/10
Sony Corporation Professional Devices & Solutions Group Devices Solutions Business Group	2004/10
Sony Corporation Consumer Products & Services Group Personal Imaging & Sound Business Group	2005/01
Sony Corporation Consumer Products & Services Group VAIO & Mobile Business Group	2005/01
Sony Ericsson Mobile Communications Japan, Inc.	2005/01
Sony Computer Entertainment Inc.	2004/06

##### Manufacturing Sites

Name of Organization	Acquired (Global EMS)	Acquired (Individual Certificate)	Number of sites
Sony EMCS Corporation Tokai TEC Inazawa SITE	2004/07	2003/04	1
Sony Corporation Sendai Technology Center	2004/08	1996/08	1
Sony Chemical & Information Device Corporation	2004/08	1997/08	5
Sony Siroisi Semiconductor Inc.	2004/10	1997/04	1
Sony DADC Japan Inc.	2004/10	1997/04	3
Sony Energy Devices Corporation	2004/10	1997/09	5
Sony Manufacturing Systems Corporation	2004/11	1996/05	1
Sony Mobile Display Corp.	2004/12	2002/01	2



Sony EMCS Corporation Kisarazu TEC	2004/12	1996/03	1
Sony TAIYO Corporation	2005/01	1999/01	1
Sony EMCS Corporation Tokai TEC Kosai SITE	2005/01	1997/01	1
Sony Semiconductor Kyushu Corporation	2005/01	2001/12	4
Sony Chemical & Information Device Corporation Tome PLANT Nakada SITE	2005/02	1997/02	1
Sony Chemical & Information Device Corporation Tome PLANT Tojosato SITE	2005/02	1997/04	1
Sony EMCS Corporation Tokai TEC Kohda SITE, Minokamo SITE	2005/05	1995/05	2
Sony EMCS Corporation Nagano TEC	2005/07	1997/07	1
Sony Electronics of Korea Corporation	2005/04	1996/06	2

**Non-Manufacturing Sites**

Name of Organization	Acquired (Global EMS)	Acquired (Individual Certificate)	Number of sites
Sony Corporation Technology Center	2004/07	1998/03	19
Sony PCL Inc.	2004/07	2001/01	4
Sony LSI Design Incorporated	2004/11	2001/01	3
Sony Assurance Inc.	2004/12	2001/10	4
Sony Music Group	2004/12	2002/02	4
Sony Supply Chain Solutions, Inc.	2005/01	2000/09	5
Sony Broadband Solutions Corp.	2005/02	2000/05	8
Sony Marketing (Japan) Inc.	2005/03	2000/03	10
Sony Life Insurance Co.,Ltd	2005/05	2001/03	2
JARED Inc.	2005/07	2000/08	5
Sony Finance International, Inc.	2005/07	2000/09	1
Frontage Inc.	2005/07	2001/09	2
Sony EMCS Corporation Mizunami Technology SITE	2004/07	—	1
Sony EMCS Corporation Tougane Technology SITE	2004/12	—	1
Sony Taiwan Ltd	2005/09	—	8
Sony Korea Corporation	2006/01	2000/03	1
Sony Bank Inc.	2008/03	—	1
Sony DADC Japan Inc.	2004/10	1997/04	1

## Environment

### List of ISO14001 Certification - Europe Region (As of April 1, 2011)

#### ISO14001 Global Environmental Management System (GEMS) Certification

(Updated on November 22, 2011)

##### Manufacturing Sites

Name of Organization	Acquired (Global EMS)	Acquired (Individual Certificate)	Number of sites
Sony DADC Austria A.G.	2004/10	1998/02	2
Sony Chemicals Europe B.V.	2005/02	1997/06	1
Sony UK Ltd. Digital Technology Center Pencoed	2005/06	1996/09	1
Sony France S.A., Alsace Technology Center	2005/07	1997/06	1
Sony DADC UK Ltd.	2009/01	2008/09	1

##### Non-Manufacturing Sites

Site name	Acquired (Global EMS)	Acquired (Individual Certificate)	Number of sites
Sony Computer Entertainment Europe	2005/02	2005/02	6
Sony Europe Limited. Portuguese Branch	2005/02	2004/06	1
Sony Europe Limited, Weybridge Schlieren/Switzerland Branch	2005/02	2001/12	1
Sony Europe Limited, Sony Belgium	2005/03	2001/03	1
Sony Europe Limited, Sony United Kingdom	2005/02	1999/05	2
Sony Europe Limited, Germany Branch	2005/04	2003/02	1
Sony Deutschland GmbH, Stuttgart Technology Center	2005/04	2002/04	1
Sony Europe Limited, Italian Branch	2005/05	2000/03	1
Sony Europe Limited, Austria Branch	2005/06	2003/05	1
Sony Europe Limited, Spanish Branch	2005/06	2000/12	2
Sony Europe Limited, Sony France S.A,	2005/06	2001/02	1
Sony Benelux B.V. / Sony Netherlands	2006/01	1998/03	1
Sony Electronics Closed Joint Company (CIS)	2009/07	2009/07	1

## Environment

### List of ISO14001 Certification - North America Region (As of April 1, 2011)

#### ISO14001 Global Environmental Management System (GEMS) Certification

(Updated on November 22, 2011)

##### Manufacturing Sites

Name of Organization	Acquired (Global EMS)	Acquired (Individual Certificate)	Number of sites
Sony Digital Audio Disc Corporation - Mexico S.A. de C.V.	2004/08	1998/06	1
Sony Digital Audio Disc Corporation - Terre Haute	2005/03	1997/11	1
Sony Nuevo Laredo, S.A. de C.V.	2005/04	1997/11	1
Sony Digital Audio Disc Corporation Brasil	2005/12	1998/06	1

##### Non-Manufacturing Sites

Name of Organization	Acquired (Global EMS)	Acquired (Individual Certificate)	Number of sites
Sony American Zone	2006/01	2001/12	26
Sony Digital Audio Disc Corporation Brasil (Distribution)	2005/12	1998/06	1

## Environment

### List of ISO14001 Certification - Latin America Region (As of April 1, 2011)

#### ISO14001 Global Environmental Management System (GEMS) Certification

(Updated on October 20, 2010)

##### Manufacturing Sites

Name of Organization	Acquired (Global EMS)	Acquired (Individual Certificate)	Number of sites
Sony Brasil Ltda.	2004/09	1999/10	2

##### Non-Manufacturing Sites

Name of Organization	Acquired (Global EMS)	Acquired (Individual Certificate)	Number of sites
Sony Comercio de México S.A. de C.V. and Sony de México S.A. de C.V.	2006/01	2001/06	1
Sony Inter-American, S.A.	2006/01	2001/05	1
Sony Brasil Ltda. (Sao Paulo Branch)	2004/01	1999/10	1

## Environment

### List of ISO14001 Certification - Pan Asia Region (As of April 1, 2011)

#### ISO14001 Global Environmental Management System (GEMS) Certification

(Updated on November 22, 2011)

##### Manufacturing Sites

Name of Organization	Acquired (Global EMS)	Acquired (Individual Certificate)	Number of sites
Sony Technology (Thailand) Co., Ltd. - Ayuthaya Technology Center	2004/10	1998/03	1
Sony Technology (Thailand) Co., Ltd. - Chonburi Technology Center	2004/10	1998/03	1
Sony Electronics (Singapore) Pte. Ltd., Energy Technology Singapore (fka SDS)	2004/11	1996/06	1
Sony DADC Australia Pty Limited	2004/12	1999/03	1
Sony Device Technology (Thailand) Co., Ltd	2005/06	1997/07	1
Sony EMCS (Malaysia) Sdn. Bhd. PG Tec	2005/09	1999/12	2
Sony EMCS (Malaysia) Sdn. Bhd. KL Tec	2005/09	2000/02	2
Sony DADC (India) Pvt. Ltd.	2006/01	2000/10	1

##### Non-Manufacturing Sites

Name of Organization	Acquired (Global EMS)	Acquired (Individual Certificate)	Number of sites
Sony Electronics Vietnam Co., Ltd.	2005/10	1999/12	3
Sony Supply Chain Solutions (Thailand) Ltd.	2005/06	1999/04	6
Sony Gulf FZE	2005/09	1999/04	1
Sony Thai Co. Ltd.	2005/09	2001/03	1
Sony Supply Chain Solutions (Malaysia) Sdn. Bhd.	2006/01	1999/04	1
Sony (Malaysia) Sdn. Bhd.	2006/01	1999/12	1
Sony South Africa (Proprietary) Limited	2006/01	2000/04	1
Sony Australia Limited	2006/01	2001/02	1
PT Sony Indonesia	2006/01	2001/03	2
Sony Electronics Asia Pacific Pte. Ltd.	2006/01	2001/12	4
Sony Electronics Singapore Pte Ltd Non-manufacturing Division Companies (ADMS, SOSIN, GISSAP, SRL, SSCSS)	2006/01	2001/12	
Sony Global Treasury Services, Plc; Singapore Branch (SGTS)	2006/01	2001/02	

Sony India Pvt. Ltd.	2006/01	-	5
Sony Phillipines Inc.	2008/12	-	1

## Environment

### List of ISO14001 Certification - East Asia Region (As of April 1, 2011)

#### ISO14001 Global Environmental Management System (GEMS) Certification

(Updated on November 22, 2011)

##### Manufacturing Sites

Name of Organization	Acquired (Global EMS)	Acquired (Individual Certificate)	Number of sites
Sony Chemicals (Suzhou) Co., LTD.	2004/07	1998/03	1
Sony Digital Products (Wuxi) Co., LTD.	2004/09	-	1
Shanghai Suoguang Visual Products Co., Ltd.	2005/02	1998/08	1
Sony Precision Devices (Huizhou) Co., Ltd.	2005/02	2002/04	1
Sony Electronics (Wuxi) Co., Pte. Ltd.	2005/03	2000/09	1
Shanghai Suoguang Electronics Co., Ltd.	2005/04	1998/04	1
Sony DADC Hong Kong Limited	2006/01	1999/10	1
Sony Chemicals (Shenzhen) Limited	2009/01	2009/01	1
Sony Electronics Huanan Co., Pte. Ltd.	2009/11	-	1
Shanghai Epic Music Entertainment Co., Ltd. Sony DADC China Co., Ltd.	2010/04	-	1

##### Non-Manufacturing Sites

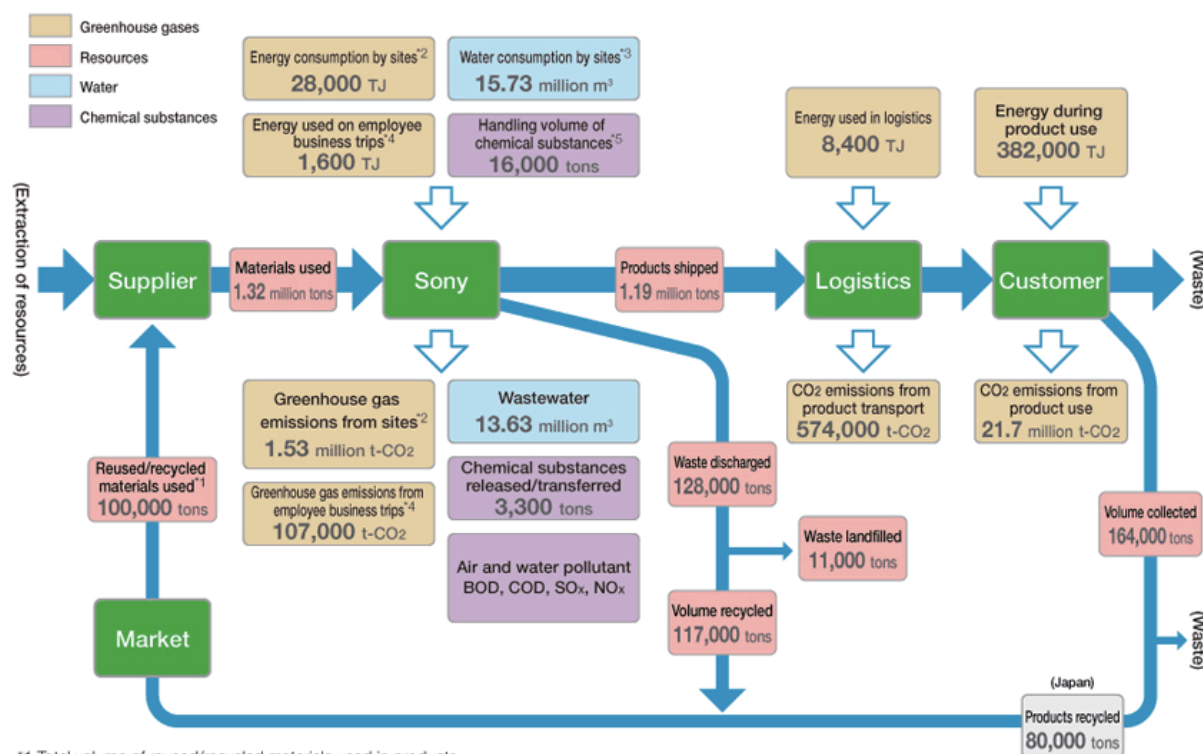
Name of Organization	Acquired (Global EMS)	Acquired (Individual Certificate)	Number of sites
Sony (China) Limited	2005/03	1999/09	8
SOBEY Digital Technology Co., Ltd.	2005/12	-	1
Sony Corporation of Hong Kong Limited	2005/04	2001/02	2

## Environment

### Sony's Environmental Performance

(Updated on November 22, 2011)

#### Overview of Environmental Impact



\*1 Total volume of reused/recycled materials used in products

\*2 Renewable energy is subtracted from this figure

\*3 Contribution from groundwater recharge is subtracted from this figure

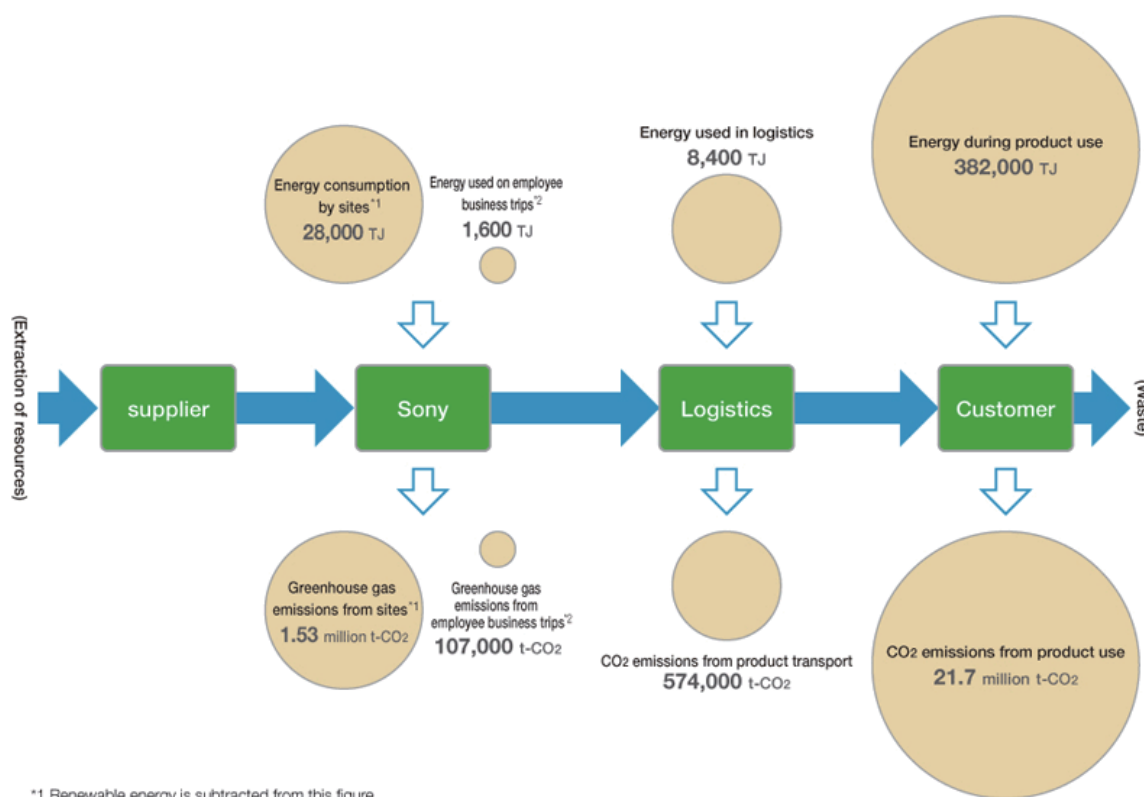
\*4 Relevant primarily to Sony Group companies in Japan, Europe and North America

\*5 Volume of Class 1-3 chemical substances handled

Note: Business processes other than those shown in this chart—including the production of purchased materials used and the recycling of products—may also have an impact on the environment.



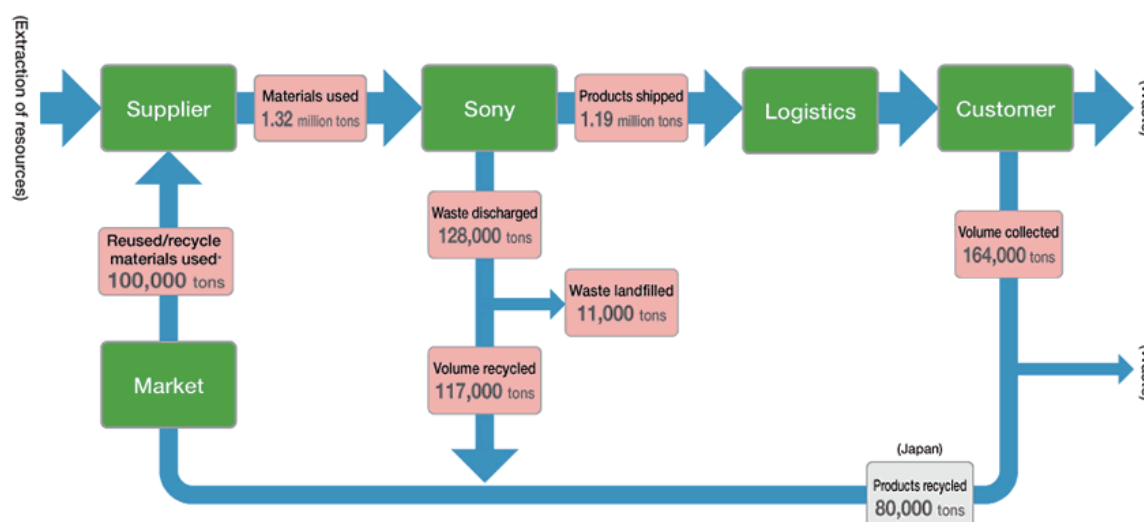
## Greenhouse Gases



\*1 Renewable energy is subtracted from this figure

\*2 Relevant primarily to Sony Group companies in Japan, Europe and North America

## Resources

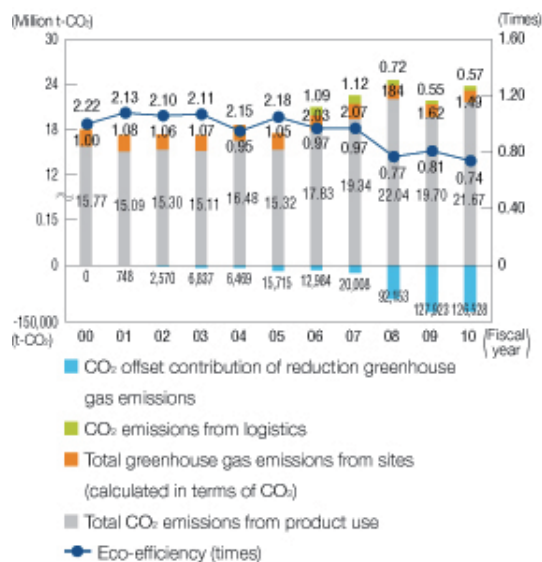


\* Total volume of reused/recycled materials used in products

## Environment

### Eco-Efficiency

#### Greenhouse Gas Efficiency

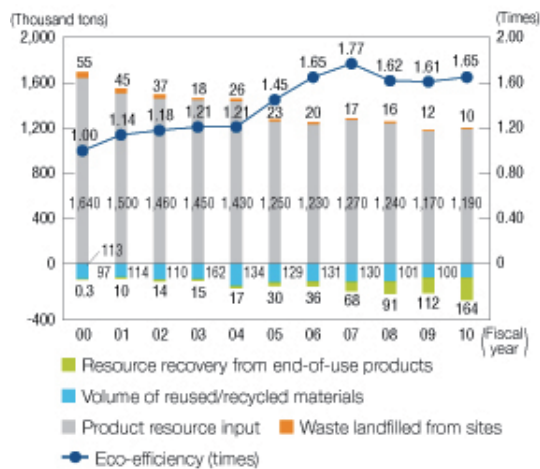


#### Greenhouse Gas Efficiency

[Million t-CO<sub>2</sub>]

	Total greenhouse gas emissions from sites (Calculated in terms of CO <sub>2</sub> )	Total CO <sub>2</sub> emissions from product use	Total CO <sub>2</sub> emissions from logistics	Greenhouse gas emissions offset	Eco-Efficiency (times)
FY2000	2.22	15.77		0	1.00
FY2001	2.13	15.09		0.00075	1.08
FY2002	2.10	15.30		0.0026	1.06
FY2003	2.11	151.1		0.0068	1.07
FY2004	2.15	16.48		0.0065	0.95
FY2005	2.18	15.32		0.016	1.05
FY2006	2.03	17.83		0.013	0.97
FY2007	2.07	19.34		0.020	0.97
FY2008	1.84	22.04	0.72	0.092	0.77
FY2009	1.62	19.70	0.55	0.128	0.81
FY2010	1.49	21.67	0.57	0.127	0.74

## Resource Efficiency



## Resource Efficiency

[Thousand@ton]

	Waste landfilled from sites	Volume of product resource input	Volume of reused/recycled materials	Resource recovery from end-of-life products	Resource macro indicator	Eco- Efficiency (times)
FY2000	55	1640	113	0	1581	1.00
FY2001	45	1500	97	10	1443	1.14
FY2002	37	1460	114	14	1367	1.18
FY2003	18	1450	110	15	1338	1.21
FY2004	26	1430	162	17	1280	1.21
FY2005	23	1250	134	30	1113	1.45
FY2006	20	1230	129	36	1087	1.65
FY2007	17	1270	131	68	1084	1.77
FY2008	16	1240	130	91	1034	1.62
FY2009	12	1170	101	112	967	1.61
FY2010	10	1190	100	164	939	1.65

## Environment

### Environmental Data for Sites

- Environmental Data for Sites (Worldwide) > page 304
- Environmental Data for Sites (Japan region) > page 306
- Environmental Data for Sites (North America region) > page 308
- Environmental Data for Sites (Latin America region) > page 310
- Environmental Data for Sites (Europe region) > page 311
- Environmental Data for Sites (Pan Asia region) > page 313
- Environmental Data for Sites (East Asia region) > page 315

## Environment

### Environmental Data for Sites (Worldwide)

(Updated on November 22, 2011)

#### Energy (Unit:t-CO2)

	Electricity consumption	Gas consumption	Oil consumption	Vehicle fuel	Total
Fiscal 2000	1,325,478	312,151	240,770	34,261	1,912,660
Fiscal 2000	1,317,742	275,016	234,095	34,261	1,861,114
Fiscal 2002	1,360,856	334,793	165,083	34,261	1,894,993
Fiscal 2003	1,393,452	326,985	161,859	36,594	1,918,889
Fiscal 2004	1,423,706	301,464	149,299	34,290	1,908,759
Fiscal 2005	1,496,083	285,848	125,247	35,193	1,942,371
Fiscal 2006	1,467,183	238,798	83,466	34,847	1,824,295
Fiscal 2007	1,515,172	209,680	56,823	41,336	1,823,011
Fiscal 2008	1,342,423	189,150	56,057	38,690	1,626,320
Fiscal 2009	1,221,392	185,514	44,167	42,252	1,493,325
Fiscal 2010	1,141,048	171,358	31,086	32,932	1,376,424

\* Electricity consumption is calculated based on the CO2 conversion rate used in the countries in which Sony sites are located in fiscal 2000.

\* Figures for vehicle fuel in fiscal 2000 and 2001 are not available and have been substituted by figure in fiscal 2003.

#### Water (Unit: m3)

	Water consumption	Water discharge
Fiscal 2000	26,883,710	
Fiscal 2001	24,381,288	
Fiscal 2002	24,627,784	
Fiscal 2003	21,438,431	
Fiscal 2004	22,943,862	
Fiscal 2005	23,705,314	
Fiscal 2006	22,345,200	15,287,388
Fiscal 2007	21,287,613	16,501,885
Fiscal 2008	18,186,286	16,817,247
Fiscal 2009	15,204,523	14,285,398
Fiscal 2010	17,764,116	13,631,873

\* Effective from fiscal 2003, water used represents the volume of water used less contribution to water conservation (water cultivation). Amount of water used is subtracted from amount of water consumed after fiscal 2000 and onward.

Amount of water used is of water directly taken from the source for the purpose of heat exchange and is returned to the same source.

The amount of such water used is subtracted from the "amount of water consumed" since water is not polluted and amount of water neither increases nor decreases from this process.

**Waste (Unit: tons)**

	Waste generated	Waste reused/recycled	Waste disposed of as landfill
Fiscal 2000	281,450	226,046	55,404
Fiscal 2001	257,769	212,630	45,141
Fiscal 2002	223,726	186,528	37,198
Fiscal 2003	224,166	195,156	29,010
Fiscal 2004	214,807	189,197	25,610
Fiscal 2005	213,120	189,893	23,377
Fiscal 2006	193,120	173,066	20,055
Fiscal 2007	191,582	174,768	16,814
Fiscal 2008	168,160	152,454	15,706
Fiscal 2009	147,371	134,909	12,461
Fiscal 2010	128,124	117,175	10,949

**Chemical substances (Unit: tons)**

	Class 1 substances used	Class 2 substances used	Class 3 substances used	Class 4 substances used	Total
Fiscal 2000	3.9	703	17,042	27,490	45,239
Fiscal 2001	0.35	468	19,221	26,627	46,315
Fiscal 2002	0.37	203	16,292	43,408	59,904
Fiscal 2003	0.71	177	14,412	36,013	50,604
Fiscal 2004	0.67	85	15,594	28,460	44,140
Fiscal 2005	0.61	20	16,083	28,895	44,998
Fiscal 2006	1.91	0	10,215	37,674	47,891
Fiscal 2007	1.84	0	24,932	37,279	62,213
Fiscal 2008	1.60	0	9,163	30,995	40,159
Fiscal 2009	1.20	0	7,370	41,839	49,210
Fiscal 2009	5.25	0	8,019	59,949	67,973

\* Chemical substances used represents the volume handled less the volume recycled.

\* Effective from fiscal 2003, data used for Class 4 chemical substances represents the total of Class 4 and Class 5 substances.

\*Figures for fiscal 2007 has been amended because of the accuracy improvement of the data aggregation

## Environment

### Environmental Data for Sites (Japan region)

(Updated on November 22, 2011)

#### Energy (Unit:t-CO2)

	Electricity consumption	Gas consumption	Oil consumption	Vehicle fuel	Total
Fiscal 2000	596,848	139,828	190,680	7,556	927,355
Fiscal 2000	628,628	130,598	176,099	7,556	935,324
Fiscal 2002	661,642	134,177	137,168	7,556	940,543
Fiscal 2003	696,061	129,054	148,726	7,952	981,793
Fiscal 2004	717,417	92,605	138,267	7,819	956,108
Fiscal 2005	772,465	98,398	116,936	6,062	993,861
Fiscal 2006	828,487	119,805	78,447	2,501	1,029,240
Fiscal 2007	865,003	129,068	52,068	7,503	1,053,642
Fiscal 2008	805,517	121,779	51,586	7,860	986,742
Fiscal 2009	729,831	117,166	42,786	7,119	896,903
Fiscal 2010	707,116	111,316	30,567	6,918	855,917

\* Electricity consumption is calculated based on the CO2 conversion rate used in the countries in which Sony sites are located in fiscal 2000.

\* Figures for vehicle fuel in fiscal 2000 and 2001 are not available and have been substituted by figure in fiscal 2003.

#### Water (Unit: m3)

	Water consumption	Water discharge
Fiscal 2000	14,117,409	
Fiscal 2001	14,257,885	
Fiscal 2002	14,279,835	
Fiscal 2003	13,027,101	
Fiscal 2004	14,880,167	
Fiscal 2005	16,175,227	
Fiscal 2006	14,709,548	11,398,578
Fiscal 2007	14,484,305	12,649,224
Fiscal 2008	12,749,799	12,095,146
Fiscal 2009	11,030,734	10,844,237
Fiscal 2010	12,031,106	10,654,861

\* Effective from fiscal 2003, water used represents the volume of water used less contribution to water conservation (water cultivation).

**Waste (Unit: tons)**

	Waste generated	Waste reused/recycled	Waste disposed of as landfill
Fiscal 2000	116,815	108,399	8,416
Fiscal 2001	116,305	112,215	4,090
Fiscal 2002	91,055	88,041	3,014
Fiscal 2003	92,554	89,916	2,638
Fiscal 2004	82,269	80,584	1,685
Fiscal 2005	80,449	78,502	1,947
Fiscal 2006	72,759	70,827	1,933
Fiscal 2007	74,596	73,404	1,192
Fiscal 2008	64,055	62,892	1,163
Fiscal 2009	54,382	53,456	926
Fiscal 2010	53,337	52,406	932

**Chemical substances (Unit: tons)**

	Class 1 substances used	Class 2 substances used	Class 3 substances used	Class 4 substances used	Total
Fiscal 2000	3.85	146	6,832	13,924	20,906
Fiscal 2001	0.26	66	7,116	17,663	24,845
Fiscal 2002	0.35	61	6,078	27,446	33,584
Fiscal 2003	0.70	37	6,745	28,928	35,711
Fiscal 2004	0.67	27	6,780	21,460	28,267
Fiscal 2005	0.61	17	7,629	23,788	31,435
Fiscal 2006	1.88	0	7,414	32,650	40,066
Fiscal 2007	1.79	0	21,211	33,403	54,616
Fiscal 2008	1.60	0	7,250	28,265	35,517
Fiscal 2009	1.20	0	5,465	39,463	44,930
Fiscal 2010	5.25	0	6,219	57,530	63,754

\* Chemical substances used represents the volume handled less the volume recycled.

\* Effective from fiscal 2003, data used for Class 4 chemical substances represents the total of Class 4 and Class 5 substances.

\* Figures for fiscal 2007 has been amended because of the accuracy improvement of the data aggregation

\* Japan region: Japan, Taiwan and South Korea



## Environment

### Environmental Data for Sites (North America region)

(Updated on November 22, 2011)

Since fiscal year 2009, North America and Latin America, which are part of the Americas region, have been managed separately. Data prior to fiscal 2009 show the sum of North America's and Latin America's data.

#### Energy (Unit:t-CO2)

	Electricity consumption	Gas consumption	Oil consumption	Vehicle fuel	Total
Fiscal 2000	403,204	108,780	407	4,274	512,391
Fiscal 2000	377,713	84,722	4,160	4,274	466,596
Fiscal 2002	402,200	130,579	16	4,274	537,069
Fiscal 2003	373,939	131,959	1,392	1,731	509,021
Fiscal 2004	360,260	131,316	2,164	1,379	495,119
Fiscal 2005	372,722	133,029	1,224	1,520	508,495
Fiscal 2006	278,572	40,478	77	3,018	322,145
Fiscal 2007	269,101	31,169	50	5,975	306,295
Fiscal 2008	244,326	28,854	58	4,553	277,791
Fiscal 2009	193,316	30,750	187	9,784	234,018
Fiscal 2010	137,496	20,312	182	5,865	163,855

\* Electricity consumption is calculated based on the CO2 conversion rate used in the countries in which Sony sites are located in fiscal 2000.

\* Figures for vehicle fuel in fiscal 2000 and 2001 are not available and have been substituted by figure in fiscal 2003.

#### Water (Unit: m3)

	Water consumption	Water discharge
Fiscal 2000	5,786,088	
Fiscal 2001	5,275,979	
Fiscal 2002	5,549,278	
Fiscal 2003	4,301,028	
Fiscal 2004	3,587,359	
Fiscal 2005	3,347,347	
Fiscal 2006	2,687,557	580,313
Fiscal 2007	2,609,021	501,570
Fiscal 2008	1,588,178	1,336,592
Fiscal 2009	1,144,837	890,192
Fiscal 2010	888,375	713,410

**Waste (Unit: tons)**

	Waste generated	Waste reused/recycled	Waste disposed of as landfill
Fiscal 2000	97,958	71,042	26,916
Fiscal 2001	83,125	58,517	24,608
Fiscal 2002	77,430	57,355	20,075
Fiscal 2003	75,841	62,101	13,740
Fiscal 2004	75,593	64,508	11,085
Fiscal 2005	79,881	67,783	12,256
Fiscal 2006	66,268	54,688	11,580
Fiscal 2007	52,964	44,464	8,500
Fiscal 2008	42,655	36,310	6,345
Fiscal 2009	35,804	31,078	4,726
Fiscal 2010	23,642	20,608	3,034

**Chemical substances (Unit: tons)**

	Class 1 substances used	Class 2 substances used	Class 3 substances used	Class 4 substances used	Total
Fiscal 2000	0.05	112	8,875	10,375	19,362
Fiscal 2001	0.09	36	10,760	6,041	16,837
Fiscal 2002	0.01	67	9,136	14,552	23,755
Fiscal 2003	0.01	74	6,856	5,556	12,486
Fiscal 2004	0.00	46	7,975	4,510	12,531
Fiscal 2005	0.00	0	7,477	2,779	10,256
Fiscal 2006	0.00	0	2,561	2,287	4,847
Fiscal 2007	0	0	2,865	688	3,552
Fiscal 2008	0	0	1,101	384	1,485
Fiscal 2009	0	0	364	311	675
Fiscal 2009	0	0	145	400	545

\* Chemical substances used represents the volume handled less the volume recycled.

\* Effective from fiscal 2003, data used for Class 4 chemical substances represents the total of Class 4 and Class 5 substances.

\*Figures for fiscal 2007 has been amended because of the accuracy improvement of the data aggregation

## Environment

### Environmental Data for Sites (Latin America region)

(Updated on November 22, 2011)

Since fiscal year 2009, North America and Latin America, which are part of the Americas region, have been managed separately. This page shows data for Latin American region since fiscal 2009.

#### Energy (Unit:t-CO2)

	Electricity consumption	Gas consumption	Oil consumption	Vehicle fuel	Total
Fiscal 2009	2,080	247	0	85	2,411
Fiscal 2010	2,540	362	69	190	3,161

\* Electricity consumption is calculated based on the CO2 conversion rate used in the countries in which Sony sites are located in fiscal 2000.

#### Water (Unit: m3)

	Water consumption	Water discharge
Fiscal 2009	54,310	46,164
Fiscal 2010	97,163	82,589

#### Waste (Unit: tons)

	Waste generated	Waste reused/recycled	Waste disposed of as landfill
Fiscal 2009	2,442	2,171	271
Fiscal 2010	5,555	3,716	1,839

#### Chemical substances (Unit: tons)

	Class 1 substances used	Class 2 substances used	Class 3 substances used	Class 4 substances used	Total
Fiscal 2009	0	0	0	0	0
Fiscal 2010	0	0	11	0.18	12

\* Chemical substances used represents the volume handled less the volume recycled.

## Environment

### Environmental Data for Sites (Europe region)

(Updated on November 22, 2011)

#### Energy (Unit:t-CO2)

	Electricity consumption	Gas consumption	Oil consumption	Vehicle fuel	Total
Fiscal 2000	92,008	32,954	7,633	8,313	132,595
Fiscal 2000	82,186	35,175	4,619	8,313	121,981
Fiscal 2002	78,154	46,644	6,048	8,313	139,160
Fiscal 2003	85,687	39,217	5,760	11,041	141,705
Fiscal 2004	79,368	50,758	5,944	12,079	148,149
Fiscal 2005	54,672	30,640	5,299	10,739	101,350
Fiscal 2006	37,473	12,212	4,805	9,228	63,718
Fiscal 2007	35,039	11,729	4,653	9,906	61,327
Fiscal 2008	117	9,212	4,386	9,434	23,149
Fiscal 2009	0	8,720	13	8,787	17,519
Fiscal 2010	0	7,475	137	7,150	14,762

\* Electricity consumption is calculated based on the CO2 conversion rate used in the countries in which Sony sites are located in fiscal 2000.

\* Figures for vehicle fuel in fiscal 2000 and 2001 are not available and have been substituted by figure in fiscal 2003.

#### Water (Unit: m3)

	Water consumption	Water discharge
Fiscal 2000	2,052,375	
Fiscal 2001	1,161,808	
Fiscal 2002	1,010,868	
Fiscal 2003	1,159,588	
Fiscal 2004	1,075,356	
Fiscal 2005	574,234	
Fiscal 2006	311,957	133,828
Fiscal 2007	305,479	130,326
Fiscal 2008	292,069	260,126
Fiscal 2009	233,650	187,703
Fiscal 2010	163,140	130,515

Amount of water used is subtracted from amount of water consumed after fiscal 2000 and onward.

Amount of water used is of water directly taken from the source for the purpose of heat exchange and is returned to the same source.

The amount of such water used is subtracted from the "amount of water consumed" since water is not polluted and amount of water neither increases nor decreases from this process.

## Waste (Unit: tons)

	Waste generated	Waste reused/recycled	Waste disposed of as landfill
Fiscal 2000	32,176	24,327	7,849
Fiscal 2001	26,558	19,983	6,575
Fiscal 2002	30,360	23,007	7,353
Fiscal 2003	29,415	24,004	5,411
Fiscal 2004	30,957	26,079	4,878
Fiscal 2005	27,938	23,851	4,087
Fiscal 2006	30,579	28,287	2,291
Fiscal 2007	34,381	32,964	1,416
Fiscal 2008	36,679	35,663	1,016
Fiscal 2009	25,630	24,943	688
Fiscal 2010	15,994	15,639	355

## Chemical substances (Unit: tons)

	Class 1 substances used	Class 2 substances used	Class 3 substances used	Class 4 substances used	Total
Fiscal 2000	0	127	699	490	1,317
Fiscal 2001	0	48	689	253	990
Fiscal 2002	0	27	466	745	1,238
Fiscal 2003	0	4	360	872	1,236
Fiscal 2004	0	1	304	1,162	1,467
Fiscal 2005	0	1	383	620	1,004
Fiscal 2006	0	0	80	241	320
Fiscal 2007	0	0	86	312	398
Fiscal 2008	0.01	0	65	294	359
Fiscal 2009	0.00	0	40	318	358
Fiscal 2010	0.00	0	38	259	297

\* Chemical substances used represents the volume handled less the volume recycled.

\* Effective from fiscal 2003, data used for Class 4 chemical substances represents the total of Class 4 and Class 5 substances.

\*Figures for fiscal 2007 has been amended because of the accuracy improvement of the data aggregation

## Environment

### Environmental Data for Sites (Pan Asia region)

(Updated on November 22, 2011)

#### Energy (Unit:t-CO2)

	Electricity consumption	Gas consumption	Oil consumption	Vehicle fuel	Total
Fiscal 2000	197,365	24,842	30,336	13,267	252,542
Fiscal 2000	194,095	20,406	39,855	13,267	254,356
Fiscal 2002	179,725	17,287	10,573	13,267	220,852
Fiscal 2003	183,478	16,101	3,438	13,580	216,598
Fiscal 2004	181,220	16,102	2,788	11,634	211,744
Fiscal 2005	189,803	14,580	1,171	15,322	220,877
Fiscal 2006	190,365	13,771	131	15,352	219,619
Fiscal 2007	192,352	9,449	46	16,644	218,491
Fiscal 2008	149,340	3,107	15	13,720	166,183
Fiscal 2009	145,457	3,218	1,196	13,528	163,398
Fiscal 2010	137,726	3,152	121	10,093	151,093

\* Electricity consumption is calculated based on the CO2 conversion rate used in the countries in which Sony sites are located in fiscal 2000.

\* Figures for vehicle fuel in fiscal 2000 and 2001 are not available and have been substituted by figure in fiscal 2003.

#### Water (Unit: m3)

	Water consumption	Water discharge
Fiscal 2000	4,927,838	
Fiscal 2001	2,317,156	
Fiscal 2002	1,883,386	
Fiscal 2003	1,544,897	
Fiscal 2004	1,647,736	
Fiscal 2005	1,706,043	
Fiscal 2006	1,749,326	1,417,563
Fiscal 2007	1,868,089	1,403,573
Fiscal 2008	1,592,292	1,328,884
Fiscal 2009	1,455,200	1,212,427
Fiscal 2009	1,448,098	1,190,619

**Waste (Unit: tons)**

	Waste generated	Waste reused/recycled	Waste disposed of as landfill
Fiscal 2000	34,502	22,279	12,222
Fiscal 2001	27,830	18,467	9,364
Fiscal 2002	20,744	14,868	5,877
Fiscal 2003	21,640	17,023	4,617
Fiscal 2004	18,973	15,007	3,965
Fiscal 2005	17,328	14,597	2,730
Fiscal 2006	15,668	12,420	3,248
Fiscal 2007	19,539	15,970	3,569
Fiscal 2008	14,613	10,692	3,920
Fiscal 2009	19,610	16,223	3,387
Fiscal 2010	20,564	16,276	4,288

**Chemical substances (Unit: tons)**

	Class 1 substances used	Class 2 substances used	Class 3 substances used	Class 4 substances used	Total
Fiscal 2000	0	318	636	2,701	3,655
Fiscal 2001	0	276	619	1,435	2,330
Fiscal 2002	0	29	577	311	917
Fiscal 2003	0	25	424	249	698
Fiscal 2004	0	8	457	232	697
Fiscal 2005	0	2	439	166	607
Fiscal 2006	0	0	150	388	538
Fiscal 2007	0	0	157	244	401
Fiscal 2008	0	0	119	130	250
Fiscal 2009	0	0	111	37	148
Fiscal 2010	0	0	106	35	141

\* Chemical substances used represents the volume handled less the volume recycled.

\* Effective from fiscal 2003, data used for Class 4 chemical substances represents the total of Class 4 and Class 5 substances.

\* Fiscal 2000 data is total of pan asia region and east asia region.

\* Figures for fiscal 2007 has been amended because of the accuracy improvement of the data aggregation

\* Pan asia region: Southeast Asia, Middle East, Africa and Oceania

## Environment

### Environmental Data for Sites (East Asia region)

(Updated on November 22, 2011)

#### Energy (Unit:t-CO2)

	Electricity consumption	Gas consumption	Oil consumption	Vehicle fuel	Total
Fiscal 2000	36,054	5,748	11,714	850	53,517
Fiscal 2000	35,120	4,116	9,361	850	48,598
Fiscal 2002	39,136	6,106	11,278	850	57,369
Fiscal 2003	54,286	10,654	2,543	2,290	69,772
Fiscal 2004	85,442	10,681	135	1,380	97,638
Fiscal 2005	106,420	9,201	616	1,551	117,788
Fiscal 2006	132,285	52,533	6	4,749	189,572
Fiscal 2007	153,677	28,265	7	1,308	183,256
Fiscal 2008	143,123	26,198	12	3,122	172,456
Fiscal 2009	150,707	25,414	5	2,949	179,075
Fiscal 2010	156,170	28,740	9	2,715	187,635

\* Electricity consumption is calculated based on the CO2 conversion rate used in the countries in which Sony sites are located in fiscal 2000.

\* Figures for vehicle fuel in fiscal 2000 and 2001 are not available and have been substituted by figure in fiscal 2003.

#### Water (Unit: m3)

	Water consumption	Water discharge
Fiscal 2000		
Fiscal 2001	1,368,460	
Fiscal 2002	1,904,418	
Fiscal 2003	1,405,816	
Fiscal 2004	1,753,245	
Fiscal 2005	1,902,463	
Fiscal 2006	2,886,812	1,757,106
Fiscal 2007	2,020,718	1,817,192
Fiscal 2008	1,963,949	1,796,498
Fiscal 2009	1,285,793	1,104,676
Fiscal 2010	1,098,603	859,880

\* Fiscal 2000 data of east asia region is included in pan asia region data.



**Waste (Unit: tons)**

	Waste generated	Waste reused/recycled	Waste disposed of as landfill
Fiscal 2000			
Fiscal 2001	3,951	3,448	504
Fiscal 2002	4,137	3,257	880
Fiscal 2003	4,716	2,111	2,605
Fiscal 2004	7,015	3,019	3,996
Fiscal 2005	7,524	5,160	2,356
Fiscal 2006	7,847	6,844	1,003
Fiscal 2007	10,102	7,965	2,136
Fiscal 2008	10,159	6,896	3,262
Fiscal 2009	9,503	7,039	2,464
Fiscal 2010	9,031	8,530	501

\* Fiscal 2000 data of east asia region is included in pan asia region data.

**Chemical substances (Unit: tons)**

	Class 1 substances used	Class 2 substances used	Class 3 substances used	Class 4 substances used	Total
Fiscal 2000					0
Fiscal 2001	0	42	37	1,234	1,313
Fiscal 2002	0	19	36	355	410
Fiscal 2003	0	38	27	409	473
Fiscal 2004	0	3	78	1,096	1,178
Fiscal 2005	0	0	154	1,542	1,696
Fiscal 2006	0	0	10	2,109	2,119
Fiscal 2007	0	0	613	2,633	3,246
Fiscal 2008	0	0	627	1,921	2,549
Fiscal 2009	0	0	1390	1,710	3,099
Fiscal 2010	0	0	1,511	1,725	3,236

\* Fiscal 2000 data of east asia region is included in pan asia region data.

\* Chemical substances used represents the volume handled less the volume recycled.

\* Effective from fiscal 2003, data used for Class 4 chemical substances represents the total of Class 4 and Class 5 substances.

\*Figures for fiscal 2007 has been amended because of the accuracy improvement of the data aggregation

\* East asia region: mainland China, Hong Kong

## Environment

### Greenhouse Gas Emissions

(Updated on November 22, 2011)

#### Greenhouse Gas Emissions from Sites

(Unit: t-CO2)

(Unit: t-CO2)

(Unit: t-CO2)

(Unit: t-CO2/million yen)

	total greenhouse gas emissions	greenhouse gas emissions offset*	the emissions from which greenhouse gas emissions offset is subtracted	Emissions divided by consolidated sales (Emission Intensity)
Fiscal 2000	2,218,026	0	2,218,026	0.303
Fiscal 2001	2,127,425	748	2,126,677	0.281
Fiscal 2002	2,101,783	2,570	2,099,213	0.280
Fiscal 2003	2,120,414	6,837	2,113,577	0.281
Fiscal 2004	2,151,875	6,469	2,145,406	0.298
Fiscal 2005	2,195,959	15,715	2,180,244	0.290
Fiscal 2006	2,041,080	12,984	2,028,096	0.244
Fiscal 2007	2,091,963	20,008	2,071,955	0.234
Fiscal 2008	1,928,847	92,153	1,836,694	0.238
Fiscal 2009	1,745,217	127,923	1,617,294	0.224
Fiscal 2010	1,653,011	126,528	1,526,483	0.213

\* CO2 emissions offset by means that include power generation by renewable energy, purchasing of electricity generated by renewable energy, and purchasing of renewable energy certificates. Figures are calculated by multiplying CO2 conversion rate by power generation (kWh) or quantity of purchase (kWh).

#### Emissions by Business Category in Fiscal 2010

(Unit: t-CO2)

Electronics	Other than Electronics			
	Music	Movie	Finance	Others
1,472,581	11,266	39,451	839	2,346

#### Scope 1 (Direct Emissions from Sites)

(Unit: t-CO2)

	Greenhouse Gas Emissions						CO2 Emissions from Energy Use	Total
	HFCs	PFCs	SF6	NF3	Other	Total		
Fiscal 2000	7,823	242,580	51,947	2,780	235	305,365	586,121	891,486
Fiscal 2001	6,553	206,780	43,118	8,669	443	265,563	542,291	807,854
Fiscal 2002	6,754	150,996	39,351	5,988	1,131	204,220	532,942	737,162
Fiscal 2003	4,275	130,464	45,481	7,833	6,634	194,687	522,212	716,899

Fiscal 2004	5,619	150,298	58,163	15,637	6,931	236,648	480,397	717,045
Fiscal 2005	4,492	150,928	62,099	11,490	8,864	237,873	439,993	677,866
Fiscal 2006	4,915	121,073	53,725	14,025	16,381	210,119	334,938	545,057
Fiscal 2007	4,872	127,328	49,053	15,221	52,469	248,943	276,848	525,791
Fiscal 2008	7,898	119,596	47,117	14,971	20,793	210,374	254,379	464,753
Fiscal 2009	6,817	64,063	30,210	12,049	10,831	123,970	246,080	370,050
Fiscal 2010	3,470	70,364	47,896	15,025	13,640	150,396	212,233	362,629

Scope 2 (Indirect Emissions from Sites)

(Unit: t-CO<sub>2</sub>)

	Purchased Electricity		Purchased Heat	Total	
	total greenhouse gas emissions	the emissions from which greenhouse gas emissions offset is subtracted		total greenhouse gas emissions	the emissions from which greenhouse gas emissions offset is subtracted
FY 2000	1,325,478	1,325,478	1,061	1,326,539	1,326,539
FY 2001	1,318,490	1,317,742	1,081	1,319,571	1,318,823
FY 2002	1,363,426	1,360,856	1,195	1,364,621	1,362,051
FY 2003	1,400,289	1,393,452	3,226	1,403,515	1,396,678
FY 2004	1,430,175	1,423,706	4,656	1,434,831	1,428,362
FY 2005	1,511,798	1,423,706	6,295	1,518,093	1,502,378
FY 2006	1,480,167	1,467,183	22,173	1,502,340	1,489,356
FY 2007	1,535,180	1,515,172	30,991	1,566,171	1,546,163
FY 2008	1,434,576	1,342,423	29,518	1,464,094	1,371,941
FY 2009	1,349,315	1,221,392	25,853	1,375,168	1,247,245
FY 2010	1,267,240	1,141,048	23,143	1,290,383	1,164,191

**Scope 3 Emissions in Fiscal 2010 (Other Emissions)**

**CO2 emissions from the electricity during product use**

21,700,000 t-CO2
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Details: Climate Change > Reducing Greenhouse Gas Emissions Related to Products and Services > page 140

**CO2 emissions from product shipment**

574,000 t-CO2
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Details: Reducing Environmental Impact of Logistics > page 237

**CO2 emissions from employee business trips**

107,000 t-CO2
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Details: Climate Change > Reducing Greenhouse Gas Emissions by Transport > page 161

## Environment

### Emissions of Air and Water Pollutant (Worldwide)

(Updated on November 22, 2010)

(Unit: Tons)

	NOx	SOx	BOD	COD
Fiscal 2002	457	156	140	420
Fiscal 2003	351	52	142	337
Fiscal 2004	288	64	135	311
Fiscal 2005	274	59	142	158
Fiscal 2006	167	48	280	279
Fiscal 2007	182	35	205	113
Fiscal 2008	176	8	133	73
Fiscal 2009	174	11	141	39
Fiscal 2010	163	8	254	96

## Environment

### Environmental Data for Products

(Updated on November 22, 2011)

#### Greenhouse Gas Emissions from Product Use (Unit: t-CO<sub>2</sub>)

	Television	Video	Audio	IT	Professional use	Game	Total
Fiscal 2000	12,067,418	407,618	1,964,006	67,893	1,008,853	256,561	15,772,350
Fiscal 2001	10,818,776	280,299	2,461,309	132,360	871,437	529,577	15,093,758
Fiscal 2002	11,961,737	197,346	1,365,062	143,076	538,146	1,095,122	15,300,489
Fiscal 2003	11,738,773	228,719	2,055,160	207,479	432,057	447,826	15,110,014
Fiscal 2004	12,908,566	527,432	2,043,388	161,243	511,678	331,595	16,483,902
Fiscal 2005	12,393,225	322,432	1,586,781	109,593	616,053	295,299	15,323,383
Fiscal 2006	13,599,236	372,547	1,609,150	73,821	1,369,409	810,242	17,834,405
Fiscal 2007	14,978,341	341,573	1,689,645	90,784	1,135,557	1,105,117	19,341,017
Fiscal 2008	19,587,858	314,004	1,487,003	89,710	1,242,232	813,700	23,534,507
Fiscal 2009	19,445,913	244,644	1,184,093	92,017	1,242,447	782,127	22,991,241
Fiscal 2010	17,679,570	260,246	1,310,705	99,472	1,554,751	769,768	21,674,512

#### Rationale

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 CO<sub>2</sub> conversion rate

#### Total Volume of Resources Used in Products (Unit: tons)

	Television	Video	Audio	IT	Professional use	Devices/ Others	Game	Music	Total
Fiscal 2000	470,518	59,731	444,736	40,874	9,815	185,804	27,614	134,688	1,639,105
Fiscal 2001	638,865	64,135	378,147	57,007	6,825	174,675	51,016	134,112	1,504,783
Fiscal 2002	629,294	105,203	259,564	44,127	5,628	204,956	57,784	150,144	1,456,701
Fiscal 2003	575,353	137,931	280,320	40,636	6,121	208,271	39,990	156,480	1,445,103
Fiscal 2004	611,575	96,428	287,155	32,300	9,915	206,549	18,630	170,430	1,432,982
Fiscal 2005	469,549	81,746	251,249	34,278	9,280	222,058	17,196	168,258	1,253,614
Fiscal 2006	432,164	80,537	250,927	26,194	13,526	184,202	65,256	179,510	1,232,316
Fiscal 2007	421,231	81,721	261,180	36,343	15,883	163,821	95,713	190,585	1,266,477
Fiscal 2008	450,545	83,481	235,509	41,290	15,291	150,097	85,038	178,501	1,239,752
Fiscal 2009	401,334	79,621	186,951	49,840	13,679	165,899	74,406	195,629	1,167,359
Fiscal 2010	443,085	73,834	193,716	59,348	14,855	130,739	75,936	200,740	1,192,253

#### Rationale

Total weight of all Sony-branded Products sold, including all accessories and packaging materials

## Environment

### Product Recycling Data

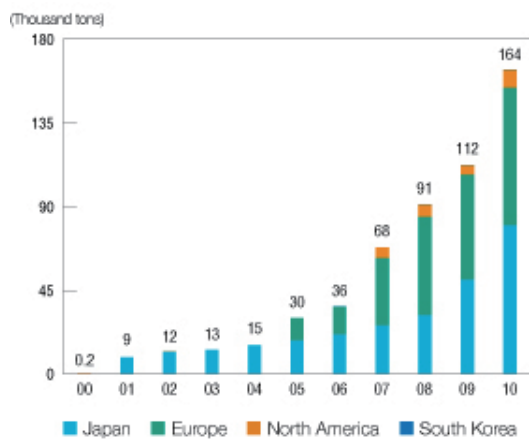
#### Weight of End-of-Life Products Collected

(Updated on November 22, 2011)

(Unit:ton)

	Japan	Europe	North America	Korea	Total
Fiscal 2000	0	0	253	0	253
Fiscal 2001	8,851	0	46	0	8,898
Fiscal 2002	12,026	0	117	0	12,143
Fiscal 2003	12,931	0	126	0	13,057
Fiscal 2004	15,407	0	73	0	15,480
Fiscal 2005	17,906	12,087	53	0	30,046
Fiscal 2006	21,349	14,726	55	225	36,355
Fiscal 2007	26,115	36,090	5,761	167	68,133
Fiscal 2008	31,486	52,980	6,589	133	91,188
Fiscal 2009	50,686	56,300	5,221	80	112,287
Fiscal 2010	79,915	74,000	9,572	85	163,572

Weight of End-of-Life Products Collected



## Environment

### Examples of Polyvinyl chloride (PVC) -free Products and Brominated Flame Retardant (BFR) -free Products

(Updated on August 31, 2011)

**Examples of PVC-free Products and BFR-free Products: Model Name (As of June 2011)**

Product Category	Polyvinyl chloride(PVC)	Brominated Flame Retardant(BFR)
	Examples of PVC-free Products Model Name (*1)	Examples of BFR-free Products Model Name (*2)
Personal Computer "VAIO" Laptops	2010 Autumn models	All 2010 Autumn models
	L series, F series, B series, S series, J series, W series, Y series[11.6"][13.3"], Z series, G series, P series, X series, M series	L series, F series, B series, S series, J series, W series, E series, Y series[11.6"][13.3"], Z series, G series, P series, X series, M series
	All 2011 Spring models	All 2011 Spring models
	F series, B series, S series, C series, J series, W series, L series, E series, Y series[11.6"][13.3"], Z series, G series, P series, X series, M series	F series, B series, S series, C series, J series, W series, L series, E series, Y series[11.6"][13.3"], Z series, G series, P series, X series, M series
MP3 players "WALKMAN"	NW-S754 / S755 / S756	NW-S754 / S755 / S756
	NW-S754K / S755K	NW-S754K / S755K
	NWZ-A844 / A845 / A846 / A847	NWZ-A844 / A845 / A846 / A847
	NW-A855 / A856 / A857	NW-A855 / A856 / A857
	NWZ-S544 / S545	NWZ-S544 / S545
	NWZ-E353 / E354 / E355	NWZ-E353 / E354 / E355
	NWZ-E453K / E454K	NWZ-E453K / E454K
	NWZ-E453 / E454 / E455	NWZ-E453 / E454 / E455
	NWZ-B162 / B163 / B162F / B163F / B162FHK / B162FEK	NWZ-B162 / B163 / B162F / B163F / B162FHK / B162FEK
	NWZ-B152F / B153F / B152FK	NWZ-B152F / B153F / B152FK
	NWZ-E363 / E364	NWZ-E363 / E364
	NW-E052 / E053	NW-E052 / E053
	NW-E052K / E053K	NW-E052K / E053K
	NWZ-E053	NWZ-E053
		NWD-W252 / W253
		NWZ-W252 / W253
Personal Navigation System "nav-u"	NV-U3DV / NV-U35 / NV-U37 / NV-U76V / NV-U76VT / NV-U77V	NV-U3DV / NV-U76V / NV-U76VT / NV-U77V



IC recorder	ICD-UX71 / UX71F / UX81 / UX81F / UX91 / UX91F / UX200 / UX300 / UX300F / UX400 / UX400F / UX512 / UX512F / UX513F	ICD-UX512 / UX512F / UX513F / SX712 / SX713 / SX813
	ICD-AX70 / BX700 / PX720 / AX80 / BX80 / BX800 / PX820 / AX412 / AX412F / BX312 / PX312 / PX312F / PX312M / BX112	ICD-AX70 / BX700 / PX720 / AX80 / BX80 / BX800 / PX820 / AX412 / AX412F / BX312 / PX312 / PX312F / PX312M / BX112
	ICD-B61	ICD-B61
Portable Radio Recorder	ICZ-R50	ICZ-R50
Linear PCM Recorder		PCM-D1 / D50 / M10
Video Camera "Handycam"	HDR-TD10	HDR-TD10
	HDR-CX560 / CX560V / CX690E / CX700 / CX700V	HDR-CX560 / CX560V / CX690E / CX700 / CX700V
	HDR-PJ10 / PJ20 / PJ30 / PJ30V / PJ40V / PJ50 / PJ50V	HDR-PJ10 / PJ20 / PJ30 / PJ30V / PJ40V / PJ50 / PJ50V
	HDR-CX360 / CX360V	HDR-CX360 / CX360V
	HDR-XR160	HDR-XR160
	HDR-CX130 / CX160 / CX180 / CX110 / CX115E	HDR-CX130 / CX160 / CX180 / CX110 / CX115E
	HDR-FX1000	HDR-FX1000
	HDR-AX2000	HDR-AX2000
	HDR-FX7	HDR-FX7
	DCR-SR15E / SR20 / SR68	DCR-SR15E / SR20 / SR68
	DCR-SX15E / SX20 / SX45 / SX65 / SX85	DCR-SX15E / SX20 / SX45 / SX65 / SX85
	DCR-SD1000E	DCR-SD1000E
	DCR-VX2200E	DCR-VX2200E
	NEX-FS100	NEX-FS100
	NEX-VG10	NEX-VG10
Mobile HD Snap Camera "bloggie"	MHS-TS20 / TS20K / TS10	MHS-TS20 / TS20K / TS10
	MHS-FS1 / FS1K / FS2 / FS2K / FS3 / FS3K	MHS-FS1 / FS1K / FS2 / FS2K / FS3 / FS3K
Digital Still Camera "Cybershot"	NV-U3DV / NV-U35 / NV-U37 / NV-U76V / NV-U76VT / NV-U77V	NV-U3DV / NV-U35 / NV-U37 / NV-U76V / NV-U76VT / NV-U77V
	DSC-TX10 / TX100V / T110 / T110D	DSC-TX10 / TX100V / T110 / T110D
	DSC-H70	DSC-H70
	DSC-HX7V / HX9V / HX100V	DSC-HX7V / HX9V / HX100V
	DSC-W510 / W515PS / W520	DSC-W510 / W515PS / W520
	DSC-J10	DSC-J10
	DSC-S3000	DSC-S3000
	DSC-W370 / W310	DSC-W370 / W310
	DSC-S2100 / S2000	DSC-S2100 / S2000

Digital Photo Frame "S-Frame"	DPF-D82 / D92	DPF-XR100 / XR80
	DPF-XR100 / XR80	DPF-VR100
	DPF-VR100	
	DPF-X75 / X85 / X95	
	DPF-D75 / D85 / D95	
	DPF-A710 / A73	
	DPF-E73 / E75	
	DPF-NS70	
	DPP-F800	
Interchangeable lens digital camara "α"		DSLR-A900
	DSLR-A290 / A390	DSLR-A290 / A390
	DSLR-A580	DSLR-A580
	SLT-A33 / A55	SLT-A33 / A55
	SLT-A35	SLT-A35
	NEX-C3	NEX-C3
PSP® (PlayStation®Portable)	PSP-3000 series	PSP-3000 series
Digital Book Reader "Reader"	PRS-350 / 650 / 950	PRS-350 / 650 / 950
Portable CD/DVD Player	DVP-FX770	DVP-FX770
	DVP-FX970	DVP-FX970
Portable Blu-ray Disc™/DVD Player	BDP-SX1000	BDP-SX1000
	BDP-SX1	BDP-SX1
"Memory Stick"	MS-HX32G / HX16G / HX8G	MS-HX32G / HX16G / HX8G
	MS-MT32G / MT16G / MT8G / MT4G / MT2G	MS-MT32G / MT16G / MT8G / MT4G / MT2G
	MS-A8GDP / A4GDP	MS-A8GDP / A4GDP
	MS-JX8G	
"SxS memory card"	SBP-32 / 16, SBS-32G1 / 64G1A	SBP-32 / 16, SBS-32G1 / 64G1A
	*1 PVC-free products: No use of PVC in casing and cables for internal wiring,excluding accessories	*2 BFR-free products: No use of BFRs in casing and main PWBs of products,excluding accessories

## Environment

### Environmental Cost

(Updated on November 22, 2011)

#### Environmental Cost\*1

##### Environmental Cost in fiscal 2008

Cost for environmental activities at sites	1.5 billion yen
Cost for environmental technology development*2	8.2 billion yen

##### Environmental Cost in fiscal 2009

Cost for environmental activities at sites	1.5 billion yen
Cost for environmental technology development*3	8.2 billion yen

##### Environmental Cost in fiscal 2010\*4

Cost for environmental activities at sites	1.1 billion yen
Cost for environmental technology development*3	32.6 billion yen

\*1 Total cost of Sony Corporation and its subsidiaries related to electronics businesses.

\*2 Environmental technology development costs incurred at Sony Corporation's corporate research labs.

\*3 Environmental technology development costs incurred at Sony Corporation's business units and corporate research labs.

\*4 Environmental technology development costs incurred at Sony Group companies (including Sony Corporation) and corporate research labs.

## Environment

### List of Controlled Substances at Sites

(Updated on November 22, 2011)

Class	1(Prohibited)	2(To be phased out by March 31, 2011)	3(Reduction)	4(Controlled)
Greenhouse Gases			PFCs HFCs SF6 N2O CH4 NF3 HFEs CO2 (except in emissions from energy use)	
Ozone-Depleting Substances	CFCs (non-refrigerant) HCFCs (non-refrigerant) methyl bromide halon (other than for fire extinguishers and fire extinguishing equipment)	CFCs (refrigerants for refrigerators/freezers up until March 31, 1985)		HCFCs (refrigerant) HFCs (refrigerant) (HCFCs and HFCs may be used in new refrigerators until March 31, 2011) CFCs (refrigerants for refrigerators/freezers after March 31, 1985) halon (for fire extinguishers and fire extinguishing equipment)
VOC	1,1,1-trichloroethane 1,1,2-trichloroethane 1,2-dichloroethane 1,1-dichloroethylene 1,2-dichloroethylene methylene chloride chloroform trichloroethylene tetrachloroethylene carbon tetrachloride		Methanol IPA MEK acetone n-heptane n-hexane toluene xylene ethyl acetate butyl acetate styrene ethyl benzene tetrahydrofuran 1-methoxy-2-propanol n-butanol	

VOC			MIBK cyclohexanone formaldehyde other VOCs	
Heavy Metal Compounds	Cadmium and its compounds mercury and its compounds lead solder			Lead-free solder hexavalent chromium compounds lead and its compounds (other than in lead solder) antimony and its compounds arsenic and its compounds nickel and its compounds zinc and its compounds manganese and its compounds cobalt and its compounds fluorine and its compounds boron and its compounds selenium and its compounds
Carcinogenic Substances	Asbestos vinyl chloride monomer PCBs benzene N,N-dimethylformamide			
Endocrine Disruptors and Substances Harmful to Reproductive Functions	Nonylphenol octylphenol methyl cellusolve and methyl cellusolve acetate ethyl cellusolve and ethyl cellusolve acetate dioxins/furan			
Toxic and Dangerous Substances	Especially harmful chemicals Provided by each country law	PFOS		substances: Substances specified under other laws/regulations
Agrichemicals, Sterilizers, and Others	Agrichemicals pesticides others: Aldrin dieldrin endrin chlorodane heptachlor toxaphene mirex			

Agrichemicals, Sterilizers, and Others	DDT polychlorinated naphthalene (with more than three chlorine atoms) hexachlorobenzene bis (tributyltin) oxide certain paraphenylenediamines 2,4,6-tri-tertiary-butylphenol			
Others				Substances specified under other laws/regulations

\* Class 1 substances that used for research and development purposes are exempted.

## Environment

### Independent Verification Report

#### Purpose and Scope of Verification

(Updated on November 22, 2011)

Sony has obtained third-party verification since fiscal 2001 to ensure the credibility of data reported and facilitate the ongoing improvement of its environmental management. Since fiscal 2003, Sony has sought independent verification from the Bureau Veritas (BV) Group, the external auditing organization for the Sony Group's global environmental management system. In fiscal 2010, Sony asked the BV Group to undertake independent verification of the reliability of data collection and reporting processes, as well as the accuracy and the appropriateness of conclusions drawn from such data, at production sites, non-manufacturing sites, design sites and Sony's headquarters.

## Independent Verification Report

(Updated on November 22, 2011)

### CSR Report 2011 Independent Verification Report



BUREAU  
VERITAS

31<sup>st</sup> August 2011

To: Sony Corporation

Bureau Veritas Japan Co., Ltd.  
System Certification Services Headquarter

#### Objective of Verification

To verify the reliability and consistency of environmental data selected by Sony Corporation (Sony) for inclusion in the Sony CSR Report 2011 (the Report), issued under the responsibility of Sony's management. The aim of this verification is to consider the accuracy of environmental performance data detailed in the Report and to provide a verification opinion based on objective evidence.

#### Scope of Work

The scope of the verification work covered the activities at a total of seven Sony business sites for which environmental data is generated, each one of which was visited as part of the verification coverage. This included:

- Sony Headquarters , VAIO & Mobile Business Headquarters
- Sony Mobile Display Corporation Tottori Plant
- Sony Chemical & Information Device Corporation Neagari Plant
- Sony EMCS Corporation Tokai TEC Kohda Site
- Sony Corporation Shonan Technology Center
- Sony Electronics (S) Pte Ltd, Energy Technology Singapore
- Sony Electronics Huanan Co.,Ltd.

#### Data Item

##### Environmental performance data of each site

- Energy consumption(including fuel for motor vehicles),CO<sub>2</sub> emissions from energy consumption
- Emissions of PFCs and other greenhouse gases
- Waste discharge, recycle volume , final treatment waste volume
- TV recycle record
- Water consumption , discharge
- Air pollutants(NO<sub>x</sub> & SO<sub>x</sub>) emission
- Water pollutants(BOD/COD) emission
- Environmental management substances(class1~4) volume to use , emission , transportation

##### Environmental data of product

- CO<sub>2</sub> emissions from product use
- Total volume of resources used in products
- Electricity consumption of product

##### Environmental data of distribution

- CO<sub>2</sub> emissions from logistics

##### Other

- CO<sub>2</sub> Emissions from Employee Business Trips

#### Verification Methodology

Bureau Veritas has implemented a code of ethics across its business which is intended to ensure that all our staff maintain high standards in their day to day business activities. We are particularly vigilant in the prevention of conflicts of interest. Bureau Veritas activities for Sony Corporation are for social reporting verification only and we believe our verification assignment did not raise any conflicts of interest.



Bureau Veritas has conducted its verification activities to determine the following:

Sony Headquarters

1. The reliability and adequacy of data collection and aggregation systems and related processes
2. The effectiveness of internal verification processes
3. The resulting data accuracy (April 2010 to March 2011)
4. The validity of conclusions drawn from and reported against aggregated data

Sites

1. The relevance of the scope of data selected for inclusion in the report
2. The effectiveness of data measurement, collection, and aggregation methods, and of internal verification processes
3. The reliability of monitored and collected data and accuracy of final aggregated data

This verification was conducted using Bureau Veritas' standard procedures and guidelines for external verification of non-financial reporting, based on current best practice. Bureau Veritas refers to the International Standard on Assurance Engagements (ISAE) 3000 in providing a limited assurance for the scope of work stated herein.

Opinion

As a result of the above scope of work Bureau Veritas is of the opinion that:

- The environmental data reported at sites' level is measured, collected and aggregated based on established and effective internal systems and processes.
- All errors in reported data identified during the verification process have been duly corrected.
- Product related environmental impact data are subject to effective aggregation process, resulting in clear and unambiguous results.
- Therefore, nothing comes to our attention to suggest that there are any data that are not reliable and that contains significant error or bias.

Bureau Veritas has implemented a code of ethics across its business which is intended to ensure that all our staff maintain high standards in their day to day business activities. We are particularly vigilant in the prevention of conflicts of interest. Bureau Veritas activities for Sony Corporation are for social reporting verification only and we believe our verification assignment did not raise any conflicts of interest.

## Reference View

(Updated on November 22, 2011)

Bureau Veritas has verified the environmental data collection and reporting and associated environmental management activities at the Sony headquarters and other business sites. The following conclusions have been made as a result.

### 1. Site Environmental Impact Information

- Due to the revision of the data management standard (document) that has been actively implemented globally, the standardization of data management has progressed and the overall data management level at each site has further improved.
- The data collection percentage has improved overall during the reporting period. Activities in South America region, especially, have progressed.
- The reason for data management errors seemed to be due to incomplete hand over of duties when changing over responsible operational staff. A data management procedure should be documented to ensure that the job duties are transferred completely during staff succession.
- With the installation of this year's newly updated environmental database site by site, re-training has been implemented for the use of the data input procedure; however, not all pertinent operation staff have received the training yet and it will be important to complete the training as soon as possible.

### 2. Energy Consumption & Green House Gas (GHG) Emissions

- The data at sites have been checked using a system that gives a warning when the year-over-year number deviates by 20% or more, to help identify input errors.
- It is necessary to clarify the procedure for the calculation of these figures, ensuring there is adequate understanding of regarding the use of decimal points when aggregating data.

### 3. Waste

- Waste has been sorted into categories at sites, which confirms a more detailed and proactive to waste collection.

### 4. Controlled Chemical Substances

- Input errors of consumption data rarely occur, especially at sites with a high volume of environmentally controlled substances in use. This is due to chemical substance data being aggregated based on information from purchasing records. However, in some cases, the input data is interrupted when a substance changes. Therefore, it is necessary to record such interruption events to be able to determine the cause for any resulting data errors.
- At certain sites, there has been a proactive approach to obtaining more accurate distribution factor data to apply in calculating VOC emissions to atmosphere.

### 5. Air Pollutants & Water Pollution Material

- Some omissions in data collection were detected at certain sites; however, the overall collection percentage across all sites has increased.

### 6. Product Environmental Data

- It was confirmed at headquarters that the product assessment procedure is clear and has been implemented properly. Also, operational procedures have been standardized by advancing documentation of workflow diagrams, forms and a data entry manual.
- The calculation method for the quantity of CO<sub>2</sub> emission for Sony Products in the "use phase" has not changed from the time of database development. However, the shift in users' lifestyles and therefore product use, should be considered periodically to assess if the methodology remains fit for purpose.

7. CO2 emission from logistics

- The CO2 emission aggregation for the Logistics section has been continued to progress since last year and now covers most operations in the overseas regions.

## Environment

### History of Environmental Activities at Sony

(Updated on November 22 2011)

		Principles and Organization	Action
1976	April	Establishes Environmental Conference, chaired by the President	Promotes prevention of hazardous materials use and occupational health and safety in Sony Group operations in Japan
	May	Establishes Environmental Science Center	Hazardous waste materials and working environments of Group operations in Japan are evaluated
1985	April		Sony Corporation of America begins environmental audits
1989	March	Convenes special committee to study measures to eliminate CFC use	
1990	August	President's Policy on the Environment is disseminated among Sony Corporation staff	
	October	Organizes Sony Environmental Conservation Committee	
1991	October	Formulates policy for product assessment	
	November		Signs business charter for sustainable development of the international chamber of commerce
1992	December		Policy on environmental management established
1993	May		inaugurates Environmental Fund System, a program supporting development of environmental protection technologies,
	March	Sony Global Environmental Policy and Environmental Action Program is formulated	
	April		Center for Environmental Technologies (CET) is established at the Sony Research Center
1994	February		Launches Sony Environmental Award program
	April	Center for Environmental Technologies (CET) is established at the Sony Research Center	
	May		Launches Greenplus Project to promote environmental consideration with respect to products
	July	Guidelines for acquiring ISO environmental certification are established and introduced	
1995	May		Sony Kohda Corporation becomes the first Sony company in Japan to acquire ISO 14001 certification

1996	July		Sony Deutschland's Service Division becomes the first nonmanufacturing site in the Sony Group to acquire ISO 14001 certification
	October	Revises Sony Environmental Action Program and formulates Green Management 2000	
1997	October	Initiates operations at Recycle Research Center in Ichinomiya	
	December		Four sites in Singapore become the first nonmanufacturing sites in Asia to acquire ISO 14001 certification
1998	April	Composition of Sony Environmental Conservation Committee is revised to give each member a specific responsibility	
	September	Environmental R&D laboratory is established in the Environmental Center Europe, Germany	
	November	Implements Sony Environmental Action Program uniformly across the Sony Group worldwide and introduces Green Management 2002	
1999	February		Completes the process of acquiring ISO 14001 certification at all 38 manufacturing sites in Japan
	February		Sony Eco Plaza environmental exhibition room opens Sony Headquarters
2000	April		Environmental factors are incorporated into Network Companies' evaluations; Guideline for the Environmental Risk Management is formulated; Fire risk survey program is launched for European and Asian operations
	September	Sony China Environmental Conservation Committee is established	
	October	Introduces periodic environmental information disclosure involving advertising and publicity introduce; Launches "eco info" mark	
	December		Introduces periodic environmental information disclosure involving advertising and publicity; Launches. "eco info" mark
2001	March	Revises Sony Mid-Term Environmental Action Program; Formulates Green Management 2005	

	April		Japan's Home Appliance Recycling Law became effective and the 14-plant recycling network of Green Cycle Corporation, where Sony is the principal shareholder, began processing four types of appliance; Environmental evaluation standards are extended from Electronics to Game, Music and Pictures businesses
	September		Sony begins using the Green Power Certification System
	October		PS one game console shipments temporarily are halted in the Netherlands due to containing cadmium above the limit
2002	March	Sony Technical Standards, SS-00259 "Management Regulations for the Environment-related Substances to be Controlled which are included in Parts and Materials" is formulated	
	April		Completes ISO 14001 certification process at all manufacturing sites worldwide
	June		Initiates first "Sony Group Environmental Month"
	July		Introduces Green Partner Environmental Quality Approval Program
2003	March	Introduces new system to increase the efficiency of environmental management through a high level of expertise in environmental issues concerning products and sites; Establishes Institute for Environmental Research to develop medium- and long-term environmental management visions	
	July	Revises Sony Mid-Term Environmental Targets (Green Management 2005)	
	November	Revises Sony Environmental Vision and renames it "Sony Group Environmental Vision"	
2004	June		Acquires ISO 14001 for the headquarters functions of Sony Group environmental management Commencement of a globally integrated environmental management system
2006	March		Completes shift to a globally integrated environmental management system, based on ISO 14001
	April	Establishes Green Management 2010	
	July		Begins participation in World Wide Fund for Nature (WWF)'s Climate Savers Programme

2007	November	Resources Recycling Office is established	Use of renewable energy at Sony DADC Austria's Anif Plant reaches 100%
2008	February		Provides venue for the annual conference of the WWF's Climate Savers Program and co-hosts (with the WWF) Climate Savers Tokyo Summit 2008, which welcomes representatives of industry, government and the media,
	April		Launches a scheme to support forest conservation efforts in Aomori using a Green Power Certification system purchase contract
	June		Launches KDL-32JE1, a low-energy LCD television
	August		Commences pilot program to collect waste in the city of Kita-Kyushu
2009	January		Participates in 2009 International Consumer Electronics Show (CES) with environment-themed booth; Announces new V5/VE5/WE5 series of BRAVIA™ LCD televisions with energy-saving features, including a "Presence Sensor" and "Energy Saving Switch," that facilitate a substantial reduction in energy consumption
	June		Releases mercury-free alkaline button battery (LR)
	July		Achieves using 100% renewable energy at European sites; percentage of total energy used by Tokyo headquarters building accounted for by renewable energy reaches 50%
2009	October		Sony Chemical & Information Device Corporation's Kanuma Plant wins Minister of Economy, Trade and Industry Award for "Resource Recycling Techniques and Systems"
	November	Announces at presentation to the media that it has positioned "the environment" as one of four key strategic priorities	
2010	February		Announces VAIO W series of "eco body model" PCs with features that evoke Sony's commitment to environmental conservation, including components that are 80% made with recycled plastic and carrying case made from 100% recycled PET materials

	April	Announces new "Road to Zero" global environmental plan, revises Sony Group Environmental Vision and formulates "Green Management 2015," a new set of mid-term environmental targets for the Sony Group	
	October		Presentation on groundwater recharge for idle rice paddies (project undertaken by Sony Semiconductor Kyushu Corporation's Kumamoto Technology Center) given at COP10 Biodiversity Conference.
2011	February		Develops "SoRPlas", plastic made 99% from recycled materials, for use in the bezel (screen rim) components of BRAVIA™ LCD televisions; Sony Forest, maintained by Sony EMCS Corporation's Tokai TEC Kohda Site, earns Superlative Stage (top rank) certification under the Social and Environmental Green Evaluation System (SEGES) in Japan
	April		Launches 1.2 kWh-capacity energy storage modules containing rechargeable lithium-ion batteries made with olivine-type lithium-ion iron phosphate

• Organization names appear as they were at the respective dates; some may not be current.



## Innovation

### Innovation

True to its DNA, Sony continues to address the challenge of realizing new potential through creative technologies, products and services and a spirit of innovation that focuses on contributing to society. This challenge is undertaken in partnership with a diverse array of stakeholders.

#### Technology



Sony harnesses new technologies to contribute to the realization of sustainable lifestyles and address key issues of importance to society.

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#### Solution



In addition to taking steps to lower greenhouse gas emissions from its operations, Sony is developing energy-saving products and IT technologies that help reduce CO2 emissions from Sony products during use by customers.

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#### Marketing



Sony offers programs that enable consumers to make their own contribution toward solving environmental problems.

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#### Design



Sony pursues a variety of design-based initiatives that help solve problems faced by society and take user diversity into consideration.

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## Innovation

### Technology

#### Open Energy Networks: Research and Experimental Deployment of Systems

(Updated on August 31, 2010)

Modern society derives most of the power it requires from large-scale electric power generating facilities. Recent years have brought the development of small-scale residential generating systems using sunlight, wind and other renewable resources. It is generally believed that the use of such large- and small-scale systems in an organic and flexible manner would make it possible to meet growing energy needs. However, there are technological limitations to the integration of power from dispersed natural energy resources into the conventional power grid. This motivated Sony Computer Science Laboratories, Inc. (Sony CSL) and Sony Energy Devices Corporation to research aimed at realizing an open energy network capable of transmitting and distributing power from dispersed energy sources. As part of this effort, the companies developed a prototype system for deployment in rural, nonelectrified areas of northern Ghana with the aim of harnessing solar energy to power audiovisual (AV) equipment used in public viewings of FIFA World Cup™ soccer games.

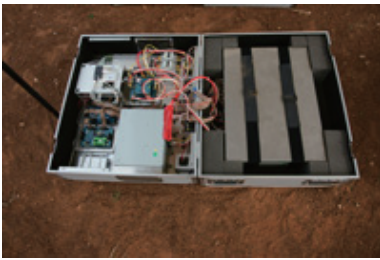
The system used in the public viewings in northern Ghana used solar panels to generate and store energy and supply power directly to AV equipment. The critical component of the system was an energy server consisting of 200 lithium-ion batteries and a newly developed battery charge and discharge control device, power conditioner and input/output voltage control circuitry. To facilitate use in the public viewings in Africa, the companies emphasized durability and portability in designing vibration- and dust-proof housing. The companies also designed an original base sheet that made it easy to transport standard commercial flexible solar panels and to increase the number of panels in use if necessitated by weather conditions. The sheet greatly enhanced the system's maneuverability on the ground.

With the exception of a few specific devices, equipment used in the public viewings -- including a high-definition projector (370 W), Blu-ray Disc player (30 W) and active speakers (20 W) -- was driven by direct current. This is a concept essential not only to reduce power lost through AC-DC voltage conversion, but also to the creation of open energy networks for the future.

The public viewings in Ghana used two prototype units. Under fair weather conditions, batteries charged for four hours from solar panels were sufficient to enable visitors in a single location to enjoy an entire match.

The concept behind the system is also underscored by WCDMA/GSM and GPS capabilities. As a consequence, the system can communicate positioning and battery and operational information via a dedicated server to PCs and smartphones situated some distance away.

Representing the culmination of research conducted to date, the system used for the public viewings in Ghana was designed specially for the FIFA World Cup™. The experimental deployment for this purpose brought to light many issues that must be addressed to realize open energy networks that facilitate the supply of power to nonelectrified rural communities. Sony CSL and Sony Energy Devices will apply the experience gained through this initiative to further their research in this area.



Internal structure of the energy server



Vibration- and dust-proof housing



Solar panels and base sheet



DC-powered equipment was used to power equipment to show matches



Power is supplied to equipment from the system

## Development of Lithium-Ion Secondary Batteries, Energy Storage Module and Storage Battery Made with Olivine-Type Lithium Iron Phosphate

(Updated on November 8, 2011)

**Development of olivine-type lithium-ion iron phosphate secondary cell that provides a long lifespan, a high level of safety and a smaller environmental footprint**

Since commercializing the world's first lithium-ion battery in 1991, Sony has continued to focus efforts on the development and commercialization of technologies for lithium-ion batteries, which boast excellent energy efficiency and high energy/power density, among other superior properties. In recent years, Sony has also utilized its accumulated technologies and know-how in product development in the energy storage field, which continues to benefit from rapidly rising demand in Japan and abroad across a wide range of applications, such as emergency backup power sources for hospitals, schools and offices, as well as energy storage systems for group housing complexes. In 2009, Sony brought to market a proprietary lithium-ion battery that uses an olivine-type lithium-ion iron phosphate as the cathode material, and took a solid step forward into the field of energy storage.



Sony's olivine-type lithium-ion iron phosphate secondary cell

**Development of energy storage module and storage battery that will help to build backup power sources and encourage peak energy shift**

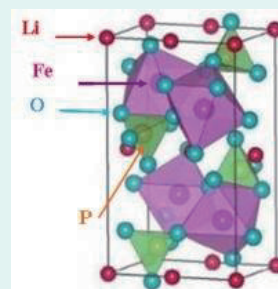
After shipments of the olivine cell began, Sony developed an energy storage module with a 1.2 kWh capacity that uses the inherent proprietary technologies applied to such cells. In April 2011, Sony commenced mass production of these modules. Following the Great East Japan Earthquake in March 2011, Japan has seen a rapid rise in interest in the storage of electricity for later use from a broad range of electricity consumers, from infrastructure facilities to residential homes. Energy storage battery technology is thus attracting significant attention from both businesses and households as a means of reducing electricity consumption and as a backup power source in the event of a sudden power outage. Against this backdrop, Sony will continue to mobilize and apply its technical capabilities in the energy storage field with the aim of realizing innovations in sustainability. Plans for the Japan market include commercializing an integrated energy storage battery unit for commercial use and a small energy storage battery unit for household use.



Energy storage module (IJ1001M)

**Use of olivine-type lithium-ion iron phosphate**

An exceptional feature of the long-life cell developed by Sony, and of the energy storage module in which it is mounted, is the use of olivine-type lithium-ion iron phosphate as the cathode material. The positively charged material is stable, with its crystals binding together for greater strength, and it has a robust crystal structure. Even if the ambient temperature rises, it is difficult for oxygen to detach, thereby providing superior heat stability. While this material is extremely promising, it customarily presents several drawbacks and challenges when applied to secondary cells. However, Sony overcame these issues by applying proprietary material process technology and developing a suitable structure to create a cell with key advantages. Specifically, the cell realizes (1) a lifespan of more than 10 years if fully charged and discharged daily in a 23°C environment; (2) excellent safety performance based on superior heat stability; (3) rapid recharging (can be recharged to 90% capacity or more in just one hour); and (4) high scalability. In addition, since it uses iron (lithium-ion iron phosphate) a relatively plentiful resource -- as the electrode material, it achieves a much lower environmental footprint compared with batteries that use rare metals, which have extremely limited reserves and are in short supply.



Molecular structure of olivine-type lithium-ion iron phosphate

**Commercializing Energy Storage Batteries**

**Integrated energy storage battery unit for commercial use**

Sony commenced shipments of an integrated energy storage battery unit for commercial use in September 2011. Combining such components as an energy storage module mounted with the Company's own long-life cells, a controller, inverter and converter, this battery delivers a maximum storage capacity of 2.4 kWh. The unit has six power outlets and can function as an uninterruptible power supply (UPS) for commercial users.



Integrated energy storage battery unit (ESSP-2000)

### Small energy storage battery unit for household use

General sales of Sony's Home Energy Server, which targets the household market, were launched in Japan in October 2011. This unit features several long-life cells developed in-house by Sony to deliver maximum energy storage capacity of 300 Wh. Boasting a compact design and user-friendly operation, the Home Energy Server may be utilized by home users both for power saving and as an emergency backup supply in case of a power outage.

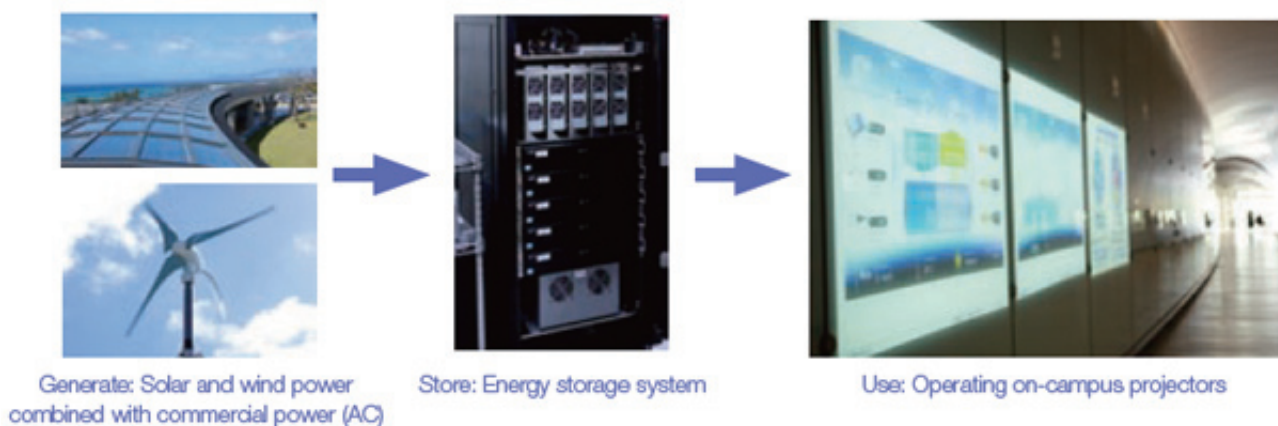


Home Energy Server  
(CP-S300E/W)

## Efforts Aimed at Realization of a Smart Grid

(Updated on November 8, 2011)

In collaboration with Okinawa Institute of Science and Technology Promotion Corporation (OIST), Sony Group research institute Sony Computer Science Laboratories, Inc. (Sony CSL), is conducting demonstration tests for an open energy system (i.e., a distributed smallscale energy network) that features an energy storage system with our energy storage module and renewable energy (solar and wind power, with commercial power as an auxiliary power source). Sony CSL is currently building an energy storage system at OIST's campus in Onna Village, Okinawa, scheduled to open in 2012. The system features a Sony 8.4 kWh energy storage module and is connected to commercial power as well as solar and wind power generation systems, using renewable energy to, among others, operate on-campus projectors and monitor stored-energy volume, wind power, temperature, and lighting intensity. Sony will also take part in the Pecan Street Smart Grid Demonstration Project, in Austin, Texas, which begins in 2012, and plans to participate in a variety of demonstrations and verification tests utilizing its independently developed technology for predicting electricity demand and energy storage units, among others.



## Cell Broadband Engine™ Technologies: Helping to Identify the Mechanics of Disease

(Updated on August 31, 2010)

### Cell Broadband Engine™ and Distributed Computing

Cell Broadband Engine™ (Cell/B.E.) on PLAYSTATION®3 (PS3™) is a powerful new microprocessor that achieves a computing speed approximately 10 times faster than that of a standard PC. Cell/B.E. facilitates the real-time processing of massive amounts of data, inviting a broad range of potential applications not only in next-generation computer entertainment systems and digital electronic products, but also in workstations for movie production and computer simulations in science and technology. Additionally, Cell/B.E. makes it possible to run multiple operating systems (OSs), meaning real-time OSs used in conventional PCs and workstations can run together, as can OSs used in digital consumer electronic products and computer entertainment systems. Distributed computing is a technique for obtaining significant computing capacity by leveraging the capacity of multiple computers, thus eliminating the need for a dedicated supercomputer. This technique is used primarily by universities and research institutes. Calculations are divided into smaller units, i.e., packets, which are then distributed to participating computers. When the computers have finished processing the calculations, they send the data back. Accordingly, more computers on the network mean greater computing capacity. With these technologies, PS3™s connected to a network together act like a supercomputer.

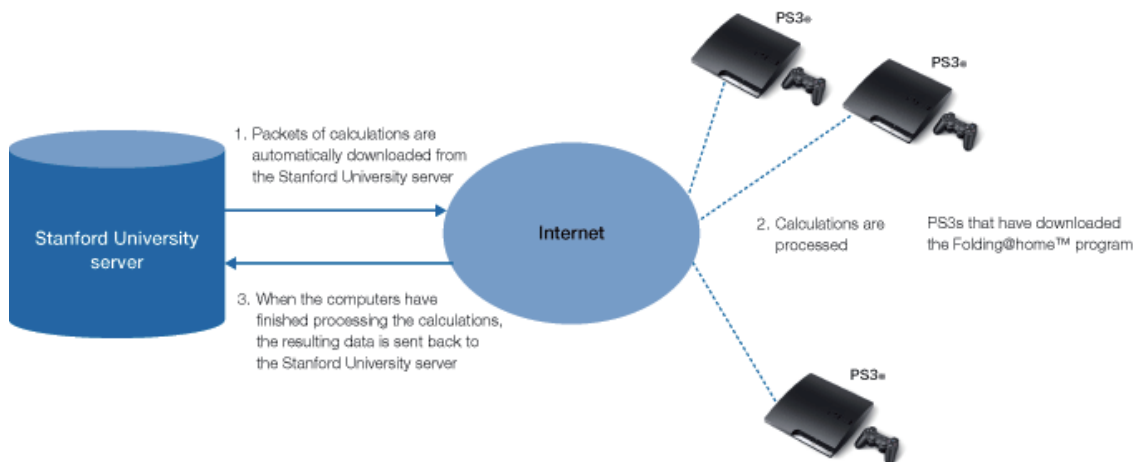
### Analyzing Protein Folding on PLAYSTATION®3

Misfolded proteins in the human body are linked to a number of diseases, including Parkinson's, Alzheimer's and cancer. Analyzing protein folding to identify the causes of this phenomenon requires massive computing capabilities. Computer simulations are essential because the folding process is extremely complicated, but with an average PC one simulation would take about 30 years.



The screen of a PS3™ running Folding@home™

Folding@home™ is a distributed computing program established by Stanford University to study protein folding. Participating computers are sent packets of complicated calculations over the Internet. These computers simultaneously process these packets of calculations, greatly reducing the time needed to complete the calculation. Once the computers have finished processing their packets, the resulting data is sent back over the Internet to the Stanford University server.



Folding@home™: How does it work?



In March 2007, Sony Computer Entertainment Inc. began offering PS3™ owners a software application enabling them to donate capacity to Folding@home™. PS3™s, backed by the tremendous computing capacity of Cell/B.E., are thus contributing to efforts to identify the mechanics of several diseases. Since Folding@home™ for PS3™ was released in March 2007, a huge number of PS3™ users from around the world have taken part. As of May 2010, the amount of donated computing capacity had increased to more than 24 times the pre-release capacity.

#### **Folding@home™ Project Listed in Guinness Book of Records Thanks to PS3™ Power**

On September 16, 2007, the Guinness Book of World Records certified the Folding@home™ project as the world's most powerful distributed computing network after it broke the one-petaflop barrier for computing capacity. Thanks to the tremendous computing capacity of the PS3™, the project became the first ever to reach the one-petaflop mark in distributed computing.

- Folding@home™ on PLAYSTATION®3  
<http://www.scei.co.jp/folding/jp/>

#### **A Stakeholder's Voice**

##### **Opportunities in Medical Research**



Vijay S. Pande  
Associate Professor of Chemistry and of Structural Biology,  
Stanford University

Simulation of biological and chemical processes plays an increasingly important role in today's medical science. Folding@home™, a distributed computing project, was established in October 2000 at Stanford University. It applies such simulation techniques to help provide a better understanding of protein folding, misfolding and related diseases. The massive amount of computing capacity needed for our research is provided by volunteers, who connect to the network and donate computing capacity. The project has enjoyed the support of more than one million computers since it began. Sony gave owners of PLAYSTATION®3 systems the opportunity to join the project in March 2007. Within just one month, the donated computing capacity more than doubled, which gives our research a significant acceleration in the quest to understand and eventually develop cures for serious diseases. The keys to success for initiatives like Folding@home™ are technical excellence and sustained volunteer contribution. We count on Sony and other industry partners to continue pushing the limits in these areas.

## Innovation

### Solution

In addition to taking steps to lower greenhouse gas emissions from its operations, Sony is developing energy-saving products and IT technologies that help reduce CO<sub>2</sub> emissions from Sony products during use by customers.

(Updated on August 31, 2010)

#### Digital Cinema Systems

The movie industry is shifting rapidly to digital technology. Sony developed the world's first digital cinema camera, the HDW-900, in 2000, an achievement that brought dramatic changes to the front lines of filmmaking. The use of high definition video (HDV) rather than film greatly improves efficiency on several fronts. For example, one reel of film holds only about 10 minutes' worth of action, whereas one reel of digital video allows 50 minutes of consecutive filming. Moreover, shots can be reviewed on the spot, greatly simplifying the post-production editing process, thereby making production more efficient and reducing associated costs.



SRW-9000 high-definition camcorder  
(HDCAM-SR series)

Released in 2009, the SRW-9000 -- the first digital high-definition camcorder in the HDCAM-SR series -- delivers superb image quality and performance and outstanding maneuverability. Approximately 60% the size and weight of an independent video camera and recorder combined, the SRW-9000 also uses only about half the electricity.\*1 Moreover, because digital data is delivered to digital cinema-compatible movie theaters on a hard disc drive (HDD), there is no need to develop film, substantially reducing the need for water and chemicals used during the developing process. Further, whereas a single two-hour movie on film requires six reels of positive film, the same movie made with digital cinema needs only one HDD, thus increasing the efficiency of shipping and contributing to the reduction of associated CO<sub>2</sub> emissions.

Total emissions of CO<sub>2</sub> associated with a two-hour movie made using digital cinema--from production of complete digital cinema package through to distribution to and showing at 300 digital cinema-compatible movie theaters across Japan and final disposal -- are estimated to be approximately 160 tons lower than those associated with a movie made using film. \*2

\*1 Compared with the Sony F23 and SRW-1 combined

\*2 Based on Sony data; premise for calculation is as follows:

#### Movie made using film

CO<sub>2</sub> emissions from the following processes associated with a two-hour movie made using film, assuming six rolls of film per movie theater:

- CO<sub>2</sub> emissions during manufacture and developing of film
- CO<sub>2</sub> emissions during transport of film

Calculated in ton-kilometers assuming round-trip between Tokyo and each movie theater in a two-ton truck: Weight x distance traveled x fuel used per ton-kilometer x coefficient of CO<sub>2</sub> emissions per unit of fuel used

- CO<sub>2</sub> emissions from projectors during showing of movie  
Power consumption by projectors during showing of two-hour film x coefficient of CO<sub>2</sub> emissions per unit of power consumed
- CO<sub>2</sub> emissions from disposal of film  
Calculated assuming incineration of all positive film used

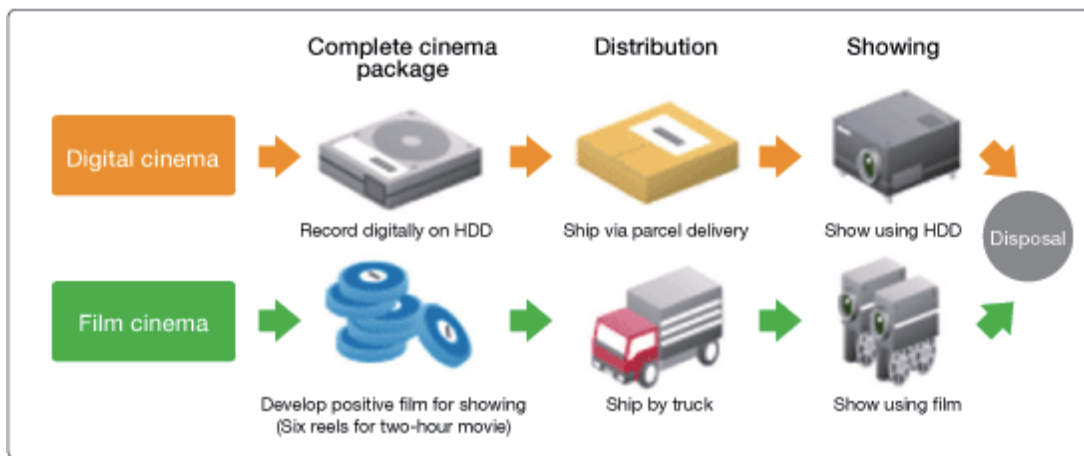


### Movie made using digital cinema

CO<sub>2</sub> emissions from the following processes associated with a two-hour movie made using film, assuming one HDD per movie theater:

- CO<sub>2</sub> emissions during manufacture of HDDs  
Distributed proportionally assuming one HDD can be used for a total of 120 movies
- CO<sub>2</sub> emissions during transport of HDDs  
Calculated in ton-kilometers assuming round-trip between Tokyo and each movie theater in a two-ton truck: Weight x distance traveled x fuel used per ton-kilometer x coefficient of CO<sub>2</sub> emissions per unit of fuel used
- CO<sub>2</sub> emissions from projectors during showing of movie  
Power consumption by projectors during showing of two-hour film x coefficient of CO<sub>2</sub> emissions per unit of power consumed
- CO<sub>2</sub> emissions from disposal of HDDs  
Calculated assuming landfilling of HDDs
- CO<sub>2</sub> emissions over the life cycle of digital cinema projectors (except during showing of movie)

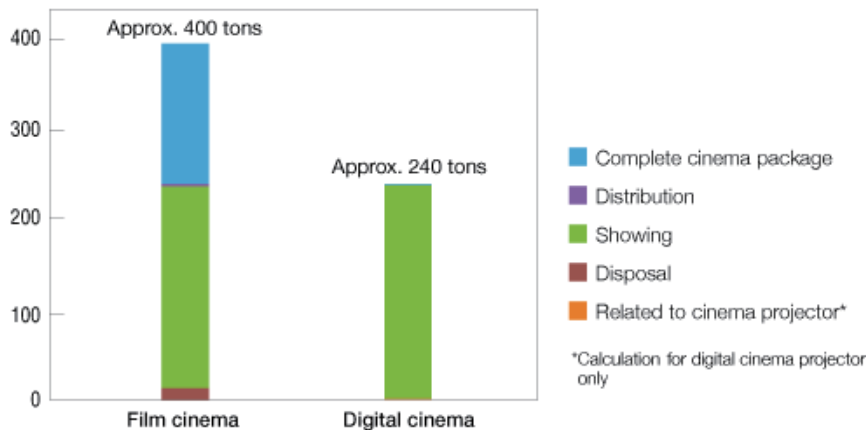
### Comparison of life cycle of movie made using digital cinema and movie made using film



### Comparison of CO<sub>2</sub> Emissions at Each Lifecycle Stage

(From creating a complete cinema package for a 2-hour movie, to distributing, showing, and disposing at 300 theaters around Japan)

Emissions (t-CO<sub>2</sub>)



## Video Conferencing Systems

Meetings involving individuals from different locations generate significant CO<sub>2</sub> emissions -- the principal component of which is emissions from travel. The use of video conferencing systems can greatly reduce CO<sub>2</sub> emissions associated with employee business trips and other travel. For example, CO<sub>2</sub> emissions associated with a single meeting involving two employees each from five cities across Japan and held using Sony's PCS-XG80 HD video conferencing system are estimated to be approximately 1.1 tons\*3 lower than would be the case if the same two employees from each of the five cities were to travel to Tokyo to participate in the meeting in person. For a meeting held 24 times a year, therefore, the total annual reduction would amount to approximately 26 tons.

\*3 Based on Sony data; premise for calculation is as follows:

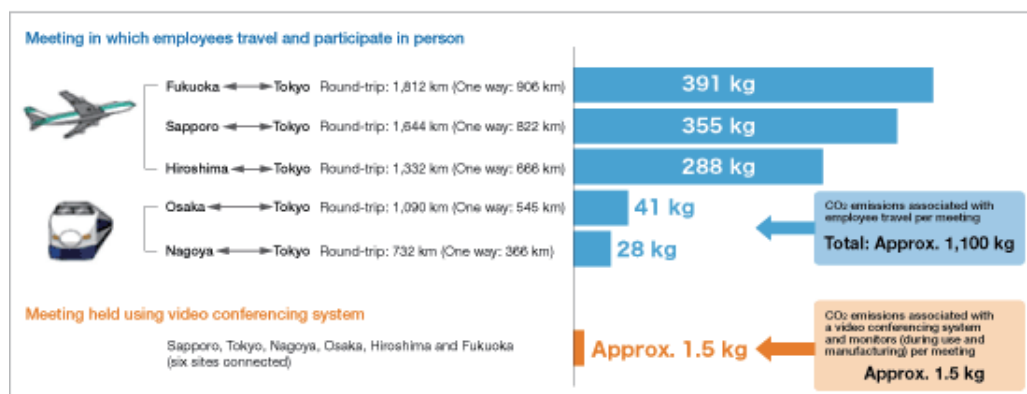
### CO<sub>2</sub> emissions associated with meeting in which employees participate in person

- Meeting with participation of two employees each from five cities (Fukuoka, Sapporo, Hiroshima, Osaka and Nagoya) traveling to Tokyo
- Participants traveling between Tokyo and Fukuoka, Tokyo and Sapporo, and Tokyo and Hiroshima, by air; participants traveling between Osaka and Tokyo, and Nagoya and Tokyo, by Shinkansen; coefficient used to calculate emissions: data for fiscal year 2008 in "CO<sub>2</sub> Emissions per Unit of Transport (Passengers)," Ministry of Land, Infrastructure, Transport and Tourism

### CO<sub>2</sub> emissions associated with meeting held using video conferencing system

- CO<sub>2</sub> emissions from meeting held associated with use of PCS-XG80 HD video conferencing system linking six locations and six displays (KDL-32EX300) for two hours plus CO<sub>2</sub> emissions during manufacture of equipment distributed proportionally over the number of times the equipment is used (assuming 24 times annually for 10 years)

Comparison of CO<sub>2</sub> emissions associated with meeting that involves employee business travel to meeting held using video conferencing system



PCS-XG80 HD video conferencing system

## Innovation

### Marketing

With the aim of using its business activities to increase public awareness of efforts to resolve social problems, and of encouraging its customers to participate in such activities, Sony participates in cause-related marketing, a type of marketing that allows it to support the efforts of NPOs through marketing efforts for its products and services.

### "Solar-bear": An Example of Cause-Related Marketing

(Updated on August 31, 2010)

The companies of the Sony Group support the efforts of the Solar Bear Fund, a Japanese NPO established to promote the prevention of global warming and environmental education for children, by making use of a wide range of techniques linked to their sales and business activities.



In March 2008, Sony launched a campaign whereby it displays "Solar Bear" characters on packaging for its retail batteries, rechargeable batteries and battery chargers. Sony donates a portion of the revenue generated from the sale of these products to the Solar Bear Fund, which uses the proceeds to install solar power generation units at kindergartens and nursery schools. In addition to providing direct support to the Solar Bear Fund, this ongoing initiative enables Sony to capitalize on the visibility of Solar Bear characters in retail settings to encourage consumer understanding of environmental issues.

In 2009, Sony Assurance Inc. initiated a program in collaboration with the Solar Bear Fund aimed at installing solar power generation equipment at kindergartens and nursery schools. The program capitalizes on the method Sony Assurance uses to calculate automobile insurance premiums, which is based on estimated distance driven in a year, when policies are renewed. Policyholders whose actual distance driven is below the distance initially estimated are considered to have contributed to environmental conservation. For each 100 kilometers the actual result is below the estimate, Sony Assurance donates 1 Yen to the Solar Bear Fund, which uses this money to install solar power generation equipment at kindergartens.

In fiscal years 2008 and 2009, Sony Marketing (Japan) Inc. also supported the Solar Bear Fund in its effort to promote solar power generation equipment.

The support of the aforementioned three Sony Group companies in fiscal years 2008 and 2009 enabled the Solar Bear Fund to install solar power generation equipment at 14 kindergartens and nursery schools.

Sony Life Insurance Co., Ltd., contributes to the Solar Bear Fund by donating 10 Yen each time a new policyholder opts to receive his or her policy guide on CD-ROM, rather than in printed form. Sony also has a campaign whereby it also makes about 100 Yen worth of donation to the Solar Bear Fund for every completed customer survey received from the owners of VAIO™ released in 2010. These donations are used to support various Fund initiatives.

For more information, please see (Japanese only):

- <http://www.sony.jp/battery/solarbear/index.html>
- [http://www.sony.jp/CorporateCruise/SMOJkankyou/project/solarbear\\_powerplants.html](http://www.sony.jp/CorporateCruise/SMOJkankyou/project/solarbear_powerplants.html)
- <http://ecology.sonysonpo.co.jp/>
- [http://www.sonylife.co.jp/company/news/21/files/100217\\_yakkan.pdf](http://www.sonylife.co.jp/company/news/21/files/100217_yakkan.pdf)

## Carbon-Offset Investment Trust

(Updated on November 8, 2011)

In an initiative aimed at mitigating greenhouse gas emissions, Sony Bank Inc. donates to the Japanese government greenhouse gas emissions rights it has purchased on behalf of customers whose holdings in funds that make up its carbon-offset investment trust exceed a specified amount. This system enables customers to participate in an environmental preservation activity while Sony Bank manages their investments. In fiscal year 2010, the Bank purchased 1,000 tons of emissions rights for investments in three eligible funds.

Through the Climate & Children Supporters program, Sony Bank also provides support for a UNICEF project aimed at improving water and sanitation in the Republic of Mozambique. In fiscal years 2008 to 2010, the Bank donated a total of 600 million Yen to the project, an amount based on the value of emissions trading rights purchased by the Bank.

- For more information, see (Japanese only)  
<http://www.moneykit.net/visitor/eco/eco04.html>

## Innovation

### Design

Sony pursues a variety of design-based initiatives that help solve problems faced by society and take user diversity into consideration.

#### "odo": The Concept behind Sustainable Design

(Updated on August 31, 2010)

"odo" is a design concept model group of devices, powered by kinetic energy, which Sony proposed and developed. The devices provide children with new experiences, a sense of social consciousness, ecological values and inspiration. In return, children offer their creativity, curiosity and energy to "odo," which enhances its value even more. They are an invitation to enjoy a new level of interaction with devices, by having fun moving parts, turning cranks and using the body to generate energy while playing. At the Eco-Products 2008 exhibition, held in December 2008, the Sony booth featured new "odo" devices and a workshop where children could try these new devices out. Children visiting the Sony booth could experience the fun of taking photographs using the Twirl 'N Take digital still camera and viewing them using a memory card and the Push Power Play photo viewer, all powered by their very own energy.

From March through June 2010, "odo" devices were featured at an exhibition at Sony ExploraScience in Beijing titled "Green & Eco."

- For more information, please visit the Sony Design website  
<http://www.sony.net/Fun/design/activity/sustainable/ucd/>



"odo": The concept behind sustainable design



#### Sustainable Packaging

(Updated on August 31, 2010)

Packaging policies have been a key facet of Sony's environmental initiatives for some time. Keeping the consumer's perspective firmly in mind, designers are expanding efforts to create sustainable packaging by considering, among others, how packaging be made more conducive to appropriate management after use and how it can make unboxing a new Sony product an exciting and satisfying experience.

A sustainable package redesign project resulted in the development of a brand-new slim carton for the VAIO™ NW series, launched in fiscal year 2009. The designers in charge began by verifying the relationship between packaging and customers and, after reviewing the results of this process, resolved to employ environmentally-conscious materials, as well as to minimize the size of and volume of materials used in the carton, making it easy to open and possible for customers to recycle immediately after opening.

Looking ahead, Sony will continue to incorporate the principles of sustainable design into its packaging development efforts.

- For more information, please visit the Sony Design website:  
[http://www.sony.net/Fun/design/activity/product/sustainable\\_package/01.html](http://www.sony.net/Fun/design/activity/product/sustainable_package/01.html)

## Stakeholder Engagement and Partnership

### Stakeholder Engagement and Partnership

For Sony, engaging and working together with various stakeholders is vital for pursuing CSR activities. Sony not only promotes engagement with stakeholders in implementing its CSR activities but also encourages the participation of multiple stakeholder groups in the planning of those activities, thereby contributing to the creation of a global framework.

### Collaboration with Environmental NGOs

(Updated on August 31, 2011)

In July 2006, Sony joined the Climate Savers Programme, which partners the World Wide Fund for Nature (WWF), a leading environmental protection NGO, with companies in the drive to reduce greenhouse gas emissions. Through the Climate Savers Programme, leading corporations partner with the WWF to establish targets for reducing absolute emissions of CO<sub>2</sub> and other greenhouse gases. Progress toward these targets is monitored by an independent body. As of July 2011, 26 corporations worldwide had signed on as Climate Savers Programme partners.

Under the program, Sony is committed to achieving a 7% reduction in emissions of greenhouse gases from all of its sites from the fiscal year 2000 level by the end of fiscal year 2010, as well as to lowering energy consumption by its products and working with the WWF to communicate with consumers.

In November 2009, Sony announced a new set of climate change-related targets for fiscal year 2011 and beyond. These are to (a) achieve an absolute reduction in greenhouse gas emissions—measured in CO<sub>2</sub> emissions—from Sony Group sites of 30% from the fiscal year 2000 level by the end of fiscal year 2015; and (b) achieve a reduction in power consumption per product of 30% from the fiscal year 2008 level by the end of fiscal year 2015. These targets were reviewed and approved by the WWF as revised targets for Sony under the Climate Savers Programme.

In February 2010, Sony and the WWF co-hosted the Climate Savers Tokyo Summit 2008, which was held at Sony's Tokyo headquarters and attended by representatives of current and intended program participants. In addition to the WWF's annual assembly, the summit for the first time welcomed participants representing industry and government, as well as the press. The summit featured presentations highlighting the efforts and achievements of program participants, as well as panel discussions featuring leading experts and a keynote address by James Leape, Director General of WWF International. The highlight of the event was the announcement by Sony Chairman and CEO Howard Stringer of the Tokyo Declaration, signed by 12 Climate Savers Programme participants. On behalf of the signatory companies, Mr. Stringer declared support for the Intergovernmental Panel on Climate Change (IPCC) and its conclusion that global greenhouse gas emissions must peak and begin to drop in the next 10–15 years, to well below half the level recorded in 2000, by the middle of the 21st century. He further asserted that with the aim of realizing a low-carbon society the signatory companies will take further action, including trying to widen the scope of emissions reduction activities through greater cooperation with business partners and promoting a low-carbon lifestyle to consumers and customers.



In 2009, Sony also joined as a participant in the Climate Savers Programme's "Let the Clean Economy Begin" campaign, and has been actively engaged in a wide range of related initiatives. These include taking part in joint advertising activities and linking its corporate website with those of partner companies.

## Participation in the Development of a Global Framework

(Updated on August 31, 2011)

Sony undertakes a wide range of activities with the aim of promoting CSR initiatives. One example is its role as joint chair of the working group on the formulation of the ISO 26000, international standard of social responsibility published in November 2010, on which Sony submits reports in Japan through the Japanese Industrial Standards Committee (JISC). Sony is also involved in the development of a global CSR framework, which includes participating in the multi-stakeholder planning and revision process for the Global Reporting Initiative's (GRI's) GRI Sustainability Reporting Guidelines.

In the area of climate change, Sony serves as a member of the advisory group of the Carbon Disclosure Project Japan, which promotes disclosure of corporate greenhouse gas emissions.

## Participation in CSR-Related Organizations and Projects

(Updated on August 31, 2011)

Sony is a member of numerous worldwide CSR organizations, including the World Business Council for Sustainable Development (WBCSD), Business For Social Responsibility (BSR), CSR Europe and the Council for Better Corporate Citizenship (CBCC). The WBCSD has established a project called the "Eco-Patent Commons," which is a collection of sleeping patents pledged by corporations to provide assistance with environment preservation. In January 2008, Sony joined forces with International Business Machines Corporation (IBM) of the United States, Nokia Corporation of Finland and Pitney Bowes Inc. of the United States to launch a database of environment-friendly patents on a website hosted by the WBCSD.

The CBCC was established in 1989 as The Council for Better Investment in the United States, an initiative Nippon Keidanren, with the purpose of promoting good relations between Japanese-affiliated companies and various stakeholders, including local communities and employees, by encouraging good corporate citizenship. Sony's founder, Akio Morita, served as the organization's first chairman. Authorized as a "designated public benefit organization" in June 2010, the CBCC is currently chaired by Ryoji Chubachi, vice chairman of Sony Corporation



## Launch of the “Eco-Patent Commons”

(Updated on August 31, 2011)

On January 15, 2008, Sony joined forces with IBM (USA), Nokia (Finland), Pitney Bowes (USA) and the World Business Council for Sustainable Development (WBCSD) to launch the “Eco-Patent Commons.” This portfolio of patents for environmental technologies released by founding and participating members is available on a dedicated website hosted by the WBCSD. As of July 2011, 13 companies in a wide range of industries had released more than 100 patents.

The patents that make up the portfolio include patents that address environmental issues, as well as patents covering innovative manufacturing and business processes. Releasing these patents encourages their application in the development of innovative products, processes and services that contribute to environmental preservation.

The founding members of the Eco-Patent Commons Project, including Sony and other members of the WBCSD, are calling for other companies to join them in this initiative, which promotes innovation and collaboration with the aim of preserving the global environment.

- Eco-Patent Commons.

<http://www.wbcd.org/web/epc/>

## CSR Enlightenment

### CSR Enlightenment

Sony is engaged in a variety of efforts in line with its belief that a solid in-house organization and a high level of employee awareness is essential to ensuring the effective coordination of its CSR initiatives.

### Organization for Promoting CSR

(Updated on August 31, 2011)

Sony has established an office for CSR that is responsible for formulating policies concerning Sony's social responsibilities, implementing these policies throughout the Group and communicating with third parties through, among others, the sharing of information.

The CSR office also handles CSR-related disclosure, promotes dialogue with stakeholders, ensures feedback reaches management and any pertinent Sony department (e.g., legal, compliance, environment, product quality, procurement, human resources, marketing) as well as interdepartmental meetings, and is incorporated into management's actions. The relevant departments promote CSR activities throughout the Group by ensuring policies and initiatives thus incorporated are conveyed to Group companies.

### Encouraging Awareness

(Updated on August 31, 2011)

Recognizing the importance of raising employee consciousness with regard to the effective promotion of CSR, Sony offers a variety of educational programs based on a three-level approach, whereby employees are encouraged first to learn about CSR, second to participate in CSR activities and third to incorporate CSR into their day-to-day work.

Sony provides employees with essential training to facilitate the sharing of information, disseminates pertinent news and stages the CSR Forum, featuring lectures by invited experts, film showings and other activities designed to enhance awareness of each individual's obligations to society.

Sony's social contribution projects offer a uniquely Sony approach, that is, an employee volunteer-driven organization that contributes to society while at the same time encouraging employee involvement.

## Organization for Promoting CSR

(Updated on August 31, 2011)

CSR training for new employees focuses on instilling know-how and introducing Sony's CSR program. Sony also offers instructor-led training sessions aimed at management. To enhance the expertise of both employees and management, Sony publishes the CSR Update. In addition to detailing Sony's CSR activities, this monthly newsletter reports on CSR-related awards and recognition received from outside agencies and on CSR-related trends.

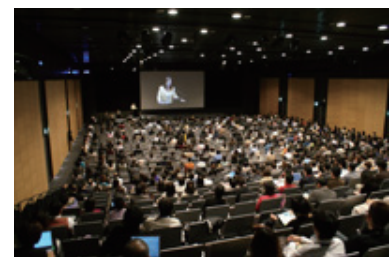


CSR Update

## CSR Forum

(Updated on August 31, 2011)

Held after hours and completely voluntary, the CSR Forum provides Sony employees in Japan with the opportunity to increase their knowledge of CSR. Organized five or six times a year, this event features lectures by invited experts, film showings and other activities, and addresses a variety of themes, including the disaster relief, environment, human rights, poverty, international understanding, employment opportunities for the disabled, work-life balance and diversity. The CSR Forum is held at Sony's headquarters in Tokyo. Employees of Group companies are able to view the proceedings via streamed video or on DVD. As of the end of year 2010, the CSR Forum has been held 22 times, with cumulative participation exceeding 17,000 individuals. Donation boxes for charities related to the featured topics are set up on-site, thus enabling participants to immediately transform ideas into action.



## Employee Participation

(Updated on August 31, 2011)

Sony believes that employee participation is crucial to ensuring its social contribution activities are truly meaningful. Accordingly, Sony encourages employees to be aware of social issues, strive constantly to deepen their understanding and then to participate in fundraising initiatives, community projects and/or other activities. Employees with a particular expertise or specialization are encouraged, for example, to lead workshops for local students and children, underscoring Sony's desire to promote multi-level engagement.

### ◆Volunteer Systems and Initiatives for Employees

- Leave for volunteer purposes
- SOMEONE NEEDS YOU (employee volunteer program)

For further information: Community > Volunteer Systems for Employees > page 104

### • Volunteer initiatives

- Dispatching employee to disaster support of Great East Japan Earthquake
- Instructors and staffs for Sony Science Program
- Cleanup activities and tea-planting

### ◆Fund-raising initiatives

- Matching gift programs

For further information: Community > Matching gift programs, fund-raising initiatives > page 104

### • Fund-raising initiatives

- Emergency humanitarian assistance
- Dream Goal 2010 (CSR project coinciding with the FIFA World Cup South Africa 2010)

### • Donations in kind

- School satchels for developing countries
- South Africa Mobile Library Project

- Employee activities of assistance and volunteer work in affected areas by East Japan Earthquake and Tsunami on March 11, 2011

<http://www.sony.net/SonyInfo/csr/news/volunteer.html>



Sony employee donating money to the Ticket Fund, "Dream Goal 2010" at head office.