



**SONY**  
make.believe

# CSR Reporting 2012

For the Next Generation

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## About CSR Reporting

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 report to "CSR report".

Against the backdrop of growing interest among stakeholders in more integrated disclosure of CSR activities in conjunction with financial reporting, in 2012 Sony has issued an Annual Report (one report) incorporating the information previously include in its Annual and CSR reports. The CSR Highlights section of this report reviews key CSR activities related directly to Sony's business activities and certain other topics of interest to stakeholders.

You will also find further details in this website.

## Reporting Scope and Composition

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- This website summarizes the CSR activities of the Sony Group worldwide during fiscal year 2011 (which began on April 1, 2011 and ended on March 31, 2012). It also includes reporting on some material activities, such as major organizational changes, up to the end of June, 2012. 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](#)
- Materiality for defining contents has been identified by two axes (materiality matrix), 1. impact to company's business performance, and 2. influence of stakeholder assessments. Each risk/opportunity is plotted against the two axes and the righter and higher the axes, the higher on the priority list.
- [Independent Verification Report](#)



## Management Message

Sony has always been known for its groundbreaking products that inspire the curiosity of people the world over and usher in new eras of entertainment. This has blessed us with many fans who trust and support the Sony brand. Sony's DNA -- a distinctive will and drive to generate new value, has been cultivated since Sony's founding and passed down from one generation of Sony employees to the next.



The same Sony DNA also plays a key role in our approach to corporate social responsibility (CSR). Sony's founders believed that a company should always strive to create value for society, and this idea serves as a foundation of our CSR activities. I believe that fulfilling our responsibilities as a corporate citizen is integral to the sustainability of our businesses, and as such, in concert with the expectations of our stakeholders, we will continue to deliver not only innovative products, content, services and technology, but sound business practices as well.

In 2011, in the immediate aftermath of the Great East Japan Earthquake and floods that affected Thailand and its neighboring countries, the Sony Group came together to provide assistance for relief and recovery efforts, including through employee donations and volunteer programs. Sony's operations were affected significantly by both events, and we are currently drawing on these experiences to reinforce our business continuity planning and risk management systems.

Other fundamental components of CSR, such as effective corporate governance, compliance, and responsible sourcing, also play a key role in a company's ability to fulfill its responsibilities as a corporate citizen. The management and employees of the Sony Group are committed to working as one to ensure the success of its efforts in these areas.

We also acknowledge the importance of pursuing innovations tied in with our business strategies that will contribute to the creation of a sustainable society. In order to contribute to the resolution of global challenges that we all face, we are committed to creating products that pose less impact on the environment and addressing global social issues such as poverty and education by contributing to the achievement of the Millennium Development Goals through uniquely Sony initiatives.

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

June 29, 2012

Kazuo Hirai  
President and CEO  
Representative Corporate Executive Officer  
Sony Corporation

# Corporate Governance

## Corporate Governance

Sony has long been committed to strong corporate governance, as one of its most important management initiatives. 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 and maintain 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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◆ Governance Structure

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◆ Primary Roles of the Governance Entities

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◆ Sony Initiatives

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◆ Meeting Record

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◆ Cooperation of the Audit Committee and the Internal Audit Division

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

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

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◆ Risk Management System

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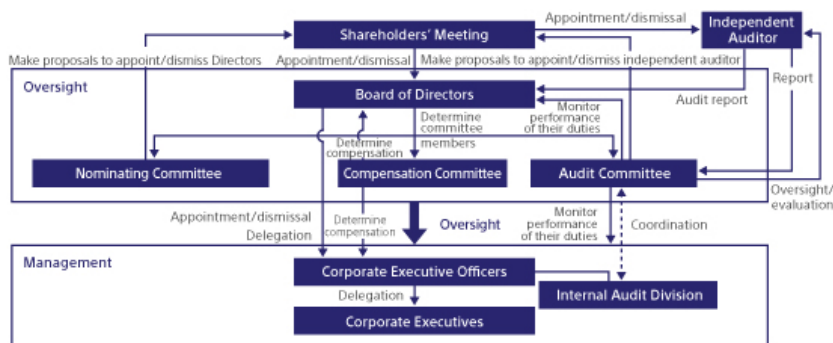
◆ Crisis Management System

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# Corporate Governance

## Governance Structure

Sony Corporation is governed by its Board of Directors, which is appointed by resolution at the annual shareholders' meeting. The Board has three committees (the Nominating Committee, Audit Committee and Compensation Committee), each 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.



## Corporate Governance

### Primary Roles of the Governance Entities

#### 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 Corporate Executive Officers through reviewing structure to ensure the adequacy of the financial reporting process, structure to enable management to ensure the effectiveness of internal control over financial reporting, structure to ensure timely and appropriate disclosure and to ensure compliance with any applicable law, Articles of Incorporation and internal policies and rules and status of any other items described in the "Internal Control and Governance Framework" determined by the Board of Directors in accordance with the Companies Act of Japan and also monitors the performance of duties by Directors through attending the Nominating Committee or Compensation Committee and reviewing the Business Report and the documents relating to the proxy statement.
- Oversees and evaluates the work of independent auditor, including to evaluate the adequacy of its independence and its qualification, to propose its appointment/dismissal or nonreappointment, to approve its compensation, to evaluate the appropriateness of its audit regarding the financial results and internal control over financial reporting, and to preapprove its engagement for any other services than audit services to be provided.

#### 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

## Corporate Governance

### Sony Initiatives

To strengthen its governance structure beyond legal requirements, Sony Corporation includes several provisions in its Charter of the Board of Directors to help 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 CEO or COO of Sony (or persons in any equivalent position) from serving on the Compensation Committee; and
- discouraging the concurrent appointment of Audit Committee members to other committees.

## Corporate Governance

### Meeting Record

During the fiscal year ended March 31, 2012, the Board of Directors convened ten times. The Nominating Committee met five times, the Audit Committee met ten times and the Compensation Committee met eight times. All 13 outside Directors participated in all meetings of the Board of Directors held during his/her tenure period of the fiscal year ended March 31, 2012 except for Sir Peter Bonfield, Fujio Cho, Yukako Uchinaga, Yorihiro Kojima, and Osamu Nagayama. (Sir Peter Bonfield participated in eight meetings out of ten; Fujio Cho participated in seven meetings out of ten; Yukako Uchinaga, Yorihiro Kojima and Osamu Nagayama each participated in nine meetings out of ten.) Also, all 12 outside Directors who are members of Committees participated in at least 80 percent of the aggregate number of meetings of each Committee held during the fiscal year ended March 31, 2012. 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, 2012.



## Corporate Governance

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

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.

## Corporate Governance

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

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, 2012.

**Supervision**

**Board of Directors**

<p><b>Chairman of the Board: Howard Stringer</b>  <b>Vice Chairman: Osamu Nagayama*</b>  <b>Kazuo Hirai</b> Sony Corporation Representative Corporate Executive Officer, President and CEO  <b>Ryoji Chubachi</b> Sony Corporation Representative Corporate Executive Officer, Vice Chairman  <b>Masaru Kato</b> Sony Corporation Corporate Executive Officer, EVP and CFO  <b>Peter Bonfield*</b> Chairman of the Board, NXP Semiconductors N.V.  <b>Ryuji Yasuda*</b> Professor, Graduate School of International Corporate Strategy, Hitotsubashi University</p>	<p><b>Yukako Uchinaga*</b> Director and Executive Vice President, Benesse Holdings, Inc.  <b>Mitsuaki Yahagi*</b> Chairman of the Board, Chief Executive Officer and President, Berlitz Corporation  <b>Tsun-Yan Hsieh*</b> Special Advisor, The Japan Research Institute, Ltd.  <b>Roland A. Hernandez*</b> Founder &amp; Chairman, LinHart Group  <b>Kanemitsu Anraku*</b> Retired Chairman and Chief Executive Officer, Telemundo Group, Inc.  <b>Yorihiko Kojima*</b> Director, Mizuho Financial Group, Inc.  <b>Osamu Nagayama*</b> Chairman of the Board, Mitsubishi Corporation  <b>Takaaki Nimura*</b> Representative Director, Chairman and Chief Executive Officer, Chugai Pharmaceutical Co., Ltd.          Certified Public Accountant</p>
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**Nominating Committee**

**Peter Bonfield\* (Chairman)**  
**Osamu Nagayama\***  
**Roland A. Hernandez\***  
 Yorihiko Kojima\*  
 Howard Stringer  
 Kazuo Hirai  
 Ryoji Chubachi

**Audit Committee**

**Takaaki Nimura\* (Chairman)**  
**Mitsuaki Yahagi\***  
**Kanemitsu Anraku\***

**Compensation Committee**

**Ryuji Yasuda\* (Chairman)**  
**Tsun-Yan Hsieh\***  
**Masaru Kato**

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

**Management**

**Corporate Executive Officers**

<p><b>Kazuo Hirai**</b> Representative Corporate Executive Officer, President and CEO  <b>Ryoji Chubachi**</b> Representative Corporate Executive Officer, Vice Chairman  <b>Hiroshi Yoshioka</b> Executive Deputy President, Officer in charge of Medical Business  <b>Keiji Kimura</b> Executive Vice President, Officer in charge of Intellectual Property  <b>Nicole Seligman</b> Executive Vice President, General Counsel  <b>Masaru Kato**</b> Corporate Executive Officer, EVP and CFO  <b>Tadashi Saito</b> Corporate Executive Officer, Executive Vice President and Chief Strategy Officer</p>	<p><b>Shoji Nemoto</b> Corporate Executive Officer, EVP          Officer in charge of Professional Solutions Business, Digital Imaging Business, Disk Manufacturing Business, System &amp; Software Technology Platform and Corporate R&amp;D  <b>Tomoyuki Suzuki</b> Corporate Executive Officer, Executive Vice President          Officer in charge of Semiconductor Business, Device Solutions Business, Advanced Device Technology Platform  <b>Kunimasa Suzuki</b> Corporate Executive Officer, Executive Vice President          Officer in charge of PC Business, Mobile Business and UX, Product Strategy and Creative Platform</p>
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\*\* Representative Corporate Executive Officer concurrently serving as Director

(Names and positions of new Directors and Corporate Executive Officers as of June 27, 2012)

## Corporate Governance

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

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.

#### 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>

## Corporate Governance

### Risk Management System

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. The Group Risk Office has been established in Sony Corporation to promote risk management initiatives, such as business continuity planning, across the organization.

## Corporate Governance

### Crisis Management System

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 compliance offices around the world. Additionally it has adopted and implemented the Sony Group Code of Conduct, and set up Compliance Hotline systems through its Global Compliance Network. Sony has taken these actions 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.

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◆ Strengthening the Compliance System

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◆ Sony Group Code of Conduct

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◆ Internal Hotline System

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

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◆ Compliance Monitoring Program

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◆ Sony Group Anti-Bribery Program

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◆ Basic Approach and Systems to Exclude Anti-Social Forces

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◆ Information Security and Personal Information Management

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## Compliance

### Strengthening the Compliance System

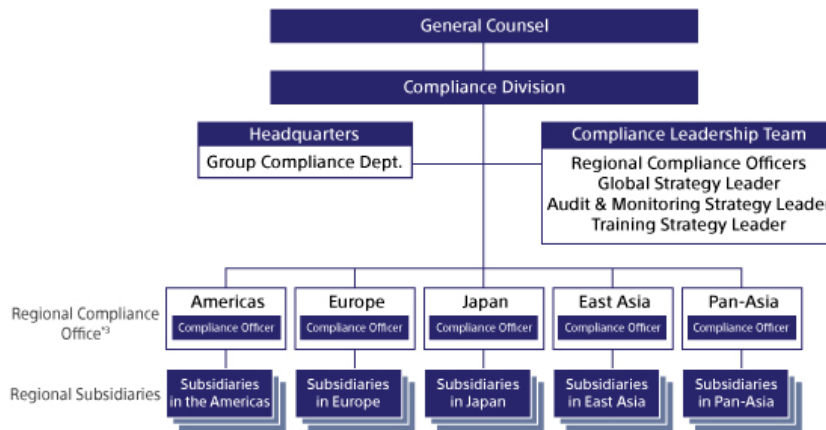
In July 2001, Sony Corporation established the Compliance Division, charged with exercising overall control over compliance activities across the Sony Group, to emphasize the importance of business ethics and compliance with applicable laws, regulations and internal policies. The Compliance Division establishes compliance policies and structures for the Sony Group.

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





\*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 Group, in addition to the Electronics Group Companies in Japan.

# Compliance

## Sony Group Code of Conduct

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. In addition to legal and compliance standards, the Code of Conduct sets out 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.

The Code of Conduct 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:](#)

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 Keidanren (Japan Business Federation), an alliance of Japan's leading corporations.

- [OECD Guidelines for Multinational Enterprises](#)
- [United Nations Global Compact](#)
- [United Nations Universal Declaration of Human Rights](#)
- [Keidanren Charter of Corporate Behavior](#)

**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

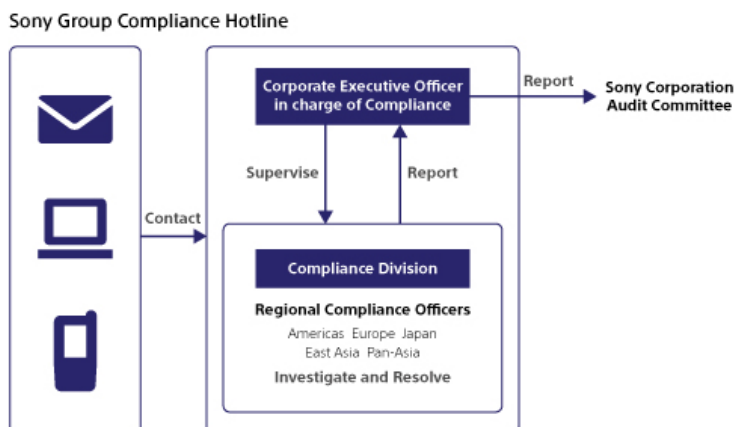
# Compliance

## Internal Hotline System

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.

The Sony Group Compliance Hotline system is directly linked to the Corporate Executive Officer in charge of Compliance. The Compliance Hotline is operated independently from the ordinary line of command, and callers who report issues in good faith are protected from any possibility of retaliation for the report. 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 2011, the Sony Group received approximately 400 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.



## Compliance

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

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, anti-bribery, 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 videos used to raise awareness of the Sony Group Code of Conduct and the internal hotline system

## Compliance

### Compliance Monitoring Program

A compliance monitoring program helps to ensure 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 and other 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

Among other policies, 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 ensure integrity in Sony's dealings with government officials, as well as training requirements.

## Compliance

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

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

Sony has established an Information Security and Privacy organization headed by a Chief Information Security Officer (CISO) reporting directly to a Sony Corporation Corporate Executive Officer. Sony also has established the Sony Global Information Security Policy and its related subordinate rules, the Sony Global Information Security Standard, and the Global Basic Principles on Personal Information, which set forth Sony's commitment to information security and privacy and define policies to be followed by all Sony personnel. The CISO and his organization are charged with maintaining and implementing these policies. This organization coordinates with individuals responsible for information security and privacy at Sony Group companies globally to create a Group-wide information security and personal information management system. Under the supervision of the CISO, Sony continuously reinforces internal rules and business processes to further strengthen the information security management framework of the Sony Group and contribute to the protection of personal information. Recognizing that employee awareness of information security is vital, Sony requires training programs for its employees to increase their understanding and improve the overall level of information security.

- [Sony Group Privacy Policy](#)



## Quality and Services

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 Service

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

[More information](#)

### Product Quality and Quality Management

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Sony is committed to improving product quality and quality management.

[More information](#)

### Responsiveness and Customer Service

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

[More information](#)

### Usability and Accessibility

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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.

[More information](#)

## Quality and Services

### 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

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 technologies that enable it to comply with or exceed legally mandated standards in all standards of its business activities to ensure the safety of its products and services.

To reflect changes in its operating environment, in April 2012 Sony revamped the Sony Pledge of Quality, which lays out its basic policy on product and service quality in the Electronics business. This move was aimed at reinforcing awareness of Sony's commitment to ensuring that the quality of its products and services exceeds the expectations of its customers around the world.



## Quality and Services

### Product Quality and Quality Management

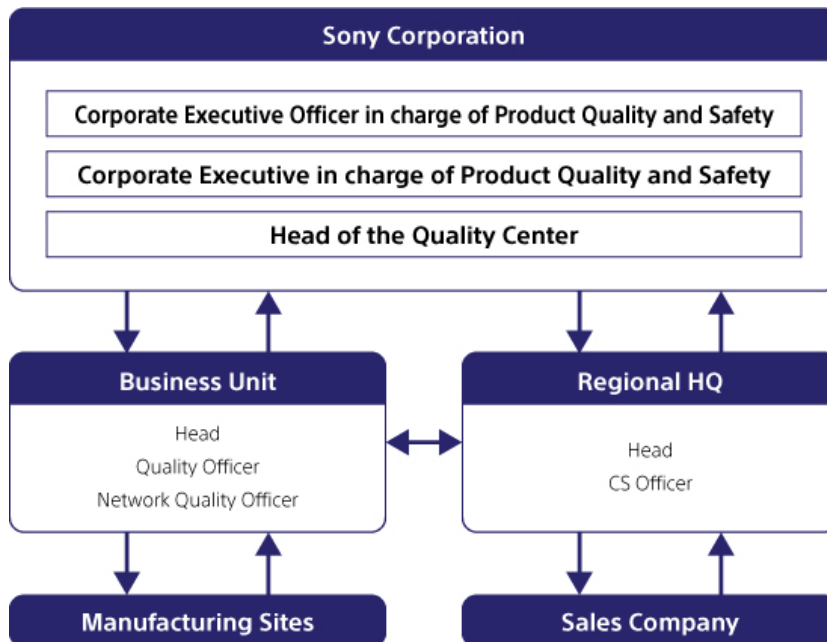
#### Product Quality and Quality Management

In the Sony Pledge of Quality, Sony sets forth a commitment to "respect our customers' viewpoints in striving to deliver product quality and customer service that exceed their expectations." To this end, Sony promotes continuous, decisive efforts to enhance product quality and to reinforce its quality management system.

### Sony's Quality Management System Framework

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 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



- 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 Network Quality Officers for each business unit involved in the provision of networked services and compatible products and has tasked them with coordinating efforts to improve product and service quality under the supervision of the Quality Officers;
- 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 and fiscal year quality and CS targets, as well as key quality-related indicators for business plans, with the aim of fulfilling the Sony Pledge of Quality. Business units and regional headquarters subsequently devised their own fiscal year quality and CS targets and CS-oriented business plans, in line with which they continue to promote 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 business unit Quality Officers, 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 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.

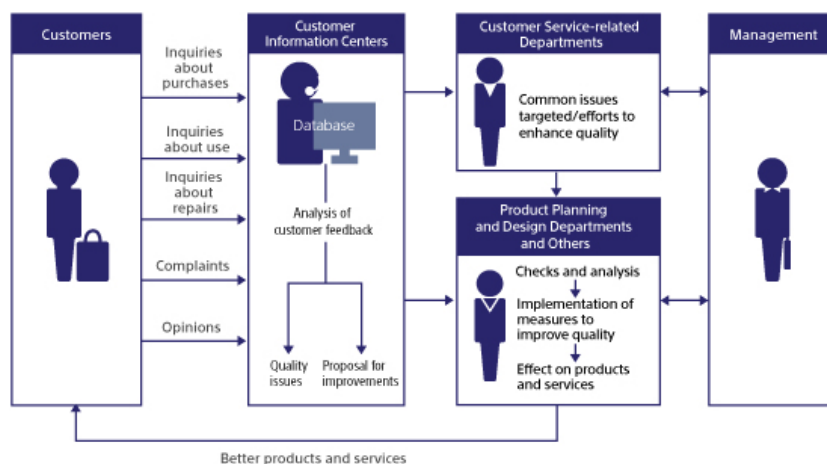
## Responding to the Customer

Sony makes active use of customer feedback to improve its products and services. Opinions, reports of malfunctions after purchase, questions regarding use and other feedback received through Customer Information Centers are evaluated promptly and accurately 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 instance of this process in action is improvements made to the default settings for certain BRAVIA LCD televisions that made it possible for customers to begin enjoying their new televisions immediately after purchasing. In particular, the format for the setup guide was changed to the easy-to-follow wizard user interface, which made it easier for customers to enjoy BRAVIA's extensive networked services.

Other examples include overhauling built-in electronic product user manuals to enhance usability, as well as adding explanations that use images and illustrations, thereby making manuals more intuitive and easier to understand.

### Utilizing Customer Feedback



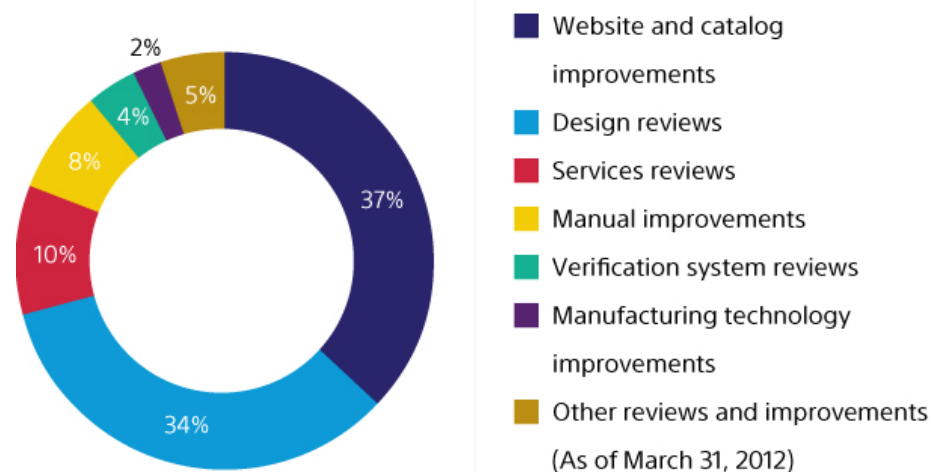
## Quality Hot Line

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 1,560 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 1,000 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.



## Monitoring Quality in Markets

Sony has established dedicated quality management organizations in each of its business areas that are responsible for improving 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.

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

### 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 implementation of the Plan-Do-Check-Act (PDCA) cycle.

Sony has also established standard product quality rules to ensure Sony products manufactured by OEM/ODM companies are of the same high quality as those manufactured at Sony production sites.

**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 a 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 reliability, thereby ensuring Sony's ability to deliver safe, durable and reliable products to customers.

Sony has assigned specialists to work full time on improving technologies essential to product reliability and continues working to ensure the long-term reliability of its products by developing elemental technologies for preventing the deterioration, wear and corrosion of materials and parts, as well as technologies necessary to ensure the reliability of new technologies and products and evaluate such technologies and products.

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.

## Innovations for extending products life

### 1) Battery Care Function for VAIO note PC

Using Battery Care Function, battery degradation can be slowed by limiting battery charge up to 80% of capacity. This function extends the battery life approximately 1.5 times longer.

#### For details please refer the following sites;

- [Basic battery information \(Sony Asia Pacific\)](#)
- [Basic battery information \(Sony Middle East and Africa\)](#)
- [Video Tutorials \(Sony eSupport / U.S.A.\) > Input your VAIO PC model name and find relevant instruction](#)
- [Basic battery information \(Sony Japan - Japanese language\)](#)

### 2) Providing a software update service for a longer use of various Sony products

We provide update programs, utility software and the like for various Sony products so that customers could use products for a longer period. (VAIO notebooks, digital cameras, camcorders, digital media players, digital voice recorders and other products)

#### For details please refer the following sites;

- [Sony Support Center \(Sony Asia Pacific\) > Go to 'Drivers and Software download'](#)
- [Sony Support Center \(Sony Middle East and Africa\) \(Sony Middle East and Africa\) > Go to 'Drivers and Software download'](#)
- [Drivers and Software downloads \(Sony eSupport / U.S.A.\)](#)
- [Sony Europe > Select 'Your country' and go to 'Support'](#)
- [Sony Software download \(Sony Japan - Japanese language\)](#)

## Providing an extensive warranty (Sony Tourist Limited Warranty)

The Tourist Limited Warranty (TLW) is for Sony Customers to have certain products covered by Sony's manufacturers warranty outside the country of purchase. If the product fails during the 1 year warranty period, users can receive in-warranty repair service in the countries / areas listed on the TLW card (refer to below for list of Repairer countries), provided the fault condition falls within the terms and conditions of the manufacturers warranty.

Note: Please refer to the link below for detailed information on products which are excluded from this warranty, and regions in which the warranty applies.

• Sony Asia Pacific

## Efforts to Eliminate Software Vulnerability

The digitization and networking of consumer electronics products and an increase in the relative importance of software in recent years have 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 comprising 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

Sony recognizes that ensuring its customers' satisfaction, reliability and trust is one of its most important management tasks 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

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.

At the fifth METI Minister Awards for Best Contributors to Product Safety, for fiscal year 2011, Sony was once again honored with the Director-General for Commerce and Distribution Policy Award, this time in recognition of efforts by the VAIO & Mobile Business Group\*, part of the Consumer Products & Services Group.



1. Having objectively evaluated the effectiveness of R-Map risk management, the VAIO & Mobile Business Group developed a proprietary testing method tailored to the types of situations in which Sony products are used to ensure that product safety is built into product designs.
2. Using results generated by the self-diagnostic functions incorporated into products to identify key safety-related considerations, the VAIO & Mobile Business Group created a monitoring system that detects abnormalities after products have been sold, thereby helping prevent accidents before they happen.
3. All employees of the VAIO & Mobile Business Group were given training aimed at enhancing their awareness of product safety by enabling them to hear directly from customers regarding product uses and customer perspectives.

\*Group names are as of award date.

## Quality and Services

### Responsiveness and Customer Service

In addition to continuously improving product quality, Sony is taking various steps to improve its responsiveness and its customer service capabilities, in line with its commitment-set forth in the Sony Pledge of Quality-to "respect our customers' viewpoints in striving to deliver product quality and customer service that exceed their expectations."

### System

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

With the aim of providing high-quality services to customers around the world, Sony provides ongoing training for employees and the staff of service partners, focusing on the acquisition of new service technologies and the sharing of solutions, to ensure issues are addressed swiftly and effectively.

## Customer Information Centers

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 Year 2011)

(Thousands)

Region	Number of Inquiries Received (Telephone, E-mail, Letter)
Japan	3,590
North America	4,690
Europe	2,150
China (mainland) and Hong Kong	2,030
Pan-Asia*1	3,990
Latin America	1,540

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

## Initiatives Aimed at Improving Customer Service

Sony also uses the Internet to communicate with customers. To ensure timely access to easy-to-understand product and service information, Sony strives to enhance the content of its websites, which include sites providing downloads of manuals and software updates and information on ways to connect and enjoy multiple devices -- as well as sites offering frequently asked questions (FAQs) and prompt troubleshooting services. Sony's product and service information websites enjoy high marks in, among others, independent studies assessing the usefulness of support websites.

For owners of VAIO PCs, Sony provides a variety of services aimed at ensuring problem-free use and giving even first-time users greater confidence. These include VAIO Remote Service, whereby operators explain procedures or assist with troubleshooting while remotely monitoring the user's screen via the Internet, and VAIO Care, a software program that performs troublesome regular maintenance and provides meticulous technical support.

Sony is also taking steps to respond to the increasing diversity of customer needs in different regions and improve customer satisfaction. In a number of regions, for example, Sony recently established online forums that include social network services (SNSs), which enable customers to communicate and share solutions, and participate in live chat sessions to enhance customer support.

## Repair and Service Network

Currently, there are more than 5,900 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.

### Sony Service Locations (Fiscal Year 2011)

Region	Service Network (Number of Service Locations)
Japan	576
North America	1,664
Europe	1,365
China (mainland) and Hong Kong	594
Pan-Asia*2	1,150
Latin America	583

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

## Quality and Services

### Usability and Accessibility

Products today are increasingly complex and multifunctional. "Usability and Accessibility" 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.

#### Enhancing Usability

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. Sony provides products for a broad range of customers not only in Japan, Europe and North America, but also in other parts of the world, including emerging economies. As such, Sony recognizes that it must accommodate definitions of "usability" that vary in different cultures and lifestyles. To this end, Sony conducts user tests in a variety of markets, including India, China and Brazil, as part of the product development process with the aim of further enhancing usability.



User test (usability assessment)

#### Examples of Sony products that feature enhanced usability:

##### Television remote controls

One Sony product 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, HX850, HX820, HX750, HX720, NX720, EX720, EX72S and EX420 models of Sony's BRAVIA™ LCD televisions come with this easy-to-use, multifunctional remote control.



The HX850/HX750/HX65R/EX550/EX540 series of BRAVIA™ LCD televisions launched in 2012 have been designed to be user-friendly for many types of color vision from the perspective of color universal design. The size and color arrangement of remote control buttons and the color and brightness of LED indicators have been chosen after taking such usability factors into consideration. These remote controls have received certification from the Color Universal Design Organization (CUDO).



**Blu-ray Disc™ recorders**

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 BDZ-AT2700T, AT970T, AT950W, AT770T, AT750W, AT350S and SKP75 models of Sony's Blu-ray Disc™ recorders.



Rakuraku Start Menu

**DSLR cameras**

In planning the shape and size of the grip for "α77" and "α65" series DSLR cameras, Sony surveyed users around the world, as well as collected and analyzed handprints from people of various ages, based on which it produced and evaluated a number of prototypes, ensuring the cameras is comfortable to hold and to significantly enhancing ease of operation when shooting.



The shape of the grip for "α77"

• For more information, visit

**Examples of Sony products that reflect comments received from users:**

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

## Facilitating Accessibility

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

### Examples of Sony products that feature enhanced accessibility:

#### Remote control with built-in cordless speaker (only in Japan)

##### Easy-to-hear television sound at one's fingertips

The RM-PSZ35TV remote control realizes excellent usability for a wide range of users, from children to the elderly. To ensure the voices of people in news, drama and other programming are clearly audible, the RM-PSZ35TV remote control features an built-in cordless speaker with specially designed amplifier frequency characteristics and a distinctively shaped bass reflex port on the cabinet underside. Thanks to these innovations, users can hear voices and conversations from the speaker and do not have to raise the television volume excessively.



##### Unit design that focuses on usability and visibility

Sony incorporates usability into the design of this remote control by including such features as a combined speaker power switch and volume control that is easy to grasp and has an appropriate level of turning resistance, an indicator lamp and turning "click" so that users can easily tell whether it is switched on or off and buttons with easy-to-read large characters and function-specific colors.



Also, the base has rubber feet to prevent it from slipping or moving around the table or other surface when the buttons are pushed.

In addition, 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 the Reader eReader device which allows users to easily store and carry over a thousand books as well as adjust text size 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 Sony's product development efforts.

## Providing Information to a Diverse Range of Customers

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

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.



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

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.

- The So-net website's Site Select page (Japanese only)

## Responsible Sourcing

### Responsible Sourcing

In recent years, stakeholders have grown increasingly aware of the importance of companies fulfilling their overall responsibilities to society as corporate citizens, including managing their supply chains in a responsible manner. In response to stakeholder concerns, Sony is working with its suppliers to address issues related to human rights, labor conditions, health and safety, and environmental protection at the production sites of outsourcing partners and parts suppliers, as well as in its procurement of minerals and other raw materials.

CSR in Procurement

CSR in the Supply Chain

Environment, Labor, Human Rights and  
Conflicts in the Procurement of Raw  
Materials

## Responsible Sourcing

### CSR in Procurement

#### Compliance with "Sony Group Code of Conduct" in Business

Compliance with "Sony Group Code of Conduct" in Business In May 2003, Sony adopted the "Sony Group Code of Conduct," which sets forth 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. The code includes basic policies concerning deals with suppliers such as "Fair Procurement" and "Gifts and Entertainment," with which all personnel in the Sony Group are required to comply.

#### Supplier Hotlines

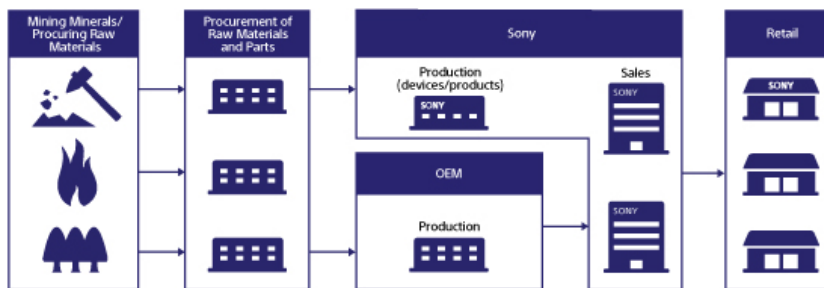
Sony Corporation has also installed a hotline for suppliers to report compliance violations on the part of Sony Group company employees or executives. Appropriate actions are taken in response to such reports once veracity has been confirmed.

# Responsible Sourcing

## CSR in the Supply Chain

Sony is committed to fulfilling its responsibility to society as a corporate citizen, including managing its supply chain in a responsible manner. To achieve this goal, Sony is working with its business partners, suppliers and subcontractors to help ensure that they adhere to the same high standards as Sony in the areas of human rights, labor conditions, health and safety, and environmental protection.

Basic Structure of the Supply Chain



### Policy for CSR in the Supply Chain

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' 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.

<p><b>Sony Supplier Code of Conduct</b> <b>(Summary of Contents)</b> <b>Established June 2005</b></p> <ul style="list-style-type: none"> <li>• <b>Legal Compliance</b></li> <li>• <b>Labor</b> <ul style="list-style-type: none"> <li>Freely chosen employment</li> <li>Prohibition of child labor</li> <li>Elimination of discrimination</li> <li>Prohibition of harsh or inhumane treatment</li> <li>Guarantee of minimum wages</li> <li>Compliance with laws regarding working hours</li> <li>Respect for the right of employees to associate freely</li> </ul> </li> <li>• <b>Health and Safety</b> <ul style="list-style-type: none"> <li>Machine safeguarding</li> <li>Industrial hygiene</li> <li>Safety</li> <li>Emergency preparedness and response</li> <li>Occupational injury and illness</li> <li>Control of employee exposure to physically demanding work</li> <li>Maintenance of dormitory and canteen facilities</li> </ul> </li> <li>• <b>Environment</b> <ul style="list-style-type: none"> <li>Product content restrictions</li> <li>Chemical and hazardous materials</li> <li>Wastewater and solid waste</li> <li>Air emissions</li> <li>Environmental permits reporting</li> <li>Pollution prevention and resource reduction</li> </ul> </li> <li>• <b>Management System</b> <ul style="list-style-type: none"> <li>Company commitment</li> <li>Management accountability and responsibility</li> <li>Legal and customer requirements</li> <li>Risk assessment and risk management</li> <li>Performance objectives with implementation plans and measures</li> <li>Training</li> <li>Communication</li> <li>Worker feedback and participation</li> <li>Audits and assessments</li> <li>Corrective action process</li> <li>Documentation and records</li> </ul> </li> <li>• <b>Ethics</b> <ul style="list-style-type: none"> <li>No corruption, extortion and embezzlement</li> <li>Disclosure of information</li> <li>No improper advantage</li> <li>Fair business, advertising and competition</li> <li>Programs to ensure the protection of whistleblowers</li> <li>Community engagement</li> <li>Protection of intellectual property</li> </ul> </li> </ul>
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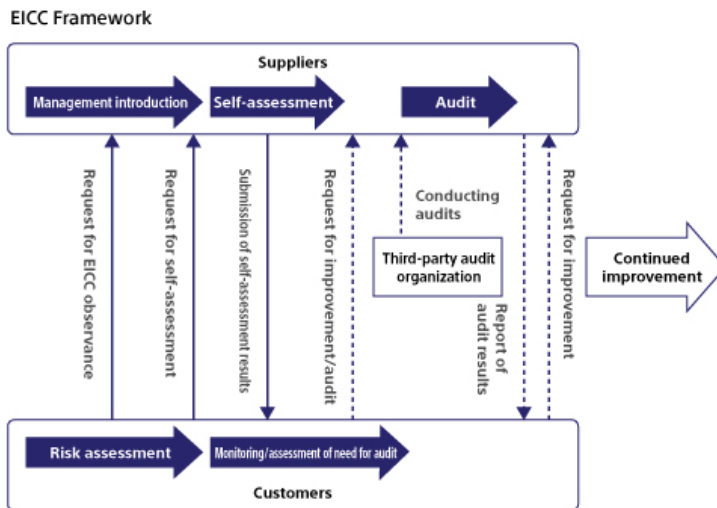
### **Basic Framework: Participation in the Electronic Industry Citizenship Coalition (EICC)**

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, participated 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 May 2012, the EICC consisted of 68 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 CO<sub>2</sub> 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



### Sony's Structure for Promoting Supply Chain Management

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: 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.

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. 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. 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 2012)

### **Stakeholder Engagement**

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.

## Responsible Sourcing

### Environment, Labor, Human Rights and Conflicts in the Procurement of Raw Materials

Stakeholders are displaying increasing concern regarding such issues as biodiversity and violations of human rights related to, among others, the extraction of rare metals essential in the manufacture of electronics products. Stakeholders are also worried that certain minerals are being used to finance the activities of armed groups in the Democratic Republic of the Congo (DRC) and neighboring countries. In July 2010, the United States enacted the Dodd-Frank Wall Street Reform and Consumer Protection Act, one section of which relates to these "conflict minerals" and requires the disclosure of certain information by companies covered under the act regarding the extent to which they use the specified minerals originating in the DRC and neighboring countries and whether those minerals are conflict minerals.

#### Our Approach to Conflict Minerals

Sony shares the concern that conflict minerals might be used in the electronics industry supply chain and is taking steps to eliminate conflict minerals from the supply chain. It is Sony policy to refrain from purchasing any products, parts and materials that are known to contain conflict minerals. Suppliers are also expected to ensure that products, parts and materials delivered to Sony do not contain conflict minerals. Sony is currently formulating an appropriate framework and measures to implement this policy.

Recognizing that these issues are common across the electronics industry, Sony is also participating in the creation of an industry-wide framework, an effort spearheaded by the EICC/GeSI, to improve traceability of minerals and ensure responsible sourcing.

In August 2011, Sony initiated a traceability of certain product categories using the EICC/GeSI and conflict minerals reporting template, as well as joint conflict-free smelter certification programs, as part of its on-going development of systems and measures to implement its policy against conflict minerals. The EICC/GeSI's Smelter List in below includes part of minerals' smelters identified through Sony's traceability processes.

 [EICC/GeSI launched Conflict Mineral Reporting Template \(Press release\)](#)

 [EICC/GeSI Conflict-Free Smelter Program and Smelter List \(EICC/GeSI website\)](#)

Sony supports and contributes to industry initiatives such as the traceability project for tin launched in 2010 by ITRI, a tin industry organization, to validate that the metals used in its products are not contributing to conflict and come from sustainable sources.

Sony is also participating in and providing financial support to the Public-Private Alliance for Responsible Minerals Trade (PPA), a joint effort led by the U.S. government to support responsible mineral trade from the Great Lakes Region of Central Africa. The PPA supports measures to sever funding links between the minerals trade and armed groups in the DRC and its neighboring countries and has the objective of promoting economic support for local communities. This multi-stakeholder alliance comprises government agencies centering on the US State Department and the US Agency for International Development (USAID), private-sector companies, industry groups and NGOs. Since its establishment, the PPA has supported the creation of a pilot supply chain management system that includes certifying conflict-free mines, that is, mines that engage in responsible trade practices. The PPA also provides a forum for discussions involving governments, industry and NGOs and extends useful information to companies via its website and other means. Through its participation in the alliance, Sony supports initiatives in producer countries.

 [Sony to Participate in the U.S.-government-initiated Public-Private Alliance for Responsible Minerals Trade](#)

With the aim of developing a framework for promoting effective supply chain management on conflict minerals the EICC/GeSI holds workshops for discussions periodically with NGOs, socially responsible investors, local government-related representatives and other stakeholders, in which Sony is also participating. Such workshops were held more than ten times in several countries/regions including Europe and North America.

In addition to EICC participation, Sony is promoting industry initiatives of JEITA (Japan Electronics Information Technology industries Association) as part of its effort to address CSR issues relating to mineral procurement. Sony has taken a initiative roles for establishment and leading of JEITA's workgroup for promoting, disseminating common framework to address the conflict minerals issues.

 [JEITA Responds to Conflict Minerals Provision of the U.S. Dodd Frank Wall Street Reform and Consumer Protection Act \(JEITA release\)](#)

**Initiatives on Paper Procurement**

Sony recognizes the impact of illegal logging on biodiversity and considers responsible procurement to be an important part of fulfilling its responsibility to society as a corporate citizen. Sony takes environmental conservation into consideration, especially when purchasing paper materials, by adhering to the "Sony Group Paper/Printed Material Purchasing Policy".

## Human Resources

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

[more information](#)

**Recruitment**



- Introduction
- Diversity in recruiting practices
- Recruiting Practices

**Training & Development**



- Introduction
- Fostering global business leaders
- Nurturing engineering talent
- Enhancing management skills
- Support for career building

**Leveraging**



- Introduction
- Appointing global business leaders
- Creating opportunities through Global Job Posting system
- Leveraging engineering talent
- Promoting greater opportunities for women
- Promoting greater opportunities for individuals with disabilities

**Support**



- Introduction
- Enhancing global mobility
- Introduction of Global Employee Survey
- Systems that support a healthy work-life balance
- Support for employees undertaking child care or nursing care
- Human rights and equal opportunities
- Occupational health and safety

**Communication**



- Introduction
- Employee-management communications
- Collaboration with External Organizations Promoting Diversity
- Collaboration with academic institutions
- Communication tools

**Special Columns - Initiatives to make workplaces in Japan more internationalized -**

[more information](#)



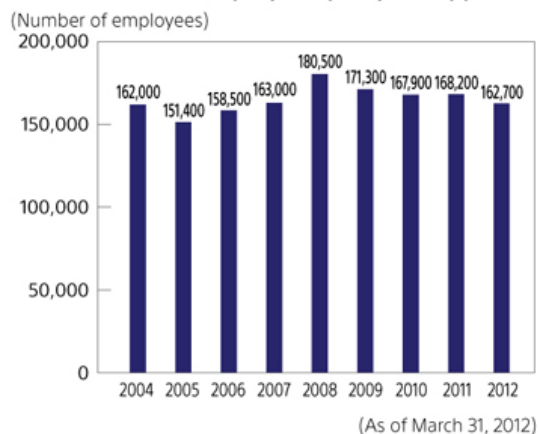
## Human Resources

### Employee Data

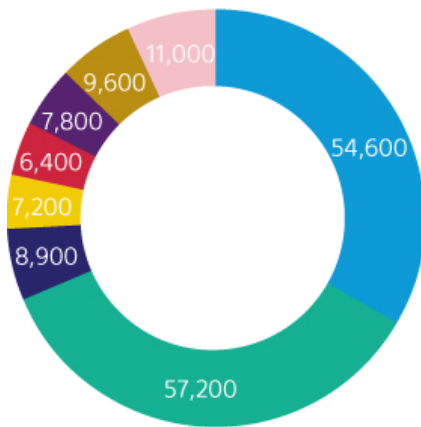
The addition of employees of its mobile communications business, included in the scope of consolidation effective from fiscal year 2011, was offset by substantial personnel reductions at production sites in the East Asia and Asia/Pacific regions (i.e., excluding Japan) accompanying the implementation of production adjustments. As a consequence, as of March 31, 2012, the Sony Group had approximately 162,700 employees on its books, down 5,500 from 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, 2012, Sony Corporation's headcount was approximately 16,000.

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



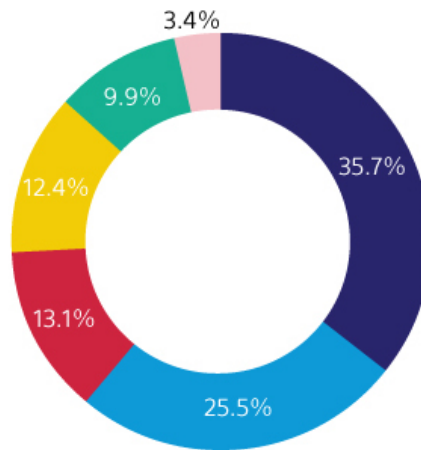
**Personnel by Business Segment**



- Consumer Products & Services
- Professional, Device & Solutions
- Sony Mobile Communications
- Pictures
- Music
- Financial Services
- Other
- Group companies in Japan

Total: 162,700  
(As of March 31, 2012)

**Personnel by Geographic Segment**



- Japan
- East Asia\*1
- Pan-Asia\*2
- North America
- Europe
- Latin America

Number of employees: 162,700  
(As of March 31, 2012)

\*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>	30	-	2
<b>Sony Group Directors</b>	17	-	7

\*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.

## Human Resources

### Recruitment

#### 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 20001. As of April 2012, Sony had recruited a cumulative total of 264 university and post-graduate students in China. Recruitment from universities and graduate schools in India began in earnest in 20079. 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 the United States, China and India, among others. 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.

#### Recruiting Practices

In its efforts to help change Japan's traditional approach to hiring new graduates, Sony has adopted new recruiting practices in the hope of attracting applications from individuals who identify with its corporate culture. To promote greater understanding of the Sony Group's various businesses, products and services, 20 Group companies got together to stage joint recruiting fairs. In these activities, Sony is striving to effect a change in the way job recruiting is done in Japan.

With the aim of encouraging young people in Japan to develop a more global perspective, in fiscal year 2011 Sony offered new domestic recruits the opportunity to polish their global skills by undertaking temporary assignments to Sony EMCS (Malaysia) Sdn. Bhd., the Sony Group's largest strategic production base. Interested individuals were encouraged to apply for the program through a campaign that invited them to "put their diplomas to work in the rain forest." On another front, Sony offered internships to university students that focused on participation as support staff for its public viewing project in Tanzania. This initiative gave interns the chance to see Sony's commitment to social contribution in action. Participation in the public viewing project also enabled interns to experience firsthand both the challenges faced by many African countries and the dynamic potential of the continent's emerging economies.

## Human Resources

### Training & Development

-The development and vitality of its employees drive Sony's dynamic growth-  
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
- ◆ Nurturing engineering talent
- ◆ Enhancing management skills
- ◆ Support for career building

## Human Resources

### Fostering global business leaders

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. In 2012, Sony established a branch of Sony University in Singapore to provide training aimed at fostering future business leaders by equipping them with skills that have currency in emerging economies as well as in the world at large.



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**

<p>Music</p>	<p><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.</p>
<p>Electronics (Europe)</p>	<p>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.</p>
<p>Electronics</p>	<p><b>Global Leadership Development Program</b> This program is conducted by Sony Supply Chain Solutions, Inc. (SSCS) and accepts 26 participants from 12 countries at 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.</p>
<p>Financial Services (Japan)</p>	<p><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 at 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.</p>

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

## Human Resources

### Nurturing engineering talent

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 2011, more than 16,000 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**

<p>Electronics</p>	<p>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.</p>
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## Human Resources

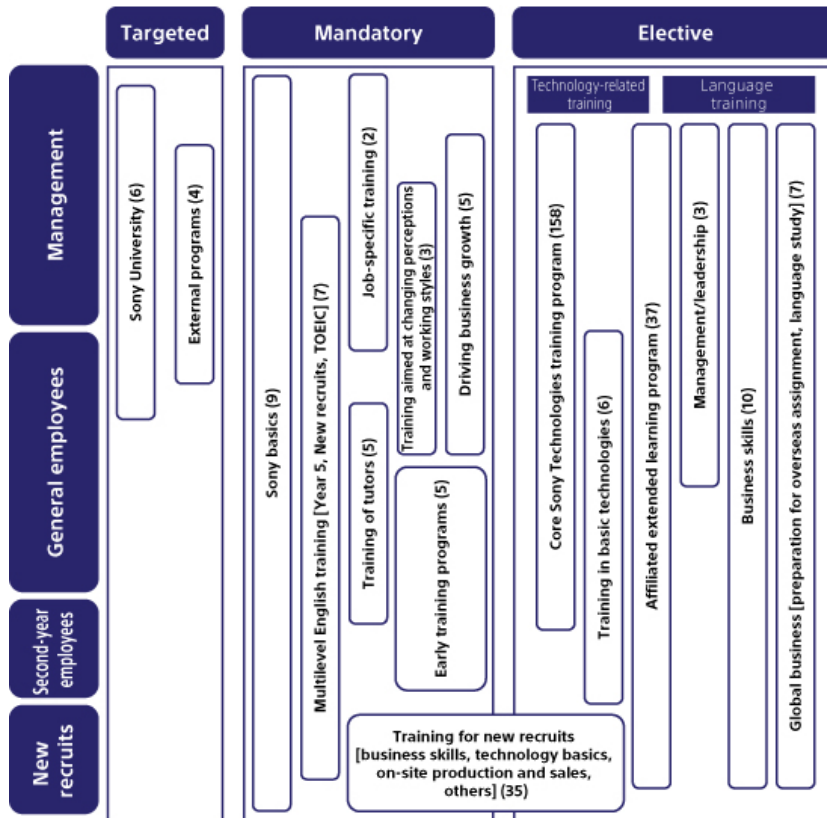
### Enhancing management skills

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

<p>Pictures</p>	<p><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.</p>
<p>Music (USA)</p>	<p>Programs here aim to foster management-level employees through training that emphasizes the setting of objectives and guidelines for managers and the accommodation of diverse business practices.</p>



\* 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 2011, the cost of training for a single Sony Corporation employee was estimated at approximately ¥320,000.

**Participation in Companywide Training\* in Fiscal Year 2011 (Sony Corporation)**

	Targeted	Mandatory	Elective (Technology- related)	Elective (Others)	Total
<b>Number of programs</b>	10	44	211	37	302
<b>Number of times offered</b>	13	260	304	163	740
<b>Participants</b>	124	23,015	16,386	2,528	40,053
<b>Cumulative total training time (Hours)</b>	17,870	284,719	44,056	28,556	375,201

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

## Human Resources

### Support for career building

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

<p>Electronics (USA)</p>	<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>
<p>Electronics (China)</p>	<p><b>"MyCareer.net"</b> 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

## Human Resources

### 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
- Creating opportunities through Global Job Posting system
- Leveraging engineering talent
- Promoting greater opportunities for women
- Promoting greater opportunities for individuals with disabilities

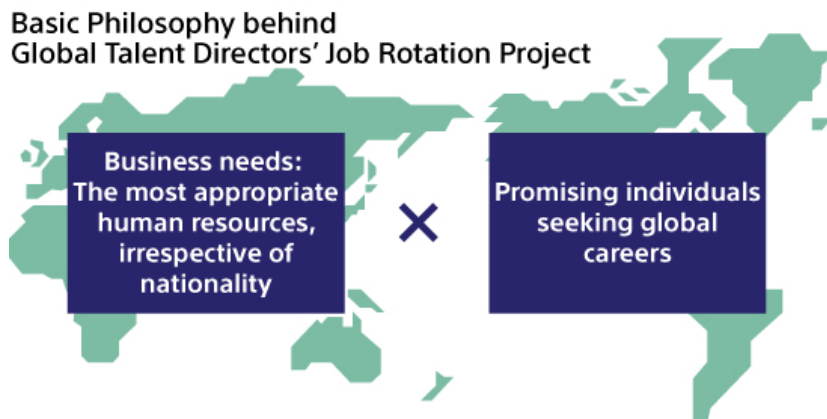
## Human Resources

### Appointing global business leaders

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.

Thanks to this effort, approximately 100 Sony employees, primarily management-level and mid-tier executives, have successfully been rotated through a schedule of job assignments to date.

Since 2011, Sony has begun debating the idea of linking its job rotation program with other initiatives aimed at fostering employees to create a more integrated, comprehensive global program.





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

<p>Electronics (Latin America)</p>	<p>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. Sony in Latin America also participated actively in the succession program.</p>
<p>Electronics (Asia Pacific)</p>	<p>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 was initiated as a job rotation program to develop young talent. The Strategic Career Management Committee, 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.</p>

## Human Resources

### Creating opportunities through Global Job Posting system

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. 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 expanded the scope of recruiting beyond sales and marketing to encompass all areas of endeavor, thus further enhancing its ability to effectively deploy talented human resources.

## Human Resources

### Leveraging engineering talent

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.

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 2011, 17 Sony employees from around the world were certified as MVPs, bringing the cumulative total certified to date to 214. 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**

<p>Monozukuri system (Master Craftsman system)</p>	<p>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 Corporation, Sony Energy Devices Corporation, Sony Chemical &amp; Information Device Corporation and Sony /Taiyo Corporation are eligible for this designation.</p>
<p>Equipment Engineer system</p>	<p>Established as part of an effort to fortify production technologies, this system recognizes equipment engineers at Sony Semiconductor Corporation. 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.</p>
<p>MD Award, President's Design Award</p>	<p>In the Asia Pacific region, efforts to foster and inspire engineers include presenting awards that recognize outstanding design and technology achievements.</p>

## Human Resources

### Promoting greater opportunities for women

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 in the Sony Group (Japan)\*3 (%)

	FY07	FY08	FY09	FY10	FY11
<b>Ratio of female employees (%)</b>	24.8	24.8	20.9	19.5	19.9
<b>Ratio of female employees in management positions (%)</b>	3.1	3.5	3.6	3.6	3.9

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

	FY07	FY08	FY09	FY10	FY11
<b>Ratio of female employees (%)</b>	37.8	38.2	39.3	32.6	38.7
<b>Ratio of female employees in management positions (%)</b>	31.6	32.2	35.6	33.8	36.1

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

	FY07	FY08	FY09	FY10	FY11
<b>Ratio of female employees (%)</b>	-	-	40.6	41.4	35.3
<b>Ratio of female employees in management positions (%)</b>	-	-	25.6	20.8	20.5

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

	FY07	FY08	FY09	FY10	FY11
<b>Ratio of female employees (%)</b>	-	78.8	68.2	64.8	63.9
<b>Ratio of female employees in management positions (%)</b>	-	36.5	33.5	25.2	29.1

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

	FY07	FY08	FY09	FY10	FY11
<b>Ratio of female employees (%)</b>	-	51.8	52.9	49.2	48.2
<b>Ratio of female employees in management positions (%)</b>	-	26.6	22.6	18.7	20.5

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

	FY07	FY08	FY09	FY10	FY11
<b>Ratio of female employees (%)</b>	40.3	42.3	40.5	34.6	38.0
<b>Ratio of female employees in management positions (%)</b>	17.2	18.0	17.9	20.5	16.8

- \*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.



## Human Resources

### Promoting greater opportunities for individuals with disabilities

The Sony Group promotes a number of initiatives aimed at realizing working environments that ensure equal access to employees with disabilities.

Sony strives to create work environments in which all employees, disabled or otherwise, can fully exercise their capabilities, as well as to provide opportunities for individuals with disabilities in areas that maximize their work contributions, with no distinction between job or benefit opportunities.

Maximizing the collective strengths of the Sony Group, Sony works actively to provide employment opportunities for individuals with disabilities. To enhance understanding, in fiscal year 2011 Sony provided guidance to departments to which newly hired disabled employees had been assigned and offered an awareness training program, which included role-playing exercises, across the entire Sony Group. Sony also held its fourth annual Group recruiting fair for disabled individuals in which approximately 20 Group companies participated.

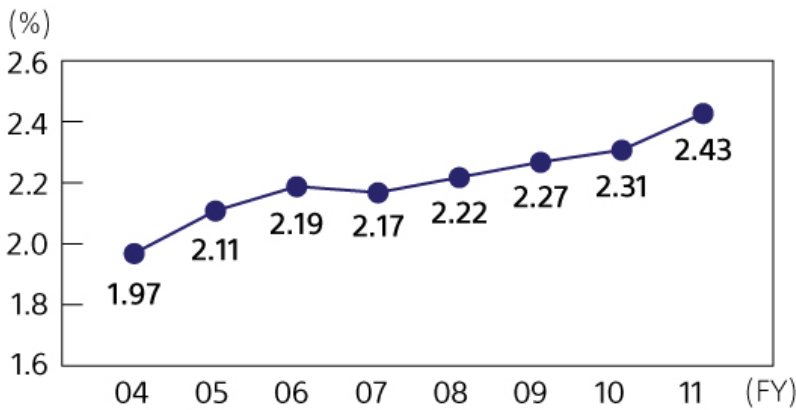
Sony representatives also participate in lectures and symposia to provide information of its efforts to providing greater employment for individuals with disabilities—a crucial component of its wider commitment to diversity and inclusion—to students who will soon enter the workforce and society at large.

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.

Sony's commitment in this area extends beyond legal compliance. In fiscal year 2011, employees with disabilities accounted for 2.43% 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-both accredited as special-purpose subsidiaries-provide disabled individuals with opportunities for employment and workplaces in which they can function with independence. These are Sony Hikari Corporation, established in fiscal year 2002, and Sony Kibo Corporation, established in fiscal year 2003. In 2012, Sony Hikari celebrated its 10th anniversary. Both companies are leveraging their experience to expand the range of opportunities for disabled employees that take full advantage of their capabilities and to allow them to function with the greatest possible independence.

Sony Corporation and other Sony Group companies continue to capitalize on the unique expertise of these special-purpose subsidiaries to promote diversity and inclusion with the aim of advancing employment opportunities and creating work environments that are accessible and accommodate the needs of all employees.



Disabled Employee Ratio (Sony Corporation)\*2 (2.43% in fiscal year 2011)

\*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)

Sony Life Insurance Co., Ltd. employs disabled individuals at its 17 Health-care Room massage therapy facilities across Japan. Having established the positions filled by these employees as professional technical posts, effective from fiscal year 2012 the company has adopted a new tailored personnel system.

## Human Resources

### 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
- Introduction of Global Employee Survey
- Systems that support a healthy work–life balance
- Support for employees undertaking child care or nursing care
- Human rights and equal opportunities
- Occupational Health & Safety

## Human Resources

### Enhancing global mobility

As of March 31, 2012, Sony had approximately 1,600 employees working in countries other than their own. Of these, 200 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.

## Human Resources

### Introduction of Global Employee Survey

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.

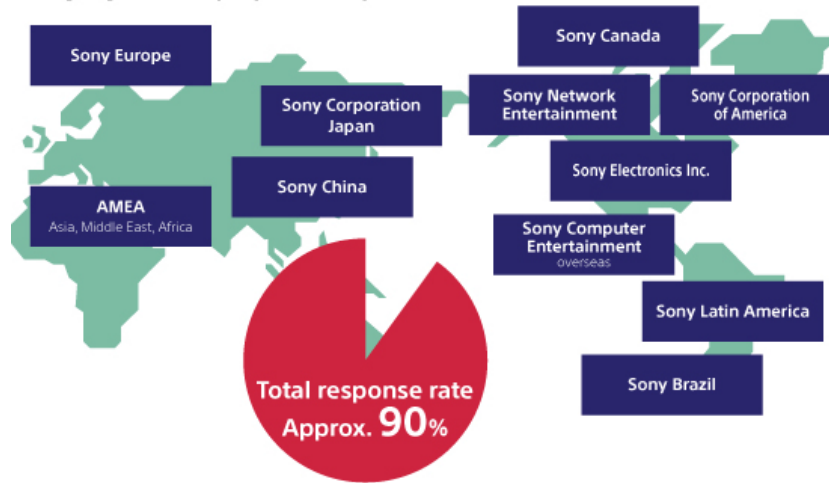
The survey positions Sony to gain a better grasp and make meaningful comparisons of the organizational and personnel situations at each Sony Group company using common Groupwide indicators, as well as to compare employee engagement and motivation with that of other global companies and analyze findings. 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 2011, 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)

### Employee Survey Implementation

Employee surveys conducted by each country and integrated into a single global employee survey



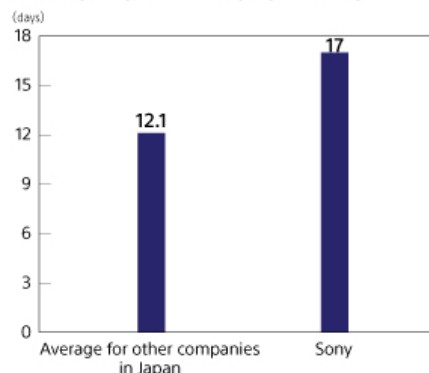
\* The response rate is the percentage of responses received from employees who received and completed the survey.

## Human Resources

### Systems that support 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 2011 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 in capital and had a workforce of more than 1,000 employees.

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

<p>Electronics (Latin America)</p>	<p>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. " 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.</p>
<p>Electronics (Asia Pacific)</p>	<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 Resources

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

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	273 (incl. 2 males)
Percentage of eligible employees taking child care leave	100%
Percentage of employees who returned to work	98.5%



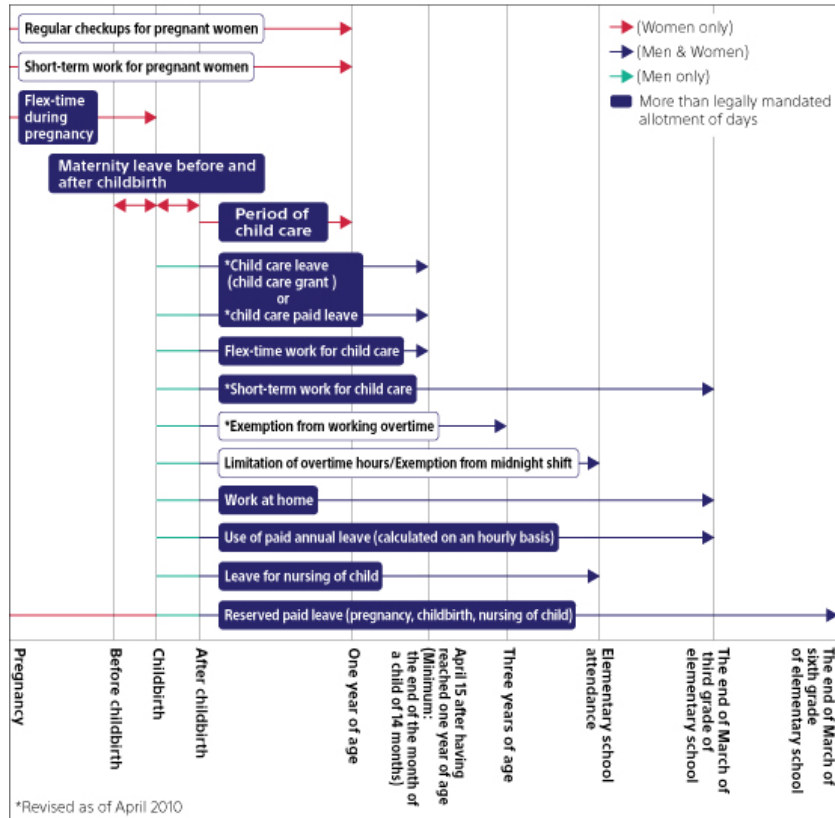
**Systems that Support Efforts to Balance Work and Child Care at Sony Corporation**

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 are 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.

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



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

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 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 Child Care Initiatives**

<p>Services for employees raising children (Japan)</p>	<p>Some group companies provide a private area for nursing mothers, emergency child care and other services for employees who are raising and/or expecting children.</p>
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## Human Resources

### Human rights and equal opportunities

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, part of the Global Personnel Development 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."

# Human Resources

## 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

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

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.

## Global OH&S Initiatives Japan

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 standards, and is promoting a variety of OH&S 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. In fiscal year 2011, Sony reduced the number of smoking rooms at its headquarters and adopted a new policy of not facilitating smoking in the workplace as a measure designed to further protect 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 that there are no omissions.

## **The Americas**

In North America, there was continued emphasis on employee training. Training programs are broad in focus and include instruction in emergency lifesaving techniques, including cardiopulmonary resuscitation (CPR) and the use of automated external defibrillators (AEDs). A monthly ESH bulletin, delivered to all regional sites, provides information on site initiatives and updates on new laws and regulations, as well as new Sony Group requirements, to promote the sharing of best practices.

### **Chemical Safety Information**

Each site in the Americas has a written Hazard Communication program for chemicals in place, including information on Material Safety Data Sheets, labeling and training. Most of this information is in the process of being revised following recently adopted changes to the OSHA Hazard Communication Standard. These revisions will more closely align the Standard to the Globally Harmonized System of Classification and Labeling of Chemicals(GHS).



## 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 aimed 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 and related 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 a quarterly basis. In the European management review meetings, held annually, the program implementation and performance is reviewed by top management.

### **Site Chemicals Program**

The 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. This program is provided for all employees and contractors and they learn changes concerning the classification, labeling and packaging of chemical substances, which are coming from the new Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

### **Road Safety Program**

On March 2, 2010, Sony Europe became a signatory to the European Commission's European Road Safety Charter and committed to promoting the Commission's road safety program.\* This program prioritizes the prevention of road accidents through the implementation of interactive road safety training for employees and on-site contractors; extending the scope of OH&S reporting to include road accidents. Sony Europe also conducts workplace risk assessments for employees who drive a great deal during working hours. In March 2011, these efforts were recognized when it was nominated by the European Commission for an Excellence in Road Safety Award. Sony Europe has also introduced an e-learning program for all employees in the region who drive during working hours. Beginning in fiscal year 2011, Sony adopted formal reporting procedures for road accidents, enabling the collection of specific data related to occupational road accidents.

• [Sony Europe's profile on the European Commission's European Road Safety Charter website:](#)

## AED Program

Thanks to recent technological advances, automated external defibrillators (AEDs) are helping to save lives more and more often. This has encouraged Sony Europe to promote the installation of AEDs at all of its sites. Multiple units have been placed at some sites to achieve a maximum response time. Sony Europe's AED program also includes instruction in the use of AEDs as part of regular emergency first aid training.



Road safety e-learning program

## Pan-Asia

Sony's Pan-Asian sites employ individuals with a wide range of nationalities and cultural backgrounds. A key objective of OH&S activities in the region is to raise awareness of safety issues and instill an appropriate mindset through training and education.

In Malaysia, for example, safety training is provided in employees' native languages, while announcements to employees in the event of an accident are made in several languages. Sites in Thailand have set up bulletin boards displaying numerical safety data at employee entrances with the aim of enhancing and broadening employee awareness. All Sony sites in the region undertake concrete initiatives aimed at, for example, ensuring equipment safety and minimizing fire risk, in compliance with regional requirements governing annual OH&S activities.



Launch of OH&S campaign at site in Malaysia



Activity aimed at enhancing awareness of safety at site in Thailand

## 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 these sites, Sony is promoting initiatives that capitalize on know-how and technologies accumulated at its manufacturing sites in Japan.

In fiscal year 2011, the OH&S initiatives of Shanghai-based Shanghai Suoguang Electronics Co., Ltd. (SSGE) were honored to be named a Minhang District Social General Security Management Excellent Enterprise and a Jiangchuan (Minhang District) Safety Manufacturing Control Excellent Enterprise. Subsidiary Sony Electronics (Wuxi) Co., Ltd., was named a Model Company of Wuxi for Safety Manufacturing for fiscal year 2011 in recognition of its initiatives, which were designed to ensure compliance with government requirements, as well as for its safety management procedures, which are based on common practices in both China and Japan.

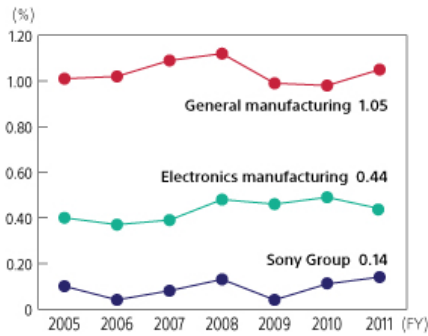
## Global Workplace Injury Statistics

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 recurrences.

### Japan

For the Sony Group in Japan, 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 Injuries in Japan\*1



\*1 Frequency rate = Number of deaths and injuries due to industrial accidents ÷ Cumulative hours worked × 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 North America, there was continued emphasis on the identification and elimination or control of potential hazards. This is achieved through engineering reviews, self-inspections, ergonomic assessments and corporate ESH 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, helps increase employee awareness of their operations.

**Workplace (Manufacturing Site) Injuries in the Americas\*2 (Calendar Year)**

Country/Region	2005	2006	2007	2008	2009	2010	2011
Brazil	0.6	0.6	1.3	3.6	2.0	1.6	1.3
Canada	4.1	0.6	4.4	1.6	3.9	0.9	N/A
Mexico	1.4	0.7	1.6	1.7	0.8	0.9	1.7
U.S.	0.9	1	0.8	0.4	0.1	0.3	1.9

\*2 Incidence rate = Total number of injuries and illnesses ÷ Total hours worked by all employees × 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 Inc. Americas.

**Europe**

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

**Workplace Injury Statistics in Europe\*3 (Calendar Year)**

Country Region	Sony and national industry average	2005	2006	2007	2008	2009	2010	2011
Austria	Sony	17.7	6.5	9.3	10.1	13.1	7.5	7.8
	National industry average	38.5	39.0	38.0	43.0	38.0	36.0	N/A
France	Sony	16.7	22.3	28.1	19.4	6.6	11.2	15.3
	National industry average	39.1	39.4	39.4	38.0	36.0	N/A	N/A
Netherlands	Sony	N/A	0	0	0	0	0	39.6 (*4)
	National industry average	18.0	N/A	N/A	N/A	N/A	N/A	N/A
U.K.	Sony	7.7	4.6	18.54	13	7.1	5.3	3.5
	National industry average	10.1	9.5	9.3	8.5	7.2	6.7	N/A

\*3 Incidence rate= Total number of recordable injuries and illnesses ÷ Total number of employees × 1,000

The definition of workplace injury varies from country to country. For this reason, direct comparisons between European countries cannot be made.

\*4 In fiscal year 2011, there was one workplace injury at a site in the Netherlands, resulting in a high incidence for the period. Rates include all Sony employees and Sony temporary employees in manufacturing sites.

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

**Pan-Asia/East Asia**

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

**Workplace Injury in Pan-Asia/East Asia \*5 (Fiscal Year)**

Country/Region	2005	2006	2007	2008	2009	2010	2011
Malaysia	1.5	1.7	1.5	1.1	1.9	1.72	1.08
Singapore	1.3	0.0	1.0	1.3	0	0	0
Thailand	0.1	0.2	0.1	0	0	0	0
China	0.2	0.4	0.5	0.4	0.4	0.41	0.4
Korea	1.7	0.4	0.7	0.8	1.67	0.97	0

\*5 Frequency rate= Total number of Workplace Accidents Reported ÷ Total number of Man-hours worked × 1,000,000

**Business Continuity Plan**

Sony continues to work on Business Continuity Plans (BCPs), which includes disaster prevention and mitigation with the objective of reducing business-interruption risks in case of a natural disaster, accident or other such an 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.

Having been challenged severely by the Great East Japan Earthquake, the effectiveness of Sony's BCPs was tested once again in fiscal year 2011 by the catastrophic flooding that struck Thailand in autumn 2011. While Sony had taken certain precautions to protect its local sites in the event of floods, including raising foundations of its facilities, the scale, geographic extent and duration of the floods were beyond its assumptions. This, together with the suspension of supplies of components and raw materials, had a significant negative impact on production in Sony's electronics business. Despite the fact that the disaster exceeded the scope of the assumptions, employees and top management rallied together, capitalizing on their experiences in implementing measures to ensure business continuity, and succeeded in minimizing the impact of the production disruptions.

Going forward, Sony will continue to capitalize on its experiences in having dealt with major disaster situations to enhance measures aimed at ensuring business continuity, which it recognizes as one of the most critical challenges in the business.

**Measures for Responding to the Risk of Disaster (Japan)**

- Sony gets prepared by contracting emergency helicopter transport to carry personnel and supplies to disaster-stricken areas.
- To lower risks in the event of an earthquake or a fire, Sony continually reviews building materials and facilities at its sites to ensure adequate earthquake and fire resistance and incorporates its findings into internal guidelines.
- Assessing and formulating countermeasures for earthquakes and floods risks that take into account the geographic conditions of each site in the world
- Developing a global disaster information escalation network and framework for reporting to management
- Improving countermeasures for managing global risks associated with the procurement of components
- Reviewing earthquake and tsunami assumptions in Japan
- Formulating and implementing business continuity measures that assume earthquakes comparable in size to the Tokai, Nankai and Tonankai earthquakes and a major earthquake with an epicenter directly below the Tokyo metropolitan area
- Managing emergency goods stockpiled at all sites in Japan
- Operating the Sony Safety Information System
- Deploying satellite phones at principal domestic sites to facilitate communication in the event of a major earthquake

**Measures for Responding to the Risk of Disaster (Americas)**

In Japan, Sony promotes ongoing efforts to develop and introduce BCPs. In the United States, Sony Electronics has been engaged in a company-wide review and update of the Business Continuity Plans (BCP) for each location. This has included:

1. Identification of the Business Recovery Coordinator (BRC) for each facility or Business Unit;
2. Workshop training sessions for new coordinators;
3. Interviews with each BRC to document all business processes;
4. A Business Impact Analysis (BIA) of all facilities;
5. Revised BCPs, based on the results of the interviews and BIAs. This included an update of the Action Plan for the SEL Crisis Management and Executive Management Teams;
6. A tabletop exercise using the updated Action Plan.

## Human Resources

### 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.

- ◆ Employee–management communications
- ◆ Collaboration with External Organizations Promoting Diversity
- ◆ Collaboration with academic institutions
- ◆ Communication tools



## Human Resources

### Employee–management communications

Sony's top management 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**

<p>Electronics (USA)</p>	<p>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&amp;A sessions on all topics.</p>
<p>Electronics (Latin America)</p>	<p>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.</p>
<p>Electronics (China)</p>	<p>Efforts are made to promote communication with employee labor unions. Management also makes use of intranets, internal newsletters and employee questionnaires to ensure information is conveyed to frontline manufacturing staff.</p>
<p>Electronics (Asia Pacific)</p>	<p>Top executives hold lunch meetings and quarterly offsite meetings with employees.</p>

Note: Sony's EICC provides a forum for discussion among management of Sony Europe and employee representatives from Sony Group companies in the EU.

## Human Resources

### Collaboration with External Organizations Promoting Diversity

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**

<p>Pictures</p>	<p>Sony launched Spectrum, a diversity program involving not only employees but also customers, local communities and parts suppliers. 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.</p>
<p>Electronics (USA)</p>	<p>Sony Electronics Inc. (SEL) has a total of 11 network groups. These groups have a combined total of over 2,200 employees from five 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. Recently, SEL was honored with an Athena Pinnacle as Corporation of the Year in 2011 for gender diversity.</p>
<p>Electronics (Europe)</p>	<p>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.</p>

## Human Resources

### Collaboration with academic institutions

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.

## Human Resources

### Communication tools

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 within 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.

# Human Resources

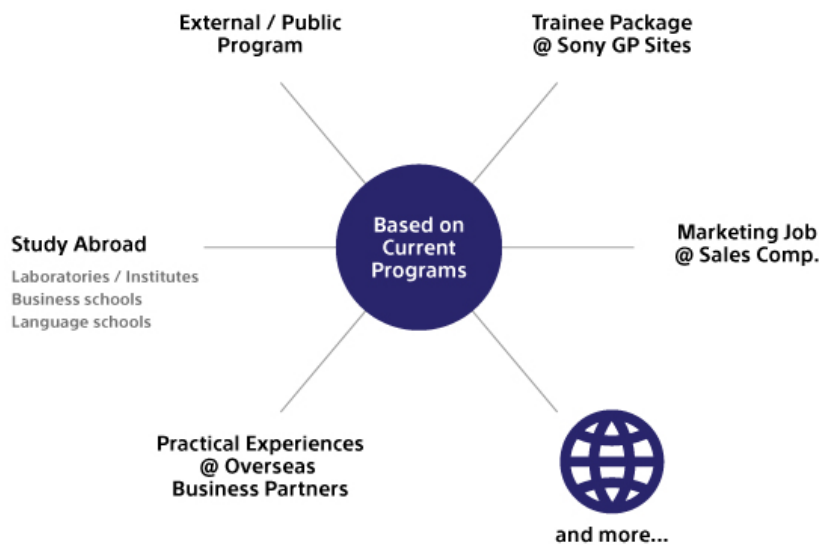
## Special Columns

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.

### 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 2011, approximately 3,500 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®."

### **Making workplaces in Japan multilingual**

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 converting intranets and human resource and administrative applications to a multilingual format. In April 2012, conversion of the most frequently used applications was completed. Sony plans to continue promoting efforts to make other applications and the Company's intranets available in English. In that such initiatives aim to establish a more conducive environment for foreign employees in Japan, Sony is also working to further enhance career support for such employees, including setting up a specialist unit within the Human Resources Division to provide career support and other assistance.



An everyday scene at the workplace



# Community

## Community

Sony continues to undertake a wide variety of community engagement initiatives based on the Sony Group's community engagement 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."

[More information](#)

### Community Engagement Policy, Main Scope and Structure

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

[More information](#)

### Project List



In addition to the science education for children, as a global company, Sony is keenly aware of the importance of the Millennium Development Goals (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.

[More information](#)

### Expenditures for Community Engagement Initiatives in Fiscal Year 2011

In fiscal year 2011, the Sony Group spent approximately 4.3 billion yen on community engagement initiatives.

[More information](#)

### Participation by Sony Employees

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Sony promotes a variety of activities in the community that capitalize on the capabilities of its employees.

- Volunteer Systems for Employees
- Engaging Employees
- Sony's support for recovery efforts in the wake of the Great East Japan Earthquake

### Contributing to the International Community through Business Activities

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Sony is particularly aware that emerging economies face significant development challenges and is exploring new business approaches to address such problems and contribute to the international community.

- More information

### Sony Museums and Foundations

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- More information

## Community

### 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." 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

### Community Engagement Policy, Main Scope and Structure

#### Sony's Community Engagement Policy

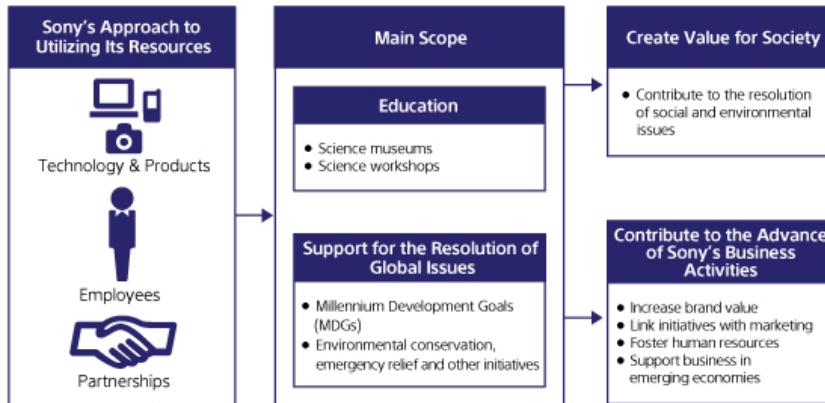
Sony defines its community engagement policy as "Undertaking activities in fields where Sony is best able to do so, to help address the needs of communities."

#### For the Next Generation

Guided by the "For the Next Generation" philosophy, 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 MDGs,\*1 which seek to resolve such key global development challenges as environmental conservation, poverty, education and by providing assistance in the aftermath of major catastrophe or crisis situation, 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 leverage Sony technologies, products, services and content resources. In addition, the volunteer involvement of approximately 180,000\*2 Sony Group employees worldwide, serve to enhance employee awareness of global issues, as well as to enhance motivation. Sony is also working with nongovernmental organizations (NGOs), international agencies and other groups that bring together networks and local expertise that Sony does not have, partnership that yields more effective results. Sony also links marketing activities that leverage its close relationship with customers to further enhance the initiatives. Employees' participation in the initiatives will enhance efforts to foster human resources, contributing to both the resolution of social and environmental issues and to the advancement of Sony's business activities.

**Sony's Community Engagement**

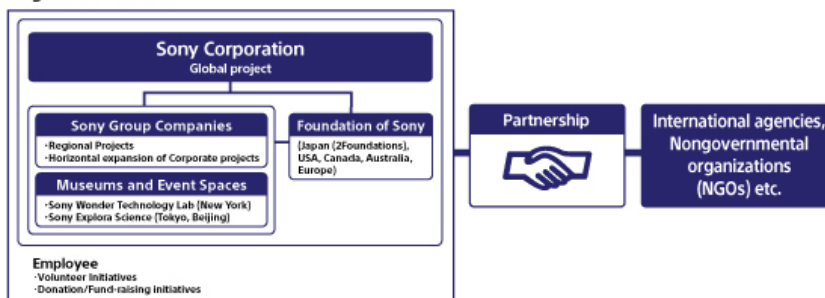


- \*1 The Millennium Development Goals (MDGs) form a blueprint for responding to the world's main development challenges by 2015. The MDGs are drawn from the actions and targets contained in the Millennium Declaration that was adopted by 189 nations at the UN Millennium Summit in September 2000.
- \*2 Cumulative participants in fundraising initiatives, blood drives and other activities.

**Framework for Community Engagement**

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 community engagement 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 fundraising programs.

Organization chart



## Community

### Project List

#### Education

• Sony Science Program

The original education workshop program designed for children to learn about the principles and rules of science

• Sony Student Project Abroad

International youth program as part of Sony's social contribution activities

• South Africa Mobile Library Project

Sony's activity to bring books to children in remote areas

• Sony Music Foundation

The Sony Music Foundation advances and popularizes music as form of art by means of promotion of international exchanges, encouragement of creative development, and fosterage of young and talented artists.

• Sony Education Foundation

The Sony Education Foundation provides support for educators and institutions with the sense of purpose needed to awaken enquiring and creative attitudes in children through the study of science.

#### Environment

• People Need Nature to Thrive

Sony's contribution to conserve the biodiversity on this beautiful planet with Conservation International

• Project for Forest Conservation in Sumatra

Sony helps to protect a World Heritage site forest on the island of Sumatra, with WWF Japan

## International Cooperation

### • EYESEE

Digital photo project, organized by UNICEF and Sony

### • Malawi Folktales Project

Recording the intangible cultural heritage before it disappears.

### • Public Viewing in Tanzania

Supporting efforts to prevent HIV/AIDS with Sony film and music contents

### • Dream Goal 2010

Using the power of football for social development on FIFA World Cup 2010

### • South Africa Mobile Library Project

Sony's activity to bring books to children in remote areas

## Support for major disasters

### • Restart Japan

Initiative to provide aid and recovery assistance with a focus on psychological care, education and creative activities for children, with Save the Children Japan.

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

Sony's support for Japan Earthquake relief efforts with its human resource and technologies.

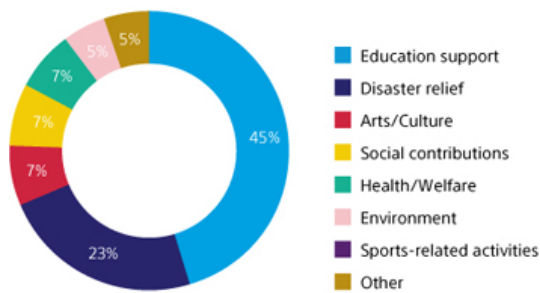
# Community

## Expenditures for Community Engagement Initiatives in Fiscal Year 2011

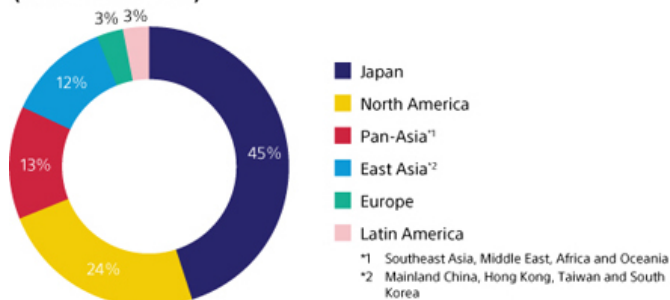
In fiscal year 2011, the Sony Group spent approximately ¥4.3 billion on community engagement initiatives.\*1, Sony's activities focused on education, particularly science education. In fiscal year 2011, Sony also assisted recovery efforts in areas devastated by the Great East Japan Earthquake, resulting in expenditures for disaster relief accounting for a greater percentage of total expenditures than average.

\*1 Cumulative figure. In addition to donations, sponsorships and independent program expenses (including facility operation expenses), this amount includes the market prices of products donated.

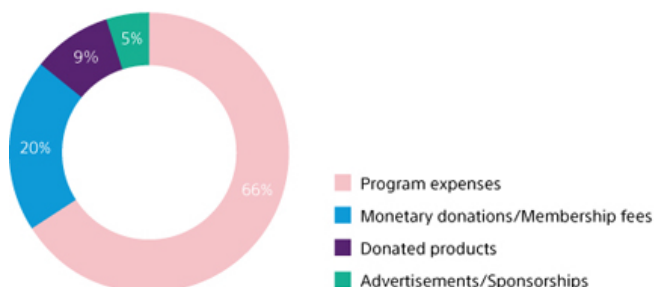
**Community Activity Expenditures by Field (Fiscal Year 2011)**



**Community Activity Expenditures by Region (Fiscal Year 2011)**



**Community Activity Expenditures by Category (Fiscal Year 2011)**





## Community

### Volunteer Systems for Employees

#### 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 2011, a total of 180,000 Sony Group employees\* participated in volunteer initiatives through SOMEONE NEEDS YOU.

\* Cumulative participants in fundraising initiatives, blood drives and other activities.

#### Leave for volunteer purposes

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

#### Matching gift programs, fundraising initiatives

Many Sony Group companies have "matching gift programs," whereby Sony matches charitable donations made by employees up to established limits to encourage employees' fundraising 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 Rakuten Edy-a prepaid electronic money service incorporating FeliCa, Sony's contactless IC card technology-is also possible.



A Sony employee making a donation using Rakuten Edy

## Community

### Contributing to the International Community through Business Activities

#### ODA Program

Since 1975, Sony's international cooperation activities have reflected the unwavering commitment of its founders to help build emerging economies and provide training for human resources using its position as an electronics manufacturer. Through Japan's Overseas Development Assistance (ODA) program, Sony has supplied equipment and provided technical training for more than 100 countries. Recipients of this aid include state-run broadcasting organizations, universities, health institutes, libraries, theaters and art museums.

#### BOP Businesses

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 base-of-the-pyramid (BOP) businesses.



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 objectives.

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.

As another example of BOP business, Sony has extended FeliCa contactless IC card technology for use in Bangladesh. In the capital city of Dacca, where buses are the principal mode of transportation, traffic jams are a major problem. Moreover, the use of paper tickets purchased by the roadside for every trip significantly hinders ease of use, as well as encourages fare dodging. In 2011, the city began introducing FeliCa-based IC cards as a convenient alternative that will greatly improve the efficiency of buses, including maintaining a record of every individual who boards and disembarks, as well as relieve traffic jams and improve the transparency of fare income for operators.



Commuter in Dacca, Bangladesh, pays her bus fare using a SPASS IC card

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

## Community

### Sony Museums and Foundations

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)
- Sony ExploraScience (Beijing)

#### 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)

#### 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)

#### Sony Foundations

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- Sony Education Foundation (Japan)
- Sony Music Foundation (Japan)
- Sony Foundation Australia Trustee Limited website (Australia)
- Sony Canada Charitable Foundation (Canada)
- Sony Institute of Higher Education Shohoku College (Japan)

## 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



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.

For more information

[Road to Zero: Sony's Global Environmental Plan](#)

[Sony Group Environmental Vision](#)

[Sony's Environmental Performance](#)

[Green Management 2015](#)

[Environmental Management Structure](#)



## Sony's four environmental perspectives

### 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.

For more information

Policy on Climate Change

Reducing Greenhouse Gas Emissions at Sites

Reducing Greenhouse Gas Emissions Related to Products and Services

Reducing Greenhouse Gas Emissions by Employee Business Trips

Collaboration with NGOs and Suppliers

### Resource 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.

For more information

Policy on Resource Conservation

Resource Conservation at Sites

Conservation of Resources Used in Products and Services

Measures to Conserve Resources Used in Paper

Product Recycling

### 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.

For more information

Policy on Management of Chemical Substances

Management of Chemical Substances at Sites

Management of Chemical Substances in Products

### 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.

For more information

Basic Policy on Biodiversity Conservation

Biodiversity Conservation at Sony Sites

Products That Support Efforts to Conserve Biodiversity

Conservation of Local Environment

## Six stages of product life cycle

### Environmental Technologies



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

[For more information](#)

### Products and Services



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

[For more information](#)

### Procurement



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

[For more information](#)

### Sites



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

[For more information](#)

### Logistics



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

[For more information](#)

### 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.

[For more information](#)

[Sony's Policy on Recycling Products](#)

[Improving Product Recyclability](#)

[Recycling Activities in Each Region](#)

[Links for Product Recycling Information in Each Region](#)

## 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.

[For more information](#)

## Environment

### Sony's Global Environmental Plan: Table of Contents

Sony has formulated a global environmental plan "Road to Zero", which is long-term vision of achieving a zero environmental footprint. In order to realize this vision, Sony has set forth a number of mid-term targets and established a global environmental management structure.

Road to Zero: Sony's Global  
Environmental Plan

Sony Group Environmental Vision

Sony's Environmental Performance

Green Management 2015

Environmental Management Structure



## Environment

### Road to Zero: Sony's Global Environmental Plan

Since the early 1990s, Sony has pursued environmental initiatives in accordance with its environmental principles and targets. In April 2011, Sony announced the "Road to Zero", a new global environmental plan. This plan consists of the Sony Group Environmental Vision and several sets of mid-term environmental targets, which form key milestones on the road to achieving the Vision.

#### Striving to achieve a zero environmental footprint

As stated in the new Sony Group Environmental Vision, Sony strives to realize a sustainable society by achieving a zero environmental footprint throughout the life cycle of its products and business activities. It is this long-term goal that prompted Sony to name its new global environmental plan "Road to Zero." Using backcasting method, Sony has devised Green Management 2015, a set of specific mid-term targets that it has determined the Sony Group must meet by fiscal year 2015 if it is to achieve the ultimate goal of Road to Zero by 2050. These targets are based on four environmental perspectives-climate change, resource conservation, management of chemical substances and biodiversity-across all product life cycle stages.



# 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

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

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 perspectives and takes proactive actions to achieve those goals.



Sony focuses on four environmental perspectives

**·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](#)

**·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

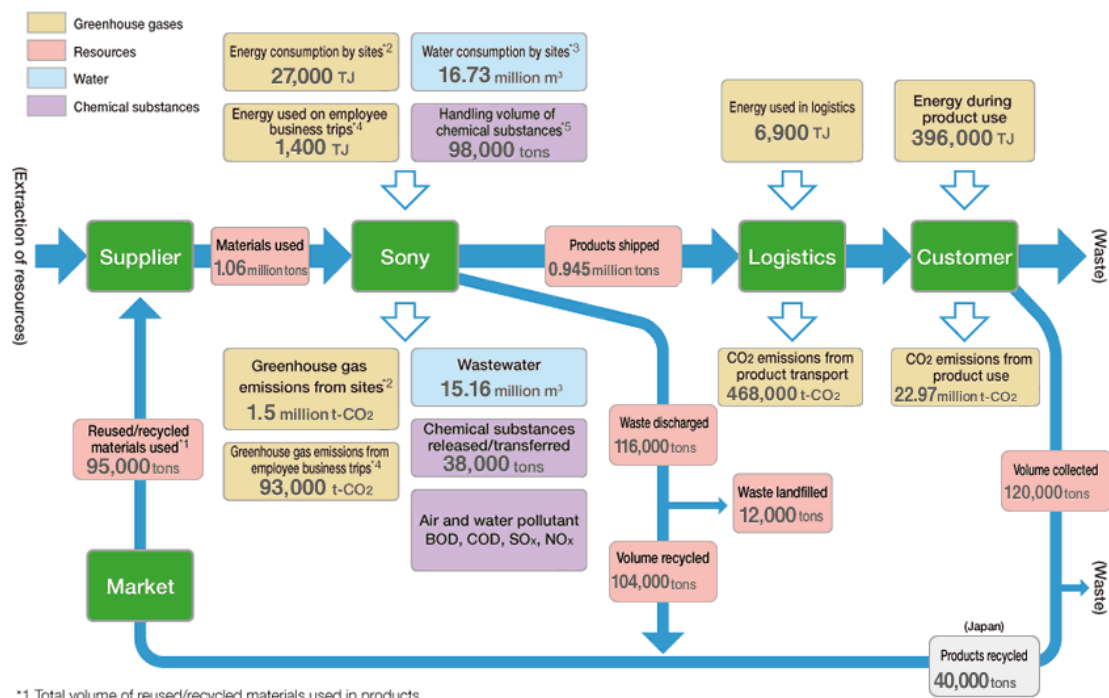
Sony's business activities may affect the environment in various ways. This overview looks at Sony's environmental footprint from the perspective of product life cycles.

- 
- Overview of Environmental Impact
- 
- Environmental Indicators and Eco-Efficiency
-

# Environment

## Overview of Environmental Impact

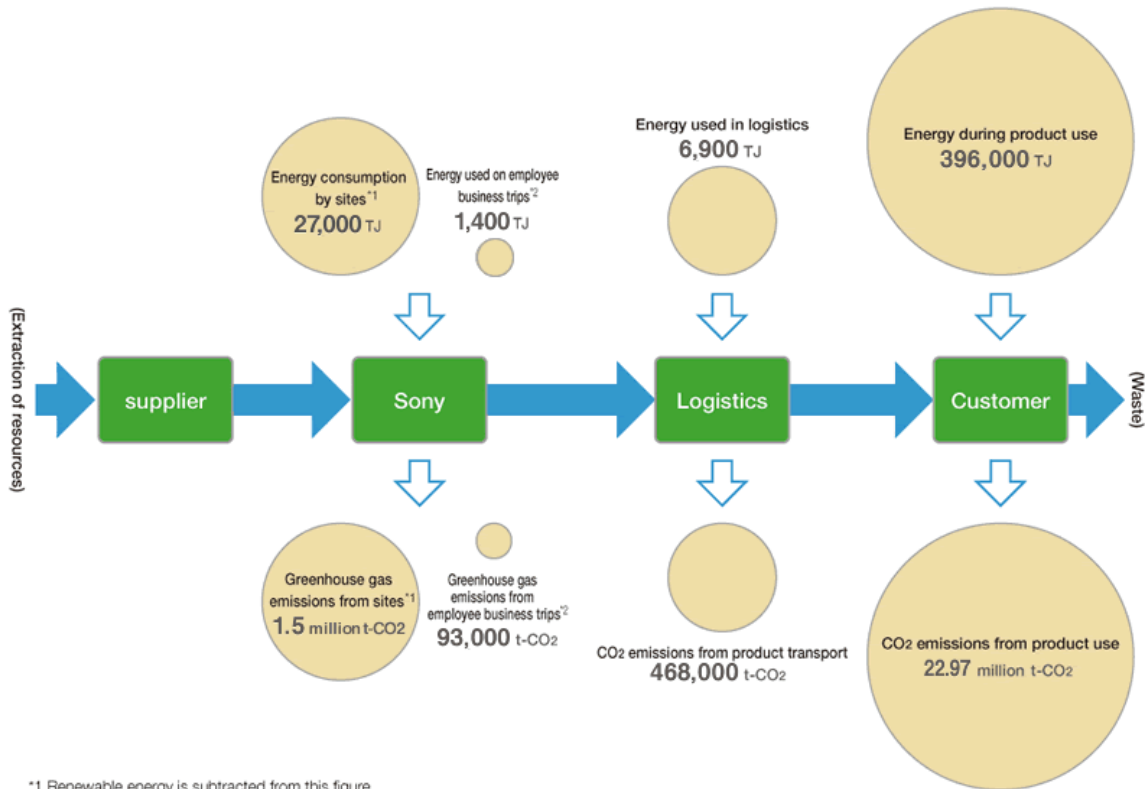
The chart below shows Sony's impact on the environment over the entire life cycle of its business activities, including energy and resources used in business activities, energy consumed by Sony products when used by their customers, and the recycling and disposal of products after use. The chart shows the principal environmental impact during fiscal year 2011 for items that Sony can recognize and manage directly.



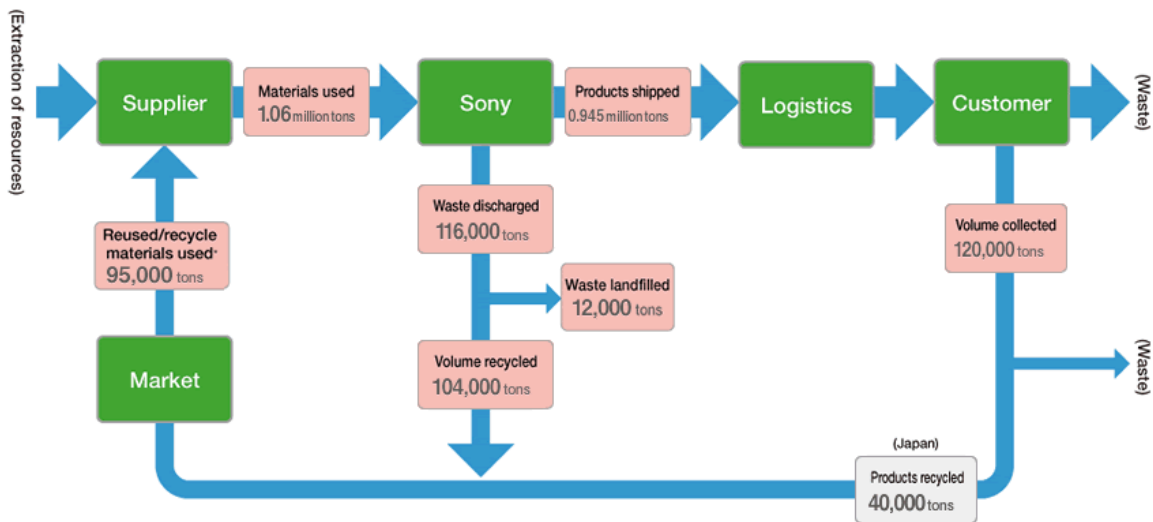
\*1 Total volume of reused/recycled materials used in products  
 \*2 Renewable energy is subtracted from this figure  
 \*3 Contribution from groundwater recharge is subtracted from this figure  
 \*4 Relevant primarily to Sony Group companies in Japan, Europe and North America  
 \*5 Volume of Class 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.

## Greenhouse Gases



## Resources



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

### Links to Related Items:

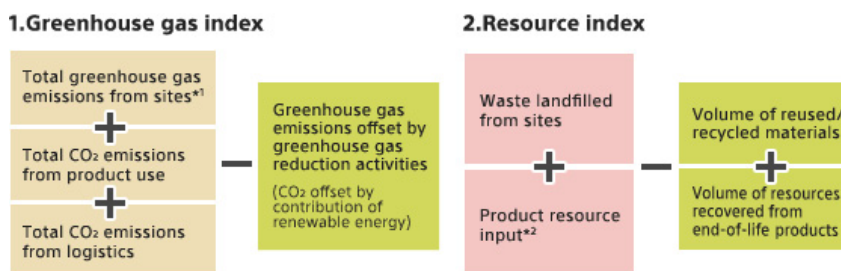
- Environmental Data > Environmental Data Collection Methods and Rationale

# Environment

## Environmental Indicators and Eco-Efficiency

### Establishing a Unique Set of Environmental Indicators and Eco-Efficiency

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—greenhouse gas emissions and resource use—are used 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 the values of these two indicators are effective against the Sony Group's business size, the Group uses the eco-efficiency equation below. In Green Management 2015, which lays down environmental targets through fiscal year 2015, Sony has set targets for these indicators.



#### Calculation formula for Eco-Efficiency

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

\*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.

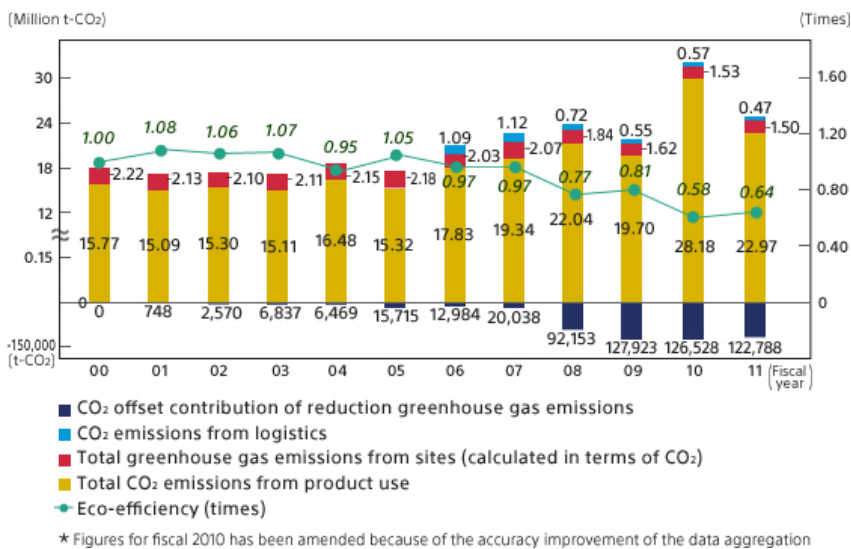
\*2 Total resources used in products, accessories, instruction manuals and packaging materials. This total does not include resources produced from recycled Sony Group product waste.

## Environmental Indicators and Eco-Efficiency in Fiscal Year 2011

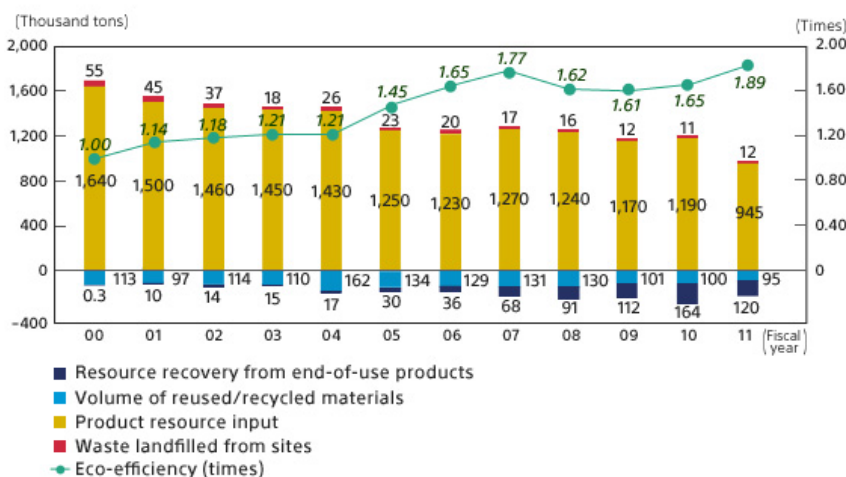
In fiscal year 2011, Sony's greenhouse gas emissions totaled approximately 24.94 million tons, down 18% from fiscal year 2010. This decrease was attributable to the reduction of greenhouse gas emissions from sites, CO<sub>2</sub> emissions from product use and logistics. Sony's eco-efficiency index for greenhouse gas emissions in fiscal year 2010 was 0.58 times, compared with 0.64 times in fiscal year 2000, an improvement of approximately 10%.

A look at Sony's resource index for fiscal year 2011 shows that resources used during the period totaled approximately 0.74 million tons, down 21% from fiscal year 2010. This decrease occurred despite declines in the volume of reused/recycled materials and resources recovered from end-of-life products and was due primarily to a significant decline in product resource input. Sony's eco-efficiency index for resources in fiscal year 2010 was 1.65 times, compared with 1.89 times in fiscal year 2000, an improvement of approximately 15%.

### Greenhouse Gas Efficiency



### Resource Efficiency





## 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, in line with which it has promoted a broad range of environmental initiatives. In 2010, Sony devised a new Sony Group Environmental Vision, the goal of which is a zero environmental footprint, and Green Management 2015, a set of new mid-term targets designed to facilitate the achievement of that goal by serving as a yardstick for the environmental activities of Sony Group companies and divisions worldwide until fiscal year 2015. Green Management 2015 went into effect in fiscal year 2011. Sony will periodically disclose the progress of these activities.

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◆ [Basic Stance of Green Management 2015](#)

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◆ [Basic Policies for Achieving Green Management 2015](#)

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◆ [Targets of Green Management 2015](#)

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# Environment

## Basic Stance of Green Management 2015

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.

## Focusing on four environmental perspectives

Green Management 2015 focuses on four key environmental perspectives—climate change, resources, chemical substances and biodiversity—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 perspectives, 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 perspectives

## Managing the product life cycle

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

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.

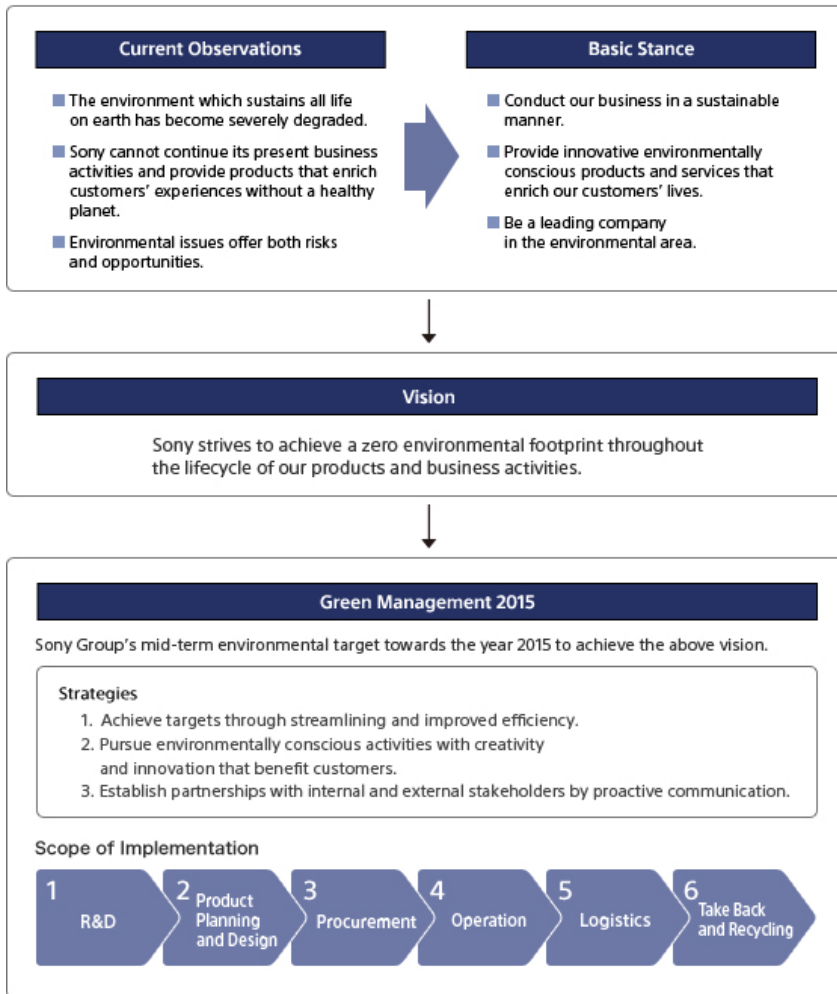
#### **2. Place a high priority on creativity and innovation and implement environmentally conscious actions that are approved and supported by our customers**

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**



## Environment

### Targets of Green Management 2015

Under Green Management 2015, Sony has divided the product life cycle 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, which are outlined in the chart below, all of which are to be achieved by fiscal year 2015.

## 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	Fiscal Year 2011 Performance
<b>Climate Change</b>	<p>1. Develop technologies that improve self-sufficiency ratio in the energy supply at the individual level by further implementation of energy saving measures in products and expansion of renewable energy.</p> <p>2. Develop information and communication technologies to support life styles indispensable to realize a low-carbon society.</p>	<p>At our booth at the Eco Products 2011 exhibition in Japan, we successfully demonstrated a new bio battery that is powered by paper. During the fiscal year under review, we announced our entry into the home energy management systems (HEMS) demonstration experiment and our new authentication outlet, which utilizes FeliCa technology.</p>
<b>Resources</b>	<p>3. Develop and refine 3R technologies in product lifecycle to achieve reductions in the use of exhaustible resources and water, and to reduce waste.</p>	<p>We expanded our categories of products made with SoRPlas ("Sony Recycled Plastic"), a proprietary recycled plastic, to include Handycam® camcorders and digital still cameras. On another front, we promoted the development of technologies for wastewater treatment using plant-derived flocculants.</p>
<b>Chemical Substances</b>	<p>4. Develop technologies to reduce the use of substances of high concern and alternative materials.</p>	<p>By using Sony proprietary flame retardant in our SoRPlas recycled plastic, we eliminated the use of bromine- and phosphorus-based flame retardants in those products.</p>

## 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	Fiscal Year 2011 Performance
<b>General</b>	1. Launch Environmental Flagship models and services in each Category continuously.	We launched at least one Environmental Flagship series in each principal product category in our electronics business (more than 20 series in total).
<b>Climate Change</b>	2. Reduce annual energy consumption of products: -30% (compared with FY2008)	Down 32%
<b>Resources</b>	3. Reduce utilization ratio of virgin oil-based plastics in products: -5% (compared with FY2008)	Down 2.4%
	4. Reduce mass of products: -10% (compared with FY2008)	Down 23%



<p><b>Chemical Substances</b></p>	<p>5. Eliminate environment-related substances to be controlled* of very high concern and BFR/PVC within specified use.</p>	<p><b>PVC:</b></p> <ul style="list-style-type: none"> <li>•We completed the switch to alternatives for all product packaging materials; electronic equipment casings and decorative coverings for such housings; casings and laminate finishes for speaker housings; contactless IC cards; bags and carrying cases for products (excluding those for professional use); flexible flat cables (FFCs); insulating plates; and heat shrink tubes.</li> <li>•We designated PVC-free product categories and eliminated the use of PVC in new products in these categories.</li> </ul> <p><b>BFRs:</b></p> <ul style="list-style-type: none"> <li>•We have eliminated BFRs in the casings and main printed wiring boards of all laptop and desktop PC models.</li> <li>•We designated BFR-free product categories and eliminated the use of BFRs in new products in these categories.</li> </ul> <p><b>Environment-related Substances to be Controlled which are of very high concern:</b></p> <ul style="list-style-type: none"> <li>•We designated six substances including phthalates to be reported of the use and applications in products.</li> <li>•We specified dates by which we will phase out the use of TCEP, HBCDD, arsenic trioxide, arsenic pentoxide, DEHP, DBP, BBP and DIBP.</li> </ul>

\* "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.

TCEP: tris(2-chloroethyl) phosphate; HBCDD: hexabromocyclododecane; DEHP: Bis(2-ethylhexyl)phthalate; DBP: dibutyl phthalate; BBP: butyl benzyl phthalate; DIBP: diisobutyl phthalate

### 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	Fiscal Year 2011 Performance
<b>Climate Change</b>	1. Establish mechanisms to determine greenhouse gas emissions from suppliers. 2. Contribute to the development of an industry-wide common reporting format.	We essentially completed the establishment of a mechanism for collecting data from our principal OEM/ODM*1 suppliers.
		<ul style="list-style-type: none"> <li>To achieve our target for the "Product Planning and Design" stage, we reinforced relevant systems and implemented more efficient procurement practices. We also cultivated partners with regard to our proprietary SoRPlas recycled plastic and contributed to the increase of the number of Sony products that use SoRPlas.</li> </ul>
<b>Resources</b>	3. Conduct procurement in ways that enable Sony to achieve the "Product Planning and Design" and "logistics" targets.	<ul style="list-style-type: none"> <li>To achieve our target for the "Logistics" stage, we worked with suppliers and customers to improve packaging for parts. We also reduced the volume of packaging materials used by reviewing the strength of these materials, enhancing parts storage efficiency and promoting the use of returnable containers.</li> </ul>

<b>Chemical Substances</b>	4. Conduct procurement in ways that enable Sony to achieve the "Product Planning and Design".	We ensured the strict observation of our standards for the management of chemical substances and promoted efforts to address the challenge of reducing Environment-related Substances to be Controlled*2 which are of very high concern, PVC and BFRs from the procurement stage.
<b>Biodiversity</b>	5. Assess impact on biodiversity at mining and collection sites.	We continue to study potential methods for evaluating the impact of principal products over their entire life cycles.

\*1 OEM suppliers are companies that manufacture products on behalf of Sony. ODM suppliers are companies that design and manufacture products on behalf of Sony.

\*2 "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.

#### 4. Operations

Reducing 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 local environmental contribution initiatives worldwide.

	<b>Targets</b>	<b>Fiscal Year 2011 Performance</b>
<b>General</b>	1. Conduct environmental assessments (including biodiversity impact assessment).	Using the Green Star Program, we conducted environmental assessments at all sites in Japan and a number of sites overseas.
<b>Climate Change</b>	2. Reduce greenhouse gases emissions by absolute value -30% (compared with FY2000).	Down 32%

<b>Resources</b>	3. Reduce waste generation by absolute value -50% (compared with FY2000).	Down 58%
	4. Improve waste recycling rate group-wide: 99% or more	90%
	5. Reduce water consumption by absolute value -30% (compared with FY2000).	Down 38%
<b>Chemical Substances</b>	<p>6. Take actions for class 1 - 4. Detailed groups of chemical substances are described separately.</p> <p><b>Class 1 substances:</b> Prohibit use.</p> <p><b>Class 2 substances:</b> Eliminate use by a specified date.</p> <p><b>Class 3 substances:</b> Reduce the amounts released and transferred.</p> <p>&gt;Reduce the amounts released to water, and the amounts transferred to sewer / as waste (including VOC) by -14% (compared with FY2008).</p> <p>&gt;Reduce the amounts of VOC released to the air by -50% (compared with FY2000).</p> <p><b>Class 4 substances:</b> Comply with the relevant laws and regulations and use under appropriate control.</p>	<p><b>Class 1:</b> None used</p> <p><b>Class 2:</b> To be eliminated by 2015</p> <p><b>Class 3:</b></p> <p>&gt;Released into water or transferred as waste into sewers (including VOCs): Down 3%</p> <p>&gt;Emissions of VOCs released to the air: Down 35%</p> <p><b>Class 4:</b> Complied with relevant laws and regulations and ensured use under appropriate control</p>

<p><b>Biodiversity, Contribution to Local Communities, Others</b></p>	<p>7. Promote environmental activities respecting the needs of the local community.</p>	<p>7. We participated in a variety of initiatives worldwide, including a brown bear conservation project in Italy, a groundwater recharge scheme in Kumamoto, Japan and a loggerhead turtle conservation effort in Oita, Japan.</p>
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## 5. Logistics

Considerable resources and energy 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 CO<sub>2</sub> emissions.

	Targets	Fiscal Year 2011 Performance
<p><b>Climate Change</b></p>	<p>1. Reduce total CO<sub>2</sub> emissions by -14% (compared with FY2008).</p>	<p>Down 22%</p>
<p><b>Resources</b></p>	<p>2. Reduce incoming parts packaging waste by -16% (compared with FY2008).</p>	<p>Down 48%</p>

## 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.

Targets	Fiscal Year 2011 Performance
<p>Based on the idea of Extended Producer Responsibility (EPR), Sony strives to achieve an environmentally conscious recycling system and effective operation for take back and recycling of end-of-life products. In addition, Sony continues to increase the use of recycled resources and to design products that are easy to recycle. This is based on the idea of Individual Producer Responsibility (IPR) to help in promoting the establishment of appropriate laws and building of infrastructure to recycle Sony products.</p>	<p>In Japan, North America, Europe and other areas where collection and recycling laws have been enacted, we are implementing collection and recycling efforts that satisfy legal requirements. In areas where such laws have not yet been introduced, we are promoting voluntary collection and recycling initiatives. In Australia, we have taken a leading role on behalf of the electronics industry in supporting the enactment of recycling legislation.</p>

## 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.

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• Global Environmental Management System

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• Linked to Business Activities

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• Environmental Audits

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# Environment

## Global Environmental Management System

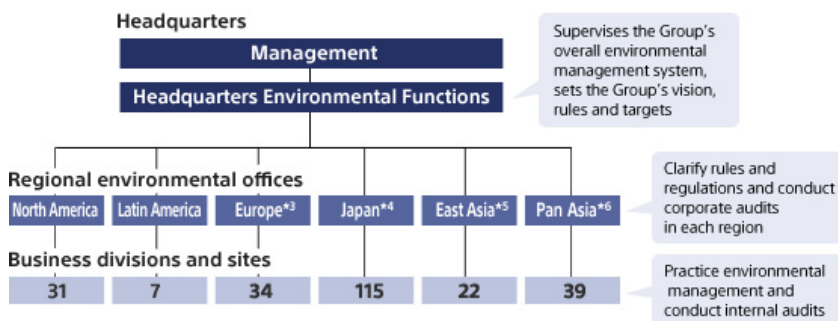
### Integrated ISO 14001 Certification for the Entire Sony Group

Since the 1990s, Sony sites\*1 throughout the world have sought certification under ISO 14001, the international standard for environmental management systems. Acquisition of ISO 14001 certification at all sites was completed in fiscal year 2000. Since then, Sony has expanded this effort, establishing an environmental management system that integrates 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\*2 for the entire Sony Group in fiscal year 2005.

\*1 "Sites" refers to manufacturing and non-manufacturing sites.

\*2 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 May 31, 2012)



#### Integrated ISO 14001 certification for 248 Sony Group sites worldwide

\*3 Coverage area: Europe including Turkey, Russia and former Soviet Union

\*4 Coverage area: Japan, Taiwan and South Korea

\*5 Coverage area: Mainland China and Hong Kong

\*6 Coverage area: Mongolia and other parts of Asia (excluding the aforementioned countries in Asia), Middle East, Oceania and Africa



## An Effective Global Environmental Management System

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 including recycling, chemical substance management, biodiversity conservation, 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.

- [Click here for more details in Corporate Governance.](#)

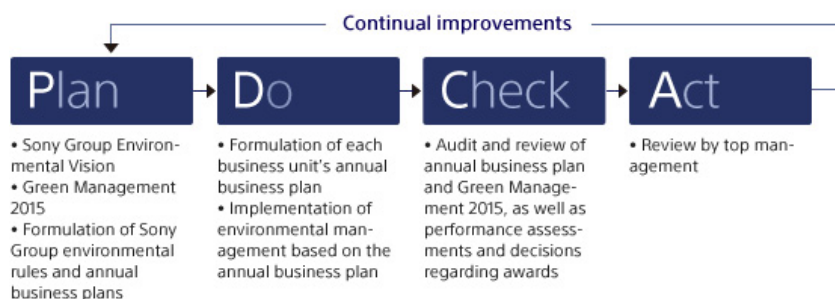
# Environment

## Linked to Business Activities

In compliance with ISO 14001, the global standard for environmental management systems that is based on the rationale of the Plan-Do-Check-Act (PDCA) cycle, 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 PDCA cycle, Sony has created an environmental document structure in line with requirements of ISO 14001. The structure covers 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.

### The Sony Group Environmental Management System PDCA Cycle



#### Links to Related Items:

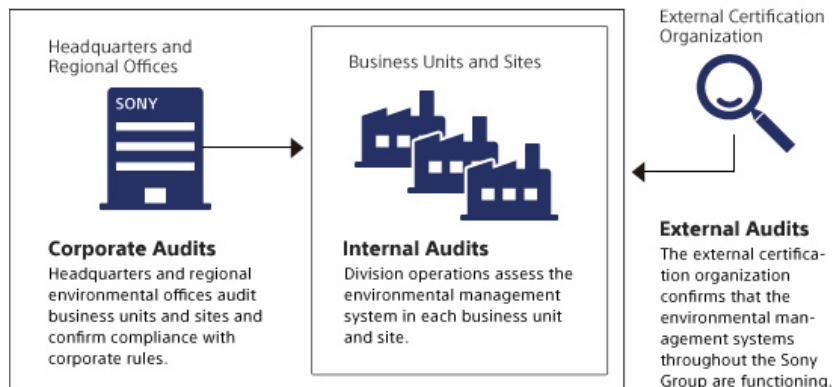
- [Environmental Data > Environmental Data Collection Methods and Rationale](#)
- [Environmental Communication](#)

# Environment

## Environmental Audits

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.

### Sony Group Environmental Audit System



### Examples of Improvements Resulting from Audits

<p><b>Clarification of environmental management functions of Sony Group headquarters</b></p> <p>The position of the procurement departments--which play a key role in the management of chemical substances in products--was clarified.</p>
<p><b>Reinforcement of performance review system</b></p> <p>The frequency and contents of performance reviews for site and product aspect for both the Sony Group headquarters and individual business units were improved.</p>
<p><b>Facilitating application of best practices identified through audits</b></p> <p>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.</p>
<p><b>Administrative efficiency</b></p> <p>Management system document structure has been simplified, improving the administrative efficiency of individual groups.</p>

## Environment

### Strategy on Climate Change: Table of contents

Sony considers that while climate change poses a significant risk both to our corporate activities and to society in general, it also provides Sony business opportunities. Sony proactively pursues to tackle the climate change issue.

Policy on Climate Change

Reducing Greenhouse Gas Emissions  
at Sites

Reducing Greenhouse Gas Emissions  
Related to Products and Services

Reducing Greenhouse Gas Emissions  
by Employee Business Trips

Collaboration with NGOs and Suppliers

#### Links to Related Items:

- [Logistics > Reducing the Environmental Impact of Logistics](#)

## Environment

### Policy on Climate Change

#### Target: Achieving Zero Emissions of Greenhouse Gases

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 business activities and its products and services. As the first step toward achieving this goal, Sony has established Green Management 2015, a set of mid-term environmental targets, which includes the target for greenhouse gas emissions indicated in the table below. Currently, Sony is implementing measures aimed at directly and indirectly minimizing its greenhouse gas emissions. These include taking decisive steps to lower energy consumption at its sites and promoting the development and provision of energy-efficient, environmentally conscious products and services. In seeking to lower energy consumption at sites, Sony is prioritizing efforts to improve energy efficiency and cut emissions of greenhouse gases used and is thus focusing on the use of renewable energy.

Sony positions the use of the Green Power Certification system and emissions credits as ways to supplement efforts to reduce emissions attributable to its operations. A participant since 2006 in the Climate Savers Programme, advanced by World Wide Fund for Nature (WWF), Sony has set its targets, outlined below, in consultation with the WWF. Sony's progress toward these targets is audited by external organizations. In addition, Sony is working to ensure it has a solid grasp of greenhouse gas emissions by its suppliers, as well as to implement effective management measures for such emissions.

**Mid-Term Greenhouse Gas Emissions Targets**

<p><b>Technology Development</b></p>	<ul style="list-style-type: none"> <li>●Develop technologies that improve selfsufficiency ratio in the energy supply at the individual level by further implementation of energy saving measure in products and expansion of renewable energy.</li> <li>●Develop information and communication technologies to support life styles indispensable to realize a low-carbon society.</li> </ul>
<p><b>Product Planning and Design</b></p>	<p>Reduce annual energy consumption of products: -30% (compared with FY08)</p>
<p><b>Procurement</b></p>	<ul style="list-style-type: none"> <li>●Establish mechanisms to determine GHG emissions from suppliers.</li> <li>●Contribute to the development of an industry-wide common reporting format.</li> </ul>
<p><b>Operations</b></p>	<p>Reduce total GHG: -30% (compared with FY00)</p>
<p><b>Logistics</b></p>	<p>Reduce total CO<sub>2</sub>: -14% (compared with FY08)</p>

**Understanding and Responding to Business Risks**

As a company that strives to contribute to the achievement of a sustainable society, Sony believes that addressing environmental issues, including climate change, is crucial to achieving this goal. Sony also recognizes the importance of such efforts from the perspective of business continuity. The failure to take appropriate steps to respond to such issues involves various underlying risks that could negatively impact Sony's operations. These include risks involving new or amended laws or regulations that could elicit higher carbon taxes, broaden the geographic applicability of emissions trading schemes or impose tougher energy-saving standards on products. Another example is physical risks, such as the risk of rising sea levels and abnormal weather patterns caused by climate change. There is also the risk of market change brought about by evolving consumer perceptions. Sony realizes that flawed responses to such risks could have major social and financial ramifications. Accordingly, Sony works constantly to assess underlying risks, as well as to ensure it is prepared to respond effectively to those risks that it judges likely to have an impact on its operations. Sony has, for example, established and continues to maintain a system for collecting information on laws and regulations in force in countries and territories around the world and to ensure that its business activities and products comply.

## Creating Business Opportunities

Efforts to address the issue of climate change also present promising business opportunities. With general awareness of climate change growing, it is increasingly likely that governments will implement policies designed to encourage consumers to purchase products with energy-saving features and that, in turn, energy efficiency will become an increasingly important aspect of consumer needs. Having long worked to build energy-saving features into its products through a variety of distinctive innovations, Sony sees this trend as a positive development that has further enhanced the competitive advantages of its products.

In addition to commercializing an energy storage module that facilitates the efficient use of electric power, Sony will continue to advance the development of groundbreaking environmental technologies, including its new Authentication Outlet and a home-use energy management system, with the aim of establishing its presence in the environmental business.



IJ1001M energy storage module, which facilitates the storage and efficient use of electric power



Prototype of Sony's new Authentication Outlet, which enables users to identify electric power fees on a per-device basis

## Environment

### Reducing Greenhouse Gas Emissions at Sites

- 
- ◆ Greenhouse Gas Emissions

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  - ◆ Promoting Efficient Energy Use

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  - ◆ Reducing Energy Consumption by Sony-Owned Business Vehicles

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  - ◆ Use of Renewable Energy

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  - ◆ Participation in Emissions Reduction and Trading Programs

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# Environment

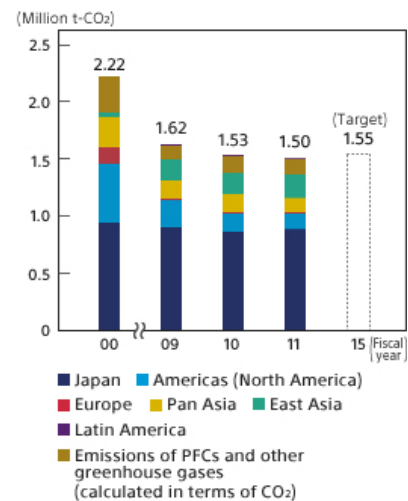
## Greenhouse Gas Emissions

### Reducing Greenhouse Gas Emissions by 32% from the Fiscal Year 2000 Level

Sony has set a target to achieve an absolute reduction in greenhouse gas emissions (calculated in terms of CO<sub>2</sub>) of 30% or more from the fiscal year 2000 level by fiscal year 2015. To this end, Sony strives to lower energy consumption and emissions of perfluorocarbons (PFCs) and other greenhouse gases. In fiscal year 2011, Sony's emissions of greenhouse gases\* (calculated in terms of CO<sub>2</sub>) totaled approximately 1.50 million tons. This represents approximately 32% decrease from the fiscal year 2000 level, and a 2% decrease from the fiscal year 2010 level.

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

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



## Environment

### CO<sub>2</sub> Emissions from Energy Use at Sites

In fiscal year 2011, emissions of CO<sub>2</sub> at sites\*1 accounted for approximately 1.36 million of the around 1.5 million tons of greenhouse gases emitted at Sony sites, down about 14,000 tons from fiscal year 2010. The decline was attributable largely to measures implemented by sites to reduce energy consumption, as well as to reduced production, a consequence of production adjustments due to the persistent global economic slump, the Great East Japan Earthquake and the severe flooding in Thailand. CO<sub>2</sub> emissions resulting from the use of energy at sites in Japan amounted to approximately 880,000 tons\*2, an increase of approximately 50,000 tons from fiscal year 2010. 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 2011, CO<sub>2</sub> emissions resulting from fuel used in vehicles amounted to approximately 34,000 tons.

Going forward, Sony will take 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 enhance nonstructural measures, notably the introduction of training programs designed to foster energy-saving leaders.

\*1 This includes CO<sub>2</sub> emissions from fuel use of business vehicles owned by Sony.

\*2 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 as a result of energy use in fiscal year 2011 was approximately 958,000 tons.

### Emissions of PFCs and Other Greenhouse Gases

PFCs and other greenhouse gases with high global warming potential 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 2011 (calculated in terms of CO<sub>2</sub>) totaled approximately 139,000 tons, down about 11,000 tons from fiscal year 2010. Sony continues for ongoing efforts to reduce emissions of PFCs and other greenhouse gases by, among others, installing gas abatement equipment.

## Environment

### Promoting Efficient Energy Use

Sony sites around the world implement a variety of measures aimed at increasing the efficiency of energy used in their various operations. Examples of such measures are described below.

#### Malaysia: Reducing Energy Consumption through the Eco Challenge Project

Sony is continuously promoting the Eco Challenge Project, which aims at increasing the environmental awareness of Sony employees worldwide and reducing energy consumption. The following are examples of project initiatives from Malaysia.

From 2008 through 2010, Sony EMCS (Malaysia) Sdn. Bhd.'s Penang TEC implemented the Facility Optimization Project, spearheaded by facility engineers and succeeded in reducing the total amount of energy consumed by common areas annually from 42,200,000 kWh in 2008 to 39,900,000 kWh in 2010. Seeking further improvements, Penang TEC subsequently expanded its focus beyond common areas to include reducing energy consumption on production floors and enhancing the environmental awareness of production floor employees and, in July 2011, launched the Eco Challenge Project together with Sony EMCS (Malaysia)'s Kuala Lumpur TEC. This project set an aggressive target of a 30% reduction in energy consumption in pertinent areas. Production floor staff, tasked with reviewing practices on their particular lines and proposing improvements, generated numerous innovations that led to overall reductions that far exceeded the project's 30% target in five months. These included the creation of a unique system that displays energy used in real time, thereby rendering energy consumption clearly visible. In addition to aiding employee awareness, this system made it possible to identify portions of production lines where energy consumption was abnormally high and implement swift countermeasures. Ideas and efforts to optimize production systems and testing rooms resulted in substantial improvement in energy consumption, while similar efforts for lighting systems made it possible to reduce a large number of fluorescent tubes used. The increased environmental awareness of its employees and the encouraging result has since been instrumental to the introduction of a variety of other environmental initiatives.



Energy reduction activity

## China: Reducing Energy Consumption through the Development of a New Jig for Switching Hub

Until recently, Shanghai Suoguang Electronics Co., Ltd. used multiple direct current (DC) regulated power supplies on each of its assembly lines. However, because of long hours of operation, these power supplies wore out quickly and required replacement numerous times every year. Seeking to address this problem, the company analyzed electric power consumption data for each of its assembly lines, determining that output per production line averaged 300-500 mA, meaning that hubs with a smaller supply capacity could be used.

Based on these findings, the company developed a new switching hub jig that made it possible to alter the supply mode from one unit for each line to one unit for six lines, thereby facilitating the elimination of 534 hubs and a 31,655 kWh reduction in annual power consumption, which in turn reduced annual emissions of CO<sub>2</sub> by approximately 24 tons.



Switching hub jig developed by Shanghai Suoguang Electronics

## Environment

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

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, 2012, 55% of Sony-owned business vehicles were environmentally conscious, that is, either hybrids or fuel-efficient vehicles.

In the United States, Sony Electronics Inc. (SEL) recently completed a four-year plan to convert its corporate fleet of more than 600 vehicles from conventional to hybrid models. As of the end of fiscal year 2011, most of the fleet had been replaced with hybrid vehicles. SEL estimates that this plan has enabled it to reduce CO<sub>2</sub> emissions by approximately 30%.

Sony Europe has formulated a company car policy to include environmental criteria such as CO<sub>2</sub> emission levels when selecting newly leased vehicles.

## Environment

### Use of Renewable Energy

#### Sony Reduces Emissions of CO<sub>2</sub> in Fiscal Year 2011 by Approximately 123,000 Tons through the Use of Renewable Energy

The use of renewable energy\* is a key part of Sony's effort to reduce greenhouse gas emissions. In fiscal year 2011, the use of the Green Power Certification System and the introduction of solar power generation systems helped reduce Sony's CO<sub>2</sub> emissions by approximately 123,000 tons. Renewable energy accounts for approximately 10% of the total amount of electricity that Sony purchases worldwide each year.

Sony uses the Green Power Certification System to promote 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. In Japan, Sony and an electric power company cooperated to establish a Green Power Certification program in 2001.

Quantity of Renewable Energy Use by Region (Fiscal Year 2011)



■ North America:	72,426t-CO <sub>2</sub>
■ Europe:	33,567t-CO <sub>2</sub>
■ Japan:	16,457t-CO <sub>2</sub>
■ China:	226t-CO <sub>2</sub>
■ Pan Asia:	70t-CO <sub>2</sub>

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

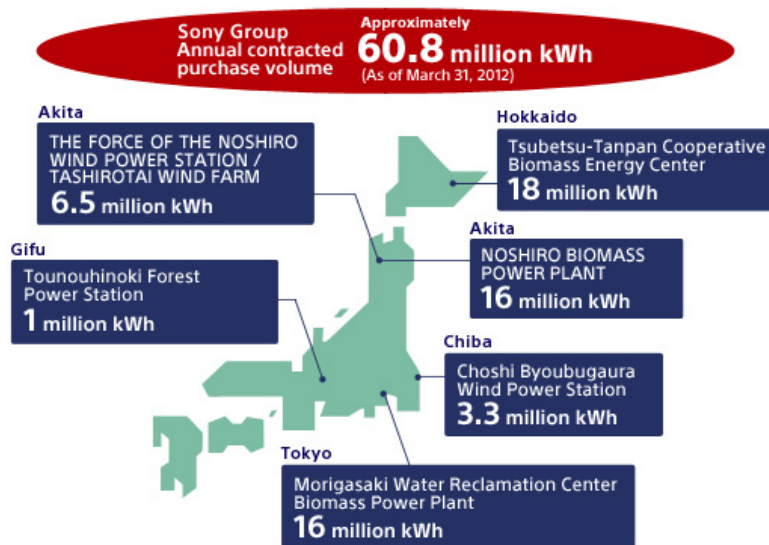
## Japan: Continues to be One of Japan's Largest Users of Green Power

In Japan, Sony uses the Green Power Certification System to promote the introduction of green power\*. As of March 2011, the Sony Group finalized a Green Power Certification System purchase contract for 60.8 million kWh annually, equivalent to around 3.45% of the Group's total power use in Japan. Since 2008, approximately 90% of electricity used by the Sony Building has been derived from green power. Additionally, all sites belonging to logistics company Sony Supply Chain Solutions and Sony Bank operate on 100% green power.

Sony is also using the Green Power Certification System to contribute to the conservation of forests. Noshiro wood biomass power plant in Akita Prefecture, with which Sony has concluded a Green Power Certification System purchase contract, uses timber resulting from tree thinning as its principal fuel. However, the high cost of transport means such timber more than necessary for fuel is often abandoned where it is cut. Since 2008, Sony has donated 6 million yen annually to Akita Prefecture's forest conservation program to fund the transport of such timber to the Noshiro plant.

\* Electricity produced using renewable energy sources

### Power Stations with Which the Sony Group Has Signed Green Power Contracts and Annual Volume Purchased



**Sony is Biggest Purchaser of Green Heat Certificates in Japan in 2012**

In addition to making extensive use of green power, in April 2012 Sony signed a three-year biomass heat production contract with Japan Natural Energy Company Limited and began purchasing Green Heat Certificates for heat generated by wood biomass combustors. Green Heat Certificates signify recognition that the user is purchasing green heat produced through the combustion of biomass, solar power or other renewable energy technology that does not increase the volume of CO<sub>2</sub>,



thereby contributing to the reduction of CO<sub>2</sub> emissions. With this contract, Sony has agreed to purchase 133,333 GJ of green heat annually, making it the largest purchaser of Green Heat Certificates in Japan. This is expected to facilitate an annual reduction in greenhouse gas emissions of approximately 8,000 tons.

**Sony actively supports the promotion of renewable energy in society**

"Green Energy Partnership" was formed by the 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, president of Sony Corporation at the time, was inaugurated as the first chairman of the Partnership. In his 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. \(Japanese only\)](#)

**Europe: Using 100% Renewable Energy**

In Europe, Sony has been using renewable energy since 2002, and has been promoting the use of electricity supplied by renewable energy sources where possible and the purchase of Renewable Energy Certificates by sites unable to purchase renewable energy directly since fiscal year 2008. In fiscal year 2011, Sony sites in Europe used a total of approximately 116 million kWh of renewable energy, accounting for 100% of total electricity consumption by Sony's European sites (excluding those sites with fewer than 100 employees).



Sony DADC's site in Anif, Austria, one of the sites in Europe that uses 100% renewable energy



## North America: Promoting the Use of Renewable Energy by Various Regional Group Companies

Beginning April 2008, four of Sony's sites in the United States -- Sony DADC U.S. Inc.'s Pitman (at the time) and Terre Haute plants, the New York office of Sony Corporation of America (SCA) and the San Diego office of Sony Electronics Inc. (SEL) -- signed Renewable Power Certification System contracts. They were joined in January 2009 by Sony DADC's distribution centers at Carrollton, Bolingbrook and Fresno and by SEL's Carson distribution center.



Solar power generation facility installed on the roof of SPE's headquarters

In 2012, Sony DADC, SEL, Sony Pictures Entertainment (SPE) and SCA in the United States, under the umbrella of Sony Corporation of America, came together to purchase more than 88 million kWh of green power annually for that year. This is enough green power to meet an estimated 36% of these entities' electricity use in the United States.

All of SEL and DADC U.S. ISO 14001 certified sites (sites with 100 or more employees) are covered under this contract. The amount of purchased renewable energy by SEL accounts for approximately 74% of the total amount of electricity used by Sony sites in the United States that are ISO 14001 certified. 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.

## Environment

### Participation in Emissions Reduction and Trading Programs

Sony pursues its own energy efficiency improvement while at the same time meeting requirements under various emissions reduction and trading programs in advance of legal requirements.

#### United Kingdom: Compliance with the CRC Energy Efficiency Scheme

The United Kingdom recently enacted the new Carbon Reduction Commitment (CRC) Energy Efficiency Scheme. This scheme mandates the reporting and reduction of carbon emissions during the operation of all business-use buildings owned by companies. Ahead of the actual commencement of the scheme in fiscal year 2012, all Sony Group companies and business sites in the United Kingdom established a CRC working group to ensure compliance with the scheme.

The carbon emission reduction measures of all Sony business sites in their efforts to comply with the CRC Energy Efficiency Scheme have received positive recognition, with Sony being placed in the top 25% in the CRC league table which is the ranking of all participants of the scheme. Additionally, Sony was one of the first major manufacturers to receive certification from the British Standards Institution.

## Japan: Meeting Metropolitan Tokyo's Mandated Requirements and Other Programs

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.

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 March 2012, Sony had purchased credits worth approximately 36,700 tons of CO<sub>2</sub>.

In addition, Sony utilizes the Domestic Clean Development Mechanism (CDM), a scheme whereby greenhouse gas emissions reduction projects executed by small and medium-sized companies in Japan generate carbon credits that may be purchased by large companies. Sony has entered into two such CDM agreements, and has purchased credits worth approximately 1,680 tons of CO<sub>2</sub> (as of the end of March 2012). Under one of these projects, an emissions reduction project in Tokamachi, Niigata Prefecture, Sony purchased 277 tons of CO<sub>2</sub>-equivalent credits from the Tokamachi municipal government in fiscal year 2011, and in fiscal year 2012 plans to purchase credits generated by projects implemented jointly by the municipal government and local small and medium-sized companies.

## Environment

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

- 
- Greenhouse Gas Emissions from Product Use

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  - Reducing Product Operating Power Consumption

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  - Development of Energy Storage Modules and Energy-Generating Devices

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  - Systems Solutions that Help Reduce CO<sub>2</sub> Emissions

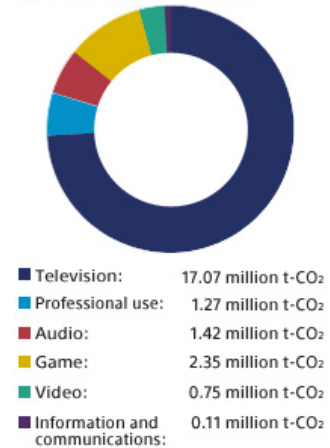
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## Environment

### Greenhouse Gas Emissions from Product Use

Sony products consume electrical power while used in the hands of their owners, resulting in indirect emissions of CO<sub>2</sub>. Having set a target for reducing annual greenhouse gas emissions from product use of 30% from the fiscal year 2008 level by fiscal year 2015, Sony is promoting the incorporation of energy-saving features in all product categories. In fiscal year 2011, average greenhouse gas emissions per product were 32% lower than in fiscal year 2008. Sony's total CO<sub>2</sub> emissions over the entire life cycle of all products sold in fiscal year 2011 were approximately 22.97 million tons, 19% lower than for products sold in fiscal year 2010, thanks to the incorporation of energy-saving features into products and to a decline in sales volume.

**Greenhouse Gas Emissions from Product Use**



Note: 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.

## Environment

### Reducing Product Operating Power Consumption

Sony reduces the power consumption of individual products by setting specific annual targets for each product category. 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), legislation which, in addition to electrical products, covers windows, insulation materials and other energy-related products, demanding compliance with environmental legislation across a broad range of products. Electrical products, in particular, must comply with strict energy-reduction standards. Sony products comply with energy efficiency regulations in every country where they are enforced. In countries where no regulations exist, Sony has established product-specific energy reduction targets and is active in achieving these targets.

#### Reducing the Power Consumption of BRAVIA™ LCD Televisions

The BRAVIA™ HX750 Series of LCD televisions, launched in 2012, realize low energy consumption and sharp contrast with deep blacks by precise control of the LED backlight and panel. While achieving superb picture quality such as 4-times speed play, it delivers high energy efficiency. In particular, KDL-55HX750 achieves the lowest energy consumption of 132 kWh/year (based on Japan's Law Concerning the Rational Use of Energy) the highest achievement made by any Sony televisions with the screen sizes of 55V and 52V to date. The KDL-55HX750 also qualified for European Union energy efficiency class A+ rating and satisfied the International ENERGY STAR® program's requirements for televisions (Version 5.3), earning it the ENERGY STAR Most Efficient 2012 designation.

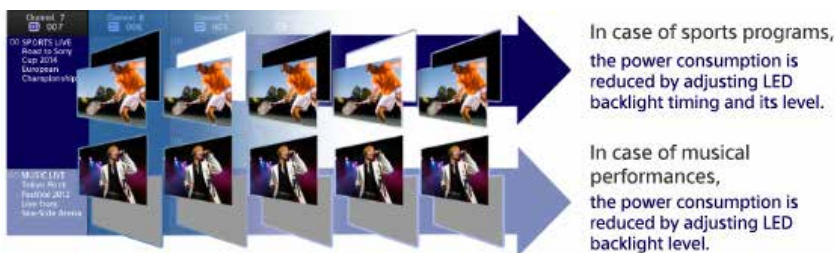


KDL-55HX750

### Automatic Adjustment of Backlighting Based on Program Genre

The most appropriate picture quality depends on what you are watching, whether it is sports, musical performances, or other programming. The ideal level of backlighting also varies. That is why the BRAVIA™ HX750/850 series of LCD televisions, launched in 2012, automatically switch to the optimal level of backlighting to suit the type of program being watched. This careful control of backlighting per program can reduce power consumption by up to 30%\*1 while ensuring maximum picture quality.

\*1 Compared to when this backlight control is manually deactivated.



Automatic backlight adjustment by HX750 series.

### International ENERGY STAR® Program Requirements

For televisions marketed in North America, Sony is actively promoting to meet the requirements of the International ENERGY STAR® program. 20 models (approx. 77%) models launched in the United States and Canada in 2012\*2 complied with the International ENERGY STAR® program requirements (Version 5.3), while 100% of models achieved the program's sleep mode power consumption requirements by a margin of 50% or more.

\*2 Models launched by September 2012

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

XBR-65HX950	XBR-55HX950	KDL-55HX850
KDL-46HX850	KDL-55HX751	KDL-55HX750
KDL-46HX750	KDL-60EX645	KDL-55EX645
KDL-55EX640	KDL-50EX645	KDL-46EX645
KDL-46EX641	KDL-46EX640	KDL-40EX645
KDL-40EX640	KDL-42EX441	KDL-42EX440
KDL-32EX340	KDL-22EX350	-

## Reducing the Power Consumption of Blu-ray Disc™ Players

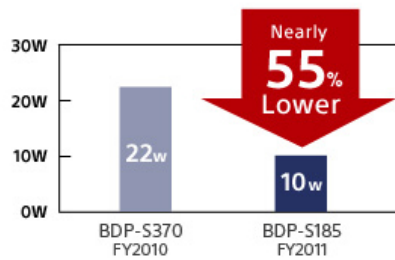
Sony is working to reduce the amount of energy consumed by the Blu-ray Disc™ players it markets around the world. The BDP-S185 Blu-ray Disc™/DVD player, launched in the European and North American markets in summer 2011, was designed from the ground up with the aim of realizing a Blu-ray Disc™/DVD capable of delivering a video, audio and environmental performance overwhelmingly superior to that of units offered by Sony's competitors. At the heart of the player is newly developed integrated circuitry. Two microcontrollers, considered standard, were consolidated into one; components were integrated on a single board; and the number of memory chips was reduced from four to two. These technologies have combined to substantially reduce overall energy requirements. The BDP-S185 consumes a mere 10 W when in operation, approximately 55% less than its immediate predecessor, the BDP-S370, for example, and is approximately 30% smaller, which contributes to the reduction of CO<sub>2</sub> emissions during transport.



BDP-S185



Power consumption during operation





## Reducing the Power Consumption of Speakers with the Use of Magnetic Fluid

Discovered by NASA, magnetic fluid is a liquid that can be attracted by a magnetic field. With the aim of achieving a significant improvement in speaker efficiency, Sony has promoted R&D with the aim of realizing a magnetic fluid suspension suitable as an alternative to conventional damper suspensions. Sony conducted extensive tests to determine the optimal magnetic strength and viscosity for passively damping the high-speed vibration of the voice coil, and in 2012, it succeeded in developing a speaker with a magnetic fluid suspension for mass production. Thanks to the absence of dampers, which generate secondary sound pressure causing sound distortion, this speaker consumes approximately 35% less power at +2dB noise level than conventional speakers,\* producing crystal-clear sound quality. Sony's magnetic fluid speakers are used in the CMT-V70B Walkman® component stereo, sold primarily in Japan, as well as in the BDV-N790W 3D Blu-ray Home Theater System for overseas markets.

\* Energy consumption of magnetic fluid speakers alone, compared to that of conventional speakers at equivalent volume



Magnetic fluid reacting to the magnetic force



Sony has succeeded in adopting magnetic fluid in mass-produced full-range speakers -- world first.

## Reducing the Power Consumption of VAIO® PCs

The VAIO® Z Series, launched in 2012, realizes both low power consumption and high performance by fully leveraging the latest technologies.

For example, VAIO® Z Series computers feature low-power dual-channel solid state drives, making them perfect for long use without plugging in, such as during long meetings or travelling. Power consumption is reduced at all times, including when booted. These computers also sense the level of ambient light and automatically adjust the brightness of the LCD display accordingly, further reducing energy consumption.



VAIO® Z Series

Sony is actively promoting to meet the requirements of the International ENERGY STAR® program for personal computers, with 100% of new models (14 series) launched in fiscal year 2011 complying with the program's Version 5.2 requirements, which came into effect in July 2009. As a result, 100% of new models released after July 2009 are Version 5.2 compliant. Of those models, 6 series (approximately 42%) exceeded the Version 5.2 requirements by a margin of 50% or more in TEC (Total Energy Consumption) value.

### List of Series that complied with the requirements of the International ENERGY STAR® program (Version 5.2) by a margin of 50% or more in TEC value

VPCC Series	VPCEG Series	VPCEH Series
VPCZ2 Series	VPCJ2 Series	VPCL2 Series

In addition, all new AC adapters sold from fiscal year 2009 have achieved Level V rating described in International Efficiency Marking Protocol for External Power Supplies.

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

#### Links to Related Items:

- ["VAIO" Environmentally conscious features \(Japanese only\)](#)
- [ECO products \(Sony Europe\)](#)

## Environment

### Development of Energy Storage Modules and Energy-Generating Devices

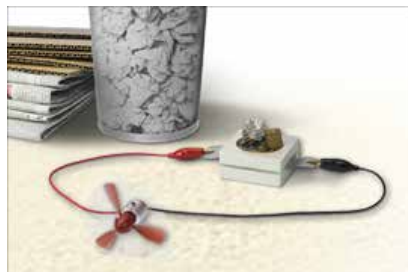
In recent years, there has been a significant change in conditions relating to electricity and energy. Increasing the efficiency of electricity usage and utilizing renewable energy sources are important issues being addressed by society. Sony has promoted the research and development of such environmental technologies as energy conservation, storage and generation since before this situation came about. In 2011, Sony launched energy storage module IJ1001M and also energy storage batteries for commercial and residential use, which can be used for load leveling during peak electricity periods.



Home Energy Server CP-S300E/S300W (commercialized in 2011)

Sony is also currently pursuing research and development of next-generation energy technology, including bio batteries, as well as "authentication outlets" and home energy management systems (HEMS), which aim to help build a new relationship between people and the electricity they use.

#### Examples of environmental technologies being developed by Sony



Paper-powered bio battery



"Authentication outlet," which makes possible the management of electricity on a per-user or per-device basis

- [Click here for more details in "Expanding from the Development of Olivine-Type Lithium-Ion Iron Phosphate Storage Batteries to Include Other Peripheral Devices"](#)

## Environment

### Systems Solutions that Help Reduce CO<sub>2</sub> Emissions

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.

#### Digital Cinema Systems

In 2000, Sony developed HDW-F900, the world's first video camera for motion picture production, and in 2006 launched sales of 4K digital cinema projection systems, thereby promoting energy- and resource-saving cinema projection. Sony Digital Cinema 4K™ received the 58th Okochi Memorial Production Prize (fiscal year 2011). This system reduces CO<sub>2</sub> emissions by an estimated 40% compared with conventional film projection systems.



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



SRX-R320 (left) and SRX-R220 (right) digital cinema projector

[Click here for more details in "Digital Cinema Systems"](#)

#### 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 Sony's video conferencing systems can greatly reduce CO<sub>2</sub> emissions associated with employee business trips and other travel. The use of these systems is expected to also provide such advantages as reduction of travel costs and effective use of time.



PCS-XG80 HD video conferencing system

[Click here for more details in "Video Conferencing Systems"](#)

## 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

In fiscal year 2008, Sony began measuring a new category of greenhouse gas emissions generated by the Sony Group, that is, CO<sub>2</sub> 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 90,000 tons in fiscal year 2011.\*

Moving forward, Sony will take measures to reduce CO<sub>2</sub> 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. of the United States issued guidelines for business travel, which encourage departments to send fewer employees on business trips and to instead use teleconferencing whenever possible.

At some sites in Japan and the United States, Sony is also promoting reductions in CO<sub>2</sub> 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.) CO<sub>2</sub> emissions are calculated by multiplying the distance traveled by the number of employees traveling and the emission intensity proposed by the GHG Protocol.

## Environment

### Collaboration with NGOs and Suppliers

- 
- Collaboration with NGOs
- 
- Grasping the Extent of Greenhouse Gas Emissions by Suppliers
-

## Environment

### Collaboration with NGOs

#### Participation in the WWF's Climate Savers Programme

In July 2006, Sony joined the Climate Savers Programme, established by the World Wide Fund for Nature (WWF), a leading international environmental NGO. Under the Climate Savers Programme, the WWF partners with leading



corporations to establish targets for reducing absolute emissions of greenhouse gases that are meaningful, rather than simply expedient for corporations. Progress toward the achievement of these goals is monitored by the WWF, as well as by an independent body. Participation in the program has enabled Sony to set more ambitious targets, while monitoring by the WWF and an independent body has enhanced the transparency of its various environmental initiatives.

#### Sony Sets Tougher Reduction Targets

Sony met its greenhouse gas reduction targets for fiscal year 2010, which were set in fiscal year 2006, when it joined the Climate Savers Programme. Having launched its own plan for reducing greenhouse gas emissions by fiscal year 2015, in November 2009 Sony announced new targets set in collaboration with the WWF. The new targets have earned praise for being particularly ambitious. Sony is working to achieve these targets by cutting greenhouse gas emissions at all Sony Group sites and reducing power consumption by its products.

<p><b>Sites</b></p>	<p>Target 30% reduction in greenhouse gas emissions from Sony Group sites in CO<sub>2</sub> emissions by the end of the fiscal year ending March 31, 2016, compared to the level of the fiscal year ended March 31, 2001</p>
<p><b>Products and Services</b></p>	<p>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</p>

• [Click here for more details in Stakeholder Engagement and Partnership.](#)

## Environment

### Grasping the Extent of Greenhouse Gas Emissions by Suppliers

Recent escalation of climate change issues has prompted corporations to broaden the scope of efforts to grasp the greenhouse gas emissions not just of their own operations but also those from their supply chain. Starting in fiscal year 2009, Sony has conducted trials to determine emissions from its main OEM/ODM\* suppliers. The amount of greenhouse gas emissions from Sony's main OEM/ODM suppliers in fiscal year 2010 (grasped in fiscal year 2011) is estimated to be approximately 1.23 million tons.

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

\* OEM suppliers are companies that manufacture products on behalf of Sony. ODM suppliers are companies that design and manufacture products on behalf of Sony.



## Environment

### Resource Conservation: Table of contents

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

Policy on Resource Conservation

Resource Conservation at Sites

Conservation of Resources Used in  
Products and Services

Measures to Conserve Resources  
Used in Paper

## Environment

### Policy on Resource Conservation

One of the long-term objectives of Sony's Road to Zero global environmental plan is to maximize the use of recycled plastics and other recyclable materials\*, thereby helping Sony to eliminate the use of petroleum, copper and other limited natural resources. As the first step toward achieving this target, Sony has set the following targets for conserving resources as part of its Green Management 2015 mid-term environmental targets. To these ends, Sony is striving to develop products that are smaller and lighter and reduce the use of virgin plastics. At its sites, Sony is working to minimize waste generated and further the use of recycled materials. Sony is also actively advancing the recycling of resources by focusing on recycling-conscious design and the development of recycling technologies.

\* Reused or recycled materials and vegetable-based materials

#### Mid-Term Resource Conservation Targets

<b>Research and Development</b>	Develop and refine 3R technologies in product lifecycle to achieve reductions in the use of exhaustible resources and water, and to reduce waste.
<b>Product Planning and Design</b>	<ul style="list-style-type: none"> <li>● Reduce utilization ratio of virgin oil-based plastics in products: -5% (compared with FY2008)</li> <li>● Reduce mass of products: -10% (compared with FY2008)</li> </ul>
<b>Procurement</b>	Conduct procurement in ways that enable Sony to achieve the "Product Planning and Design" and "logistics" targets.
<b>Operations</b>	<ul style="list-style-type: none"> <li>● Reduce waste generation: -50% (compared with FY00)</li> <li>● Improve waste recycling rate group-wide: 99% or more</li> <li>● Reduce water consumption: -30% (compared with FY00)</li> </ul>
<b>Logistics</b>	Reduce incoming parts packaging waste: -16% (compared with FY08)
<b>Take Back and Recycling</b>	Based on the idea of Extended Producer Responsibility (EPR), Sony strives to achieve an environmentally conscious recycling system and effective operation for take back and recycling of end-of-life products. In addition, Sony continues to increase the use of recycled resources and to design products that are easy to recycle. This is based on the idea of Individual Producer Responsibility (IPR) to help in promoting the establishment of appropriate laws and building of infrastructure to recycle Sony products.

## Environment

### Resource Conservation at Sites

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◆ Waste at Sites

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◆ Waste Reduction

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◆ Water Consumption at Sites

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◆ Reduction of Water at Sites

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## Environment

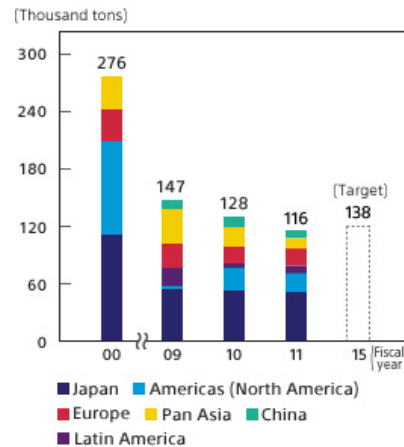
### Waste at Sites

#### Achieving an absolute reduction in waste at sites of 58% from the fiscal year 2000 level

Sony is implementing a variety of measures to reduce waste and use materials more effectively in line with its targets to achieve an absolute reduction in waste at Sony sites of 50% or more from the fiscal year 2000 level and achieve a recycle rate of 99% or higher for global sites by fiscal year 2015.

In fiscal year 2011, waste at Sony sites totaled approximately 116,000 tons. This represents approximately 58% decline from the fiscal year 2000 level and is approximately 10% lower than in fiscal year 2010, and was achieved despite the impact of the Great East Japan Earthquake and other natural disasters. This decline was largely attributable to a reuse 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.

**Waste at Sites**



#### Recycling rate for Sony sites

In fiscal year 2011, the recycling rate for all Sony Group sites was 90.0%. (Effective from fiscal year 2011, the scope of the calculation for the recycling rate has been expanded to include all sites.) The recycling of industrial waste remained on an upswing, while that for everyday waste was essentially level with fiscal year 2010. Going forward, Sony will provide meticulous guidance to its sites in an effort to boost its overall recycling rate.

## Management of industrial waste

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.

## Environment

### Waste Reduction

The Sony Group is implementing a wide range of waste reduction measures at its sites worldwide. Examples of such measures are described below.

#### Japan : Promoting the Recycling of Metals from Sites

Sony recycles precious metals contained in printed circuit boards of discarded mobile phones and digital cameras and the like from its sites in Japan as raw materials for use in Sony products. In fiscal year 2011, 36 kg of gold, 34 kg of silver and 10 tons of copper were extracted from 23 of its sites in Japan, contributing to a reduction in the use of virgin materials. Looking ahead, Sony will actively strive to communicate the benefits of such efforts to sites across the global Sony Group to increase the number of sites promoting similar initiatives, beginning with sites in Japan, and to expand the recycling of metals from sites.

#### Progress of Efforts to Promote the Recycling of Metals from Sites

	Fiscal year 2010	Fiscal year 2011	Percentage change
Number of participating sites (Japan)	12	23	<b>192%</b>
Weight of items discarded (printed circuit boards, etc.)	34 tons	58 tons	<b>171%</b>
Gold extracted	28kg	36kg	<b>129%</b>
Silver extracted	7kg	34kg	<b>486%</b>
Copper extracted	5 tons	10 tons	<b>200%</b>

## Japan : Recycling Waste Cathode Materials

Sony Energy Devices Corporation, which manufactures lithium-ion batteries, among other products, is promoting a variety of ambitious recycling initiatives. Previously, the company sold waste cathode materials from cathode processes and battery assembly lines to recycling companies for the extraction of cobalt, which was used in the manufacture of tools and other items but not recycled for use as battery materials. However, in an effort spearheaded by its procurement and administrative departments, the company developed a scheme whereby it has partnered with a recycling firm that uses calcination to process waste cobalt and other metals from cathode and production processes into a powder form, thereby facilitating reuse as cathode materials. In fiscal year 2011, approximately 60 tons of waste materials were thus recycled for use as cathode materials.

## United States : Furthering Efforts to Recycle DVD Packaging

In response to a proposal made by a supplier of optical disc cases, Sony Pictures Entertainment Inc. (SPE) and Sony DADC U.S. Inc. are promoting a closed-loop recycling program for DVD and Blu-ray Disc™ cases. Under this program, the aforementioned supplier accepts all of Sony DADC's waste polypropylene DVD and Blu-ray Disc™ cases, which it stores-taking care to ensure that they remain separate from other companies' DVD cases-and later grinds and recycles them into a material that is combined with virgin polypropylene for use in the manufacture of new DVD cases. These cases are then repurchased by Sony DADC and used to package SPE's DVDs. This program was launched in February 2012 and as of June 2012, Sony has recycled over 6 million DVD cases (more than 293,000 kg).

## Environment

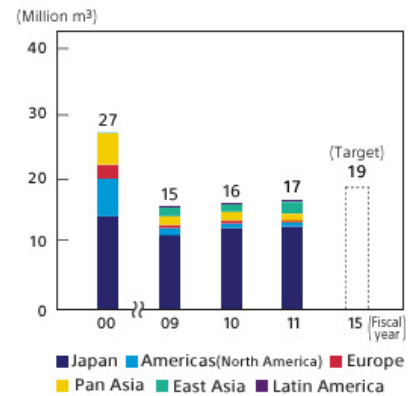
### Water Consumption at Sites

Sony is taking steps to reduce the consumption of water at its sites in line with its target of achieving an absolute reduction of 30%, compared with the fiscal year 2000 level, by fiscal year 2015.

In fiscal year 2011, Sony sites used approximately 16.7 million m<sup>3</sup> of water, up approximately 6% from fiscal year 2010, but a decrease of approximately 38% compared with the fiscal year 2000 level.

Factors behind the decrease compared with the fiscal year 2000 level include efforts to promote recycling wastewater in various regions. The increase from fiscal year 2010 was primarily attributable to the acquisition of semiconductor fabrication sites in Japan and LCD production sites in China. Another factor contributing to the increase in water consumption at sites was the inclusion of information on water use at a number of non-manufacturing sites. This was the result of Sony's efforts in fiscal year 2011 to include data on water for non-manufacturing use, in its drive to reduce water consumption at its sites.

**Water Consumption at Sites**





## Environment

### Reduction of Water at Sites

A significant amount of water is required in the processes used to manufacture many digital products. At its production sites in Japan and overseas, Sony promotes a variety of measures to conserve local water resources, including recycling wastewater and reducing the volume of water used. Sony Semiconductor Corporation's Kumamoto Technology Center (Kumamoto TEC) provides a good example of these measures at work.

#### Kumamoto TEC: Reducing use of groundwater through wastewater recycling

Sony Semiconductor Corporation's Kumamoto Technology Center (Kumamoto TEC) uses significant quantities of groundwater in the fabrication of semiconductors, in cleaning and other processes.

Accordingly, Kumamoto TEC has taken steps to reduce its consumption of water by recovering concentrated brine. With a reverse osmosis filtration system, which filters brine and separates out pure water, Kumamoto TEC is able to reuse the retrieved pure water. While recognizing that any further reduction of groundwater consumption would require an increase in water recovery, Kumamoto

TEC also acknowledged the difficulty of doing so given that Kumamoto is volcanic, meaning its groundwater has a particularly high silica content -- three to four times the national average -- and that an increase in water recovery would increase the risk of silica adhering to the membrane of its reverse osmosis filtration system and causing the system to stop operating. To resolve this situation, Kumamoto TEC collaborated with a water treatment firm to develop a dispersing agent, which has been introduced into the system since then, enabling it to achieve a substantial increase in water recovery and to reduce its annual consumption of groundwater by 10,400 m<sup>3</sup>.



Production equipment that uses pure water (Kumamoto TEC)

## Environment

### Conservation of Resources Used in Products and Services

- ◆ Using Resources in Products
- ◆ Reducing the Use of Resources in Products
- ◆ Using Recycled Plastics in Products
- ◆ Developing and Utilizing Vegetable-based Plastics
- ◆ Promoting Environmentally Conscious Packaging
- ◆ Reduction of Packaging Materials in Logistics
- ◆ Resource Conservation of Disc Cases

## Environment

### Using Resources in Products

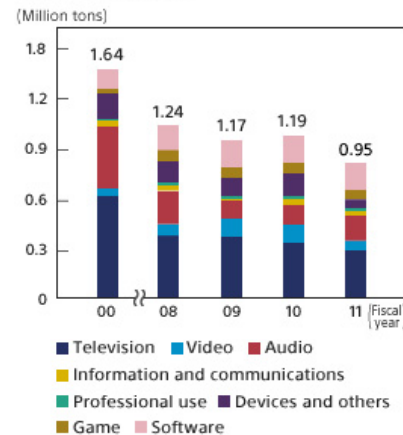
#### Steady Reduction in the Volume of Resources Used in Products

Having set targets for reducing the percentage of virgin plastics used in products and the mass of products of 5% and 10%, respectively, from the fiscal year 2008 level by fiscal year 2015, Sony is stepping up efforts to use reused/recycled materials in products and to reduce product weight.

For products sold in fiscal year 2011, Sony used approximately 945,000 tons of resources, down around 21% from fiscal year 2010.\*1 This result reflected a decline in sales volume for devices and others, as well as lower product weights for television and video products. Sony's virgin plastic utilization rate\*2 in fiscal year 2011 was 2.4% lower

than in fiscal year 2008, owing to the progress of efforts to expand the use of recycled plastics, particularly in televisions and cameras, as well as to the steadily expanding use of recycled plastics in other product categories. The average mass of product in fiscal year 2011 declined 23%. This was attributable largely to efforts to shrink and reduce the weight of products and packaging materials used, particularly for television and video products.

**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 materials. The weight of total products shipped is substituted for this value.

\*2 Virgin plastic utilization rate: Percentage of plastics used accounted for by petrochemical-derived plastics

## Environment

### Reducing the Use of Resources in Products

With the aim of reducing the use of resources in its products, Sony is promoting the development of more compact products and expanding the use of recycled materials. One example of these efforts brought to fruition is Sony's new noise-canceling headphones.

### Development of Noise-Canceling Headphones

Conventional noise-canceling headphones require a cord-mounted control box to house an armature driver, processor and microphone. In developing its XBA-NC85D noise-canceling headphones, Sony made each of the devices that are normally housed in a control box smaller and more efficient, making it possible to move these parts into the earbud housing, thus enabling Sony to realize the world's first\* "boxless" noise-canceling headphones. By adding an internal battery, Sony also eliminated the need for replaceable dry batteries, another move aimed at reducing battery energy consumption. A new energy-efficient processor delivers approximately 20 hours of battery life on a single full charge.

\* First consumer noise-canceling headphones as of September 2011, according to Sony research



## Environment

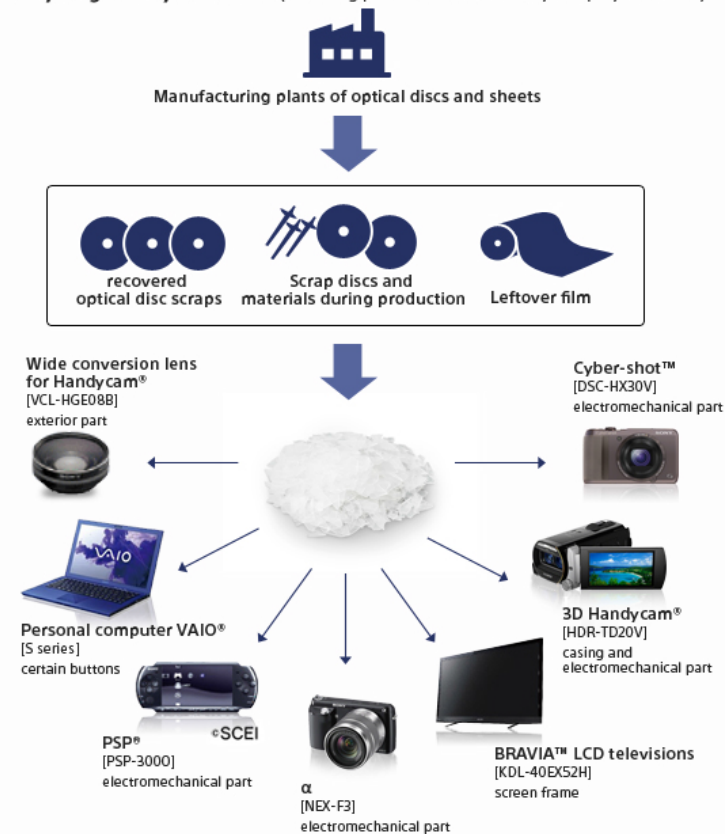
### Using Recycled Plastics in Products

#### Using Over 17,000 Tons of Recycled Plastics Annually

With the aim of eliminating the use of virgin materials such as oil and copper that have been identified as key resources, Sony is actively expanding the use of recycled plastics in products. The Sony Group currently uses more than 17,000 tons of recycled plastics annually in various products\*, including televisions, recording media, audio products, PCs and digital video cameras. Approximately 50% of the total volume comes from the production processes at manufacturing sites, while approximately 50% is from end-of-life products, containers and other items. To further increase the use of such plastics, Sony is advancing the development of technologies and the adoption of recycled plastics in Sony products. Sony is also implementing measures to be in line with its Green Management 2015 mid-term environmental targets, one of which is to reduce the utilization ratio of virgin oil-based plastics in products by 5% from the fiscal year 2008 level-which is the same as increasing the utilization ratio of recycled plastics in products by 5% from the fiscal year 2008 level. (Note that in order to reduce the volume of virgin plastics used, there is a possibility that materials that are not recycled plastics-such as metals-may be used.)

\* Gross value including virgin plastics and additives that are mixed with recycled materials

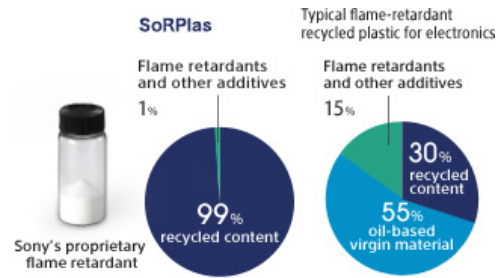
#### Recycling of Polycarbonate (Including plastics mixed with recycled polycarbonate)



Click here for more details in "Technologies for Recycling of Waste Optical Discs"

## Development and Use of SoRPlas

In February 2011, Sony developed SoRPlas\*1 (Sony Recycled Plastic), which contains more than 99% recycled materials, the highest recycled materials rate of any recycled plastic in the world.\*2 SoRPlas is made with plastic waste generated both within and outside Sony sites. While typical flame retardant recycled polycarbonate resin has a recycled material content of less than 60%, Sony has developed a proprietary flame retardant that allows it to reduce additives to a maximum of 1% of the total content of SoRPlas, thereby achieving a 99% recycled content rate. Moreover, SoRPlas is one of the most flame retardant and durable polycarbonate resin products-virgin or recycled-currently available. The very first application of SoRPlas was for the bezel (screen frame) of 2011-model BRAVIA™ LCD televisions (KDL-40EX52H, KDL-32EX42H/B, KDL-22EX42H/B). In fiscal year 2012, Sony is expanding its use in digital still cameras and other mobile devices as it steps up efforts to expand the use of this innovative material in its products.



\*1 SoRPlas is a registered trademark in Japan of Sony Corporation.

\*2 As of February 8, 2011, according to research conducted by Sony. Conventionally, recycled plastics with flame retardant properties used in electronics devices have a recycled materials rate of 60% or less.

### Sony products employing SoRPlas



SoRPlas is used in the bezel (screen frame) of BRAVIA™ LCD televisions (KDL-40EX52H, KDL-32EX42H/B, KDL-22EX42H/B).



For this application, durability of SoRPlas is further increased to suit use for mobile devices (HDR-TD20V 3D Handycam® camcorder).



The DSC-HX30V Cyber-shot™ digital still camera, an improved version of SoRPlas used in the HDR-TD20V

## Introducing Post-Consumer Recycled Plastics

Sony actively introduces post-consumer recycled plastics\*1 into its products. Of all plastics used in Sony products, the post-consumer recycled plastic accounts for approximately 2.7%\*2 in fiscal year 2011. For example, the KDL-32BX350 BRAVIA™ LCD television utilizes styrene foam and beverage containers collected from the market for parts such as its rear cover. The ratio of post-consumer recycled plastics used for this product is approximately 10%\*3.

- \*1 Post-consumer recycled plastics are plastics recycled from recovered plastic products once shipped to and used at the market.
- \*2 Net value excluding virgin plastics and additives that are mixed with recycled materials. For new products in fiscal year 2011.
- \*3 Ratio of post-consumer recycled plastics (net weight) in the total plastics used in the product excluding packaging and accessories.

## Using Plastics Recycled Internally

For the past decade, Sony has promoted environmentally conscious product designs that are conducive to recycling. With the aim of using recycled flame-retardant plastics from Sony televisions internally, Sony limited the use of flame-retardants or switched to alternatives, and promoted consistency in the materials used in its televisions since its 1996 models. This has enabled it to eliminate contaminants from scrap recovered from televisions, making it possible to dismantle products and recycle plastic components. Sony has also developed a technology for applying a proprietary additive to styrene foam waste from the parts packaging to produce highly durable, flame-resistant recycled polystyrene materials.

## Environment

### Developing and Utilizing Vegetable-based Plastics

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

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 more details in Dream Goal 2010.](#)



Body cap of the α 900  
DSLR camera



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.



Shohoku College student ID card (FeliCa-based technology contactless IC 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.



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)

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 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.

- \*1 The use of vegetable-based plastics ensures much lower CO<sub>2</sub> 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 CO<sub>2</sub> 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 more details in Sony and the Environment > Vegetable-based Plastics](#)

## Environment

### Promoting Environmentally Conscious Packaging

Sony is promoting the development of its own original packaging with the aim of making packaging that must be disposed of by customers more conducive to recycling. Efforts include expanding the use of recycled plastic, paper and other materials. At the same time, Sony is seeking to reduce the volume of resources used in packaging by shrinking packaging for medium-sized and large products. Such efforts led to the development of new packaging for VAIO® notebook computers and for Walkman® accessories shown below.

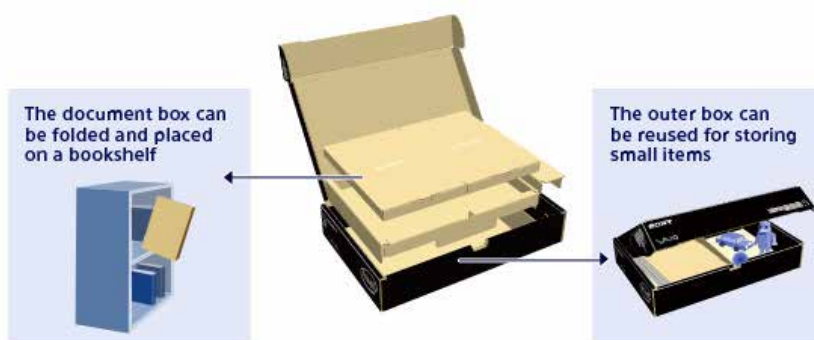
In fiscal year 2011, Sony used a total of 126,000 tons of packaging materials worldwide. This total includes all packaging materials used for products worldwide at time of shipment.

- [Click here for more details in "Reducing the Environmental Impact of Logistics through Improvement of Package Design"](#)

### Sustainable packaging for VAIO® S series PCs

By designing the packaging for the VAIO® S series so that each component serves two functions, Sony succeeded in trimming the number of packaging components used and shrinking the package size, thereby reducing the weight of the total package by approximately 28 g. The document box, which holds the product manual and other documentation, is designed so that it can be placed beautifully on a bookshelf, while the outer box, which has a sectioned-off portion for accessories, can be reused as a simple storage box for small items. These innovations have enabled Sony to substantially reduce waste from the VAIO® S series' packaging, with the cushions being the only components actually requiring disposal.

#### Sustainable packaging for VAIO® S series PCs



## Packaging for Walkman® accessories made with recycled plastic

In fiscal year 2010, Sony began using recycled plastics in packaging for accessories for Walkman® digital music players. In fiscal year 2011, Sony used approximately 34.5 tons of recycled plastics for this purpose, accounting for 72.0% of packaging materials for Walkman® accessories, up from 40.4% in fiscal year 2010. In fiscal year 2010, Sony's adoption of recycled PET products for use in packaging for Walkman® accessories earned Sony an award in the electronics packaging category of a major packaging contest in Japan.



## Environment

### Reduction of Packaging Materials in Logistics

Sony strives to reduce the amount of resources such as packaging materials used in logistics through improvement of packaging technology.

- [Click here for more details in "Reducing the Environmental Impact of Logistics through Improvement of Package Design"](#)

## Environment

### Resource Conservation of Disc Cases

Sony Group companies in the entertainment business sell a significant number of disc-based products, including music and movies. Sony is implementing measures to reduce the volume of resources used in the disc cases for such products.

#### North America : Adopting Lightweight Disc Cases

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 and minimizing the impact on the environment.



New lightweight DVD cases

As part of this effort, the companies have adopted lightweight cases for DVD and Blu-ray Disc™ products. A new lightweight two-disc DVD case uses 32% less plastic than a standard-weight two-disc DVD case. For a single-disc case, the difference is 20%. Both two-disc and single-disc lightweight Blu-ray Disc™ cases use 20% less plastic than their standard-weight counterparts. The introduction of a multidisc stacking hub and other casing innovations has facilitated reductions in the consumption of polypropylene, board and paper.

Additionally, SPHE and Sony DADC jointly completed a global supply chain carbon footprint study for both the single-disc DVD and the single-disc Blu-ray Disc™. The study utilized the PAS 2050 measurement protocol. The results of the study are being used to to guide carbon emission reduction efforts and improve the efficiency of shipping methods.

#### Recycled paper CD cases for music

Since 2008, Sony Music Entertainment Inc. (SME) has issued new and catalog releases in environmentally conscious CD cases, many of which use heavy recycled paper. In the United States, titles continue to be released in environmentally conscious paperboard-based cases, including (but not limited to) disc box slider packs.

## Europe : Using 100% Recycled Cardboard

In fiscal year 2008, Sony DADC in Austria developed its proprietary Bend-it Green disc case, which is made of 100% recycled cardboard or FSC/PEFC-certified\* material and uses a variety of environmentally sustainable inks, glues and varnishes. 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

As it reduces the environmental impact of CD 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 greenhouse 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 casing, 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.

\* The Forestry Stewardship Council (FSC) and the Programme for the Endorsement of Forest Certification (PEFC) are international forest certification organizations. The logo of these organizations on a paper product certifies that all wood used in production was harvested from sustainably managed forests.

## Japan : Environmentally Conscious DVD Cases

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 Secolo™ protective cases, an innovative cardboard-based case 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, but also to reduce volume by about one-fifth and total weight by about 60%, yielding a commensurate reduction in CO<sub>2</sub> emissions during transportation.

In 2011, SPEJ introduced even lighter disc cases. Developed in-house, the new case, named "One Coin," is only half the weight of Secolo™ case. SPEJ shipped more than 100,000 discs in One Coin cases in the first six months after the new case was introduced. In fiscal year 2012, CO<sub>2</sub> emissions attributed to Secolo™ and One Coin cases were 53 tons less than would have been the case with traditional plastic disc cases. (Estimate made by DEG Japan.)

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 case 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\*, achieved through the use of green power.

\* 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.



Traditional plastic disc case (left) and Secolo™ cardboard-based disc case (right) One Coin disc case, approximately half the weight of Secolo™ case

## Environment

### Measures to Conserve Resources Used in Paper

Sony recognizes that paper resources are limited and not only makes it a point to procure environmentally conscious paper, such as recycled paper and paper made from certified forest products, but also strives to reduce the amount of office paper used at sites and limit the number of pages in its product manuals.

### Sony Group Paper / Printed Material Purchasing Policy

Sony formulated a paper and printed material purchasing policy covering the entire Sony Group to promote the environmentally conscious use of paper within the organization in order to ensure the efficient use of resources, including the conservation of forests and preservation of biodiversity. This policy is being implemented gradually worldwide.



<p><b>Objectives</b></p>	<p>Sony recognizes that paper resources are limited and therefore promotes the efficient use of paper resources, the conservation of forests and the preservation of biodiversity in order to reduce our environmental footprint.</p>
<p><b>Scope</b></p>	<p>Paper and printed material used by Sony worldwide, covering office paper, packaging materials for Sony products, instruction manuals, catalogues, and printed matter for both internal and external use.</p>
<p><b>Basic Policy</b></p>	<p>Sony shall purchase paper and printed material based on the following principles:</p> <ol style="list-style-type: none"> <li>1. Wood as raw material for paper shall be produced in compliance with the regulatory requirements of the country where the wood is logged.</li> <li>2. Priority for purchase shall be given to either paper made of recycled pulp or paper produced from wood under environmentally appropriate forest management, as certified by a third party organization. In cases in which purchasing the above is difficult, environmentally conscious paper shall be selected from the paper available in each region.</li> <li>3. The bleaching of paper shall be chlorine free.</li> <li>4. Printed material shall be environmentally conscious, e.g., using VOC-free ink (*1).</li> <li>5. Paper shall not be purchased if it is produced by companies that are accused of environmental destruction (*2).</li> </ol>
<p><b>Implementation</b></p>	<ul style="list-style-type: none"> <li>- Sony will implement the above Basic Policy through a step-by-step approach, taking into account regional differences on availabilities and markets of paper and printed material.</li> <li>- Sony will cooperate with stakeholders, e.g., with regard to information exchange, to achieve better paper and printed material purchasing.</li> <li>- Each Sony Group company or region is allowed to establish more stringent implementation rules.</li> </ul>

\*1 VOC stands for Volatile Organic Compounds.

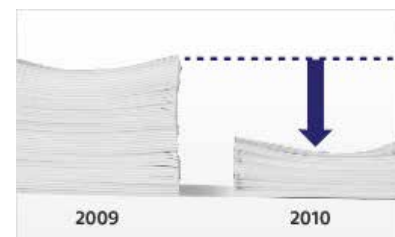
\*2 "Policy for the Association of Organizations with FSC" by the Forest Stewardship Council (FSC) is referred.

## Reducing the Use of Paper at Sony Sites and Offices

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 2011 amounted to the equivalent of approximately 280 million sheets of A4-sized paper and 11% below the fiscal year 2010 level, with around 120 million of these sheets being used in Japan, a reduction of 14% from fiscal year 2010.

## Product Manual Improvements

The number of pages in user manuals and operating guides has increased as products become more multi-functional. Reducing page counts will contribute to conservation of paper resources and also reduce CO<sub>2</sub> emissions from printing and transportation operations. Therefore, Sony is promoting activities to cut page counts while maintaining content that is easy to understand. For example, LCD TV BRAVIA™ that was launched in Japan in 2010, features a brief instructive electronic manual—i-Manual—that explains various features of the television. The i-Manual enables users to figure out how to use product features right away and has allowed Sony to condense the printed manual for the domestic market—more than 300 pages at its largest size—to about 48 pages, while manuals for overseas markets were trimmed to about 20 pages per language.



On the left, the volume of paper used in the instruction manual for the BRAVIA™ LCD TV sold in fiscal year 2009, and on the right, the amount of paper used in the instruction manual for the model with the on-screen i-Manual sold in fiscal year 2010. (Worldwide language coverage: 44)

## Environment

### Management of Chemical Substances: Table of contents

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

Management of Chemical Substances at Sites

Management of Chemical Substances in Products

## Environment

### Policy on Management of Chemical Substances

In conformance with its Green Management 2015 mid-term environmental 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.

#### Chemical substances used in products

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\*, 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.

\* [Click here for more details on the United States Environmental Protection Agency's Design for the Environment partnership program](#)

**Targets for the Management of Chemical Substances in Products**

<b>Research and Development</b>	Develop technologies to reduce the use of substances of high concern and alternative materials.
<b>Product Planning and Design</b>	Eliminate environment-related substances to be controlled of very high concern and BFR/PVC within specified use.
<b>Procurement</b>	Conduct procurement in ways that enable Sony to achieve the "Product Planning and Design" targets.

\* "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.

**Chemical substances used at sites**

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."

**Targets for the Management of Chemical Substances at Sites**

<b>Operations</b>	<p>Take actions for each class below.</p> <p><b>Class 1:</b> Prohibit use.</p> <p><b>Class 2:</b> Eliminate use by a specified date.</p> <p><b>Class 3:</b> Reduce the amounts released and transferred.</p> <p>* Specified substances: the amounts released and transferred: -14% (compared with FY08)</p> <p>* VOCs: emission to air: -50% (compared with FY00)</p> <p><b>Class 4:</b> Comply with the relevant laws and regulations and use under appropriate control.</p>
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## Environment

### Management of Chemical Substances at Sites

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- Chemical Substances Used by Sites

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  - Environmental Risk Management at Sony Sites

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  - Response to Soil and Groundwater Contamination

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## Environment

### Chemical Substances Used by Sites

The Sony Group has developed a Groupwide 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.

#### Reinforcing Standards for Managing Chemical Substances

In line with Green Management 2015, 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 released into the air, water and soil or transferred as waste.

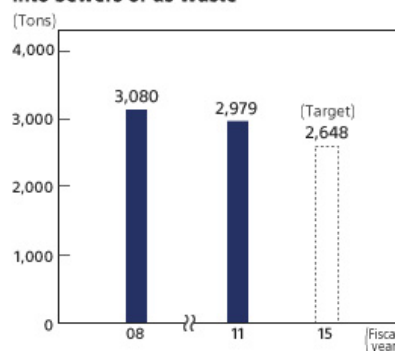
In countries where no legal reporting requirements exist for chemical management, Sony sites apply standards based on Japan's Pollutant Release and Transfer Register (PRTR) as internal rules.

Class 1 chemical substances are those whose use is prohibited. Among Class 1 substances, in fiscal year 2011 Sony used 369 kilograms of mercury as an additive in button batteries and 6.65 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.

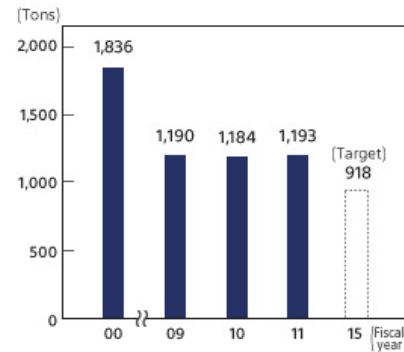
Class 3 chemical substances are those for which emissions are to be lowered. Having set targets for reducing the amounts released into water and transferred as waste or into sewers by 14% from the fiscal year 2008 level and reducing the amounts of volatile organic compounds (VOCs) released into the air by 50% from the fiscal year 2000 level, Sony is taking active steps to cut back its use of class 3 chemical substances. In fiscal year 2011, Sony released a total of approximately 2,979 tons of such substances into water and transferred as waste or into sewers, down approximately 3% from the fiscal year 2008 level. After analyzing its performance in fiscal year 2011, Sony will redouble its efforts, focusing particularly on those transferred as waste. Sony's release of VOCs into the air in fiscal year 2011 amounted to approximately 1,193 tons, down 35% lower than in fiscal year 2000 and up 1% from fiscal year 2010.

**Amounts of Chemical Substances Released into Water, Transferred into Sewers or as Waste**



VOCs include solvents used in semiconductor production. While semiconductor production increases in response to demand, there are some solvents that are difficult to substitute despite industry-wide efforts to reduce the use of such substances. Moreover, released 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 VOC treatment systems.

**Release of VOCs into the Air**



## Reducing Chemical Substance use at Sony Sites

Sony Semiconductor Corporation is taking steps to reduce the handling amount of volatile organic compounds (VOCs), which are essential to semiconductor fabrication. The company began by implementing a study to clarify the manner in which VOCs are used in its semiconductor fabrication processes, after which it formulated measures tailored to different processes. These included reducing the frequency with which the gas supply piping of manufacturing equipment is cleaned, shortening cleaning times, cutting back the amount of solvent used and reducing the frequency with which the solvent is discharged—a practice aimed at maintaining solvent quality. The company also eliminated certain processes. Such efforts enabled the company to lower its annual release of VOCs into the air by approximately 30 tons, as well as to reduce the volume of VOCs disposed of as industrial waste, transferred into sewers and released into rivers. Recognizing that there is a limit to the degree to which it can reduce its environmental impact simply by reducing the handling amount of VOCs, Sony Semiconductor is currently considering the installation of VOC treatment systems.

## Ozone-Depleting Substances

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:

- [Environmental Data > Emissions of Air and Water Pollutants \(Worldwide\)](#)
- [Environmental Data > PRTR Data for Japan \(Japanese only\)](#)



## Environment

### Environmental Risk Management at Sony Sites

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. No such accidents were reported at any of Sony's sites in fiscal year 2011.

In February 2012, a case occurred at Sony DADC Japan Inc.'s Ibaraki site wherein turbid washwater from the waterproofing sheet on a roof flowed into the regulating reservoir of the industrial estate on which the site is situated. An investigation revealed that the turbidity of the water was due to a white powder that had formed as a result of the degradation of the waterproofing sheet's surface and that the approximately 300 tons of water recovered from the regulating reservoir by the Ibaraki site in the aftermath of the case could be safely discharged as wastewater. Sony plans to use this case as an example of advance preparation for such risks after reconfirming the installation of emergency cutoff valves at mouths of all wastewater discharge pipes within the site. Sony also provided guidance for evaluating the environmental impact of subsequent maintenance and repair work on the site building in question and shared information on measures taken to prevent recurrence following past cases. Information was also shared among other Sony Group sites with the aim of preventing similar cases elsewhere.

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 are no incidents of chemical substances being discharged or leaking from any of the damaged facilities reported at this point in time. In October 2011, certain Group sites in Thailand were affected by the severe flooding in that country. Here, too, there are no incidents of chemical substances being discharged or leaking from damaged facilities reported at this point in time.

## Environment

### Response to Soil and Groundwater Contamination

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 Standard 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 Site—where incidents of soil and groundwater contamination were previously confirmed. In July 2011, data revealed that the levels of fluorine, boron, trichloroethylene and cis-1,2-dichloroethylene in the groundwater at Sony Haneda were below levels permitted by groundwater standards.

**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, which has continued since July 2005, has revealed concentrations of cis-1,2-dichloroethylene of 0.032 mg/l (maximum limit: 0.04 mg/l) and boron of 0.9 mg/l (maximum limit: 1 mg/l), which are below the underground water standard.
Sony EMCS Corporation Inazawa Site (Japan)	June 2001(Result of voluntary assessment)	Fluorine	Leak from crack in drainage pipe	Drainage pipes equipped with sensors to detect leaks have been installed. Decontamination and monitoring continue. As of fiscal year 2010, the degree of contamination had been reduced to 1.2 mg/l, from a peak of 58 mg/l. This level has remained essentially steady, with an analysis in fiscal year 2011 indicating a contamination level of 1.7 mg/l.

## Environment

### Management of Chemical Substances in Products

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- ◆ Management of Chemical Substances in Products

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  - ◆ Three Core Principles for Managing Chemical Substances in Products

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  - ◆ Reduction and Replacement of Chemical Substances of Very High Concern

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  - ◆ Management of Chemical Substances in Packaging Materials

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## Environment

### Management of Chemical Substances in Products

#### Sony's Proprietary Global Standards for the Management of Chemical Substances

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 the management of chemical substances, titled "Management Regulations for Environment-related Substances to be Controlled which are Included in Parts and Materials" (SS-00259).\*3 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.

\*1 Directive on the restriction of the use of certain hazardous substances in electric and electronic products (RoHS) (Enforced in 2006 and revised in 2011)

\*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 (eleventh edition published in March 2012). These standards classify chemical substances as those that must be banned immediately, those for which a period for phaseout 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 \(SS-00259\)](#))

\*4 Management Methods on the Pollution Control of Electronic Information Products is 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."

## Complying with Regulations Governing Chemical Substances in Products

Sony has set up necessary procedures to ensure compliance with the EU's REACH\*1 regulation requirements and revised RoHS Directive. In response to REACH's requirements on communicating information and registration and the CE marking under RoHS Directive, Sony utilizes the common declarable substance list developed by the global JIG initiative (Joint Industry Guide)\*2 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.\*3

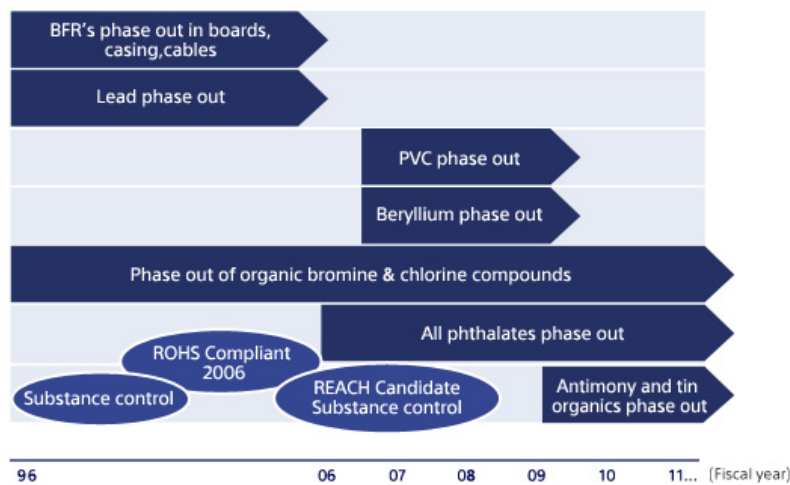
- \*1 REACH (Registration, Evaluation, Authorisation and Restriction of Chemicals): New regulations for managing chemical substances introduced in the EU effective June 1, 2008, whereby companies that meet certain conditions are required to, among others, register, apply for authorization, notify, restrict and communicate information on certain chemical substances. Information on REACH can also be found at <http://www.sony.eu/eco> (EU national language versions).
- \*2 CEA (Consumer Electronics Association, US), DIGITALEUROPE (Europe) and JGPSSI (Japanese Green Procurement Survey Standardization Initiative, Japan) issued the "Joint Industry Guide -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.
- \*3 Electronic data format defined by JGPSSI (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.

## Managing Chemical Substances in Mobile Phones

Sony is paying particular attention to reinforcing its efforts to manage chemical substances used in its mobile phones, which are sold around the world. One of the first in the industry to address the challenge of abolishing brominated flame retardants (BFRs) from its mobile phones (circuit boards, cables and casings), Sony Mobile Communications AB (abbreviated as SOMC hereafter; formerly Sony Ericsson Mobile Communications AB)\* began offering BFR-free products in 2002. Consistent efforts since then to reduce its use of chemical substances have enabled SOMC to completely eliminate BFRs and polyvinyl chloride (PVC) from all of its products. SOMC has also succeeded in eliminating phthalic esters, including Di(2-ethylhexyl) phthalate (DEHP), Dibutyl phthalate (DBP), Benzyl butyl phthalate (BBP), Di-isodecyl phthalate (DIDP), Di-n-octyl phthalate (DNOP) and Di-isononyl phthalate (DINP) from mobile phones and accessories in the Xperia™ series. Going forward, SOMC will continue phasing out organic bromine and chlorine compounds from its mobile phones and accessories.

\* Information on Sony Mobile Communications AB is based on Sony Ericsson's 2011 sustainability report (reporting period: January 1-December 31, 2011)

### Phase out of critical substances



## Environment

### Three Core Principles for Managing Chemical Substances in Products

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 (eleventh edition published in March 2012). 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 \(SS-00259\)](#))

### Upstream management

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 2012, the Green Book contained approximately 22,000 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.



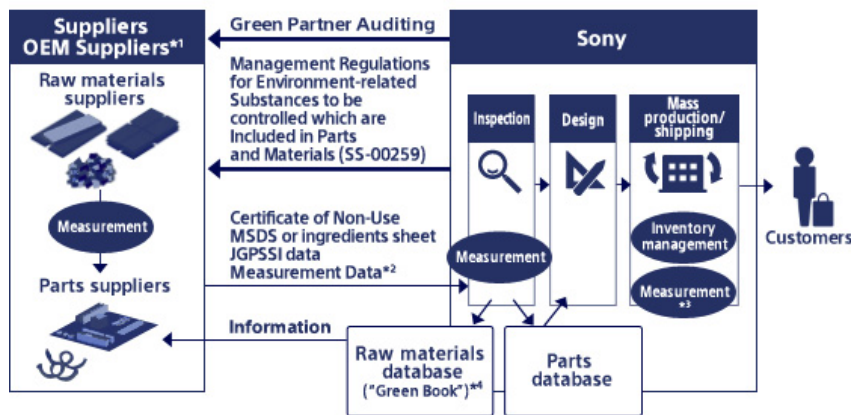
## Management in Quality Control/Quality Assurance processes

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. By implementing these strict management procedures worldwide, incompliant products are prevented from entering the market.

## Utilization of chemical analysis

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 OEM suppliers are companies that manufacture products on behalf of Sony. ODM suppliers are companies that design and manufacture 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

Sony defines "Environment-related Substances to be Controlled" (hereafter "Controlled Substances") as certain chemicals that it 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 mid-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.

<b>"Controlled Substances" Defined by Sony</b>	
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 chlorinated organic compounds	Trisubstituted organotin compounds (including tributyltin (TBT) compounds and triphenyltin (TPT) compounds)
Dibutyltin (DBT) compounds	Diocetyl tin (DOT) compounds
Asbestos	Specific azo compounds
Formaldehyde	Specific benzotriazole
Dimethyl fumarate (DMF)	Beryllium copper
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, "1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich", "1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters", Bis(2-methoxyethyl) phthalate	Hydrofluorocarbon (HFC), Perfluorocarbon (PFC)
Ozone-depleting substances (ODS)	Perfluorooctane sulfonates (PFOS)
Boric acid, specific sodium borates	4-(1,1,3,3-tetramethylbutyl) phenol
Bis (2-methoxyethyl) ether	N,N-dimethylacetamide (DMAC)

\* Control level varies depending on application.

## Polyvinyl Chloride (PVC)

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 2012, for the following products Sony replaced PVC with alternative substances in new products and new models. Sony has eliminated PVCs from all Xperia™ series\*1 mobile phones and accessories.

For more information, refer to ["Examples of PVC-Free and BFR-Free Products."](#)

PVC-Free and BFR-Free Product Categories*2
Xperia™ series mobile phones*1
Personal Computer "VAIO" Laptops
Sony Tablet
MP3 players "WALKMAN"
Personal Navigation System "nav-u"
IC recorders/Portable Radio Recorders/Linear PCM recorders/Memory Card Recorder
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)
PlayStation®Vita
Digital Book Reader "Reader"
Portable DVD players
Portable Blu-ray Disc™/DVD players

\*1 Information on Sony Mobile Communications AB is based on Sony Ericsson's 2011 sustainability report (reporting period: January 1--December 31, 2011).

\*2 For Xperia™ series mobile phones and accessories, PVC has been eliminated for plastic components. For other products, PVC has been eliminated for casings and cables for internal wiring (excluding accessories).

## Brominated Flame Retardants (BFRs)

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 2012, 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 and BFR-Free Products."



Main PWB of the VAIO Z-series contains no BFRs

Sony has eliminated BFRs from all Xperia™ series\*1 mobile phones and accessories. For more information, see [Examples of PVC-Free and BFR-Free Products.](#)"

PVC-Free and BFR-Free Product Categories*2
Xperia™ series mobile phones*1
VAIO® laptop personal computer
Sony Tablet
Walkman® MP3 players
"nav-u" personal navigation system
IC recorders/Portable radio recorders/Linear PCM recorders/Memory card recorders
Handycam® video camera
"bloggie" mobile HD snap camera
Cyber-shot™ digital still camera
S-Frame digital photo frame
"α" interchangeable lens digital camera
PSP® (PlayStation®Portable)
PlayStation®Vita portable entertainment system
Reader digital book reader
Portable CD/DVD players
Portable Blu-ray Disc™/DVD players

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.

\*1 Information on Sony Mobile Communications AB is based on Sony Ericsson's 2011 sustainability report (reporting period: January 1--December 31, 2011).

\*2 For Xperia™ series mobile phones, BFR has been eliminated for PWBs, casings and cables. For other products, BFR has been eliminated for casings and main PWBs of products (excluding accessories).

## Mercury

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 2011, 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

Sony is working to eliminate specific phthalates (phthalic esters), which are used as plasticizers in PVC, among other substances. Among these specific phthalates, Sony plans to ban the use of four types (DEHP, DBP, BBP and DIBP)\*1 as plasticizers in cables and cords beginning in 2014. For example, Sony has succeeded in eliminating phthalates (DEHP, DBP, BBP, DIDP, DNOP and DINP) \*1 from Xperia™ series\*2 mobile phones. Sony has also 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.

\*1 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; DIDP: Di-isodecyl phthalate; DNOP: Di-n-octyl phthalate DINP: Di-isononyl phthalate.

\*2 Information on Sony Mobile Communications AB is based on Sony Ericsson's 2011 sustainability report (reporting period: January 1--December 31, 2011).

## Beryllium compounds

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. Sony has succeeded in eliminating beryllium compounds from Xperia™ series\* mobile phones and related accessories.

\* Information on Sony Mobile Communications AB is based on Sony Ericsson's 2011 sustainability report (reporting period: January 1--December 31, 2011).

## Arsenic Compounds

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

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 (less than 1% use of VOCs).



## Environment

### Biodiversity Conservation: Table of Contents

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. As part of its efforts to help maintain balance among all life forms on the planet, Sony is taking steps to conserve biodiversity, which is the base of all ecosystem services, at its sites through site greening activities and initiatives aimed at helping to restore areas outside its sites to their natural state.

Basic Policy on Biodiversity Conservation

Biodiversity Conservation at Sony Sites

Products That Support Efforts  
to Conserve Biodiversity

Conservation of Local Environment

## Environment

### Basic Policy on Biodiversity Conservation

Through both its own business activities and contribution activities for local communities, Sony is taking proactive steps to maintain and restore biodiversity and aim for conservation and sustainable use of ecosystem services. Under Green Management 2015, Sony has set mid-term targets for the conservation of biodiversity, as indicated below. Sony has also formulated biodiversity guidelines for the implementation of related initiatives.

#### Targets for the Protection of Biodiversity at Sony Sites

<p><b>Procurement</b></p>	<p>Conduct biodiversity assessments at resource extraction and harvesting sites</p>
<p><b>Operations</b></p>	<p>Promote environmental contribution activities that respond to the needs of local communities</p>

## Environment

### Biodiversity Conservation at Sony Sites

- 
- ◆ Evaluation of Biodiversity at Sony Group Sites through the Green Star Program

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  - ◆ Site Greening Activities

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  - ◆ Building Neighborhood Ecological Networks

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  - ◆ Employee Education Program: "Search for Living Things"

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## Environment

### Evaluation of Biodiversity at Sony Group Sites through the Green Star Program

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 level of environmental consciousness at its sites. Sony will continue to use this program in its biodiversity-related activities and promote a range of initiatives.

[Click here for more details on "Introduction of Green Star Program"](#)

### Upgrading Biodiversity Conservation Initiatives

To date, greening activities carried out at sites had a tendency to focus on the size of natural landscapes and greenbelts. These activities did not necessarily take into account biodiversity issues. However, to address biodiversity conservation properly, sites must not only increase the size of greenbelts but also enhance their quality. By indicating specific measures and the level of initiatives, Sony is building a system that will facilitate quality improvements.

### Promoting Step-by-Step Biodiversity Conservation Initiatives

The biodiversity section of the Green Star Program classifies in the table below specific measures necessary when carrying out biodiversity-related activities at sites and its surrounding areas.

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 conserve biodiversity at its sites in line with the local area's unique characteristics. The introduction of the Green Star Program from fiscal year 2011 has served to clarify the progress and challenges of initiatives aimed at conserving biodiversity.

Challenges include determining how to implement measures tailored to the distinctive biodiversity issues that differ in each local community and how to promote biodiversity conservation in urban areas where natural environment is poor. Through such efforts, Sony will continue working to improve the effectiveness of its ongoing biodiversity conservation initiatives.

#### Evaluation scheme



The Green Star Program's evaluation scheme uses stars to rate achievement. All Sony sites are aiming to achieve five stars.

**Biodiversity Assessment for the Green Star Program**

Items	Measures
<p><b>1.Establish MRP for Biodiversity Conservation</b></p>	<ul style="list-style-type: none"> <li>●Mid Range Plan for Biodiversity Conservation</li> <li>●Improvement of environment for living things</li> <li>●Consideration to the ecological network</li> <li>●Consideration to the ecological services related to site and business</li> <li>●Consideration to the three-dimensional vegetation</li> <li>●Adoption of local species</li> <li>●Measures against alien species</li> </ul>
<p><b>2.Management and Measures for Biodiversity Conservation</b></p>	<ul style="list-style-type: none"> <li>●Appropriate management and use of chemical substances</li> <li>●Effective use of organic resources</li> <li>●Consideration to bad effects on (disturbance of) the ecosystems caused by emissions</li> <li>●Grasping and conserving endangered species</li> </ul>
<p><b>3.Measures for Avoidance, Minimization, Restoration, Improvement and Offset</b></p>	<ul style="list-style-type: none"> <li>●Restoration / improvement / offset for the ecosystems</li> <li>●Performing environmental assessments that include biodiversity assessments</li> </ul>
<p><b>4.Consideration through Procurement</b></p>	<ul style="list-style-type: none"> <li>●Procurement that leads to biodiversity</li> <li>●Switching to paper which considers biodiversity</li> </ul>
<p><b>5.Enlightenment Activities for Biodiversity</b></p>	<ul style="list-style-type: none"> <li>●Providing education for biodiversity</li> <li>●Cooperation with stakeholders</li> <li>●Training person in charge</li> <li>●External communication</li> <li>●Reputation from the public and external parties</li> </ul>
<p><b>6.Local Activities for Contributing to Biodiversity Conservation</b></p>	<ul style="list-style-type: none"> <li>●Engaging in activities for contributing to local environment conservation</li> <li>●Support for organizations that engage in biodiversity conservation activities</li> <li>●Conserve a wildlife sanctuary</li> </ul>

## Environment

### Site Greening Activities

As part of its efforts to help protect the natural environment, Sony promotes ambitious greening activities at all of its sites worldwide. Examples of such activities in Japan are described below.

#### Sony Forest, Sony EMCS Corporation Kohda Site

Since its establishment in 1972, Sony EMCS Corporation's Kohda site has sought to cultivate and expand on-site 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 Shionoka Park at Oita Technology Center

Sony Semiconductor Corporation's Oita Technology Center works to protect the 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, together with Sony EMCS Corporation's Kohda site, by SEGES as one of Japan's Top 100 Cases of Enterprise's Green Space that Contributes to Biodiversity.



Sony Shionoka Park, which is open to the local community (Sony Semiconductor 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' greenbelts and the contributions to society and the natural environment made by these businesses through the protection and nurturing of such spaces and recognizes outstanding initiatives by businesses.

## Environment

### Building Neighborhood Ecological Networks

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. The concept of ecological networks is incorporated into Sony-owned buildings in urban areas from the design stage.

#### Sony City Osaki: Promoting Biodiversity Conservation

In March 2011, an ecological network was included in the design of the newly opened Sony City Osaki, 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 the buildings' layout to allow breezes to blow in from Tokyo Bay and by connecting neighboring greenbelts in the region to form "Osaki Forest." These efforts have alleviated the heat island effect and greatly improved the area's habitat. In addition, Sony planned the layout and lines of movement through the site to actively draw people in from the station vicinity and the building's environs. 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 and Osaki Forest



Sony City Osaki

#### Building an Ecological Network for the Future

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 include 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) that connects with local green areas and incorporates an abundant variety of indigenous species.



Sony City Osaki's planting layout incorporated an abundant variety of indigenous species.



## Environment

### Employee Education Program: "Search for Living Things"

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. With this in mind, in fiscal year 2010 Sony launched a new biodiversity education program for Sony Group employees in Japan called "Search for Living Things." In the program, the participants makes observation in accordance with the specific themes for the fiscal year and post findings on the website of the Nature Conservation Society of Japan, a Japanese environmental NGO.



Nature observation near the Sony headquarters

In October 2010, the program chose six types of flora and fauna (common dandelion, bur marigold, goldenrod, red-eared slider turtle, dragon fly and a group of seven traditional Japanese plants of autumn) in the area around Sony's headquarters as the theme for observation. In June 2011, the program organized a "Search for Living Things" nature observation event on the theme of butterflies, an indicator species. Sony also incorporates nature observation into the annual walking events that it holds for employees and their families.

## Environment

### Products That Support Efforts to Conserve Biodiversity

The ability to observe and record plant and animal life is essential to the conservation of biodiversity. Creating a visual record of the natural environment that can be shared with others is important to increasing awareness of the importance of biodiversity and encouraging people to take an active role in its conservation.



DEV-3 digital recording binoculars

Sony's DEV-3 digital recording binoculars, the first in the world\* to enable the recording of Full HD video, were developed with the aim of offering a new way to capture the wonders of nature. With these binoculars, users can record Full HD video of plant and animal life as they observe for enjoyment later on their own HD television. These binoculars also eliminate the need for various pieces of equipment usually traditionally needed for filming, thereby contributing to efforts to minimize the use of resources. Since shipments began in September 2011, Sony's DEV-3 digital recording binoculars have received a favorable reception from a wide range of individuals involved in environmental protection and research.

\* First AVCHD-format digital binocular at time of launch announcement (September 30, 2011), based on Sony research.

[Click here for more details on Sony's DEV-3 digital recording binoculars](#)

## Environment

### Conservation of Local Environment

- 
- Conserving Water Resources
- 
- Tree Planting and Conservation of Indigenous Species
-

## Environment

### Conserving Water Resources

Kumamoto, home to Sony Semiconductor 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 used as rice paddies 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. During May to October, nearby paddy fields are filled with water drawn from a river prior to planting and/or 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 conserve biodiversity. In fiscal year 2010, Kumamoto TEC replenished approximately 2.07 million m<sup>3</sup> of groundwater.



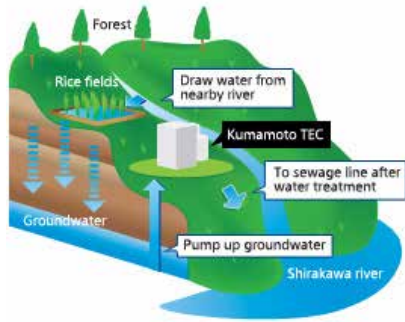
Rice growing in a paddy field belonging to a local farmer working in cooperation with Kumamoto TEC

A presentation on this initiative was made at a side event at the 10th Conference of Parties to the Convention on Biological Diversity (COP10), held in Nagoya, Japan, in October 2010. The initiative received wide praise as a new example of the effective application of PES.

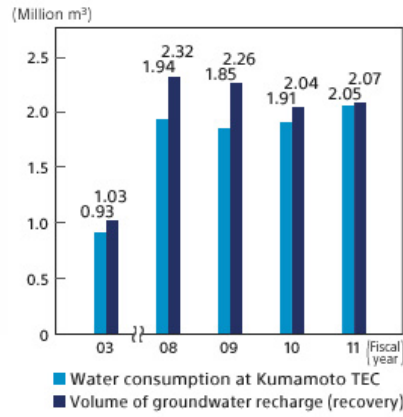
Kumamoto TEC purchases a portion of the rice harvested each year from the paddies within the groundwater recharge area to serve in its staff cafeteria. There is also a program in place enabling Kumamoto TEC employees to purchase the rice individually. These programs contribute to the local community 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 conservation

**"Groundwater recharge" using rice fields**



**Comparison of Water Used and Water Replenished by Kumamoto TEC**



## Environment

### Tree Planting and Conservation of Indigenous Species

To advance environmental preservation and encourage communication with local residents, the Sony Group sites around the world engage in tree planting initiatives and promote the conservation of indigenous species. Below are several examples of such conservation efforts.

#### Japan : Participating in Tree Planting and Protecting the Endangered Species

##### Kumamoto TEC: Participating in Local Broadleaf Forest Initiative

Since 2006, Sony Semiconductor Corporation's Kumamoto Technology Center (Kumamoto TEC) has participated in a broadleaf forest initiative. Launched with the objective of securing water resources and preserving the local natural environment, the initiative is a partnership of local residents, companies, business sites and local government, each of which performs its own particular role.

When it joined the initiative in 2006, Kumamoto TEC pledged to plant 7,500 trees and accepted responsibility for forest maintenance for a 15-year period. Between 2006 and 2011, employees and their families planted 1,500 trees annually, thus fulfilling Kumamoto TEC's planting commitment. Although the promotion of forest growth still needs to continue, wild birds have been spotted inhabiting the trees in all seasons. Going forward, Kumamoto TEC will continue to support the initiative by providing maintenance services for the forest.



Tree planting by Kumamoto TEC

##### Oita TEC: Protecting the Endangered Loggerhead Sea Turtle

Sony Semiconductor Corporation's Oita Technology Center (Oita TEC) is located near Kurotsuzaki Beach, a spawning ground for Loggerhead Sea Turtles, an endangered species. For the past 20 years, Oita TEC has spearheaded cleanup efforts on Kurotsuzaki Beach. With the cooperation of other local companies, in fiscal year 2011 Oita TEC expanded the scope of these efforts to approximately 1.5 km along the beach. Thanks to this and other efforts, loggerhead sea turtles came ashore on the beach to spawn in June 2011.

Because spawning and hatching is fraught with danger, Oita TEC employees, in cooperation with local residents, prepared and posted signs and spread net covers to delineate the spawning ground and prevent people and dogs from accidentally straying in.



Loggerhead sea turtle

## Italy : Initiatives to Protect the Marsican Brown Bear

In line with its biodiversity preservation and environmental protection program, the National Park of Abruzzo, Lazio and Molise in Italy, acting through the Centro Visitatori dell'Orso (Marsican Brown Bear Observation Center), launched a campaign aimed at protecting the Marsican Brown Bear, an endangered species native to the region where the park is located. In addition to the creation of a wildlife sanctuary in the park, the campaign encompassed environmental education for visitors to the park and the filming of a documentary on the Marsican Brown Bear using equipment and support provided by Sony Italia S.p.A. Sony Italia also plans to provide equipment for a Full HD 3D video presentation on the Marsican Brown Bear for visitors to the observation center.

## Panama : Harpy Eagle Conservation

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 promotes environmental conservation and raises awareness of the harpy eagle, Panama's national bird, which is a symbol of the serious loss of forest habitat and biodiversity in Latin America.

Fourteen 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 introduced, including a video wall featuring Sony's BRAVIA™ LCD televisions, a home theater system and remote cameras connected to VAIO™ PCs, enabling visitors to enjoy an interactive virtual experience of the harpy eagle's natural environment. To promote conservation efforts, the Center also holds an annual Harpy Eagle Festival. In November 2011, Sony staged an event that reaffirmed its commitment to the Harpy Eagle conservation initiative, as well as to the Harpy Eagle Patronage, which was attended by a number of special guests, including former mayor of Panama City Ricardo Vallarino.



Harpy Eagle Center, Summit Municipal Park, Panama



Harpy Eagle

## Environment

### Environmental Technology: Table of contents

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.

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◆ Mid-Term Targets for the Development of Environmental Technologies

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◆ Development Aimed at Environmental Technologies of the Future

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◆ Sony's Proprietary Technologies Used in Manufacturing Processes

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## Environment

### Mid-Term Targets for the Development of Environmental Technologies

The table below outlines the mid-term targets for R&D set forth in Green Management 2015. To facilitate the achievement of these targets, Sony has established R&D themes that contribute to the reduction of environmental impact. Basic research is conducted at its headquarters' research centers, while the development of practical commercial applications is the responsibility of business units.

#### Mid-Term Targets for the Development of Environmental Technologies

<p><b>Climate Change</b></p>	<ul style="list-style-type: none"> <li>●Develop technologies that improve self-sufficiency ratio in the energy supply at the individual level by further implementation of energy saving measures in products and expansion of renewable energy.</li> <li>●Develop information and communication technologies to support life styles indispensable to realize a low-carbon society.</li> </ul>
<p><b>Resources</b></p>	<p>Develop and refine "3R" (Reduce, Reuse, Recycle) technologies in product lifecycle to achieve reductions in the use of exhaustible resources and water, and to reduce waste.</p>
<p><b>Chemical Substances</b></p>	<p>Develop technologies to reduce the use of substances of high concern and alternative materials.</p>

## Environment

### Development Aimed at Environmental Technologies of the Future

#### Home Energy Management Systems (HEMS)

At present, governmental agencies and electrical utilities worldwide are pursuing R&D into home energy management systems (HEMS). Much of this research, however, is conducted from an infrastructure point of view rather than from an end-user perspective. Sony aims to create systems that are enjoyable to use, and hence is developing proprietary HEMS that combine energy-related technology, including energy storage devices, with entertainment. From 2012, Sony is participating in the Pecan Street Smart Grid Demonstration Project in Texas, U.S.A., a smart grid system demonstration experiment.

[Click here for more details in "Efforts Aimed at Realization of a Smart Grid"](#)

#### Authentication outlet

Recent years have seen significant changes in conditions relating to electricity and energy, and society is moving to address a wide range of issues, including the utilization of renewable energy sources and the provision of charging facilities for electric vehicles. Sony has focused on electricity outlets-essential to electricity use-and is developing technologies for authentication outlets using contactless IC card technology. An authentication outlet has an IC chip in the plug of an electrical appliance or electric vehicle and a contactless IC card reader/writer on the outlet side. When the plug is inserted into the outlet, electricity is supplied after device and user authentication. Based on this system, it will be possible to charge for electricity on an individual-user basis and manage consumption for each device. Such technology is expected to contribute to new public power-supply services and the development of HEMS.



Prototype authentication outlet

[Click here for more details in "Efforts Aimed at Realization of a Smart Grid"](#)

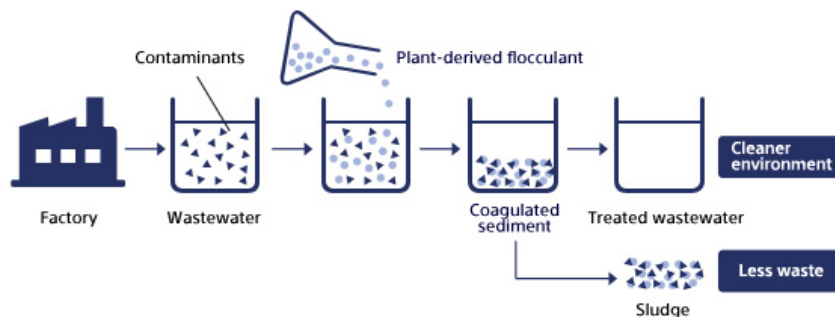
## Plant-Derived Flocculants for Wastewater Treatment

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 a lower ratio of petroleum-derived flocculant use; resource conservation thanks to the need for less flocculant to be added; and a reduction of waste output since it generates less sludge.



Plant-derived flocculants for wastewater treatment

### Wastewater purification process using plant-derived flocculant



## 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. Humans breathe in oxygen and absorb carbohydrates (glucose) from food to produce the energy the body needs. Bio batteries apply the same biological principle to generate electrical energy by taking in oxygen and glucose and then chemically reacting them with enzymes. Furthermore, glucose is a safe, ubiquitous substance contained in fruit, vegetables, and juices. Glucose also has an extremely high energy density. The energy contained in the glucose in a single 150-gram serving of rice is estimated to be equivalent to that of 96 alkaline AA batteries.



Powering a Walkman digital music player using a prototype bio battery that generates power from a glucose solution (February 2009)



A bio battery in sheet form that has been made thinner and lighter through the non-use of metal materials, including by adopting a simpler structure and carbon electrodes



A prototype toy created by leading toy manufacturer TAKARA TOMY Company, Ltd. that employed Sony's bio battery prototype.

### Bio Battery Powered by Paper

While pursuing R&D into bio batteries that use glucose to generate electricity, Sony is also focusing on paper and wood cellulose. A durable substance that contains molecular chains of glucose, cellulose is difficult to break down. To gain insight, Sony looked at the mechanism termites and grazing animals use to derive energy from wood and other plants, which use enzymes called cellulases\* to break cellulose down into glucose. Sony has applied the same mechanism to develop a technology for generating electricity from cellulose broken down to glucose. If commercial development is successful, this technology will make it possible to generate electricity from such items as waste paper, corrugated cardboard and magazines. In 2011, Sony exhibited a prototype bio battery powered by paper at one of Japan's largest environmental products exhibitions, Eco Products 2011, and held a workshop that succeeded in generating electricity from corrugated cardboard.



Paper-powered bio battery workshop

\* In nature, cellulases are found in microbial soil wherein fallen leaves and trees decompose. Sony uses cellulases produced by Novozymes A/S of Denmark. These enzymes are also produced by digestive bacteria in termites and ruminants such as goats and cattle.

## Next-Generation Electronic Paper and Flexible Film Displays

Sony is undertaking R&D into advance electronic paper used in electronic book readers, to develop next-generation electronic paper that can substitute for a wide range of paper media. Next-generation paper is thin and light, similar to conventional paper, and can be flexibly bent and is able to reproduce colors. Hence, its adoption would realize savings in paper used currently for newspapers and magazines. In 2011, Sony successfully developed a flexible electronic paper that uses a plastic substrate rather than glass. Sony is pursuing the development of electronic paper using organic thin-film transistors (TFTs) and flexible OLED displays. Compared to conventional silicon-based transistors, organic materials are more flexible and the display may be rolled up, offering significant potential advantages in terms of storage and design. Furthermore, by leveraging the properties of organic materials, Sony is developing technology to reduce the amount of materials and energy used during the manufacturing process.



13.3-inch color electronic paper prototype (May 2011)



An organic TFT-driven EL display prototype that can be rolled up (May 2010)

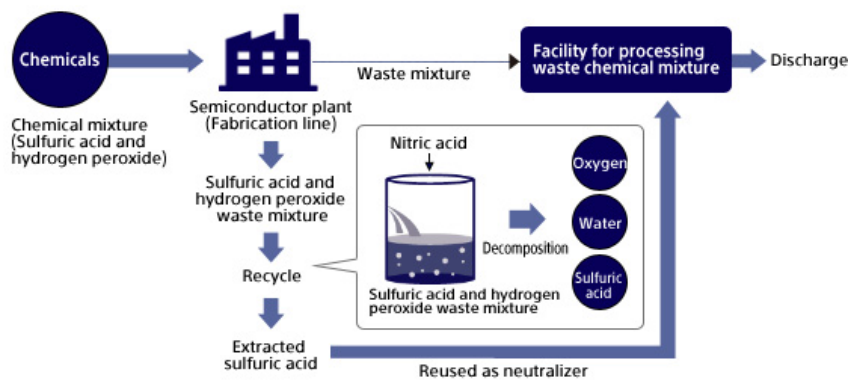
## Environment

### Sony's Proprietary Technologies Used in Manufacturing Processes

#### Recycling Waste Chemical Mixture at a Semiconductor Plant

The cleaning process during semiconductor fabrication processes frequently uses a mixture of sulfuric acid and hydrogen peroxide. The waste mixture resulting from cleaning 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 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. Because it does not require forced heating or cooling, this process also helps reduce the amount of energy consumed by recycling equipment.

#### Recycling Waste Rinse Liquid into Neutralizer

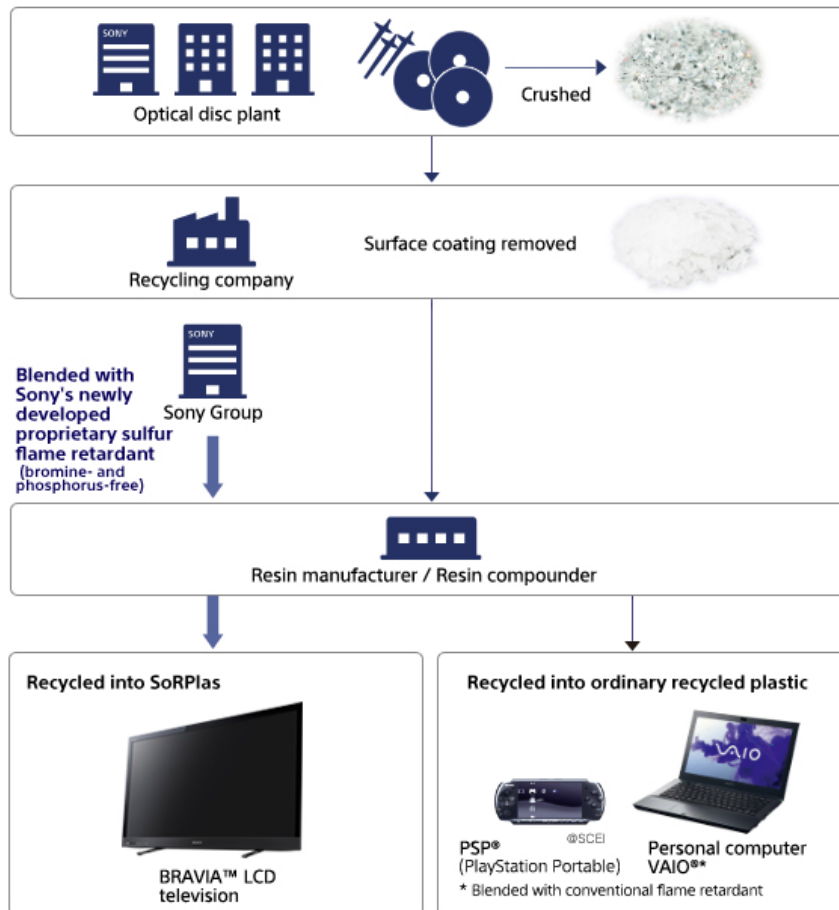


**This technology reduces chemicals needed to decompose hydrogen peroxide by approximately 30% and improves water quality by 15%**

## Technologies for Recycling of Waste Optical Discs

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, which is now named "SoRPlas" (Sony Recycled Plastics), has outstanding flame retardancy and thermal resistance and is employed in products such as LCD television BRAVIA™'s screen frame.

### Introduction of Recycled Plastic from Waste Optical Discs



**Sony's Newly Developed SoRPlas Boasts a Recycled Material Content of 99%**

In February 2011, Sony completed development of SoRPlas (an acronym for "Sony Recycled Plastic" ), a novel recycled plastic boasting 99% recycled material content. Produced with polycarbonate resin recycled from scrap optical sheets from Sony Group manufacturing sites and waste optical discs from Sony Group and other production facilities, and blended with Sony's newly developed proprietary sulfur flame retardant, SoRPlas achieves an impressively high recycled material content, together with outstanding thermal-resistance and durability. First used in the KDL-40EX52H BRAVIA™ LCD television, released in 2011, SoRPlas has since been used in the DSC-HX30V Cyber-shot™ digital camera and the HDR-TD20V Handycam® camcorder, both launched in 2012.



• [Click here for more details on "Using Recycled Plastics in Products"](#)



## Environment

### Reducing the Environmental Impact of Products and Services: Table of Contents

Sony continues to promote technological innovations aimed at building products that are smaller, lighter and more energy efficient and thus exert less of an impact on the environment.

- 
- ◆ Progress Toward Achieving Mid-Term Environmental Targets for Products and Services

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  - ◆ Developing Environmentally Conscious Products

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  - ◆ Standards for Environmentally Conscious Products

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  - ◆ Examples of Eco-Conscious Sony Products

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  - ◆ Reducing Environmental Impact Through Product Life Cycle Assessment

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## Environment

### Progress Toward Achieving Mid-Term Environmental Targets for Products and Services

In its Green Management 2015 Mid-Term Environmental Targets, Sony has set the following targets for its products. Also, by setting specific targets and conducting environmental assessments for all products, Sony is stepping up efforts to develop environmentally conscious products.

#### Mid-Term Environmental Targets for Products (Product Planning and Design)

<b>General</b>	Launch Environmental Flagship models and services in each category continuously.
<b>Climate Change</b>	Reduce annual energy consumption of products: -30% (compared with FY2008)
<b>Resources</b>	<ul style="list-style-type: none"> <li>●Reduce utilization ratio of virgin oil-based plastics in products: -5% (compared with FY2008)</li> <li>●Reduce mass of products: -10% (compared with FY2008)</li> </ul>
<b>Chemical Substances</b>	Eliminate environment-related substances to be controlled of very high concern and BFR/PVC within specified use.

\* "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, in Sony's view, have significant environmental impact on both humans and the global environment.

## Environmental Performance of Products in Fiscal Year 2011

CO<sub>2</sub> emissions over the lifetime of Sony products sold in fiscal year 2011 amounted to approximately 22.97 million tons, down about 19% from those for products sold in fiscal year 2010. Average annual power consumption per product in fiscal year 2011 was approximately 32% less than in fiscal year 2008. For products sold in fiscal year 2011, Sony used approximately 945,000 tons of resources, down around 21% from fiscal year 2010.\*1 The average mass per product in fiscal year 2011 declined 23% from that of fiscal year 2008. Sony's virgin plastic utilization rate\*2 in fiscal year 2011 was 2.4% lower than in fiscal year 2008.

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 2011, Sony recovered approximately 120,000 tons\*3 of resources from end-of-life products. This includes resources recycled from televisions and PCs collected in Japan, the reuse/recycling rate\*4 for which was approximately 108%. Use of resources in products: Total resources used in products, accessories, instruction 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.

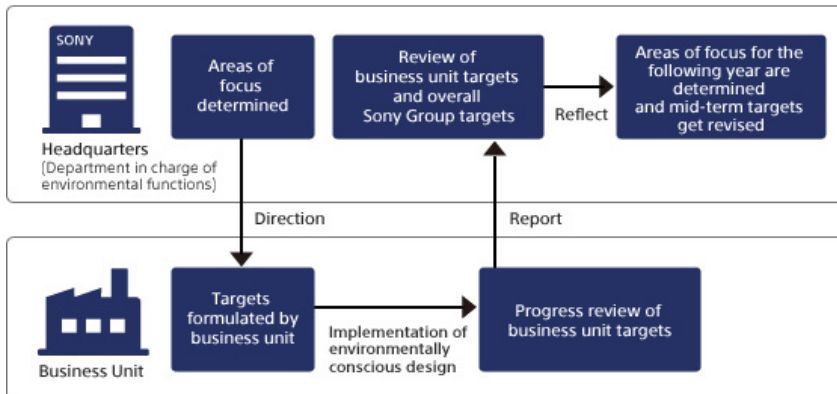
- \*1 Total volume of resources used: Total weight of resources used in products, accessories, instruction manuals and packaging materials. The weight of total products shipped is substituted for this value.
- \*2 Virgin plastic utilization rate: Percentage of plastics used accounted for by petrochemical-derived plastics
- \*3 Data for Europe excludes Belgium, the Netherlands, Hungary and Switzerland.
- \*4 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 ten years and seven years ago, respectively.

## Environment

### Developing Environmentally Conscious Products

The Sony Group's mid-term targets include targets for products, which involve the reduction of annual power consumption, the promotion of resource conservation and the management of chemical substances. Business units formulate annual targets that are consistent with environmental mid-term 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 unit, using these evaluations as the basis for its review of the Sony Group's progress toward achieving its environmental mid-term 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 environmentally conscious products.

**Management Structure for Eco-Conscious Product Development**

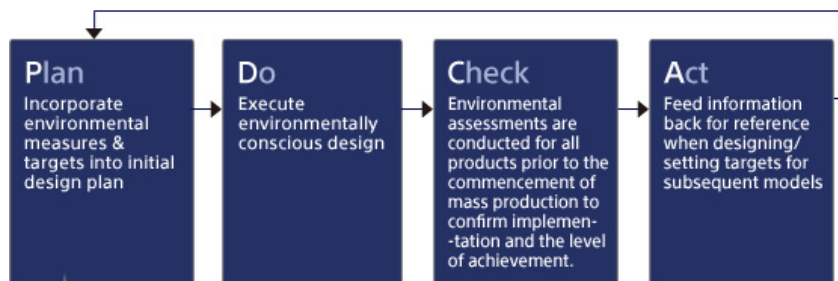


# Environment

## Guiding Principles for Environmentally Conscious Products

With the aim of developing life-enriching products that are not only superior in terms of functionality, performance and quality, but also help to reduce the impact on the environment compared to former conventional consumer electronics products, Sony has formulated its own guiding principles for environmentally conscious design, which it is designed for application with all products. On top of those principles, Sony is working to develop industry-leading flagship environmentally conscious products that are equipped with "world first" features and technologies and simultaneously deliver top-notch environmental performance.

### PDCA Cycle for Environmentally Conscious Products Design



Designing environmentally conscious products: Key considerations	
Observe relevant laws in individual countries	
Reduction of energy consumption	<ul style="list-style-type: none"> <li>• Aim for zero energy use by products when in standby mode</li> <li>• Reduce power use in all modes</li> <li>• Enhance the efficiency of AC adapters</li> <li>• Incorporate energy-saving features in products</li> </ul>
Resource conservation	<ul style="list-style-type: none"> <li>• Reduce materials and number of parts used</li> <li>• Use recyclable materials</li> <li>• Extend product life</li> </ul>
Management of chemical substances	<ul style="list-style-type: none"> <li>• Respond to technical standard for management of controlled substances</li> </ul>
Other	<ul style="list-style-type: none"> <li>• LCAs*1 assess products' environmental impact over their entire life cycle</li> <li>• Disclose pertinent information</li> </ul>

\*1 LCA is an acronym for life cycle assessment.

## Environment

### Examples of Eco-Conscious Sony Products

Sony is incorporating efforts to conserve energy and resources and to reduce controlled chemical substances into the product development process.



#### **BRAVIA™ LCD Television HX850/750 Series**

Light intensity of LED backlight is precisely controlled according to the scene broadcasted to eliminate excess light emissions. The result is a superb picture and contrast with minimal energy consumption.

- [Click here for more details on "Reducing the Power Consumption of BRAVIA™ LCD Televisions"](#)



#### **BRAVIA™ LCD Television KDL-EX52H Series**

"SoRPlas", a highly flame-retardant recycled plastic with a recycled materials rate in excess of 99%, has been employed for the bezel.

- [Click here for more details on "Development and Use of SoRPlas"](#)



#### **BDZ-AT970T Blu-ray Disc™/DVD Recorder (Sold in Japan only)**

A thorough review of software enabled shortening of start-up time and reduction of power consumption at the same time.

- [Click here for more details on "Reducing the Power Consumption of Blu-ray Disc™ Players"](#)



#### **Personal Computer VAIO® Z Series**

Standby power consumption is reduced by half (compared to the previous model) by careful selection and power reduction of hardware that operates during standby.

- [Click here for more details on "Reducing the Power Consumption of VAIO® PCs"](#)



**Smartphone Xperia™ Mini**

In recognition of its outstanding achievements in terms of reduced energy consumption and advanced chemical substance management, in 2011 the Xperia™ Mini received the 2011-2012 EISA\* Green Smart Phone award.

\* European Imaging and Sound Association (EISA)



**α NEX-F3 Digital Camera**

Employing "SoRPlas", Sony's proprietary and highly flame-retardant recycled plastic with a recycled materials rate in excess of 99%, this camera has also improved its stamina by approximately 18% compared to the previous model by improving power efficiency of its sensor. This camera can take approx.470 images. (The previous model NEX-C3 can take approx.400 images.)



**DSC-HX30V Cyber-shot™ Compact Digital Camera**

Thanks to Sony's newly developed advanced aspherical (AA) lens and other features, this camera realizes a 20x optical zoom range in a compact body only 27.4 mm\*1 thick. This model not only employs SoRPlas -- Sony's proprietary recycled plastic, made with 99% recycled materials -- but also is approximately 60% smaller than its predecessor\*2, significantly contributing to Sony's efforts to reduce resource consumption.

\*1 At the thinnest point

\*2 DSC-HX1

• [Click here for more details on "Development and Use of SoRPlas"](#)



**Digital HD Video Camera Recorder HDR-TD20V**

This model employed "SoRPlas", Sony's proprietary and highly flame-retardant recycled plastic with a recycled materials rate in excess of 99%, first ever as a mobile product.

• [Click here for more details on "Development and Use of SoRPlas"](#)



**XBA-NC85D Noise Canceling Headphones**

Sony made each of the devices that are normally housed in a control box smaller and more efficient and moved them into the earbuds themselves to completely eliminate the cord mounted control box of these headphones. The new energy efficient processor also enables approximately 20 hours of listening on a single, full charge.

- [Click here for more details on "Development of Noise-Cancelling Headphones"](#)



**BDV-N790W 3D Blu-ray Home Theater System**

This system employs speakers that use magnetic fluid. Discovered by NASA, magnetic fluid is a liquid that can be attracted by a magnetic field. Sony succeeded in developing Magnetic Fluid Speakers that use this fluid for suspension, which has enabled Sony to achieve overwhelmingly superior efficiency of 35%\* lower power consumption than conventional speakers.

- \* Energy consumption of magnetic fluid speakers alone, compared to that of conventional speakers at equivalent volume
- [Click here for more details on "Reducing the Power Consumption of Speakers with the Use of Magnetic Fluid"](#)



**DEV-3 Digital Recording Binoculars**

Full HD video recording captures the beauty of ecosystem and supports biodiversity conservation efforts.

- [Click here for more details on "Products That Support Efforts to Conserve Biodiversity"](#)



**VPL-CW255 Series Data Projectors**

In addition to realizing outstanding brightness (4500-lumen), the lamp of these data projectors consumes approximately 20% less lamp power per luminance than previous models\*. For these projectors, Sony also developed a lamp with a maximum 5,000-hour replacement time, thereby realizing a substantial reduction in resources.

- \* VPL-CW125





**Energy Storage Module IJ1001M**

Contributes to stable use of natural energy and load leveling during peak power consumption periods.

- [Click here for more details on "Development of Energy Storage Modules and Energy-Generating Devices"](#)



**Mercury-free alkaline button batteries**

Sony's mercury-free batteries are available in alkaline button batteries, silver oxide batteries and lithium coin batteries.

- [Click here for more details on reduction of mercury](#)



**FM/AM Portable Radio ICF-B03 (Sold in Japan only)**

Employed a function that generates electricity by turning handle manually. Can charge various domestic mobile phones in Japan\* and has highly luminescent LED light that can be used in case of a blackout.

- \* 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.

[Click here for more details in Sony and the Environment > Products > Lineup](#)

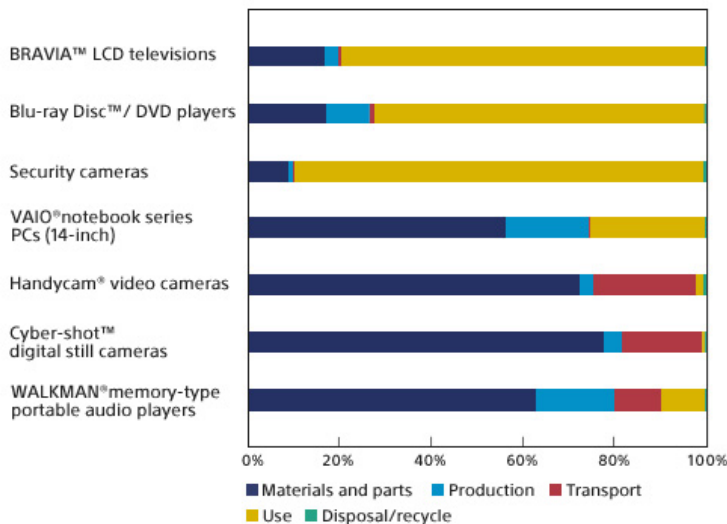
## Environment

### Reducing Environmental Impact Through Product Life Cycle Assessment

Sony conducts product life cycle assessments (LCAs) on products for all major electronics categories, with the aim of identifying and quantifying the environmental impact of products at all stages of their life cycles that include 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 CO<sub>2</sub> 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 CO<sub>2</sub> 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 CO<sub>2</sub> 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 CO<sub>2</sub> emissions.

**Breakdown of CO<sub>2</sub> 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: Walkman® Memory Type portable audio player: 5 years; Cyber-shot™ compact digital camera: 2.7 years; Handycam® digital camcorder: 6.4 years; VAIO® personal computer (14 inches): 4 years; security camera: 7 years; Blu-ray Disc™/DVD player: 7 years; BRAVIA® LCD television: 10 years

- \* This chart shows the proportion of CO<sub>2</sub> 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 CO<sub>2</sub> emissions differ among products.

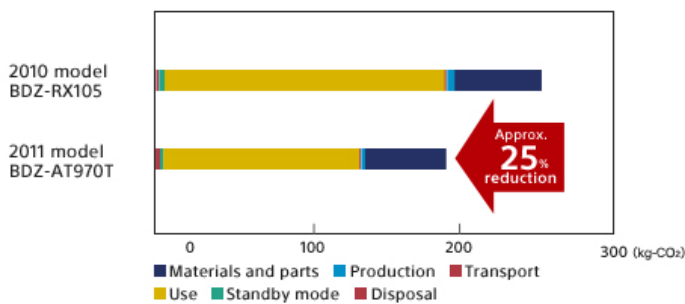
## The Life Cycle Assessment of Blu-ray Disc™ Recorders

Sony Blu-ray Disc™ recorders provide an effective case study of measures that Sony has implemented to reduce environmental impact. As the chart titled "Comparison of 2010 and 2011 Models of Blu-ray Disc™ Recorders" indicates, CO<sub>2</sub> emissions by Blu-ray Disc™ recorders while in use are relatively high. With the 2011 model BDZ-AT970T, Sony succeeded in reducing CO<sub>2</sub> emissions by approximately 25% over the product's entire life cycle compared with the 2010 model BDZ-RX105, by means of reducing power consumption during use and in standby mode. 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.



BDZ-AT970T Blu-ray Disc™ recorder

**Comparison of 2010 and 2011 Models of Blu-ray Disc™ Recorders**



**Calculation Assumptions**

- Years of use: 7
- Product transportation: 500 kilometers by truck

## 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 and resources. Sony will continue working closely with its suppliers as it strives to achieve its goal of a zero environmental footprint.

### Mid-Term Targets for Procurement

The table below outlines the targets for procurement set forth in Green Management 2015. Sony has also begun to investigate greenhouse gas emissions, water consumption, and volume of waste generation by suppliers to better grasp suppliers' efforts to achieve reductions in those areas.

#### Mid-Term Targets for Procurement

<b>Climate Change</b>	<ul style="list-style-type: none"> <li>● Establish a mechanism for determining suppliers' greenhouse gas emissions</li> <li>● Contribute to the development of a common industrywide reporting format</li> </ul>
<b>Resources</b>	Promote procurement practices that help <ul style="list-style-type: none"> <li>• reduce utilization ratio of virgin oil-based plastics in products by 5% from the fiscal year 2008 level</li> </ul>
<b>Chemical Substances</b>	Promote procurement practices that help <ul style="list-style-type: none"> <li>• Reduce utilization ratio of virgin oil-based plastics in products: -5% (compared with FY2008)</li> <li>• Reduce mass of products: -10% (compared with FY2008)</li> <li>• Reduce incoming parts packaging waste by -16% (compared with FY2008).</li> </ul>
<b>Biodiversity</b>	Conduct biodiversity assessments at resource extraction and harvesting sites

- \* 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.

**Links to Related Items:**

- [Climate Change > Grasping the Extent of Greenhouse Gas Emissions by Suppliers](#)
- [Chemical Substances > Three Core Principles for Managing Chemical Substances in Products](#)

## Environment

### Environmental Activities at Sony Sites: Table of contents

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 2015 mid-term targets and policies issued by the department in charge of environmental functions at the headquarters.

◆ Progress Toward Achieving Mid-Term Environmental Targets for Sites

◆ Introduction of Green Star Program

◆ Promoting Green Purchasing

◆ Construction of Environmentally Conscious Buildings

#### Links to Related Items:

- ◆ Climate Change >Reducing Greenhouse Gas Emissions at Sites
- ◆ Resources Conservation >Resouces Conservation at Sites
- ◆ Chemical Substances >Management of Chemical Substances at Sites
- ◆ Biodiversity >Biodiversity Conservation
- ◆ Environmental Technology
- ◆ Environmental Communication

## Environment

### Progress Toward Achieving Mid-Term Environmental Targets for Sites

In its Green Management 2015 Mid-Term Environmental Targets, Sony has set the following targets for its sites. With the aim of achieving these targets, Sony is promoting site greening activities and other efforts aimed at conserving biodiversity, as well as undertaking environmental communications initiatives, embracing environmentally conscious technologies in manufacturing processes, promoting green purchasing practices and incorporating environmental perspectives when constructing buildings.

#### Mid-Term Environmental Targets for Operations

<b>General</b>	Conduct environmental assessments (including biodiversity impact assessment).
<b>Climate Change</b>	Reduce greenhouse gases emissions by absolute value -30% (compared with FY2000).
<b>Resources</b>	<ul style="list-style-type: none"> <li>●Reduce waste generation by absolute value -50% (compared with FY2000).</li> <li>●Improve waste recycling rate group-wide: 99% or more</li> <li>●Reduce water consumption by absolute value -30% (compared with FY2000).</li> </ul>
<b>Chemical Substances</b>	<p>Take actions for class 1 - 4. Detailed groups of chemical substances are described separately.</p> <p><b>Class 1 substances:</b> Prohibit use.</p> <p><b>Class 2 substances:</b> Eliminate use by a specified date.</p> <p><b>Class 3 substances:</b> Reduce the amounts released and transferred.</p> <p>&gt; Reduce the amounts released to water, and the amounts transferred to sewer / as waste (including VOC) by -14% (compared with FY2008).</p> <p>&gt; Reduce the amounts of VOC released to the air by -50% (compared with FY2000).</p> <p><b>Class 4 substances:</b> Comply with the relevant laws and regulations and use under appropriate control.</p>
<b>Biodiversity, Contribution to Local Communities, Others</b>	Promote environmental activities respecting the needs of the local community.

## Environmental Performance of Sites

Total CO<sub>2</sub>-equivalent greenhouse gas emissions at Sony sites were about 1.50 million tons in fiscal year 2011, down about 32% from fiscal year 2000. Waste generated at sites amounted to about 116,000 tons in fiscal year 2011, down about 58% from the fiscal year 2000 level. The Groupwide recycling rate was 90%. Sites used approximately 16.70 million m<sup>3</sup> of water, 38% less than the fiscal year 2000 level. Sony released approximately 1,193 tons of VOCs\* into the air in fiscal year 2011, a decrease of approximately 35% from the fiscal year 2000 level, while VOCs released into water and transferred as waste or into sewers totaled 2,979 tons, down 3% from the fiscal year 2008 level.

\* Volatile organic compounds



# Environment

## Introduction of Green Star Program

In fiscal year 2011, Sony launched the Green Star Program, developed in-house to assess the environmental performance of Sony Group manufacturing and nonmanufacturing sites worldwide. Under the program-one of several initiatives designed to ensure achievement of the ultimate goal of Sony's "Road to Zero" global environmental plan-each site's activities are evaluated comprehensively through quantitative and qualitative assessments from four key perspectives: climate change, resource conservation, chemical substance management and the biodiversity conservation.

**Evaluation scheme**



Sony has developed numerical assessment criteria and countermeasures to measure progress toward achieving the Sony Group's Green Management 2015 mid-term environment targets, while managing attainment levels and promoting activities for reducing environmental impacts. Level of attainment is evaluated with four stars. All sites are thus striving to earn a four-star rating by 2015. Sites around worldwide got off to a good start in the drive to earn four stars by 2015, obtaining an average rating of two stars in fiscal year 2011, the first year of the Green Star Program. The introduction of the program has helped sites to identify the strengths and weaknesses of their current efforts and formulate appropriate measures to facilitate improvement. A close look at the results of assessment in fiscal year 2011 indicates that measures being taken to address the issue of climate change are for the most part progressing favorably, underscoring the effectiveness of efforts to share information on particularly successful initiatives across the global Sony Group. (For details on such measures, see Promoting Efficient Energy Use.)

Sony Group sites worldwide will continue to work as one to further enhance measures to reduce energy consumption. Having recognized room for improvement in efforts to address issues related to water and waste, sites will conduct detailed analysis on those water- and waste-related measures, taking consideration on characteristics such as local infrastructure of each region, as a prelude to developing and implementing more effective measures. Looking ahead, Sony will continue to maximize the Green Star Program as a common tool to help reduce the environmental impact by overall activities in Sony Group.

**Example of qualitative assessment criteria**

<b>Climate change</b>	<b>Hard aspect</b>	Monitor energy use with appropriate monitoring system, introducing highly efficient systems and equipment
	<b>Soft aspect</b>	Monitor energy use and raise employee awareness
<b>Resources</b>	<b>Waste</b>	Reduction of generated waste, promote resource recovery and recycling, and ensure proper processing by waste companies
	<b>Water</b>	Monitor water use, raise conservation awareness and take steps to conserve water
<b>Chemical substances</b>		Monitor handling amount, amount released and transferred, and replace with alternative substances
<b>Biodiversity</b>		Promote sustainable use of ecosystem services, and conduct land use management and greening activities <a href="#">Click here for more details on the Evaluation of Biodiversity at Sony Group Sites through the Green Star Program.</a>

## Environment

### Promoting Green Purchasing

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 2011, Sony's green purchase rate for stationery and office supplies in Japan was 69.2%.\*

\* Based on purchasing data for Sony Corporation and 15 Sony Group companies

## Environment

### Construction of Environmentally Conscious Buildings

Sony gives environmental concerns a high priority when constructing its buildings. Examples of recently constructed Sony buildings are described below.

#### Japan

##### Sony Energy Devices (Motomiya Site)

In July 2011, the Motomiya site of Sony Energy Devices Corporation (SEND) constructed a new building for producing lithium-ion secondary batteries. In undertaking this endeavor, SEND created a total energy system aimed at reducing both energy used for cathode production and CO<sub>2</sub> emissions. With this building, SEND's goal was to achieve a 20%, or 14,450 ton, reduction in annual CO<sub>2</sub> emissions over existing buildings of the same class. To this end, the facility was built with a number of innovative systems, including a two-stage waste heat recovery system combined with Japan's first-ever dehumidifying system that uses recycled heat. Thanks to these efforts, the completed building is expected to achieve a 22%, or 16,000 ton, reduction in annual CO<sub>2</sub> emissions over comparable buildings.



New building at SEND's Motomiya site

**Sony City Osaki**

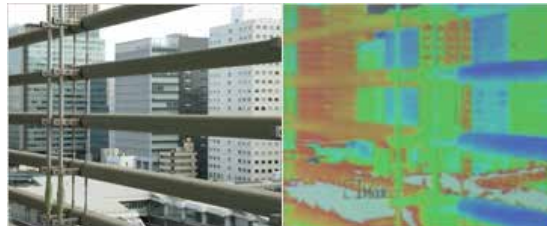
Completed in March 2011, Sony City Osaki, an R&D facility, is equipped with a wide range of energy-saving features that ensure an outstanding environmental performance. These include a highly efficient heat reservoir system that maximizes energy efficiency for the entire building and other systems that utilize heat pump water heaters using natural refrigerant that make use of CO<sub>2</sub> and heat in the atmosphere. Among these systems is the world's first practical application of the "BIO SKIN" evaporative cooling system, which draws ambient heat away when moisture on the walls evaporates. 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 in a manner similar to uchimizu, the traditional Japanese practice of sprinkling water, and reducing the burden of the building's air conditioning on the environment and lowering CO<sub>2</sub> emissions. Reducing the temperature of the air surrounding the building also helps to relieve the heat island effect. Moreover, scheduled planting facilitates the creation of greenbelts\*1 that continue seamlessly from the building's site into surrounding areas, thus contributing to the conservation of biodiversity.



Sony City Osaki



South-facing solar panels on the roof



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 degrees C cooler than the rest of the louver.

• [Click here for more details on "Building Neighborhood Ecological Networks"](#)

**Sony City (Sony headquarters)**

Completed in October 2006, Sony's headquarters building -- Sony City -- in Tokyo features a highly efficient integrated heating system as well as a variety of energy-saving technologies. One such technology recycles treated water from an adjacent wastewater treatment facility which would otherwise be discharged into rivers back into the building, harnessing the untapped energy therein to power the building's cooling and heating systems. This has reduced the energy requirements of the building's cooling systems and minimized waste heat from cooling systems, thereby mitigating the heat island effect.

Sony's efforts here, particularly its use of new energy-saving technologies and information technology, have been highly evaluated of 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 site."



Sony City Osaka

## United States

### Sony Pictures Entertainment's Head Office

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®)\* Gold Certification for its new office complex, the LOT Project Building.



Sony Pictures  
Entertainment's Head Office

These standards were developed by the U.S. Green Building Council in order to improve the performance of buildings across all metrics, including CO<sub>2</sub> 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 CO<sub>2</sub> emissions produced in the transportation process.

This building has replaced four less-efficient office buildings located across Los Angeles and is expected to save approximately 300 tons of CO<sub>2</sub> 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 of CO<sub>2</sub>).

\* 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 CO<sub>2</sub> emissions reductions, natural resources and resource stewardship, and indoor environmental quality.

### Sony Electronics Head Office

Sony Electronics Inc.'s new head office building in San Diego, California, which was completed in the summer of 2009, was awarded LEED® Gold Certification from the U.S. Green Building Council. Sony worked with the local electric utility company to install solar panels on the parking structure rooftop offset over 4% of the building total energy consumption. Considering how precious water resources are, Sony opted for a system that routes water discharged by the air-conditioning system to the fountain and cooling towers. Additionally, with the use of low flow fixtures in the bathrooms., these efforts are expected to cut the use of water resources 47% more than current codes.



Sony Electronics' new head office building in San Diego, California

More recent improvements to the lighting system through the use of LED technology and advanced lighting controls have contributed to a 5% reduction in electricity use at the site, saving over 225,000 kWh of electricity annually.



## Environment

### Reducing the Environmental Impact of Logistics: Table of Contents

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.

- ◆ Progress Toward Achieving Mid-Term Targets for Logistics
- ◆ Reducing the Environmental Impact of Logistics through Improvement of Package Design
- ◆ Reduction of Packaging Materials Used in Transporting Products
- ◆ Promoting Modal Shift
- ◆ Enhancing Transportation Efficiency by Intra-Industry Collaboration and Milk Run Transportation
- ◆ Shortening truck haul distance in Japan by changing unloading port
- ◆ Introduction of Environmentally Conscious Vehicles

## Environment

### Progress Toward Achieving Mid-Term Targets for Logistics

The table below outlines the targets for logistics set forth in Green Management 2015. To facilitate the achievement of these targets, Sony is decreasing shipping weight by reducing the weight of finished products. At the same time, Sony is striving to reduce CO<sub>2</sub> emissions and the amount of packaging materials used in logistics by optimizing transportation efficiency (i.e., making product packaging more compact, and improving load efficiency and package design), as well as by switching to modes of transportation and utilizing other shipping techniques that lessen our environmental footprint, including modal shift and joint shipping.

#### Mid-Term Targets for Logistics

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

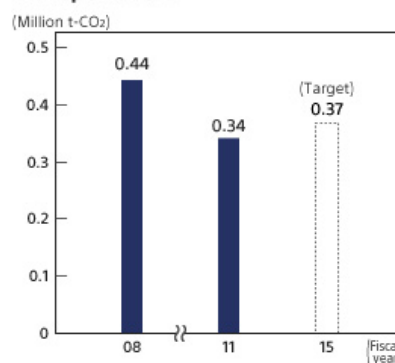
### Reducing CO<sub>2</sub> Emissions from Logistics for Finished Products in Fiscal Year 2011

In fiscal year 2011, CO<sub>2</sub> emissions from logistics totaled approximately 340,000 tons, 22% lower than in fiscal year 2008 and approximately 15% lower than in fiscal year 2010. Sony will continue working to further reduce CO<sub>2</sub> emissions from logistics by reducing the size / weight of products and cartons and promoting modal shift.

Since fiscal year 2008, the base year for its mid-term environmental targets, Sony has taken steps to expand the scope of calculation for CO<sub>2</sub> emissions from logistics.

Currently, Sony includes data for more than 40 countries and territories. For countries and territories included after fiscal year 2008, targets are set in line with the overall mid-term target using the first year of inclusion as the base year. Owing to the addition of several countries and territories to the scope of calculation, CO<sub>2</sub> emissions from logistics in fiscal year 2011 amounted to approximately 470,000 tons.

**CO<sub>2</sub> Emissions from Product Transportation**



## Environment

### Reducing the Environmental Impact of Logistics through Improvement of Package Design

Within the Sony Group, departments of product design, procurement, manufacturing and logistics 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 CO<sub>2</sub> emissions and packaging materials used.

#### Shrinking Package Sizes

During the course of improving product packaging, storage efficiency is increased by shrinking package sizes, and optimization of loading efficiency can be achieved according to transportation variation, thereby contributing to reduction of environmental impact.

As for the product packaging used for LCD televisions, since 2008 (2009 models) Sony has been seeking to reduce packaging volume.

In 2011, Sony succeeded in reducing CO<sub>2</sub> emissions generated by approximately 47%\*1 by reducing packaging volume. Through redesigned packaging, the television stand and neck can be separated from the display, enabling to reduce packaging volume significantly. Sony was also able to reduce CO<sub>2</sub> emissions in the transport of HX750 Series 40-inch LCD televisions (2012 models) by approximately 53% per unit\*2 compared with the preceding series.



Left: 2009 model; Right: 2012 model

\*1 Comparison of the HX750 Series 40-inch model with the BRAVIA™ V5 Series 40-inch model, which was launched in February 2009.

\*2 Estimate is for a 500-km haul from factory to warehouse using a 10-ton domestic transport trailer fully loaded with models of the same size.

## Expanding the Use of Returnable Containers

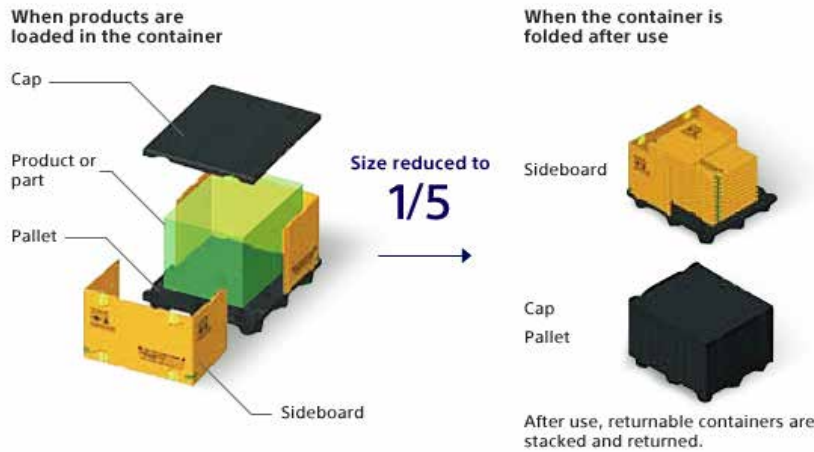
Sony uses returnable containers, which can be reused repeatedly, for products and parts transportation, in order to facilitate the reuse of packaging materials and reducing waste. Sony has been using returnable containers in Japan since 2005, and is currently promoting the use in Asia as well in accordance with the shift of production to sites outside of Japan.



Returnable containers

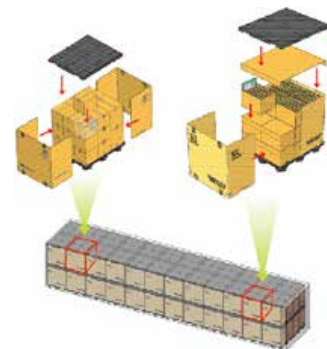
In fiscal year 2011, Sony used approximately 31,000 returnable containers worldwide, thereby contributing to approximately 312-ton reduction in the use of packaging materials and one-way pallets.

### Structural overview of a returnable container



## Increasing the Transport Efficiency of Returnable Containers

Sony's returnable containers are designed to enable efficient loading onto sea freight containers. Since 2009, Sony has introduced modular size (standardized) cartons, which fit efficiently into returnable containers. By using modular cartons that match the storage requirements of each part, 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 Transporting Products

#### Standardizing Stretch Film

Sony has promoted the standardization of thickness and packing procedures for stretch film-used to prevent cargo from shifting or collapsing during transport-with the aim of improving transport quality and reducing the amount of film used. In fiscal year 2011, such efforts facilitated a reduction in the amount of stretch film used of two tons. This, in turn, supported an estimated reduction in CO<sub>2</sub> emissions of approximately five tons.



Examples of stretch film

#### Promoting the Use of Reusable Bands and Packaging Materials to Transport Products and Parts in Factories and Warehouses

When transporting parts and products in factories and warehouses, Sony uses reusable bands as packaging materials for preventing the collapse of stacked cartons. This has facilitated reductions in the volume of stretch film and other packaging materials used and wasted.



Example of reusable band usage

## Environment

### Promoting Modal Shift

As part of its' efforts to reduce the environmental impact of finished goods transportation, Sony is promoting modal shift which switches the transportation mode from air to ocean, and from truck to rail.

### Modal Shift in International Transportation

For example, for VAIO notebook PCs, Sony has shifted to ocean transportation for approximately 30% of total shipments. For shipments of European and North American models in particular, Sony is promoting to shift the transportation mode from air to ocean and rail.

For numerous finished goods shipped from Shanghai, China to Japan, Sony changed from air transportation to a combination of sea and rail transportation or sea and truck transportation.

**Shift to ocean and rail transport for North American and European VAIO® computers**



## Modal Shift in Transportation within Region

Sony is actively promoting modal shift in different regions around the world. For example, in China, by expanding the use of rail transportation with ocean containers for transporting finished goods from manufacturing plants in southern China to export ports, Sony reduced CO<sub>2</sub> emissions by approximately 310 tons in fiscal year of 2011 compared with transportation by truck.

In Brazil, for shipment from its factory in Manaus to São Paulo, Sony Brasil Ltda. changed to cabotage transportation, thereby reducing CO<sub>2</sub> emissions by approximately 980 tons compared with transportation by truck in fiscal year of 2011. In France, Sony changed to using barge\* and rail from Le Havre port to Southern France via Éragny warehouse in the suburb of Paris. By this modal shift, Sony reduced CO<sub>2</sub> emissions by approximately 170 tons in fiscal year of 2011 compared with transportation using truck during the whole distance.

\* Barges are used for transporting heavy cargo near ports and via canals.



Modal shift from truck to cabotage in Brazil



Modal shift from truck to barge and rail for the south of France

## Modal Shift in Japan

Also in Japan, Sony continues to promote modal shift from truck to rail or ferry/boat.

In fiscal year 2011, Sony promoted modal shift for approximately 10,000 tons transportation weights of finished goods in Japan, which resulted in reduction of CO<sub>2</sub> emissions by approximately 1,780 tons compared with transportation by truck.

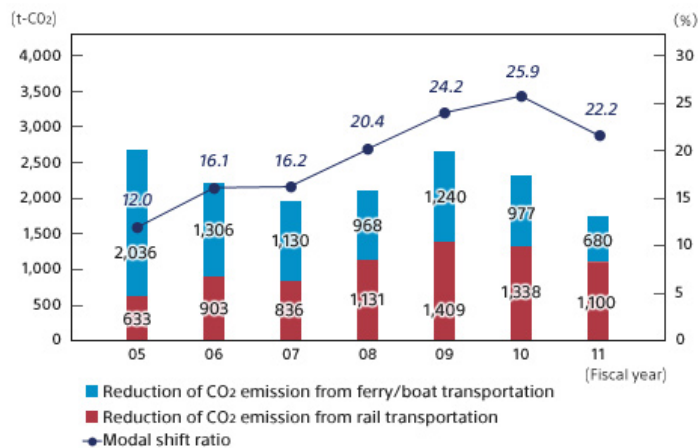
In particular, as a result of our activities of modal shift from truck to rail which can travel with less CO<sub>2</sub> emissions, Sony acquired the certification of "Eco Rail Mark"\* in September 2011 from the Japanese Ministry of Land, Infrastructure, Transport and Tourism.



Logo indicating Eco Rail Mark certification for businesses

\* Certification to company and to products (BRAVIA LCD Television and Blu-ray Disc Recorder).

**Modal shift Ratio and Reduction of CO<sub>2</sub> Emissions of Logistics in Japan**





## Environment

### Enhancing Transportation Efficiency by Intra-Industry Collaboration and Milk Run Transportation

Maximizing the loading volume per truck makes transportation more efficient and reduces the environmental impact.

Sony promotes the improvement of transportation efficiency through various intra-industry collaboration such as cooperative transportation and milk run\*.

Sony began the cooperative truck transportation in Osaka area in February 2010 in addition to Hokkaido, Fukuoka and Okinawa . Also, Sony has been operating the cooperative rail transportation between Tokyo and Osaka. Through these activities, Sony reduced approximately 70 tons of CO<sub>2</sub> emissions in fiscal year 2011.

In China, Sony Supply Chain Solutions (Shanghai) Ltd has been promoting the transportation efficiency improvement which contributed to reduction of CO<sub>2</sub> emissions, through a combination of transportation solutions such as milk run\* and round trip.



Sony trucks run round trip as a means of contributing to increased transportation efficiency.

\* 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.

## Environment

### Shortening truck haul distance in Japan by changing unloading port

When Sony ships LCD televisions to Japan that were manufactured in other countries in Asia, Sony changes the unloading port from Tokyo to Osaka or from Osaka to Tokyo according to 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 to the market after the LCD TV unloaded. Compared to the sole port operation, Sony reduced CO<sub>2</sub> emissions of approximately 450 tons in fiscal year 2011.

## Environment

### Introduction of Environmentally Conscious Vehicles

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: Table of contents

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.

[Sony's Policy on Recycling Products](#)

[Improving Product Recyclability](#)

[Recycling Activities in Each Region](#)

[Links for Product Recycling Information  
in Each Region](#)

## Environment

### Sony's Policy on Recycling Products

#### Mid-Term Environmental Targets for Collection and Recycling

Under its Green Management 2015 mid-term environmental targets, Sony has set targets for the collection and recycling of end-of-life products. Sony also supports the concept of individual producer responsibility (IPR), that is, the idea that a producer bears responsibility for its products over their entire life cycle, even after use. Accordingly, Sony continues to promote the collection and recycling of end-of-life products, as well as to design products that are easily recyclable. Sony also continues to develop recycling systems for global markets that suit local needs.

#### Mid-Term Environmental Target for Collection and Recycling

Based on the idea of Extended Producer Responsibility (EPR), Sony strives to achieve an environmentally conscious recycling system and effective operation for collection and recycling of end-of-life products. In addition, Sony continues to increase the use of recycled resources and to design products that are easy to recycle. This is based on the idea of Individual Producer Responsibility (IPR) to help promoting the establishment of appropriate laws and building of infrastructure to recycle Sony products.

• For policy, please refer to Policy on Resource Conservation.

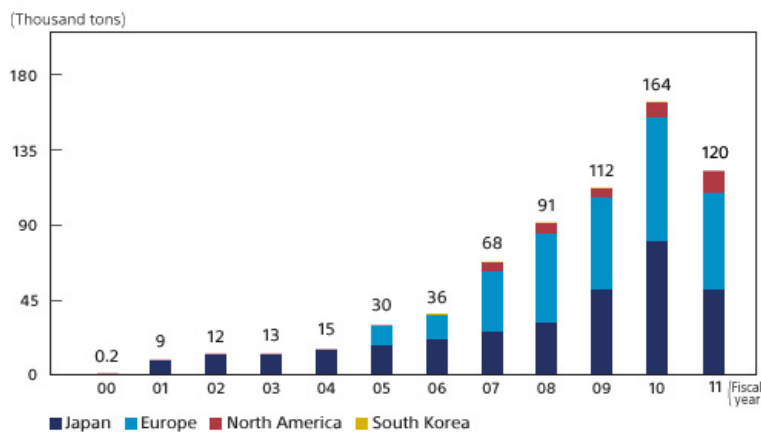
### Sony's Recycling Record

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 each state's Electronic Waste Recycling Act in the United States. As stated in its Green Management 2015 mid-term target for collection and recycling, Sony is actively advancing the collection and recycling of end-of-life products. To this end, Sony is developing recycling systems for global markets that suit local needs and is stepping up efforts to design products that are easy to recycle.

In fiscal year 2011, Sony recovered resources from 120,000 tons\*1 of collected end-of-life products. This amount represented a decline from fiscal year 2010, attributable to the end of Japanese eco points scheme for the recycling of home appliances. Sony's collection rate\*2-end-of-life products collected as a percentage of the estimated total weight of end-of-life televisions and PCs discarded in Japan-was 108%. This reflected an increase in the recovery of televisions, owing to such factors as the end of analog broadcasting in Japan.

- \*1 The calculation for "Europe" excludes Belgium, the Netherlands, Hungary and Switzerland.
- \*2 The collection rate is expressed as a percentage of the estimated weight of televisions and PCs collected in fiscal year 2011 in Japan (determined based on the weight of televisions sold in fiscal year 2001 and PCs sold in fiscal year 2004 and assuming an average period of use of 10 years for televisions and seven years for PCs).

**Weight of End-of-Life Products Collected**



\* The FY2011 figure for Europe does not include Belgium, the Netherlands, Hungary and Switzerland.

## Environment

### Improving Product Recyclability

#### Incorporating Recyclability into Product Design

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 indicating 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 also makes use of feedback from Green Cycle Corporation, the Sony Group's home electronics recycling company.



Label listing optical sheet materials

#### Recyclability Training Program

With the aim of enhancing the awareness of efforts to incorporate recyclability into product design among Sony employees, Green Cycle Corporation has offered a recyclability training program since 2006. Program participants tour Green Cycle's LCD television dismantling line, after which each individual is tasked with dismantling an LCD television on his or her own. Following this exercise, participants receive feedback from Green Cycle's site manager, who outlines current challenges faced in recycling electronics. Participation in this program enables employees to see first-hand the difficulty of dismantling electronics products and enhances their awareness of the importance of recycling collected and sorted resources, both of which are then applied to the designing of new products.



Sony employee learning how to dismantle an LCD television

## Environment

### Recycling Activities in Each Region

(Updated on August 24, 2012)

- 
- [Recycling Activities in Japan](#)
  - [Recycling Activities in Europe](#)
  - [Recycling Activities in North America](#)
  - [Recycling Activities in Pan Asia](#)
  - [Recycling Activities in Latin America](#)
-



## 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-ion batteries and other small batteries, as well as packaging materials, as required by law.

- Recycling of Television Sets
- Recycling of PCs
- Resource recovery from Small Electronics Products

## Environment

### Recycling of Television Sets

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 manufactures 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 operates Green Cycle Corp. in Aichi prefecture.

In fiscal year 2011, approximately 1.412 million CRT televisions and 88,000 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 2011, the recycling rate for Sony-manufactured CRT televisions was 78%, while for Sony-manufactured flat-screen televisions it was 85%.

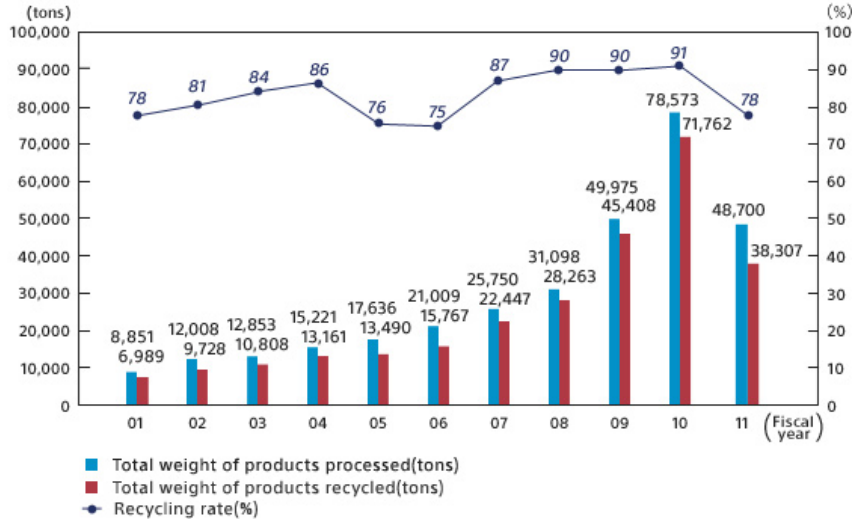
#### Television Recycling in Japan (Fiscal 2011)

	Units	CRT televisions	LCD and plasma televisions
Number of products brought into plants	Thousand	1,412	88
Number of products recycled	Thousand	1,879	96
Total weight of products processed	Tons	48,700	1,372
Total weight of recycled products and materials	Tons	38,307	1,170
Recycling rate	%	78%	85%

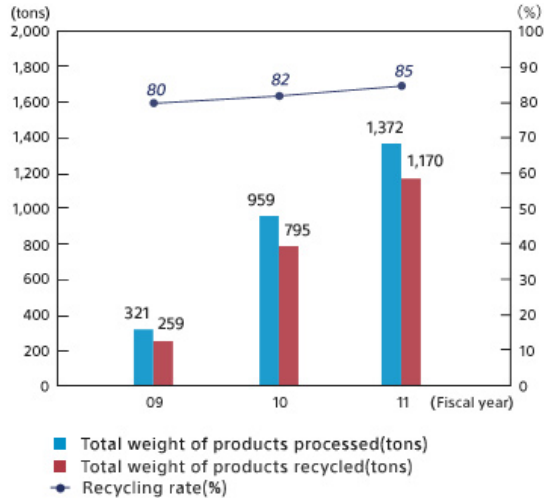
**Notes:**

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 2011.
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**



**LCD and plasma Television Recycling Performance**



**Parts and Resources Recycled from Televisions**

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

**Resources Recycled from CRT Televisions (Fiscal year 2011)**



■ Iron:	5,412 tons
■ Copper:	1,936 tons
■ Aluminum:	10 tons
■ Nonferrous and ferrous compounds:	68 tons
■ CRT glass:	19,231 tons
■ Other valuable resources:	11,647 tons

**Resources Recycled from LCD and Plasma Televisions (Fiscal year 2011)**



■ Iron:	548 tons
■ Copper:	14 tons
■ Aluminum:	58 tons
■ Nonferrous and ferrous compounds:	9 tons
■ Other valuable resources:	538 tons

**Notes:**

1. Figures have been truncated.
2. Other valuable resources include plastics, among others.

## Environment

### Recycling of PCs

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 2011, 57,178 Sony-manufactured PCs and displays were collected, generating approximately 426 tons of metals, plastics, glass and other materials.

#### PC and Display Recycling in Japan (Fiscal 2011)

	Units	Desktop PCs	Notebook PCs	CRT displays	LCDs
Units brought into plant	Thousand	14.7	16.1	6.4	20.0
Total weight of products processed	Tons	153.3	32.9	111.7	128.2
Total weight of recycled products/material	Tons	112.8	16.3	75.8	89.7
Recycling rate	%	73.6%	49.6%	67.9%	70.0%

## Environment

### Resource recovery from Small Electronics Products

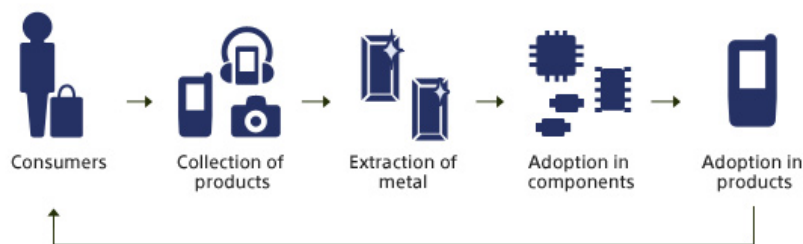
Such metals as gold, silver, copper and palladium, which are essential in the manufacture of many small electronic products, have only limited availability through mining. Sony extracts metals from used small electronics products (mobile phones, digital still cameras, portable music players, etc.), and has established in cooperation with government agencies a new "environmental procurement scheme" for using raw materials in products. Under this scheme not only is recycling technology vital, but the volume of collected products is also an important factor. Since 2008, Sony has collaborated with the city of Kitakyushu in a pilot scheme for recycling of small electronics products. In 2010 and 2011, the scheme was expanded to include the cities of Fukuoka and Nogata, thereby expanding the volume of products collected for recycling. Simultaneously, Sony has actively participated in local environmental events as part of efforts to increase awareness among residents.



Collection box for small electronics products. These boxes are placed in several locations in participating cities.

As a result, in 2011, approximately 64,000 small electronic units were collected, and this is expected to yield 380 grams of gold, 1.4 kilograms of silver, 380 kilograms of copper and 60 grams of palladium. Sony plans to purchase the gold, silver and copper as non-mine-sourced metals.

#### Resource recovery from small electronics products



## Environment

### Recycling Activities in Europe

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.

\* 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.

### Sony's WEEE Directive Compliance System

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, 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 2011, Sony financed the costs of recycling around 56,000 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.

\* Excluding Belgium, Hungary, Netherlands, Switzerland.

**Sony's WEEE Directive Compliance System**



## Sony's Battery 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



## Sony's Packaging Compliance System

In numerous European countries, producers are legally obliged to collect and recycle waste packaging. Sony fulfills this obligation through participation in authorized collection and recycling organizations wherever applicable.

Sony's Packaging Compliance





## Environment

### Recycling Activities in North America

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 that complies with a growing mandate of state and provincial legislation.

#### North America

#### Launching Trade-in and Recycling Program Website

SEL has launched a new website through which consumers may search for the optimal method of returning and recycling used electronics products (including non-Sony products). The site enables consumers to gain credits based on their recycling program use, which may be redeemed when they purchase Sony products. It also includes various ways of bolstering the recycling rate, including a search function for the nearest take-back recycling center. For consumers whose closest center is more than 40km (25 miles) away, items up to 11kg (25lb) can be sent free of shipping charges.



Trade-in and Recycling Program Website

As of March 2012, SEL had collected approximately 34,020 tons (75 million lb) of electronics equipment scrap, thereby contributing to reduced use of natural resources. In the future, through the site, SEL plans to promote higher rates of used electronics collection and conduct educational campaigns on appropriate recycling methods of used products.

### Promoting the Sony Take Back Recycling Program

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 900 such centers in operation.\* In fiscal year 2011, these centers collected 14,060 tons (30,900,000 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.



Sony Take Back Recycling Program collection activity (United States)

\* Includes recycling centers established under the GreenFill<sup>SM</sup> initiative, among others

### Implementing the Sony Green Glove Program

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 59 tons (130,500 pounds) of used electronics have been collected through this project.



A used television collected under this program

Complementing these efforts, in April 2009 SEL established the GreenFill <sup>SM</sup> 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 <sup>SM</sup> 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)\*, 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.

\* 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

### Working with Provincial Governments to Set Up Electronics Equipment Recycling Programs

Since 2003, Sony of Canada Ltd. (Sony Canada) has worked with provincial governments\* to set up recycling programs for end-of-life electronics equipment. To date, these programs have recycled more than 265,000 tons (581,000,000 pounds) of such equipment.



Recycling Activities  
(Canada)

In April 2008, Sony Canada expanded its recycling program for small electronics 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 2011, Sony Canada increased its network of nonretail locations where it collects televisions and other large Sony electronics products for recycling free of charge from 25 to 58. Since fiscal year 2008, Sony Canada has collected and recycled 460 tons (1,010,000 pounds) of consumer electronics.

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.

\* British Columbia, Alberta, Saskatchewan, Ontario, Nova Scotia and Prince Edward Island

[Click here for more details on Sony Canada's website.](#)

## Environment

### Recycling Activities in Pan Asia

Sony sites operate in various countries in Pan Asia including South Korea, China, Taiwan, and Thailand and conduct a broad range of recycling initiatives tailored to respective local needs.

Introduced here are some examples from Australia and India.

#### Australia: Recycling Discarded Electronics Equipment

In November 2011, Sony Australia Ltd. launched a pilot project for recycling end-of-life televisions. Sony Australia was the first electronics company in the country to undertake such an initiative, which was inaugurated prior to the implementation of the new e-waste recycling legislation by the Australian government in July 2012.



Recycling in Australia

During the campaign period, all 12 Sony Centre stores in Australia offered customers purchasing a new BRAVIA LCD television free collection and recycling of their old television and packaging waste, as well as free delivery and installation of their new television.

Furthermore, in March 2012, DHL's recycling scheme was approved by the Australian Federal Government as the first scheme to recycle television and computer products in the country under the new e-waste recycling legislation. As an advocate of such legislation, Sony Australia became the first manufacturer to sign to use the DHL scheme for Sony's recycling. The first collection site began operation in May 2012, and further sites will be rolled out progressively in coming months to meet the obligations and targets under the scheme.

## India: Compliance to New e-Waste Legislation

New E-waste legislation in India, E-Waste (Management & Handling) Rules, 2011, came into effect from May 2012.

Sony India appointed a leading recycler of E-waste with a global presence, as its recycler. The company carefully evaluated the ability of this E-waste recycler to ensure that its processes and attendant technologies were such that the environment, occupational health and safety were not compromised. At the same time, the company made sure that environmental rules and regulations were fully met, making disposal of the E-waste compliant with existing regulations.

In addition, Sony India also ensured that the recyclers facility had pollution control systems in place for proper environmental management including chemical leakage. Sony India also ensured that the recycler did not use downstream vendors, resulting in a more transparent value chain.

Since the introduction of the legislation, Sony India has handed over to the recycler more than 6,500 units of E-waste (approximately 21 tons), including those generated from Sony India's service waste, as of August 2012. Sony India's focus is to have a broad network of its E-waste collection centers providing customers more opportunities to return their e-waste in an easier manner. There are approximately 20 collection points nationwide as of August 2012, and the company plans to review the results at the end of its financial year and formulate future plans accordingly.

For further information on Sony India's e-waste management, please refer to [Sony India's Environment website](#).

## India: Recycling Used Mobile Phones

Sony Mobile Communications AB (SOMC) (formerly Sony Ericsson Mobile Communications AB)\* has promoted the recycling of used mobile phones worldwide since the autumn of 2008. To this end, SOMC distributes information on the collection and recycling of used mobile phones in 41 countries and territories. In nine of these countries,

SOMC collects used mobile phones and provides further information through approximately 500 collection and information points or pre-paid collection initiatives. In the United States, SOMC encourages customers to send in used mobile phones without charging for shipping. In countries where it is not currently implementing collection initiatives, SOMC plans to take steps to promote direct collection from customers.



Sony India's mobile phone collection service

In India, Sony India Pvt. Ltd. (formerly Sony Ericsson Mobile Communications Pvt. Ltd.) inaugurated the Go Green Recycle Campaign, which enables customers to take their used mobile phones to an SOMC India service center for collection, in exchange for which they receive a certificate proving that their phone has been recycled. As a result of this campaign, which preceded the enactment of e-waste legislation in India, Sony India began establishing collection points. As of March 31, 2012, there were 300 such collection points across India.

For further information on mobile phone recycling initiatives worldwide, please refer to [Sony Mobile Communications AB's website](#).

\* Information on Sony Mobile Communications AB is based on Sony Ericsson's 2011 sustainability report (reporting period: January 1-December 31, 2011).

## Environment

### Recycling Activities in Latin America

Sony has offices in a number of Central and South American countries, including Mexico, Brazil, Argentina, Colombia, Chile, Costa Rica, Panama and Peru. These offices operate recycling programs designed to meet the needs of their particular areas. Here we introduce a joint project operated throughout Latin America as well as Colombia's voluntary recycling program; as representative examples of Sony commitment to recycling initiatives.

### Sony Joint Project in Central and South America: Green Service Program

Since 2010, Sony sales companies in Latin America-including Sony Mexico, Sony Panama, Sony Costa Rica, Sony Colombia, Sony Peru, Sony Chile and Sony Argentina-gradually launched the Green Service Program. Under this initiative, using participating companies' service networks, products and components that are under warranty but discarded during repair are appropriately treated. This program marks a shift in focus from simple disposal to the proper management and repair of 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. In 2011, 238 tons of scrap were collected and processed appropriately. Going forward, the companies will continue to implement the Green Service Program.



## Joint Program by Sony and the Colombian Government for Free-of-Charge Collection

In fiscal year 2011, Sony Colombia commenced the country's first free-of-charge collection program in the electronics field for end-of-life products and batteries. Named "Proyecto Ambiente," the program applies to audio and video equipment, televisions, cellular phones and all other Sony-branded products. End-of-life products and batteries are collected through collection boxes set up by Sony Colombia at six Sony Style stores. Bigger electronics are collected at four authorized service centers. Sony passes on the products and batteries collected from customers to the authorized recycling company LITO, which carries out environmentally conscious recycling or disposal at its own factory.



Press event announcing the launch of Colombia's voluntary collection program (center: Advisor, Ministry of the Environment of Colombia)

The merits of the program have been recognized by the Colombian Ministry of the Environment, which provides support. At a press event in April 2011, held to mark the beginning of the free-of-charge collection program, the Colombian Deputy Minister of the Environment, Marcela Bonilla, attended, along with representatives of Sony Colombia and LITO, and many members of the press. David Tezna of Sony Colombia stated, "I think you will see how we are working through this program to contribute to the maintenance of a greener world for the sake of future generations."

- [Click here for more details on Sony Colombia's website \(Spanish only\).](#)

## 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.

#### Japan

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- [PC and Display Recycling in Japan \(Japanese only\)](#)
- [TV Recycling in Japan \(Japanese only\)](#)

#### Europe

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Austria, France, Germany, Ireland, Italy, Poland, Spain, United Kingdom, Norway, Denmark

- [ERP](#)

Belgium

- [Recupel](#)

Bulgaria

- [Eltechresource](#)

Czech Republic

- [Asekol](#)

Finland

- [ERP-FI](#)

Greece

- [Appliances Recycling SA](#)

Hungary

- [Országos Hulladékgazdálkodási Ügynökség](#)

Netherlands

- [ICT Milieu \(IT\)](#)

- [Wecycle/NVMP](#)

Romania

- [Environ](#)

Slovakia

- [SEWA](#)

Slovenia

- [Interseroh](#)

Sweden

• El Kretsen

Switzerland

• SWICO

**North America**

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United States

• E-cycling Central

• Sony Recycling Programs

• RBRC

**South America**

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Colombia

• LITO

## Environment

### Environmental Communication

Sony provides a wide variety of stakeholders with environmental information in an accurate, timely and continuous manner. Sony also holds events and participates in exhibitions with environmental themes and actively promotes environmental education with the aim of encouraging greater general awareness of environmental issues.

### Disclosing Environmental Information on Products

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. For example, in fiscal year 2008, beginning in Japan, Sony began affixing a new eco logo to products classified as environmentally conscious, thereby making it easier for customers in Japan to recognize the environmental benefits of these products. Currently featured on product offerings that satisfy internal guidelines for reducing energy and resource consumption, Sony will gradually expand the scope of environment-related information that it discloses to encompass additional product categories and regions in the world.



### Management of Risks Related to Chemical Substances

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 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.

## Raising the Environmental Awareness of Employees

To raise the environmental awareness of employees, Sony distributes Eco Press, an in-house environmental magazine, to Sony Group employees worldwide. Sony also shares information on environmental issues with employees of the global Sony Group via dedicated in-house environmental websites. Environmental education via e-learning is mandatory for all Group employees in Japan. In fiscal year 2011, more than 90% of Sony Corporation employees participated in e-learning programs. Sony Group companies overseas have also introduced environment-related e-learning programs.



Eco Press, Sony's in-house environmental magazine available in English and Japanese

Sony stages exhibitions and events introducing Group environmental initiatives for employees at Group sites across Japan. Sony Corporation holds a regular Environmental Management Meeting, which is attended by top management, including Sony's president, and enables Sony executives to share information about environmental issues of importance to the entire Sony Group. Additionally, Sony holds an annual environmental symposium to ensure common understanding of the challenges faced by the Group. In fiscal year 2011, the symposium included a heated debate about energy in the future. Sony also organizes environmental symposia overseas.

[Click here for more details in Sony and the Environment > Environmental Education](#)

# Environment

## Environmental Data

Introduction to the Environmental data of the entire Sony Group

Environmental Data Collection Methods and Rationale	Product Recycling Data
ISO14001 Certified Sites	Examples of Polyvinyl chloride (PVC) -free Products and Brominated Flame Retardant (BFR) -free Products
Sony's Environmental Performance	Environmental Cost
Environmental Data for Sites	Independent Verification Report
Greenhouse Gas Emissions	History of Environmental Activities at Sony
Emissions of Air and Water Pollutant (Worldwide)	Response to CDP(Carbon Disclosure Project) Investor by Sony Corporation
Handling Volume of Chemical Substances	
Environmental Data for Products	

## Environment

### Environmental Data Collection Methods and Rationale

- 
- Worldwide Data Collection System

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  - Scope, Collection Period, and Accuracy of Compiled Data

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  - Greenhouse Gas Index Data Collection Methods and Rationale

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  - Resource Index Data Collection Methods and Rationale

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  - Other Data Collection Methods and Rationale

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## Environment

### | Worldwide Data Collection System

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, North America, Latin America, 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.



## Environment

### Scope, Collection Period, and Accuracy of Compiled Data

#### Collection period: April 1, 2011-March 31, 2012

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Data from some business sites includes estimates.

#### Scope of data collection

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Business site data: All ISO 14001-certified sites as of March 31, 2011

- 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

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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

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)

• GHG Protocol

**(2) Total CO<sub>2</sub> emissions from product use**

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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 CO<sub>2</sub> 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 CO<sub>2</sub> 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 CO<sub>2</sub> emissions from logistics**

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Total CO<sub>2</sub> emissions from logistics include emissions arising from international logistics and logistics within over 40 countries and regions such as Japan, the United States, Europe, and Asia associated with Sony Group's electronics products. For logistics within Japan, CO<sub>2</sub> emissions from parts logistics are partially included.

CO<sub>2</sub> emissions from logistics are primarily calculated by multiplying ton-kilometers transported (weight of goods transported x distance traveled) by the CO<sub>2</sub> conversion rate. In certain instances, CO<sub>2</sub> 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 CO<sub>2</sub> conversion rate.

For Japanese domestic transport by truck, CO<sub>2</sub> 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, CO<sub>2</sub> emissions are calculated by multiplying ton-kilometers transported (weight of goods transported x distance traveled) by CO<sub>2</sub> 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.

### **CO<sub>2</sub> Emissions from Employee Business Trips**

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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.)

CO<sub>2</sub> 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.

### **(4) Greenhouse gas emissions offset by greenhouse gas reduction activities**

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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 CO<sub>2</sub> emission reductions realized through the purchase of power under the Green Power Certification System.

## Environment

### Resource Index Data Collection Methods and Rationale

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**

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Total weight of wastes generated at Sony sites.

#### **(2) Waste reused/recycled from sites**

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Volume of reused/recycled waste from sites

#### **(3) Product resource input**

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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**

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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**

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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

#### (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

- [List of ISO14001 Certification - Japan Region](#)  
(As of April 1, 2012)
- [List of ISO14001 Certification - Europe Region](#)  
(As of April 1, 2012)
- [List of ISO14001 Certification - North America Region](#)  
(As of April 1, 2012)
- [List of ISO14001 Certification - Latin America Region](#)  
(As of April 1, 2012)
- [List of ISO14001 Certification - Pan Asia Region](#)  
(As of April 1, 2012)
- [List of ISO14001 Certification - East Asia Region](#)  
(As of April 1, 2012)

### 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, 2012)

#### ISO14001 Global Environmental Management System (GEMS) Certification

##### Headquarters/Business Unit

Name of Organization	Acquired (Global EMS)
Sony Corporation HQ Environmental Office	2004/06
Sony Corporation Home Entertainment & Sound Business Group	2004/09
Sony Corporation Professional Solutions Business Group	2004/09
Sony Corporation Semiconductor Business Group	2004/10
Sony Corporation Devices Solutions Business Group	2004/10
Sony Corporation Digital Imaging Business Group	2005/01
Sony Corporation VAIO & Mobile Business Group	2005/01
Sony 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 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	6
Sony Semiconductor Inc. Siroishi Zao Technology Center	2004/10	1997/04	1
Sony DADC Japan Inc.	2004/10	1997/04	3
Sony Energy Devices Corporation	2004/10	1997/09	5
Sony EMCS Corporation Kisarazu TEC	2004/12	1996/03	1
Sony/Taiyo Corporation	2005/01	1999/01	1
Sony EMCS Corporation Kosai Site	2005/01	1997/01	1
Sony Semiconductor 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 Toyosato Site	2005/02	1997/04	1
Sony EMCS Corporation 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	20
Sony PCL Inc.	2004/07	2001/01	3
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	7
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	6
Frontage Inc.	2006/02	2001/02	2
Sony EMCS Corporation Mizunami Technology Site	2004/07	–	1
Sony Customer Service Tougane Technology Site	2004/12	–	1
Sony Taiwan Ltd.	2005/09	–	7
Sony Korea Corporation	2006/01	2000/03	1
Sony Bank Inc.	2008/03	–	2
Sony DADC Japan Inc.	2004/10	1997/04	1

• ISO14001 Certified Sites

## Environment

### List of ISO14001 Certification - Europe Region (As of April 1, 2012)

#### ISO14001 Global Environmental Management System (GEMS) Certification

##### 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**

Name of Organization	Acquired (Global EMS)	Acquired (Individual Certificate)	Number of sites
Sony Computer Entertainment Europe	2005/02	2005/02	7
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	–	1
Sony DADC Germany GmbH (Distribution Centre)	2011/05	–	2
Columbia Pictures Corporation Limited	2011/09	–	1
Entertainment Network Scandinavia AB	2011/10	–	1
Sony DADC France	2011/11	–	1
Sony DADC IBERIA S.L. (Distribution Centre)	2012/01	–	1
Sony Europe Limited, limited liability company, branch in Poland	2012/02	–	1
Sony Music Entertainment UK Limited	2012/03	–	1

• ISO14001 Certified Sites

## Environment

### List of ISO14001 Certification - North America Region (As of April 1, 2012)

#### ISO14001 Global Environmental Management System (GEMS) Certification

##### 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

• ISO14001 Certified Sites

## Environment

### List of ISO14001 Certification - Latin America Region (As of April 1, 2012)

#### ISO14001 Global Environmental Management System (GEMS) Certification

##### 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)	2004/09	1999/10	1
SONY CHILE, LTDA.	2011/05	–	1
SONY ARGENTINA, S.A.	2011/05	–	1

• ISO14001 Certified Sites

## Environment

### List of ISO14001 Certification - Pan Asia Region (As of April 1, 2012)

#### ISO14001 Global Environmental Management System (GEMS) Certification

##### 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	7
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 Philippines Inc.	2008/12	–	1
Sony India Pvt. Ltd. SONY INDIA SOFTWARE CENTRE	2012/03	–	1

• ISO14001 Certified Sites



## Environment

### List of ISO14001 Certification - East Asia Region

(As of April 1, 2012)

#### ISO14001 Global Environmental Management System (GEMS) Certification

##### 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	2002/09	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	–	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

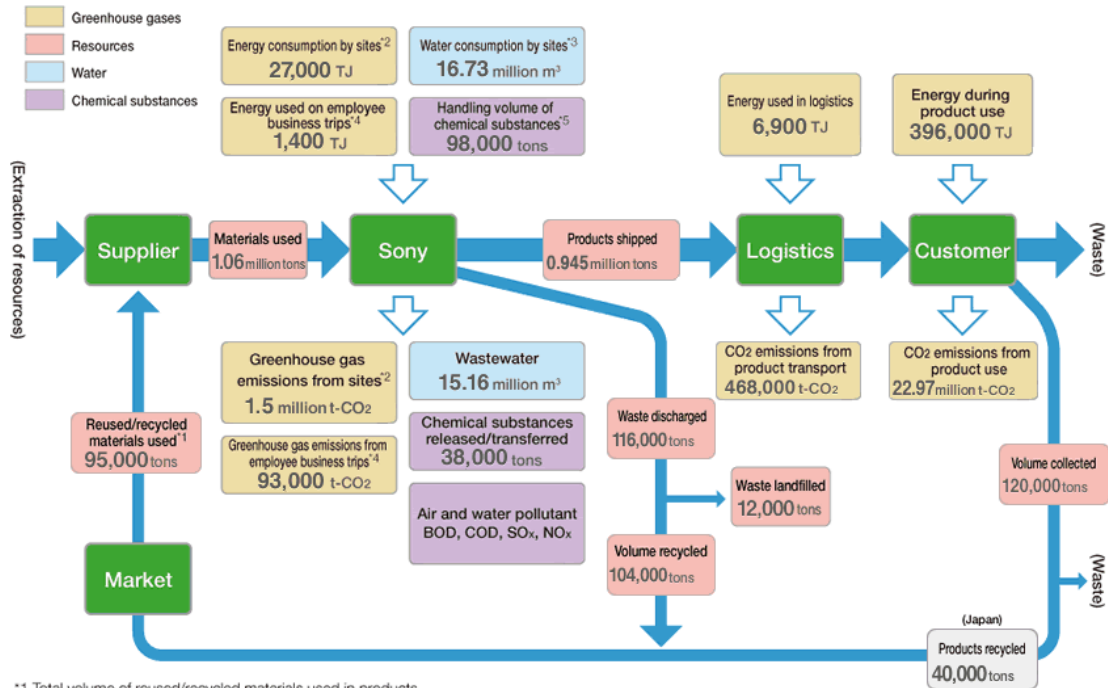
Name of Organization	Acquired (Global EMS)	Acquired (Individual Certificate)	Number of sites
Sony (China) Limited.	2005/03	1999/09	8
Sony Corporation of Hong Kong Limited	2005/04	2001/02	3

• ISO14001 Certified Sites

# Environment

## Sony's Environmental Performance

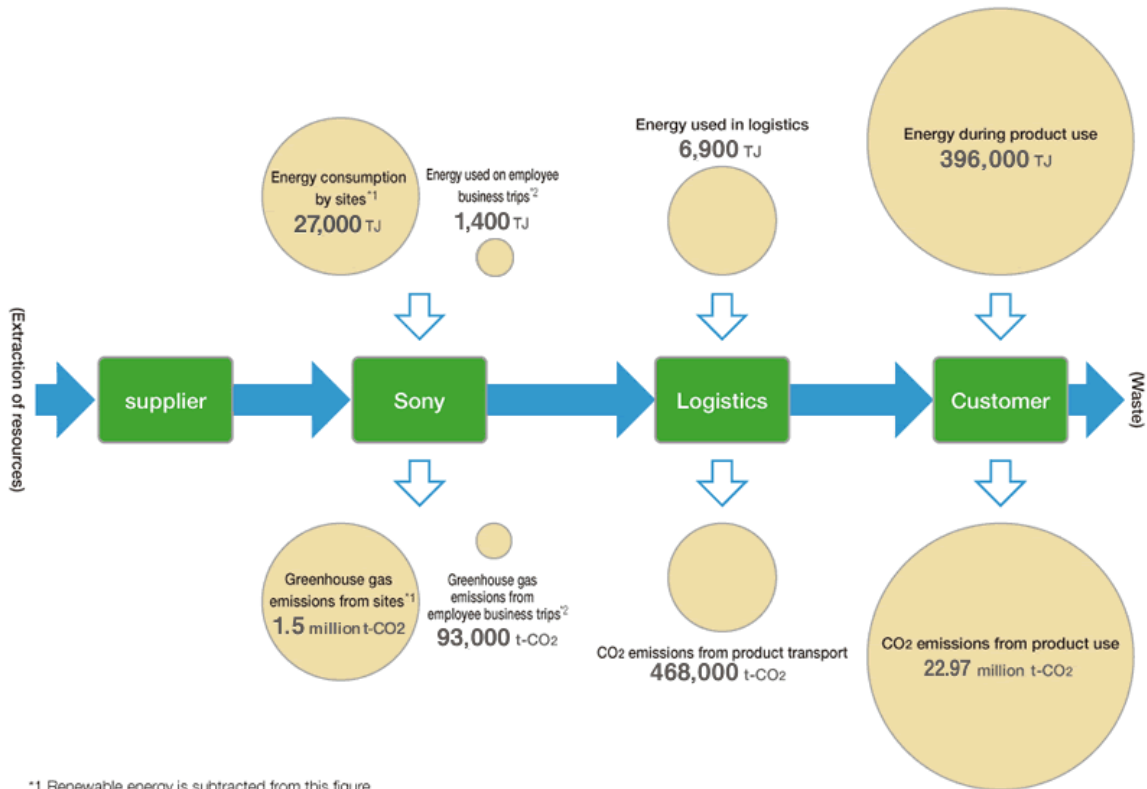
### Overview of Environmental Impact



\*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

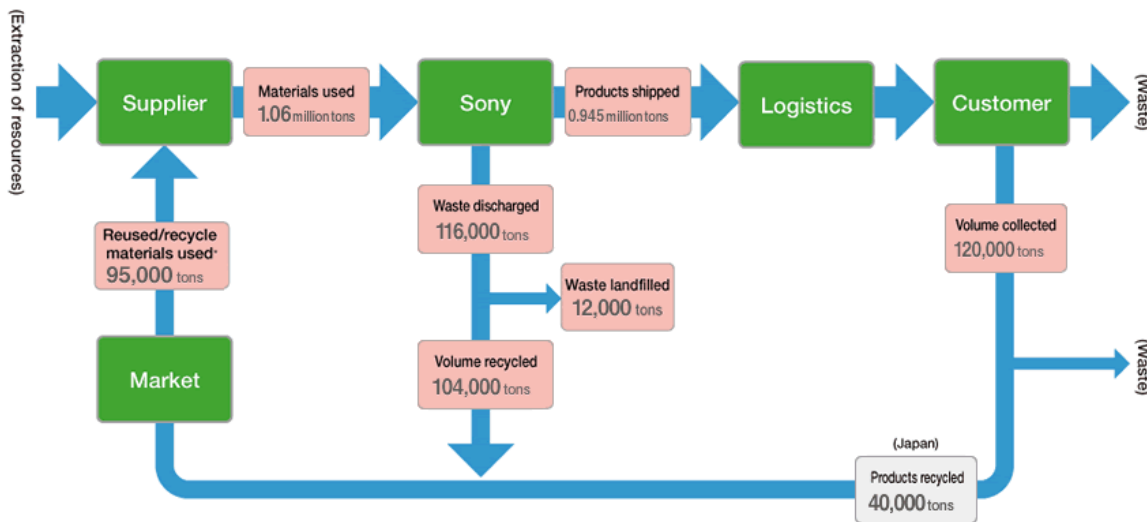
Note: Business processes other than those shown in this chart—including the production of purchased materials used and the recycling of products—may also have an impact on the environment.

### Greenhouse Gases



<sup>1</sup> Renewable energy is subtracted from this figure  
<sup>2</sup> Relevant primarily to Sony Group companies in Japan, Europe and North America

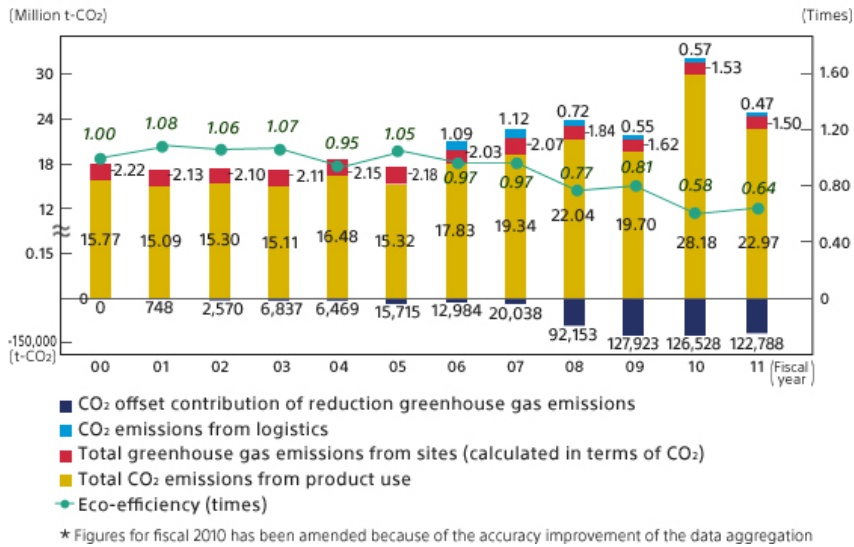
### Resources



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

## Eco-Efficiency

### Greenhouse Gas Efficiency



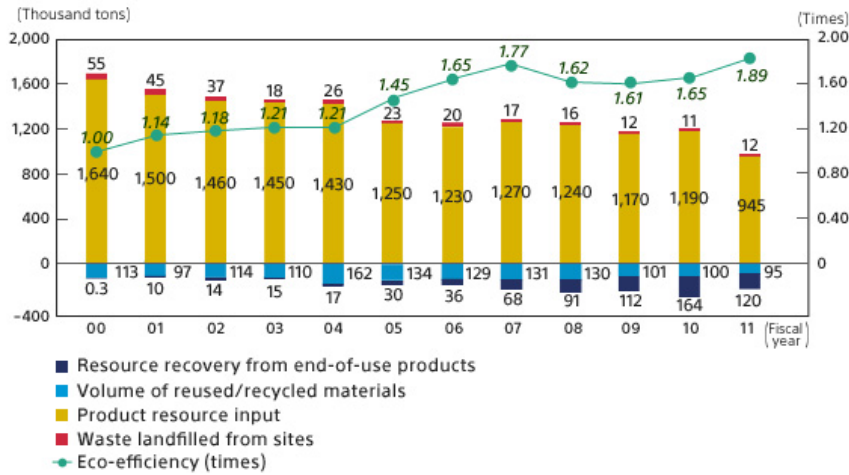
### Greenhouse Gas Efficiency

[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	15.11		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	1.53	28.18	0.57	0.127	0.58
FY2011	1.50	22.97	0.47	0.123	0.64

\* Figures for fiscal 2010 have been amended because of the accuracy improvement of the data aggregation.

**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	1,640	113	0	1,581	1.00
FY2001	45	1,500	97	10	1,443	1.14
FY2002	37	1,460	114	14	1,367	1.18
FY2003	18	1,450	110	15	1,338	1.21
FY2004	26	1,430	162	17	1,280	1.21
FY2005	23	1,250	134	30	1,113	1.45
FY2006	20	1,230	129	36	1,087	1.65
FY2007	17	1,230	131	68	1,084	1.77
FY2008	16	1,240	130	91	1,034	1.62
FY2009	12	1,170	101	112	967	1.61
FY2010	11	1,190	100	164	939	1.65
FY2011	12	945	95	120	742	1.89

\* Figures for fiscal 2010 have been amended because of the accuracy improvement of the data aggregation.

## Environment

### Environmental Data for Sites

- [Environmental Data for Sites \(Worldwide\)](#)
- [Environmental Data for Sites \(Japan region\)](#)
- [Environmental Data for Sites \(North America region\)](#)
- [Environmental Data for Sites \(Latin America region\)](#)
- [Environmental Data for Sites \(Europe region\)](#)
- [Environmental Data for Sites \(Pan Asia region\)](#)
- [Environmental Data for Sites \(East Asia region\)](#)

## Environment

### Environmental Data for Sites (Worldwide)

#### Energy (Unit:t-CO<sub>2</sub>)

	Electricity consumption	Gas consumption	Oil consumption	Vehicle fuel	Total
Fiscal 2000	1,325,478	312,151	240,770	34,261	1,912,660
Fiscal 2001	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
Fiscal 2011	1,118,110	167,044	42,333	34,479	1,361,966

\* Electricity consumption is calculated based on the CO<sub>2</sub> 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: m<sup>3</sup>)**

	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	15,726,486	13,631,873
Fiscal 2011	16,728,666	15,157,421

\* 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 landfilled
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
Fiscal 2011	115,596	104,073	11,523

\* "Waste" includes valuables, substances to be treated by outsourcing, and non-industrial waste.

**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 2010	5.25	0	8,019	59,949	67,973
Fiscal 2011	0.71	1,003	17,691	65,580	84,275

- \* 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
- \* Classification of some substances has changed since FY2011.

[Environmental Data for Sites](#)

## Environment

### Environmental Data for Sites (Japan region)

#### Energy (Unit: t-CO<sub>2</sub>)

	Electricity consumption	Gas consumption	Oil consumption	Vehicle fuel	Total
Fiscal 2000	596,848	139,828	190,680	7,556	927,355
Fiscal 2001	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
Fiscal 2011	726,178	110,214	38,063	6,478	880,943

\* Electricity consumption is calculated based on the CO<sub>2</sub> 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: m<sup>3</sup>)**

	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
Fiscal 2011	12,499,642	11,623,179

\* 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 landfilled
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
Fiscal 2011	51,472	50,495	977

\* "Waste" includes valuables, substances to be treated by outsourcing, and non-industrial waste.

**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
Fiscal 2011	0.58	859	14,538	53,115	68,513

- \* 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
- \* Classification of some substances has changed since FY2011.
  
- \* Japan region: Japan, Taiwan and South Korea

• **Environmental Data for Sites**

## Environment

### Environmental Data for Sites (North America region)

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-CO<sub>2</sub>)

	Electricity consumption	Gas consumption	Oil consumption	Vehicle fuel	Total
Fiscal 2000	403,204	108,780	407	4,274	512,391
Fiscal 2001	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	167	9,784	234,018
Fiscal 2010	137,496	20,312	182	5,865	163,855
Fiscal 2011	100,399	18,872	352	8,237	127,860

\* Electricity consumption is calculated based on the CO<sub>2</sub> 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: m<sup>3</sup>)**

	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
Fiscal 2011	772,107	704,393

**Waste\* (Unit: tons)**

	Waste generated	Waste reused/recycled	Waste landfilled
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
Fiscal 2011	19,872	17,904	1,968

\* "Waste" includes valuables, substances to be treated by outsourcing, and non-industrial waste.

**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	46	7,975	4,510	12,531
Fiscal 2005	0	0	7,477	2,779	10,256
Fiscal 2006	0	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 2010	0	0	145	400	545
Fiscal 2011	0	19	124	268	412

- \* 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
- \* Classification of some substances has changed since FY2011.

**Environmental Data for Sites**



## Environment

### Environmental Data for Sites (Latin America region)

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-CO<sub>2</sub>)

	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
Fiscal 2011	2,805	333	79	729	3,946

\* Electricity consumption is calculated based on the CO<sub>2</sub> conversion rate used in the countries in which Sony sites are located in fiscal 2000.

#### Water (Unit: m<sup>3</sup>)

	Water consumption	Water discharge
Fiscal 2009	54,310	46,164
Fiscal 2010	97,163	82,589
Fiscal 2011	64,392	54,733

#### Waste\* (Unit: tons)

	Waste generated	Waste reused/recycled	Waste landfilled
Fiscal 2009	2,442	2,171	271
Fiscal 2010	5,555	3,716	1,839
Fiscal 2011	7,549	4,684	2,864

\* "Waste" includes valuables, substances to be treated by outsourcing, and non-industrial waste.

**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	11
Fiscal 2011	0	0	9	0	9

\* Chemical substances used represents the volume handled less the volume recycled.

\* Classification of some substances has changed since FY2011.

[Environmental Data for Sites](#)

## Environment

### Environmental Data for Sites (Europe region)

#### Energy (Unit: t-CO<sub>2</sub>)

	Electricity consumption	Gas consumption	Oil consumption	Vehicle fuel	Total
Fiscal 2000	92,008	32,954	7,633	8,313	132,595
Fiscal 2001	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
Fiscal 2011	0	6,019	260	6,570	12,849

\* Electricity consumption is calculated based on the CO<sub>2</sub> 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: m<sup>3</sup>)**

	Water consumption	Water discharg
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
Fiscal 2011	132,005	120,352

- \* 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 landfilled
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
Fiscal 2011	7,004	6,792	213

- \* "Waste" includes valuables, substances to be treated by outsourcing, and non-industrial waste.

**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	0	40	318	358
Fiscal 2010	0	0	38	259	297
Fiscal 2011	0	10	1,156	10,033	11,199

- \* 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
- \* Classification of some substances has changed since FY2011.

**Environmental Data for Sites**

## Environment

### Environmental Data for Sites (Pan Asia region)

#### Energy (Unit: t-CO<sub>2</sub>)

	Electricity consumption	Gas consumption	Oil consumption	Vehicle fuel	Total
Fiscal 2000	197,365	24,842	30,336	13,267	252,542
Fiscal 2001	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
Fiscal 2011	110,793	3,200	1,259	9,872	125,124

\* Electricity consumption is calculated based on the CO<sub>2</sub> 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: m<sup>3</sup>)**

	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 2010	1,448,098	1,190,619
Fiscal 2011	1,258,339	1,055,108

**Waste\* (Unit: tons)**

	Waste generated	Waste reused/recycled	Waste landfilled
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
Fiscal 2011	17,974	14,446	3,528

\* "Waste" includes valuables, substances to be treated by outsourcing, and non-industrial waste.

**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
Fiscal 2011	0	2	324	13	339

- \* 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
- \* Classification of some substances has changed since FY2011.
  
- \* Pan asia region: Southeast Asia, Middle East, Africa and Oceania

**Environmental Data for Sites**



## Environment

### Environmental Data for Sites (East Asia region)

#### Energy (Unit: t-CO<sub>2</sub>)

	Electricity consumption	Gas consumption	Oil consumption	Vehicle fuel	Total
Fiscal 2000	36,054	5,748	11,714	850	53,517
Fiscal 2001	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	187,634
Fiscal 2011	177,934	28,407	2,320	2,583	211,245

\* Electricity consumption is calculated based on the CO<sub>2</sub> 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: m<sup>3</sup>)**

	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 2011	2,002,182	1,599,657

\* Fiscal 2000 data of east asia region is included in pan asia region data.

**Waste\* (Unit: tons)**

	Waste generated	Waste reused/recycled	Waste landfilled
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 2011	11,725	9,753	1,972

\* Fiscal 2000 data of east asia region is included in pan asia region data.

\* "Waste" includes valuables, substances to be treated by outsourcing, and non-industrial waste.

**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	1,390	1,710	3,099
Fiscal 2010	0	0	1,511	1,725	3,236
Fiscal 2011	0	113	1,540	2,151	3,803

- \* 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
- \* Classification of some substances has changed since FY2011.
- \* East asia region: mainland China, Hong Kong

**Environmental Data for Sites**

## Environment

### Greenhouse Gas Emissions

#### Greenhouse Gas Emissions from Sites

	(Unit: t-CO <sub>2</sub> )	(Unit: t-CO <sub>2</sub> )	(Unit: t-CO <sub>2</sub> )	(Unit: t-CO <sub>2</sub> /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
Fiscal 2011	1,623,664	122,746	1,500,918	0.231

\* CO<sub>2</sub> 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 CO<sub>2</sub> conversion rate by power generation (kWh) or quantity of purchase (kWh).

#### Emissions by Business Category in Fiscal 2011

(Unit: t-CO<sub>2</sub>)

Electronics	Other than Electronics			
	Music	Movie	Finance	Others
1,439,856	10,490	43,271	627	6,743

**Scope 1 (Direct Emissions from Sites)**

(Unit: t-CO<sub>2</sub>)

	Greenhouse Gas Emissions					Total	CO <sub>2</sub> Emissions from Energy Use	Total
	HFCs	PFCs	SF6	NF3	Other			
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
Fiscal 2011	3,412	49,489	43,989	19,049	23,453	139,392	214,067	353,459

**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
FY2000	1,325,478	1,325,478	1,061	1,326,539	1,326,539
FY2001	1,318,490	1,317,742	1,081	1,319,571	1,318,823
FY2002	1,363,426	1,360,856	1,195	1,364,621	1,362,051
FY2003	1,400,289	1,393,452	3,226	1,403,515	1,396,678
FY2004	1,430,175	1,423,706	4,656	1,434,831	1,428,362
FY2005	1,511,798	1,496,083	6,295	1,518,093	1,502,378
FY2006	1,480,167	1,467,183	22,173	1,502,340	1,489,356
FY2007	1,535,180	1,515,172	30,991	1,566,171	1,546,163
FY2008	1,434,576	1,342,423	29,518	1,464,094	1,371,941
FY2009	1,349,315	1,221,392	25,853	1,375,168	1,247,245
FY2010	1,267,240	1,141,048	23,143	1,290,383	1,164,191
FY2011	1,240,416	1,118,110	29,789	1,270,205	1,147,899

**Scope 3 Emissions in Fiscal 2011 (Other Emissions)**

**CO<sub>2</sub> emissions from the electricity during product use**

22,970,000 t-CO<sub>2</sub>

Details: [Climate Change > Reducing Greenhouse Gas Emissions Related to Products and Services](#)

**CO<sub>2</sub> emissions from product shipment**

468,000 t-CO<sub>2</sub>

Details: [Reducing Environmental Impact of Logistics](#)

**CO<sub>2</sub> emissions from employee business trips**

93,000 t-CO<sub>2</sub>

Details: [Climate Change > Reducing Greenhouse Gas Emissions by Employee Business Trips](#)

## Environment

### Emissions of Air and Water Pollutant (Worldwide)

(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	187	9	254	96
Fiscal 2011	163	9	252	62

\* Figures for fiscal 2010 have been amended because of the accuracy improvement of the data aggregation.

## Handling Volume of Chemical Substances

	(Unit: tons)	(Unit: tons)	(Unit: tons)	(Unit: tons)	(Unit: tons/million yen)
	<b>Class 1 substances</b>	<b>Class 2 substances</b>	<b>Class 3 substances</b>	<b>Total handling volume</b>	<b>Handling volume divided by consolidated sales (Volume Intensity)</b>
Fiscal 2007	1.91	0	35,077	35,079	0.0040
Fiscal 2008	2.12	0	18,179	18,181	0.0024
Fiscal 2009	1.41	0	16,236	16,238	0.0023
Fiscal 2010	5.25	0	15,914	15,920	0.0022
Fiscal 2011	0.83	1,023	28,738	29,762	0.0046

\* Classification of some substances has changed since FY2011.



## Environment

### Environmental Data for Products

#### 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	18,098,177	269,676	1,531,332	89,710	1,242,233	813,700	22,044,828
Fiscal 2009	16,156,097	242,823	1,185,915	92,017	1,242,459	782,127	19,701,438
Fiscal 2010	21,421,269	809,914	1,720,336	164,365	1,000,725	3,063,777	28,180,386
Fiscal 2011	17,067,704	745,164	1,422,973	104,891	1,274,451	2,351,648	22,966,831

#### 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

\* Figures for fiscal 2010 have been amended because of the accuracy improvement of the data aggregation.

**Total Volume of Resources Used in Products (total products shipped)\* (Unit: tons)**

	Television	Video	Audio	IT	Professional use	Devices/ Others	Game	Music	Total
Fiscal 2000	735,844	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
Fiscal 2011	335,685	61,407	176,900	37,126	10,707	69,614	68,411	185,147	944,997

Total weight of resources used in products, accessories, instruction manuals and packaging.

The weight of total products shipped is substituted for this value.

# Environment

## Product Recycling Data

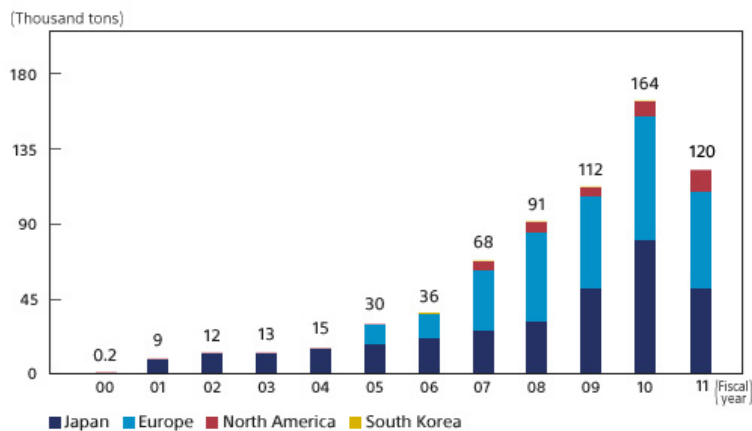
### Weight of End-of-Life Products Collected

(Unit: tons)

	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
Fiscal 2011	50,500	55,576	13,620	60	119,756

\* The FY2011 figure for Europe does not include Belgium, the Netherlands, Hungary and Switzerland

### Weight of End-of-Life Products Collected



## Environment

### Examples of Polyvinyl chloride (PVC) -free Products and Brominated Flame Retardant (BFR) -free Products

**Examples of PVC-free Products and BFR-free Products: Model Name (As of June 2012)**

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)
Xperia™ series mobile phones*3	All models	All models
Personal Computer "VAIO" Laptops	All 2011 Summer models	All 2011 Summer models
	F series, C series, J series, L series, E series, Y series, S series	F series, C series, J series, L series, E series, Y series, S series
	All 2011 Autumn models	All 2011 Autumn models
	F series, C series, J series, L series, E series, Z series, Y series, S series	F series, C series, J series, L series, E series, Z series, Y series, S series
	All 2012 Spring models	All 2012 Spring models
Sony Tablet	F series, C series, J series, L series, E series, Z series, Y series, S series	F series, C series, J series, L series, E series, Z series, Y series, S series
	All series S series, P series	All series S series, P series

MP3 players "WALKMAN"	NW-Z1050 / Z1060 / Z1070	NW-Z1050 / Z1060 / Z1070
	NWZ-Z1040 / Z1050 / Z1060	NWZ-Z1040 / Z1050 / Z1050N / Z1060
	NWZ-Z1050N	NWZ-Z1050N
	NW-A865 / A866 / A867	NW-A865 / A866 / A867
	NWZ-A864 / A865 / A866 / A867 / A866BT	NWZ-A864 / A865 / A866 / A867 / A866BT
	NW-S764 / S765 / S766	NW-S764 / S765 / S766
	NW-S764BT	NW-S764BT
	NW-S764K / S765K	NW-S764K / S765K
	NWZ-S763 / S764 / S765	NWZ-S763 / S764 / S765
	NWZ-E463 / E464 / E465	NWZ-E463 / E464 / E465
	NWZ-E463HK	NWZ-E463HK
	NWZ-E463K	NWZ-E463K
	NWZ-E363 / E364 / E365	NWZ-E363 / E364 / E365
	NWZ-E373 / E374 / E375	NWZ-E373 / E374 / E375
	NW-E062 / E063	NW-E062 / E063
	NW-E062K / E063K	NW-E062K / E063K
	NWZ-E053	NWZ-E053
	NWZ-B162 / B163	NWZ-B162 / B163
	NWZ-B162F / B163F	NWZ-B162F / B163F
	NWZ-B162FEK	NWZ-B162FEK
NWZ-B162FHK	NWZ-B162FHK	
NWZ-B172 / B173	NWZ-B172 / B173	
NWZ-B172F / B173F	NWZ-B172F / B173F	
	NWD-W263	
	NWZ-W262 / W263	
Personal Navigation System "nav-u"	NV-U37	NV-U37
	NV-U77V / U77VT	NV-U77V / U77VT
IC recorder	ICD-UX502 / UX522 / UX522F / UX523 / UX523F / TX50	ICD-UX502 / UX522 / UX522F / UX523 / UX523F / SX712 / SX713 / SX813 / TX50
	ICD-AX412 / AX412F / BX312 / PX312 / PX312F / PX312M / BX112 / BX122 / BX022 / FX8	ICD-AX412 / AX412F / BX312 / PX312 / PX312F / PX312M / BX112 / BX122 / BX022 / FX8

Memory Card Recorder	ICD-LX30	ICD-LX30
Portable Radio Recorder	ICZ-R50	ICZ-R50
Linear PCM Recorder		PCM-D50 / M10
Video Camera "Handycam"	DEV-3 / DEV-5	DEV-3 / DEV-5
	HDR-TD20 / TD20V	HDR-TD20 / TD20V
	HDR-PJ710 / PJ710V / PJ720E / PJ740VE / PJ760 / PJ760V	HDR-PJ710 / PJ710V / PJ720E / PJ740VE / PJ760 / PJ760V
	HDR-CX720V / CX730E / CX740VE / CX760E / CX760V	HDR-CX720V / CX730E / CX740VE / CX760E / CX760V
	HDR-PJ260 / PJ260V / PJ580 / PJ580V / PJ590V / PJ600E / PJ600V	HDR-PJ260 / PJ260V / PJ580 / PJ580V / PJ590V / PJ600E / PJ600V
	HDR-CX250 / CX260E / CX260V / CX270E / CX270V / CX570E / CX580E / CX580V / CX590V	HDR-CX250 / CX260E / CX260V / CX270E / CX270V / CX570E / CX580E / CX580V / CX590V
	HDR-GW55VE / GW77 / GW77V	HDR-GW55VE / GW77 / GW77V
	HDR-XR260E / XR260V	HDR-XR260E / XR260V
	HDR-PJ200 / PJ210	HDR-PJ200 / PJ210
	HDR-CX190 / CX200 / CX210	HDR-CX190 / CX200 / CX210
	HDR-AS10 / AS15	HDR-AS10 / AS15
	HDR-FX1000	HDR-FX1000
	HDR-AX2000	HDR-AX2000
	HDR-FX7	HDR-FX7
	DCR-PJ5	DCR-PJ5
	DCR-SR21	DCR-SR21
	DCR-SX21 / SX45 / SX65 / SX85	DCR-SX21 / SX45 / SX65 / SX85
	DCR-SD1000E	DCR-SD1000E
	DCR-VX2200E	DCR-VX2200E
	NEX-FS700	NEX-FS700
NEX-FS100	NEX-FS100	
NEX-VG20	NEX-VG20	
Mobile HD Snap Camera "bloggie"	MHS-TS22 / TS55	MHS-TS22 / TS55

Digital Still Camera "Cybershot"	DSC-W610 / W630 / 650 / W690	DSC-W610 / W630 / 650 / W690
	DSC-WX50 / 70/ WX100 / 150	DSC-WX50 / 70/ WX100 / 150
	DSC-TX20 / TX66 / TX200 / TX300	DSC-TX20 / TX66 / TX200 / TX300
	DSC-TX200V / TX300V	DSC-TX200V / TX300V
	DSC-H90	DSC-H90
	DSC-HX30 / HX200	DSC-HX30 / HX200
	DSC-HX10V / HX20V / HX30V / HX200V	DSC-HX10V / HX20V / HX30V / HX200V
	DSC-J20	DSC-J20
	DSC-W620 / W670	DSC-W620 / W670
	DSC-S5000	DSC-S5000
Digital Photo Frame "S-Frame"	DPF-XR100 / XR80	DPF-XR100 / XR80
	DPF-A710	
	DPF-C1000 / C800 / C700 / C70A	
	DPF-HD1000 / HD800 / HD700	
	DPF-W700	
	DPF-WA700	
	DPP-F800	
Interchangeable lens digital camara"α"	NEX-5N	NEX-5N
	NEX-C3	NEX-7
	NEX-F3	NEX-C3 NEX-F3
	SLT-A65 / A77	SLT-A65 / A77
	SLT-A57	SLT-A57
	SLT-A37	SLT-A37
PSP® (PlayStation®Portable)	PSP-E1000 series	PSP-E1000 series
PlayStation®Vita	PCH-1000 series	PCH-1000 series
	PCH-1100 series	PCH-1100 series
Digital Book Reader "Reader"	PRS-350 / 650 / 950 / T1 / G1	PRS-350 / 650 / 950 / T1 / G1
Portable DVD Player	DVP-FX770	DVP-FX770
	DVP-FX970	DVP-FX970

Portable Blu-ray Disc™/DVD Player	BDP-SX1000 BDP-SX1	BDP-SX1000 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: For Xperia™ series mobile phones and accessories, PVC has been eliminated for plastic components. For other products, PVC has been eliminated for casings and cables for internal wiring (excluding accessories).	*2 BFR-free products: For Xperia™ series mobile phones, BFR has been eliminated for PWBs, casings and cables. For other products, BFR has been eliminated for casings and main PWBs of products (excluding accessories).

\*3 Information on Sony Mobile Communications AB is based on Sony Ericsson's 2011 sustainability report (reporting period: January 1--December 31, 2011).



## Environment

### Environmental Cost

#### 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	1.4 billion yen
Cost for environmental technology development*3	17.1 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

##### Environmental Cost in fiscal 2011

Cost for environmental activities at sites	0.9 billion yen
Cost for environmental technology development*4	32.1 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

### Independent Verification Report

#### Purpose and Scope of Verification

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 2011, 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. Furthermore, amount of greenhouse gas emissions is verified in accordance with ISO14064-3 since fiscal 2011.

## Independent Verification Report

### CSR Reporting Independent Verification Report



To: Sony Corporation

6<sup>th</sup> July 2012

Bureau Veritas Japan Co., Ltd.  
System Certification Services Headquarter

#### Objective of Verification

To verify the reliability and consistency of environmental data generated in FY2011 and selected by Sony Corporation (Sony) for inclusion in the Sony CSR Report (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 six 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, Home Entertainment & Sound Business Group
- Sony EMCS Corporation Kisarazu Site
- Sony Semiconductor Corporation Kagoshima Technology Center
- Sony Chemical & Information Device Corporation Kanuma Plant
- Shanghai Suoguang Visual Products Co., Ltd.
- Sony Digital Audio Disc Corporation - Terre Haute

#### Data Item

##### Environmental performance data of each site

- Energy consumption(including fuel for motor vehicles) and associated CO<sub>2</sub> emissions from energy consumption
- Emissions of PFCs and other greenhouse gases
- Waste discharge, recycle volume and final waste treatment volume
- Volumes of water consumption and water/wastewater discharge
- Air pollutantsemissions (NO<sub>x</sub> & SO<sub>x</sub>)
- Water pollutant (BOD/COD) emissions
- Environmental management substances(class1~4): volumes of use , emissions , transportation

##### Environmental data of product

- Product recycle record
- CO<sub>2</sub> emissions from product use
- Total volume of resources used in products
- Electricity consumption of product
- Utilization ratio of virgin oil-based plastics

##### Environmental data of distribution

- CO<sub>2</sub> emissions from logistics

##### Other

- CO<sub>2</sub> Emissions associated with employee business travel

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.

**Verification Methodology**

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 2011 to March 2012)
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 processes, 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 contain 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.

## Greenhouse Gas Emissions Verification Statement

### GREENHOUSE GAS EMISSIONS VERIFICATION STATEMENT

To: Sony Corporation



**BUREAU  
VERITAS**

July 6, 2012

Bureau Veritas Japan Co., Ltd.  
System Certification Services Headquarters

Bureau Veritas Japan Co., Ltd. (Bureau Veritas) was engaged by Sony Corporation (Sony) to conduct limited assurance for the greenhouse gas (GHG) emissions reported by Sony in its CSR Reporting for the period of April 1, 2011 through March 31, 2012.

#### 1. Scope of Verification

Sony requested Bureau Veritas to conduct limited assurance to verify the accuracy of the following:

- 1) Scope 1 and Scope 2 GHG emissions:
  - GHG emissions through business operations of all ISO 14001-certified sites as of March 31, 2011 within the Sony Group
- 2) Scope 3 GHG emissions:
  - CO<sub>2</sub> emissions from the electricity consumed during product use
  - CO<sub>2</sub> emissions from product shipment (\*1)
  - CO<sub>2</sub> emissions from employee business travel (\*2)

(\*1) Total CO<sub>2</sub> emissions from logistics include emissions arising from transportation of electronics products handled by the Sony Group internationally and also over 40 countries around the world including Japan, the United States, Europe, and Asia. Emissions of logistics in Japan partially include those from parts transportation.

(\*2) Flights arranged by the departments of Japan, Europe, and U.S.A. out of the departments related to electric and electronic products, electronic devices and recording media (through Sony Travel as a rule)

#### 2. Methodology

Bureau Veritas conducted the verification in accordance with the requirements of the international standard 'ISO 14064-3: Greenhouse gases - Part 3: Specification with guidance for the validation and verification of greenhouse gas assertions'.

As part of Bureau Veritas' assurance, the following activities were undertaken:

- Interviews with relevant personnel of Sony responsible for the identification and calculation of GHG emissions;
- Review of Sony information systems and methodology for collection, aggregation, analysis and review of information used to determine GHG emissions; and
- Audit of a sample of source data to check accuracy of quantified GHG emissions.

#### 3. Conclusion

Based on the verification scope of work and processes followed, there is no evidence to suggest that the GHG emissions assertion shown below:

- are not materially correct and are not a fair representation of the GHG emissions data and related information.
- are not prepared in accordance with the methodology for calculating GHG emissions established and implemented by Sony.

Verified greenhouse gas emissions		
Scope 1	Scope 2	Scope 3
353,000 t-CO <sub>2</sub> e	1,150,000 t-CO <sub>2</sub> e	23,500,000 t-CO <sub>2</sub> e

#### 【Statement of independence, impartiality and competence】

Bureau Veritas is an independent professional services company that specializes in Quality, Health, Safety, Social and Environmental management with over 180 years history in providing independent assurance services. No member of the verification team has a business relationship with Sony, its Directors or Managers beyond that required of this assignment. We conducted this verification independently and to our knowledge there has been no conflict of interest. Bureau Veritas has implemented a Code of Ethics across the business to maintain high ethical standards among staff in their day-to-day business activities. The verification team has extensive experience in conducting assurance over environmental, social, ethical and health and safety information, systems and processes, has an excellent understanding of Bureau Veritas standard methodology for the verification of greenhouse gas emissions data.

## Environment

### History of Environmental Activities at Sony

		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 is established
1993	January		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 (ongoing until 1999)	
	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 (ongoing until 2005)	
	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
	May		Sony Eco Plaza environmental exhibition room opens Sony Headquarters
	October	Establishes Corporate Environmental Affairs Department	
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; 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 becomes effective and the 14-plant recycling network of Green Cycle Corporation, where Sony is the principal shareholder, begins processing four types of appliances; 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 legal 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 Programme 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 Noshiro, Akita prefecture using a Green Power Certification system purchase contract
	June		Announces the energy-saving KDL-32JE1 LCD television
	September		Commences pilot program to collect small e- waste in the city of Kita-Kyushu
2009	January		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%

	September	Transformed into Environmental Center (rank changed from "Department" to "Center")	
	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

	March		Sony Forest, maintained by Sony EMCS Corporation's 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
	June	Begins implementation of "Green Star Program" which assesses the environmental performance at each site	
2012	February		Developed "authentication outlets" that let a user proactively manage his/her use of electric power

\* Organization names appear as they were at the respective dates; some may not be current.

## Innovation for Sustainability

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.

[More](#)

### 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.

[More](#)

### Marketing ›



Sony offers programs that enable consumers to make their own contribution toward solving environmental problems.

[More](#)

### Design ›



Sony pursues a variety of design-based initiatives that help solve problems faced by society and take user diversity into consideration.

[More](#)

## Innovation for Sustainability

### Technology

#### Expanding from the Development of Olivine-Type Lithium-Iron Phosphate Storage Batteries to Include Other Peripheral Devices

##### Development of olivine-type lithium-ion iron phosphate secondary batteries 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. Building on accumulated technologies and know-how, in 2009 Sony commercialized an olivine-type lithium-ion secondary battery, marking its first step toward full-scale entry into the storage battery market.



Sony's olivine-type lithium-ion iron phosphate secondary batteries

##### Sony's Lineup of Storage Batteries Encompasses Products for a Broad Range of Uses

After shipments of the olivine batteries began, market needs began to shift toward products that would ensure the stable supply of electricity. Having commenced mass production of an energy storage module in April 2011, in January 2012 Sony began mass-producing a controller that controls both charging and discharging from the module and storage battery conservation. Although more than a year has passed since the Great East Japan Earthquake, general sentiment continues to lean firmly toward storing power for later use. Accordingly, storage modules that facilitate peak shifting and can be used in the event of a sudden power failure are attracting considerable attention for both professional and residential use. In this environment, Sony is responding to the needs of a broad range of customers by augmenting its lineup with compact professional-use storage modules and all-in-one home-use models that plug in for storing electricity, facilitating use at home, in the office or anywhere.



Energy storage module (IJ1001M)

**The Exceptional Safety and Reliability of Sony's Products Is Contributing to the Expansion of the Market for Storage Batteries**

Until recently, safety standards for rechargeable lithium-ion batteries were formulated primarily for applications in mobile devices. However, with the market for these batteries expanding in recent years, UL, an international third-party testing and accreditation institution, developed a new safety standard for stationary storage batteries mounted with lithium-ion batteries. Sony promptly applied and was granted UL certification for its energy storage module, as well as for its energy storage system, comprising a storage module and a controller, underscoring the safety and the performance of these products. In addition to underscoring the reliability of Sony's products, UL certification is testament to Sony's outstanding technological prowess.

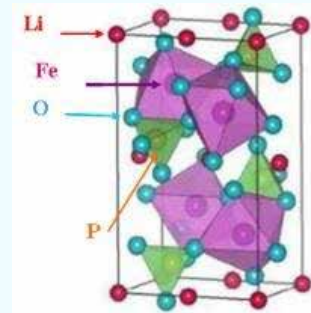


Left: An example of Sony's UL-certified energy storage system (combines IJ1001M and IJ1002C)

Right: Sony's energy storage module (IJ1001M, above) and controller (IJ1002C, below)

**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

### Development of the Authentication Outlet - Making Possible Power Management and Power Control on an Individual User and Device Basis

Recent years have seen significant changes in conditions relating to electricity and energy, and interest within society in environmental issues and their impact on our lives has greatly increased. Meanwhile, under the existing smart grid concept, most research in such areas as Home Energy Management Systems (HEMS) and Building and Energy Management Systems (BEMS) is conducted from the point of view of an electricity supplier. The principal functionality from a user perspective relates to the promotion of energy conservation by identifying the level of power consumption and providing information on device operational status.

Against this backdrop, Sony has focused on electricity outlets—an essential part of electricity usage infrastructure—and developed the "Authentication Outlet," which enables users to actively manage and control their power usage. Sony has developed two types of outlet, which play an interface role whenever electricity is used. The first category is the FeliCa-type Authentication Outlet, which provides electrical device authentication using Sony's NFC/FeliCa contactless IC card technology. This is based on proven contactless IC card technology, which is used extensively in such spheres as transportation ticketing systems and e-money, with an added authentication function. The second category is the RFID Over Power Line-type Authentication Outlet, which provides electrical device authentication via the power line by utilizing Sony's new RFID Over Power Line technology.

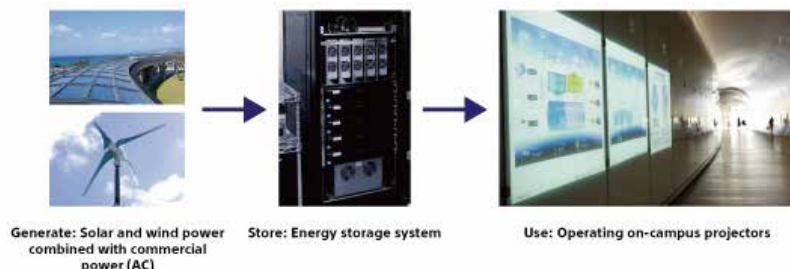
The Authentication Outlet has an IC chip in the plug of an electrical appliance or electric vehicle and a contactless IC card reader on the outlet side. When the plug is inserted into the outlet, electricity is supplied after device and user authentication. Based on this technology, it will be possible to build a new type of control system capable of tracking and managing power usage (consumption volume and history) on an individual-user basis via management of each electrical.



Concept image

**Open Energy System (Distributed Small-Scale Energy Network) Demonstration Test**

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 small-scale 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. 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.



**Participation in the Pecan Street Smart Grid Demonstration Project, in Austin, Texas**

In 2102, Sony is taking part in the Pecan Street Smart Grid Demonstration Project, in Austin, Texas. As a company participating in this demonstration project, Sony is not only performing a wide variety of tests and verification utilizing proprietary power-demand-forecasting technology and power-storage devices as well as providing practical solutions for users, but is also conducting verification in preparation for the commercialization of a HEMS that offers users enjoyment in their ongoing use. Through this demonstration, Sony is exploring ways to build the ideal smart grid business model, which will enable users to have fun while contributing to environmental sustainability.

• Note: For more information, please refer to the following press release:

**Cell Broadband Engine™ Technologies:  
Helping to Identify the Mechanics of Disease**

**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.

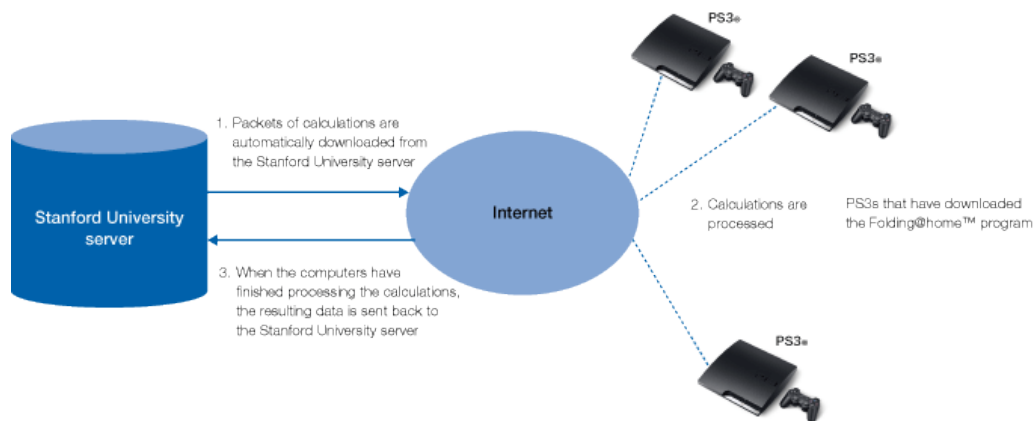
**Analyzing Protein Folding on PLAYSTATION®3**

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](#)

## 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 for Sustainability

### 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.

#### Digital Cinema Systems

The movie industry is shifting rapidly to digital technology. In 2000, Sony launched the world's first digital motion picture production camera, the HDW-F900, beginning an era of major change in the movie production industry. In 2006, Sony introduced a digital cinema projection system, and is promoting digital cinema as a means of reducing energy consumption and conserving resources.

#### Movie Production

Within digital cinema, which converts images to data instead of using film, a wide range of efficiency improvements are possible. For example, when shooting with film, one reel only lasts approximately 10 minutes. In contrast, with digital recording systems, not only is it possible to shoot continuously for 50 minutes, the shot scenes can be checked immediately on the spot. Furthermore, post-shooting editing of digital movies offers superior efficiencies, and compatibility with computer graphics (CG)-which have come to be used extensively in recent years-is also high. Consequently, this leads to increased production efficiency and reduced 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

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

**Movie Theater Operations**

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 the production of a 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

Another recent example is the Sony Digital Cinema 4K™ cinema projection system which received the 58th Okochi Memorial Production Prize (fiscal year 2011). This system is estimated to achieve a reduction of approximately 40% in CO<sub>2</sub> emissions compared with conventional film-based systems, and is rapidly being adopted around the world.

\*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:

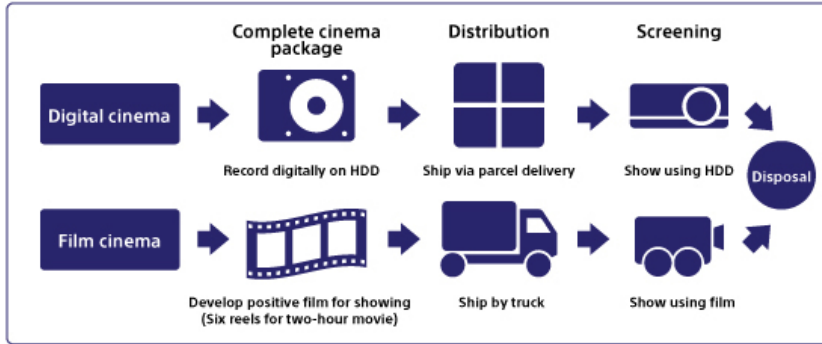
- CO<sub>2</sub> emissions during manufacture and developing of film
- CO<sub>2</sub> emissions during transport of film  
Calculated in ton-kilometers assuming round-trip between Tokyo and each movie theater in a two-ton truck: Weight x distance traveled x fuel used per ton-kilometer x coefficient of 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**

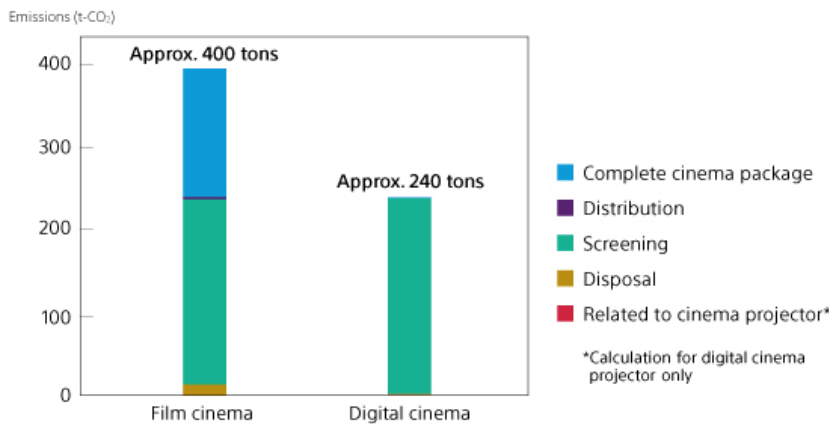
CO<sub>2</sub> emissions from the following processes associated with a two-hour movie made using digital cinema, assuming one HDD per movie theater:

- 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, screening, 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**

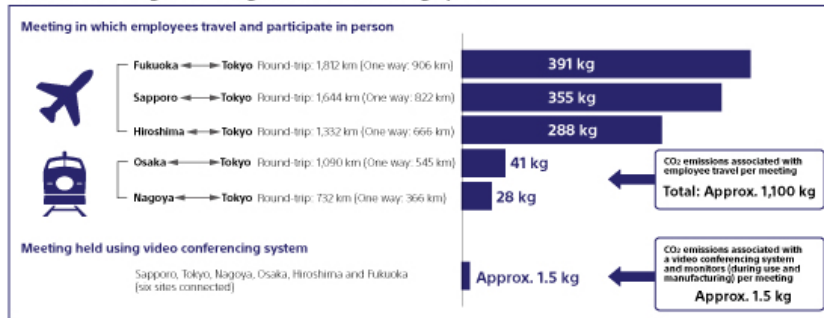
- Meeting with participation of two employees each from five cities (Fukuoka, Sapporo, Hiroshima, Osaka and Nagoya) traveling to Tokyo
- Participants traveling between Tokyo and Fukuoka, Tokyo and Sapporo, and Tokyo and Hiroshima, by air; participants traveling between Osaka and Tokyo, and Nagoya and Tokyo, 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 for Sustainability

### Marketing

In addition to taking steps to lower greenhouse gas emissions from its own operations, Sony is working to develop business systems that ensure the use of its products and services by customers contributes to the resolution of key issues.

#### A Portion of Reader™ Store Sales Used to Support Environmental Conservation Initiatives on Sumatra Island, Indonesia "Read a Book, Support Forest Conservation" Campaign

The tropical rain forests of Sumatra Island in Indonesia are recognized as a Natural World Heritage Site by UNESCO. However, deforestation over the past 30 years has led to a dramatic decline in forested area.

Sony supports a project for forest conservation in Sumatra run by the World Wide Fund For Nature (WWF) Japan. Part of the revenue from sales of e-books at Reader™ Store-Sony's e-book store-is donated to the WWF Japan conservation project, and customers can also participate in the project by donating Sony Points.



- For more information, please see:  
[Project for Forest Conservation in Sumatra](#)

#### Sony Group Companies Support the Adoption of Renewable Energy Sources Through the Solar Bear Fund

For the next generation and to help realize a sustainable society, Sony supports the efforts of the Solar Bear Fund, a Japanese NGO involved in the promotion of renewable energy sources as a means to address global warming.



- For more information, please see (Japanese only):  
[Sony Group and the Solar Bear Fund](#)

## Carbon-Offset Investment Trust

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. The initiative covers three eco-funds, which have donated greenhouse gas emissions rights totaling 1,000 tons in fiscal year 2008, 2,200 tons in fiscal year 2009, 1,000 tons in fiscal year 2010 and 1,000 tons in fiscal year 2011.

• For more information, please see (Japanese only):

## Innovation for Sustainability

### Design

#### A Portable Charger Kit Borne from Sustainable Design

To help realize a sustainable society, Sony promotes the concept of sustainable design. As one expression of this concept, Sony launched the "odo" design project, which has applied this concept to a group of model devices focusing on kinetic energy-based products. From a universal design perspective, the devices are easily accessible even for children, while also applying the principles of eco-design. Using your body to generate energy as you use these devices facilitates a new level of interaction.



"odo": The concept behind sustainable design

As an example of a design incorporating hand-powered generation, in June 2012 Sony launched the CP-A2LAKS portable USB charger kit. In this model, in addition to the conventional portable charger used with smartphones and other devices, Sony has newly included a hand-cranked, USB charger unit. By turning the charger handle, you can generate enough power to talk on a smartphone for approximately one minute. The device is convenient for outdoor use or when there is a power blackout. To ensure that the design provides ease of portability, the hand-crank input unit may be detached from the USB output unit.



- For details on the range of "odo" products, please visit the [Sony Design website](#):
- For details on the CP-A2LAKS USB charger kit with a hand-cranked unit, please visit:

#### Sustainable Packaging

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® S series, launched in fiscal year 2011. 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 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:

## 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

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 May 2012, 28 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

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

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"

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 May 2012, 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.](#)



## CSR Enlightenment

### Engaging Employees

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.

### CSR Organizational Structure

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.

CSR department 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.

### Raising Awareness

Recognizing the importance of raising employee awareness 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 screenings and other activities designed to enhance awareness of each individual's obligations to society.

Sony's community engagement 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.

## CSR Training and Information Distribution

CSR training for new employees focuses on instilling know-how and introducing Sony's CSR program. Sony also offers in-person 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 newsletter

## CSR Forum

Held after hours and completely voluntary, the CSR Forum provides Sony employees in Japan with the opportunity to increase their knowledge of CSR. This event features lectures by invited experts, film screenings and other activities, and addresses a variety of themes, including emergency relief, the environment, human rights, poverty, international understanding, employment opportunities for the disabled, work-life balance and diversity, base-of-the-pyramid (BOP) businesses and social innovation. 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 2011, the CSR Forum had been held 24 times, with cumulative participation exceeding 19,000 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

Sony believes that employee participation is crucial to ensuring its community engagement 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. Sony also encourages employees to act as instructors for workshops organized for children and students and in other capacities that capitalize on their specialized skills, as well as to participate in Public Viewings and other social contribution initiatives in developing countries.



Sony solicited employee volunteers to assist with the digital preservation of photographs damaged in the Great East Japan Earthquake (Otsuchi-cho, Iwate Prefecture).

### ◆Employee volunteers Volunteer Systems for Employees

- Leave for volunteer purposes
- SOMEONE NEEDS YOU (employee volunteer program)

For further information: [Community > Volunteer Systems for Employees](#)

### <Volunteer initiatives>

1. [Employee volunteer work in areas affected by the Great East Japan Earthquake](#)
2. [Instructors and staff for Sony Science Program](#)
3. Cleanup activities and tree-planting
4. [Sony Student Project Abroad \(China\) host family](#)
5. School satchels for children in developing countries (inspections, other efforts)
6. [Public Viewing in Tanzania](#)

Fundraising initiative, donation of goods

- Matching gift programs

For further information: [Community > Matching gift programs, fundraising initiatives](#)

### <Fundraising initiatives>

- Emergency humanitarian assistance
1. [Emergency monetary aid to victims of the Great East Japan Earthquake](#)
  2. Aid for flood victims in Thailand
  3. Funds raised for victims of the Great East Japan Earthquake through the Solar Bear Fund

### <Donations in kind>

1. School satchels for developing countries
2. [South Africa Mobile Library Project](#)

### Employee Participation in CSR Activities

