Sustainability Data Book 2016

Panasonic Corporation

Panasonic

About the Sustainability Data Book 2016

Panasonic reports on sustainability through our Sustainability page on our website and this Sustainability Data Book.

The topics of this report are selected based on an analysis of the concerns of stakeholders and material issues (topics ranked as critical by Panasonic). For the company's environmental activities, Panasonic reports on the goals it has set for itself in its environmental action plan Green Plan 2018.

The Sustainability Data Book highlights important information including topics reported on our Sustainability website, our policies and approaches to various issues, performance data, and more. For themes that have been omitted, for specific examples of initiatives, and more details generally, please refer to the Panasonic Sustainability website.

▶ Sustainability Site
http://www.panasonic.com/global/corporate/sustainability.html

Scope of Reporting

Except when noted otherwise, results are calculated based on the following:
Period: Fiscal 2016 (April 1, 2015 to March 31, 2016)
Organization: Panasonic Corporation and consolidated subsidiaries
Data:

- Data concerning manufacturing business sites cover all the manufacturing business sites (totaling 254) that constitute the Panasonic Group's environmental management system
- From fiscal 2014, Panasonic's policy has changed; there is now no revision of past data when the scope of what counts toward totals is amended.
  Fiscal 2015 data: Data from all relevant business sites (278 sites) in fiscal 2015
  Fiscal 2014 data: Data from all relevant business sites (296 sites) in fiscal 2014
  Data for fiscal 2013 and prior: Data from all relevant business sites (300 sites) as of fiscal 2013
- Data for which the fiscal year and region are not expressly stated are global results for fiscal 2016

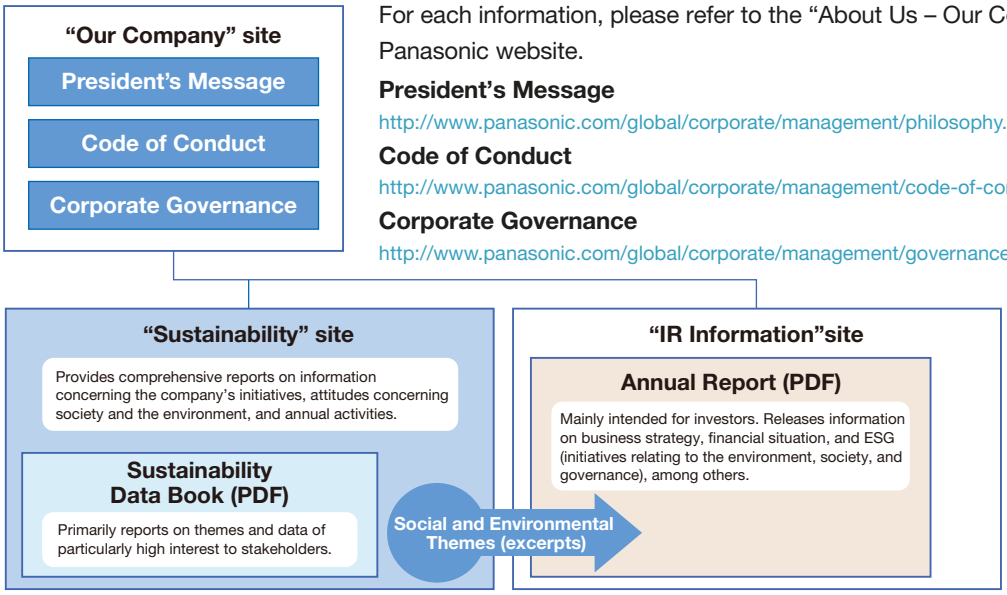
Assurances

Main data relating to the environment have been assured by KPMG AZSA Sustainability Co., Ltd. For details on the indicators covered by the assurance, please refer to the Independent Assurance Report on P128.

Reference Guidelines

"Sustainability Reporting Guidelines G4"
Japanese Ministry of the Environment, "Environmental Reporting Guidelines 2012"

Structure of Reporting on Social and Environmental Initiatives



For each information, please refer to the "About Us – Our Company" pages on the Panasonic website.

President's Message
http://www.panasonic.com/global/corporate/management/philosophy.html#section_01

Code of Conduct
http://www.panasonic.com/global/corporate/management/code-of-conduct/list.html

Corporate Governance
http://www.panasonic.com/global/corporate/management/governance.html

Sustainability Data Book 2016 Contents

Corporate Profile

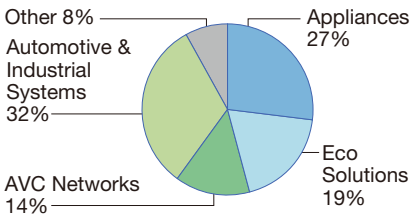
as of March 31, 2016

Company Name: Panasonic Corporation
Company Headquarters:
1006 Oaza Kadoma, Kadoma City, Osaka 571-8501, Japan
Tel: +81-6-6908-1121
Incorporated: December 15, 1935
Founded: March 7, 1918
President: Kazuhiro Tsuga
Common Stock: 258.7 billion yen

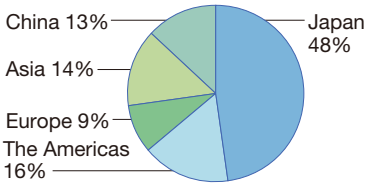
FY2016 Financial Result

Net sales: 7,553.7 billion yen **Operating profit:** 415.7 billion yen **Income before income taxes:** 217.0 billion yen
Net income attributable to Panasonic Corporation: 193.3 billion yen **Number of Employees:** 249,520

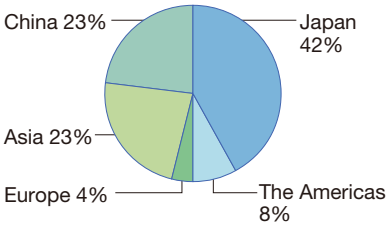
Sales by Segment (FY2016)



Sales by Region (FY2016)



Employees by Region (End of FY2016)



Main Products and Services

The Panasonic Group's major products and services, by segment, are as follows:

Appliances

Air-conditioners, TVs, refrigerators, washing machines, personal-care products, microwave ovens, home audio equipment, video equipment, vacuum cleaners, rice cookers, bicycles, showcases, large-sized air-conditioners, compressors, fuel cells

Eco Solutions

Lighting fixtures, lamps, wiring devises, solar photovoltaic systems, water-related products, interior furnishing materials, ventilation and air-conditioning equipment, air purifiers, nursing-care-related products

AVC Networks

Aircraft in-flight entertainment systems, PCs and tablets , projectors, digital cameras, surveillance cameras, social infrastructure systems equipment, fixed phones, mobile phones

Automotive & Industrial Systems

Car-use-multimedia-related equipment, electrical components, lithium-ion batteries, automotive batteries, dry batteries, electronic components, automation controls, semiconductors, electronic materials, LCD panels, electronic-components-mounting machines, electric motors, welding equipment

Other

Detached housing, rental apartment housing, land and buildings for sale, home remodeling, raw materials

Our Unchanging Management Philosophy and Sustainability

Our mission at Panasonic is to contribute to the advance of world culture by working to improve society through the products we produce and sell. Panasonic's Basic Management Objective clearly expresses the purpose of our business activities as well as the purpose of our existence.

Since the company's founding in 1918, this management philosophy has formed the foundation of all our business activities. As the key element of this philosophy, we have the basic concept of the "company as a public entity of society." All the management resources of a company-including the people, money, and commodities-all come from society.

While the company engages in business activities using the resources entrusted by society, it also develops along with society, and so the company's activities must be transparent, fair, and just.

Basic Management Objective

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

The entire Panasonic Group takes care to ensure that our management and business activities are appropriate for "a public entity of society," and we will continue to implement this management philosophy through manufacturing as our primary business. This is also the very essence of the Panasonic Group's sustainability. As we stand at historical turning points in many areas today-society, economy, global environment-the Panasonic Group will continue to promote sustainability management globally and to contribute to the future of society and the world by proposing the lifestyles of tomorrow.

Konosuke Matsushita, Founder of Panasonic Corporation, My Management Philosophy (issued in June 1978)

"There is much discussion today regarding 'social responsibility,' but while the meaning of that concept can be wide-ranging depending on social conditions at a particular time, the fundamental social responsibility of a corporation, in any era, should be to improve society through its business activities. It is extremely important to manage all business activities based on this sense of mission."

Konosuke Matsushita,
founder of Panasonic Corporation

The Panasonic Code of Conduct was formulated in 1992 as a specific guide to the practice of the Company's management philosophy. (Subsequently revised and updated, the 2016 edition is the current standard.)

http://www.panasonic.com/global/corporate/management/code-of-conduct/list.html

Panasonic formulated its Sustainability Policy in 2013, based on the company's management philosophy, as a written record of its efforts to contribute to today's society and to fulfill its social responsibility.

http://www.panasonic.com/global/corporate/sustainability/management/policy.html

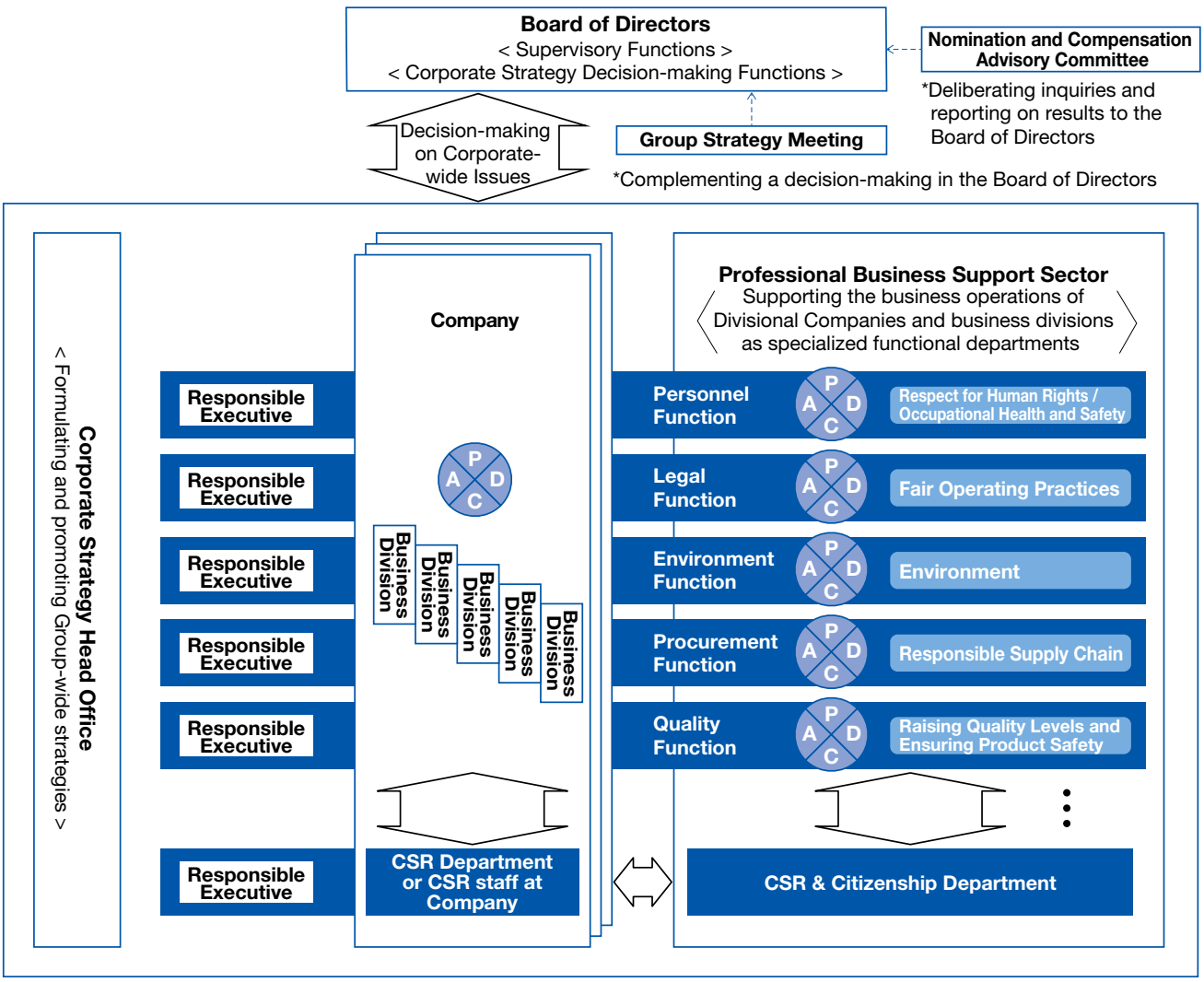
System for the Promotion of CSR Activities

Continuously and Organizationally Managing Issues and Progress Relating to Sustainability

For each area of activity relating to CSR—including human rights, fair operating practices, and the environment—Panasonic establishes responsible executives and functional divisions. Each Company, business division, regional office, and functional division has created various group meetings and opportunities for stakeholder engagement, the results of which are incorporated into everyday activities. Using PDCA cycles, these Panasonic Group constituents monitor their progress and act autonomously.

For issues affecting the entire group for which there are strong demands from society for us to respond, including by contributing to climate change mitigation and adaptation, as well as to water-related issues, decisions are made at board of directors' meetings and at Group Strategy Meetings. Concerning issues that are deemed the most material, the company makes an analysis of and identifies such issues for each area of activity, and incorporates these important issues into its operational policies. For material issues in each area of activity and the background to their selection, please refer to the items on "Management System" for the respective area ("Policy" for the environmental area). Panasonic conducts its CSR activities with respect for worldwide guidelines and stakeholders' voices as a fundamental concept.

System for the Promotion of CSR Activities



Respecting Global Standards, Norms, Guidelines, and Initiatives

Panasonic conducts its business based on global standards, specifications, norms, guidelines, and various initiatives. These concepts are reflected in the Panasonic Code of Conduct and the Sustainability Policy that form the guidelines for the company's business activities.

Global Standards, Norms, Guidelines and Initiatives

Universal Declaration of Human Rights	ILO Fundamental Labour Standards
Organisation for Economic Co-operation and Development Guidelines for Multinational Enterprises	Guiding Principles on Business and Human Rights
Japan Business Federation (Keidanren) Charter of Corporate Behavior	Industry specific codes of conduct, such as the Electronic Industry Citizenship Coalition (EICC), and others
ISO 26000	Global Reporting Initiative (GRI) Guidelines

Promoting Initiatives Based on Dialogues with Stakeholders

Panasonic conducts dialogues with its wide range of stakeholders around the world—including customers, investors, suppliers, governments, industry bodies, NPOs, NGOs, local communities, and employees—on various aspects of its business. The company incorporates the opinions it receives into its business activities and product creation.

Major Stakeholders

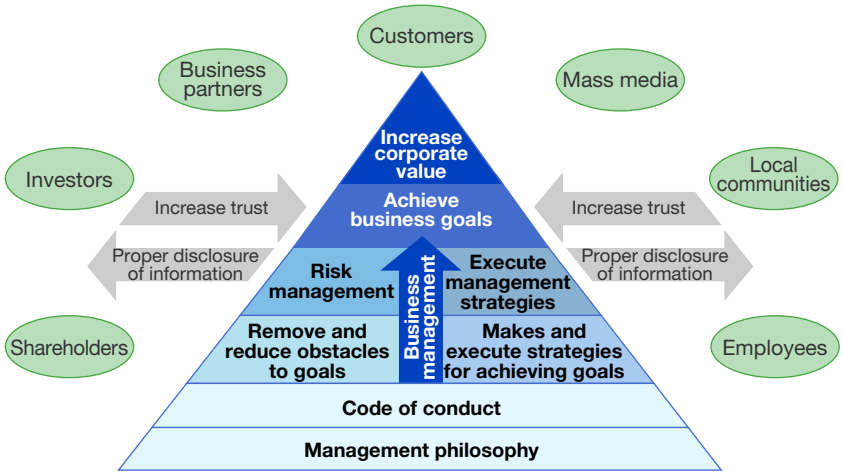
Risk Management

Fundamental Stance

Panasonic's founder, Konosuke Matsushita, coined numerous aphorisms which are still used at the company: "Hardship now, pleasure later," "The source of our failures is within us," "There are signs before all things," and "Small things can create big problems; one must be alert to signs of change and act accordingly," among many others. Using these ideas as a cornerstone in its thinking, the company conducts groupwide risk management activities covering its operations around the world, with the aim of taking preemptive actions to eliminate "sources of failure"—that is any factors that could impede the accomplishment of business goals.

At Panasonic, risk management functions in parallel with the development and execution of management strategies. The company believes that by combining these two functions, it is better positioned to accomplish its business objectives and to increase its corporate value. Furthermore, by disclosing appropriate information concerning risks to the public, improving the transparency of its management, and reducing risks through preemptive measures, the company gives its customers and other stakeholders—as well as local communities and the public as a whole—greater confidence in its organization.

Role of Risk Management in Business Management

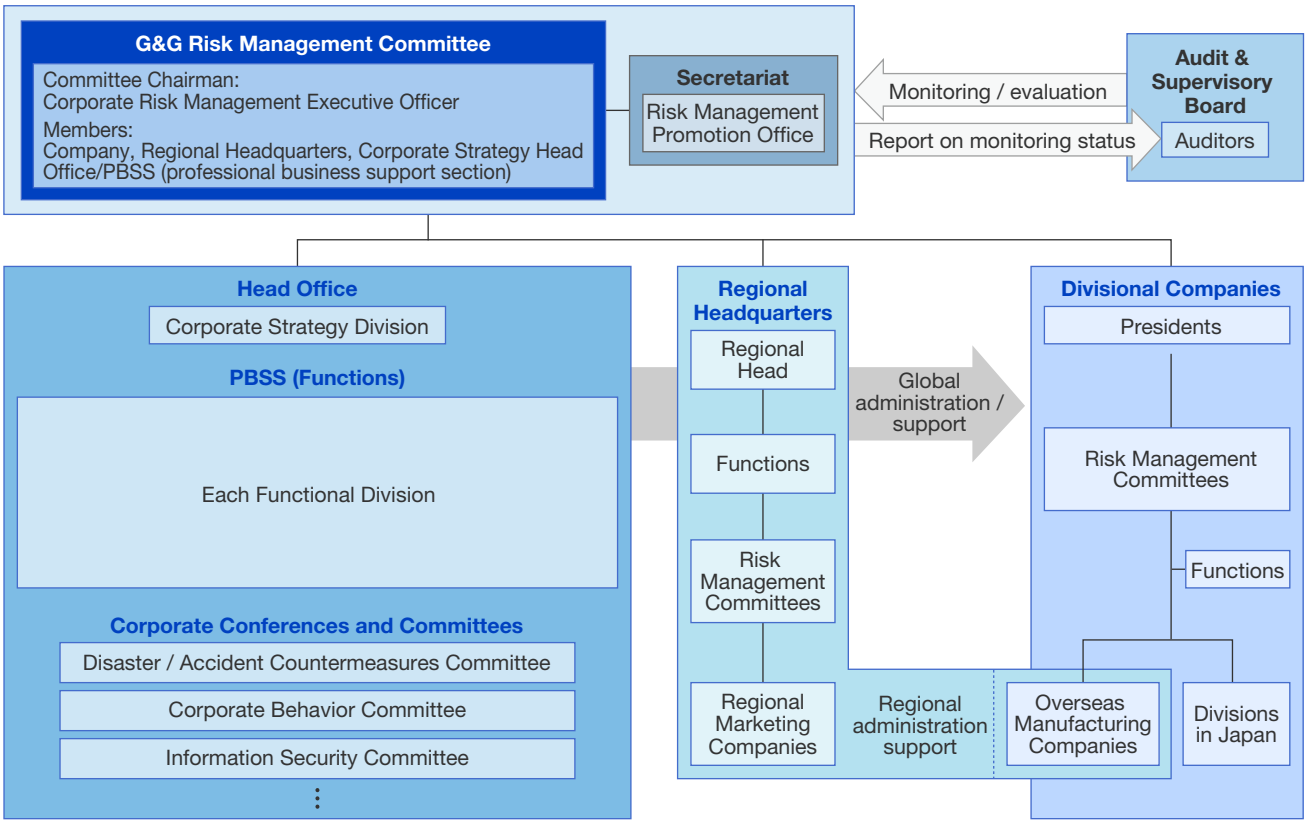


Organizational System

In April 2005, Panasonic established the Global & Group Risk Management Committee (G&G Risk Management Committee), which promotes risk management throughout the whole Panasonic Group. The Corporate Risk Management Executive Officer, who is nominated from among Group management, chairs the committee whose membership consists of Company Chief Risk Officers (CROs) and managers from regional headquarters, the Corporate Strategy Head Office, and functional divisions. The Risk Management Promotion Office serves as the committee's secretariat.

The G&G Risk Management Committee determines what serious risks the entire company faces, as corporate major risks, based on the results of risk assessments conducted by each Company, affiliates, the Panasonic headquarters, and regional headquarters. This constitutes part of Panasonic's corporate compliance with legal mandates. The committee also monitors the progress of plans instituted by the Companies, affiliates, Panasonic headquarters, and regional headquarters for countering serious risks. As needed, it provides instructions to functional divisions and various committees, as well as assistance for Companies, affiliates, Panasonic headquarters, and regional headquarters, promoting continuous improvement. The G&G Risk Management committee reports the status of monitoring to auditors and is itself monitored and evaluated by the Audit & Supervisory Board.

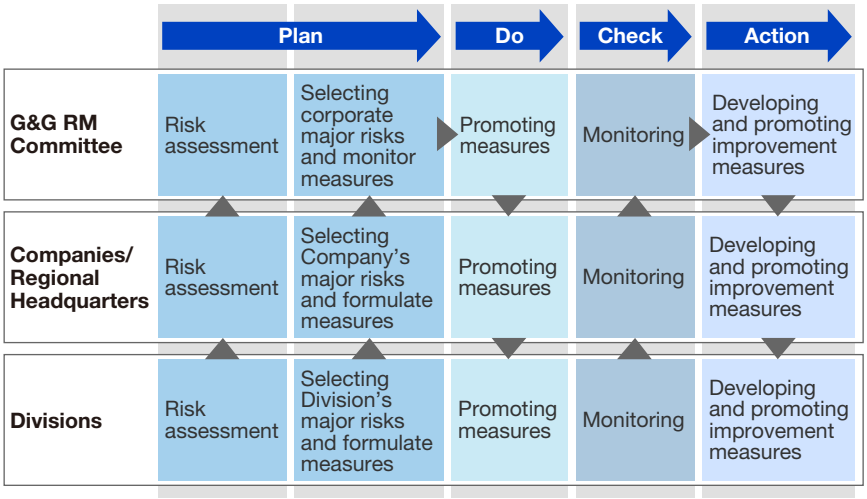
Panasonic Global and Group Risk Management Promotion Framework



Basic Framework

Panasonic has three levels of management cycles for risk management: the G&G Risk Management Committee, four Panasonic Companies, and business divisions. Each year, an assessment of the impact of risks that could affect the business management of Companies and affiliated business divisions is undertaken using a single, global set of standards incorporating the potential impact on business operations, probability of risk occurring, and other factors. Steps are then taken to identify major Company risks and to ensure that appropriate countermeasures are implemented. Taking into consideration these major Company risks, the G&G Risk Management Committee considers and identifies those major risks that require attention from a Group-wide perspective. The G&G Risk Management Committee also monitors progress made concerning countermeasures as a means to improve and strengthen Group-wide risk management.

Basic Framework for Risk Management



- Corporate Major Risks for FY2016

Natural disaster (earthquakes, tsunamis, weather-related disasters, etc.)
Quality problem
Cartels
Cyberattack

- Corporate Major Risks for FY2017

Natural disaster (earthquakes, tsunamis, weather-related disasters, etc.)
Quality problem
Cartels
Cyberattack

Increasing Risk Sensitivity

The G&G Risk Management Committee systematically educates, and raises awareness among, Panasonic Group employees to ensure the thorough dissemination of knowledge of basic policies on risk management and for these to be put into practice. In addition to disseminating information to all employees through internal communications on its activities (selected corporate major risks and the progress of measures for handling those risks), the G&G Risk Management Committee provides annual seminars on risk assessment for managers in charge of risk management promotion. The committee aims to increase the level of skills for the effective conducting of risk assessments by explaining Panasonic's basic policy on risk management, "The Risk Management Guidelines."

In addition, to prevent risks from becoming even more severe when they have manifested and responses have been insufficient, the committee issues "Guidelines for Business Unit Directors on Responding to Risk Occurence" to the business unit directors and ensures that these guidelines are put in place thoroughly. The committee improves the ability to handle risks on the ground overseas by providing training on the essentials of risk management, how to respond when risks have manifested, and related matters for newly appointed presidents of overseas affiliates and for employees who are about to be posted overseas.

The committee has organized hotlines as a mechanism for employees to report latent risks regarding matters such as compliance violations, various forms of workplace harassment, and improprieties in procurement processes. Employees and suppliers are able to report any perceived problem independently and at any time. The company has also established a mechanism by which all employees can independently report latent compliance-related risks in the workplace through annually conducted compliance awareness surveys. Feedback concerning reported risks is provided to each workplace, and these risks are dealt with.

Initiatives Relating to Business Continuity Management (BCM)

As a public entity of society, Panasonic has established as part of its management philosophy that it will contribute to the advancement of world culture by working to improve the quality of life of society through the products that it produces and sells. Since 2005, the company has been keenly aware of the necessity of activities relating to business continuity—one of the company's duties to society. The company thus engages in business continuity management (BCM), whose goal is to prevent a halt to the supply of products or the provision of services when contingencies such as disasters have occurred, or, in the rare event that service has halted, to restart operations as quickly as possible.

Specifically, if disasters or other incidents were to occur within our supply chain, they would impact the production or sales of our group companies. In the case of BtoB, this impact would also affect the production and sales of companies to which we deliver. This is why Panasonic believes it is critical to have BCM that includes our supply chain.

For this reason, we have conducted a hazard survey of various risks posed by natural disasters in countries around the world—earthquakes, floods, tropical depressions, tsunamis, naturally occurring fires, landslides, tornadoes, and volcanic eruptions. We have also shared these findings with each of the four Companies and have put priority-ranked measures in place, both within our own group and in our supply chain. We also work hard to obtain information on disasters and incidents and to respond swiftly in real time, both in order to confirm the safety of our employees and to provide uninterrupted supply to customer companies.

Forecasts indicate a high probability of a major earthquake in Japan, directly under the Tokyo metropolitan area or in the Nankai Trough, within the next 30 years. In response to these predictions, Panasonic has established a cross-Company task force, which is promoting earthquake resistance and disaster responses, based on the latest government damage predictions. The task force conducts annual groupwide disaster-preparedness training drills. It has established emergency response headquarters at every level of the group, within the four Companies, and within business divisions. These headquarters are intended to maintain and improve Panasonic's initial response capabilities—including confirmation of the safety of employees and reporting among different emergency response headquarters on the degree of damage.

In terms of procurement activities, we also manage the securing of replacement sourcing and the building up of inventory for emergencies, based on evaluations of the criticality and interchangeability of procured parts.

Concerning fires, the task force conducts periodic fire risk assessments, independent fire prevention checks, and fire prevention audits and strives to prevent similar accidents from occurring again by sharing case studies of dealing with fire-related accidents.

Environment: Policy

Environmental Policy

Contributing to society has been the management philosophy for Panasonic ever since its founding, and we have been taking measures against pollution since the 1970s. We announced the Environmental Statement in June 5, 1991, clarifying our approaches to address global environmental issues as a public entity of society. Since then we have been carrying out initiatives including matters on global warming prevention and resources recycling corporate-wide, aiming to attain a sustainable, safe, and secure society.

In fiscal 2014, the Panasonic Group introduced a new brand slogan, “A Better Life, A Better World,” aiming to realize a better life for all its customers, and is promoting environmental initiatives as an important element in achieving that goal. In production activities, exhaustive energy-saving measures have been implemented in all factories worldwide, pushing for further CO_2 emissions reduction in our production activities. We are also pursuing Recycling-oriented Manufacturing for effective utilization of resources. One example is the development of a resources recycling and trade scheme together with our supplier, in which scrap iron from used home appliances is recycled into steel plates to be used as material for products by our Group.

In addition, Panasonic has introduced its own indicator called “the size of contribution in reducing CO_2 emissions” to strengthen CO_2 reduction efforts during actual product use. Until now, the size of contribution in reducing CO_2 emissions had been disclosed to represent the volume of our direct contribution to CO_2 emissions reduction by cutting down power consumption during product use through energy-saving designs for our key consumer products. Now, we are also engaged in business development in the areas of housing, automotive, and B2B. Accordingly, more of our products are being integrated into finished goods and services of other companies, contributing to their energy-saving performances. For this reason, we have defined the CO_2 emissions reduction effect in these business areas as “the size of indirect contribution to reduction,” and disclosed the figures from the fiscal 2015 results.

Furthermore, we define our products and services that accelerate the transition to a sustainable society, such as energy-saving performances, as Strategic Green Products (GPs). Of these, we call the products that deliver the industry’s top-class environmental performance “Super GPs,” and are actively working for business expansion. By promoting wider use, we aim to contribute to further reduction of CO_2 emissions.

Environmental Policy

Environmental Statement

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

Environmental Action Guideline

Toward achieving a sustainable society, we will strive to develop our business through the creation of environmental value. For this purpose, we will address environmental challenges through our business activities and will expand our environmental initiatives based on collaboration with stakeholders.

(1) Initiatives to address environmental challenges
- We will reduce CO_2 emissions through production activities and products/services.
- We will work to efficiently use resources by pursuing Recycling-oriented Manufacturing.
- We will conserve water resources through efficient use of water and prevention of contamination.
- We will reduce the impact of chemical substances on human health and the environment.
- We will consider and conserve biodiversity.

(2) Initiatives based on collaboration with stakeholders
- We will provide products and services that create environmental value for customers with our technical strengths.
- We will expand our environmental contributions with our partner companies.
- We will deepen communications with local communities and work as a team to address environmental challenges.

Environmental Action Plan

We strive to grow and develop our business through the creation of environmental value for customers with our technical strengths while each and every employee follows the Environmental Policy to address environmental challenges. Therefore, collaboration with stakeholders including our partners is essential. We will continue to sincerely work on environmental sustainability management through further collaboration with stakeholders.

Environmental Action Plan "Green Plan 2018"

After the completion of the Green Plan 2010 which was established in 2001, the Green Plan 2018 was established in 2010 to clarify our targets for fiscal 2019 (from April 1, 2018 to March 31, 2019) as well as an action plan for all employees in order to achieve the targets. The Green Plan 2018 will continue our initiatives in five areas: CO_2 reduction, resources recycling, water, chemical substances, and biodiversity.

The Green Plan 2018 was revised in 2013, followed by the newly-established Environmental Action Guideline. Furthermore, in response to rising demand by the society for CO_2 reductions following the 21st session of the Conference of the Parties (COP21) of the United Nations Conference on Climate Change, and to the need to make changes to our business structure, including growth in the automotive and B2B businesses, the Plan was revised again in 2016.

In the area of CO_2 reduction, we are focused on maximizing the size of our contribution to reducing CO_2 emissions, which is an indicator that represents our efforts for CO_2 reduction, as well as on steady and continual reduction in CO_2 emissions from our factories to contribute to making net CO_2 emissions from the entire community peak and decline thereafter at an earlier timing. As our contribution to reducing CO_2 emissions is expanding not only in our key consumer products but in housing, automotive, and B2B businesses, the revised Green Plan 2018 clearly stated the target amount of CO_2 reduction to clarify our contribution in these areas. The revised Green Plan 2018 also defines our target for active use of renewable energy. As for resources recycling, we promote higher recycled resource utilization ratio and factory waste recycling rate,

as well as create more resources recycling-oriented products to materialize recycling-oriented manufacturing.

In addition, the revised Green Plan 2018 has set new targets such as 100% completion of water risk assessments for our factories. It also clearly states zero violation of laws and regulations by factories and products.

In the area of eco-conscious products and businesses, we have expanded the scope of our activities to products, services, and solutions in our B2B business, while applying our strengths in home appliances. The concrete numerical targets established in line with the revisions to the Green Plan 2018 are aimed at creating environmental value for our customers. Panasonic will deepen the collaboration with various partners across the supply chain and accelerate environmental initiatives to extend better impacts on the society.

We will steadily execute this Environmental Action Plan towards achieving our fiscal 2019 targets.

Environmental Action Plan "Green Plan 2018"

Priority issues	Targets for 2018 in Green Plan 2018 before revision	Targets for 2018 in Green Plan 2018 after revision
(1)Initiatives to address environmental challenges		
CO_2 Reduction	• Maximize the size of contribution in reducing CO_2 emissions from production activities and product use (Size of contribution in reducing CO_2 emissions: 47 million tons in 2015)[*1]	• Maximize the size of contribution in reducing CO_2 emissions through products and services[*2] (Size of contribution in reducing CO_2 emissions through products and services: 55million tons)
		• Reduce CO_2 emissions per basic unit in factories (Basic unit: -5% or more compared with 2013)
		• Expand the use of renewable energy (In-house renewable energy adoption: 10,000 MWh or more)
	• Reduce CO_2 emissions per basic unit in logistics (Reduction in CO_2 emissions per basic unit of weight[*3]: By 46% or more in 2018 compared to 2005 (Japan and international))	• Reduce CO_2 emissions per basic unit in logistics (Basic unit of weight: -5% or more compared to 2013 [in Japan])
	• Reduce CO_2 emissions from offices (Reduction by 2% or more on yearly average until 2018 compared to 2007 (Self-owned buildings in Japan))	— [*4]
	• Increase the Business of Energy Conservation Support Service for the Entire Factory	• Increase the Business of Energy Conservation Support Service for the Entire Factory
Resources Recycling	• Reduce total resources used and increase recycled resources used (Recycled resource utilization ratio[*5] : 16% or more in 2018)	• Reduce total resources used and increase recycled resources used (Recycled resin consumption: 45,000 tons or more (2014-2018 total))
	• Achieve "zero waste emission" from production activities at sites both in and outside Japan (Factory waste recycling rate[*6] : 99.5% or more in 2018)	• Achieve "zero waste emission" from production activities at sites both in and outside Japan (Factory waste recycling rate: 99% or more)
	• Expand the creation of Resources Recycling-oriented Products	• Expand the creation of Resources Recycling-oriented Products
Water	• Increase products to save water and contribute to water recycling	• Increase products to save water and contribute to water recycling
	• Reduce water consumption in production activities and increase the use of recycled water	• Reduce water consumption in production activities and increase the use of recycled water
		• Water risk assessment of factories: Complete 100%
Chemical Substances	• Develop alternative technologies for environmentally hazardous substances	• Develop alternative technologies for environmentally hazardous substances
	• Discontinue the use of substitutable environmentally hazardous substances in products	• Discontinue the use of substitutable environmentally hazardous substances in products
	• Minimize the release of environmentally hazardous substances from factories	• Minimize the release of environmentally hazardous substances from factories

<table>
<tr><td>Biodiversity</td><td>• Increase products contributing to biodiversity conservation</td><td>• Increase products contributing to biodiversity conservation</td></tr>
<tr><td></td><td>• Use green areas in business divisions to contribute to biodiversity conservation</td><td>• Use green areas in business divisions to contribute to biodiversity conservation</td></tr>
<tr><td></td><td>• Promote green procurement for wood toward sustainable utilization of forest resources</td><td>• Promote green procurement for wood toward sustainable utilization of forest resources</td></tr>
<tr><td>Compliance</td><td>—</td><td>• Compliance with laws and regulations (Factories and products); Zero violations</td></tr>
<tr><td colspan="3">(2) Initiatives based on collaboration with stakeholders</td></tr>
<tr><td>Customers</td><td>• Offering products, services, and solutions that improve people’s lifestyles, reduce burden on the environment, and help to make our society more sustainable</td><td>• Offering products, services, and solutions that improve people’s lifestyles, reduce burden on the environment, and help to make our society more sustainable
<table>
<tr><td>Improvement of energy-saving performance of major consumer electronics products[*7]</td><td>Energy-saving performance improvement: 35% (compared to 2005)</td></tr>
<tr><td>Dissemination of household fuel cells</td><td>Total power generation: 440,000 MWh (2010-2018)</td></tr>
<tr><td>Dissemination of LED lighting (Residential and non-residential buildings)</td><td>LED lighting sales ratio: 75%</td></tr>
<tr><td>Dissemination of photovoltaic power generation systems</td><td>Total power generation: 5.0 million MWh (2012-2018)</td></tr>
<tr><td>Air quality improvement in living environment (air purification)</td><td>Amount of air with improved quality: equivalent to 14 million rooms (2015-2018)</td></tr>
<tr><td>Dissemination of Net Zero Energy Houses (ZEH)</td><td>ZEH[*8] ratio to all detached houses: 68%</td></tr>
<tr><td>Development of smart cities</td><td>Start construction/sales: 3 sites (870 lots) (2015-18)</td></tr>
<tr><td>Increasing automotive battery supply</td><td>Battery supply meeting the demand: 200% (compared to 2014)</td></tr>
<tr><td>Dissemination of eco-conscious B2B equipment[*9]</td><td>Expansion of sales in Strategic GPs: 120% (compared to 2015)</td></tr>
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<tr><td></td><td>• Promote ‘eco’ marketing firmly rooted in each region and country</td><td>• Promote ‘eco’ marketing firmly rooted in each region and country</td></tr>
<tr><td>Supply Chain</td><td>• Increase environmental contributions through the promotion of Green Procurement with suppliers
(Establish environmental management systems and address five major environmental challenges)</td><td>• Increase environmental contributions through the promotion of Green Procurement with suppliers
(Establish environmental management systems and address five major environmental challenges)</td></tr>
<tr><td></td><td>• Promote the ECO-VC (Value Creation) Activity aimed at simultaneously achieving environmental contributions and cost reductions</td><td>• Promote the ECO-VC (Value Creation) Activity aimed at simultaneously achieving environmental contributions and cost reductions</td></tr>
<tr><td>Local Communities</td><td>• Communicate our approaches to environmental contribution to society in the form of an ‘eco ideas’ declaration</td><td>— [*10]</td></tr>
<tr><td></td><td>• Participate in presenting proposals for environmental policies by the government, aimed at the creation of a sustainable society</td><td>• Participate in presenting proposals for environmental policies by the government, aimed at the creation of a sustainable society</td></tr>
<tr><td></td><td>• Implement initiatives contributing to local communities and educate children who will be the major players in the next generation
(Promote Panasonic Eco Relay for Sustainable Earth)
(Provide environmental education to 2 million children around the world by 2018)</td><td>• Implement initiatives contributing to local communities and educate children who will be the major players in the next generation
(Promote Panasonic Eco Relay for Sustainable Earth)
(Provide environmental education to 3 million children or more around the world by 2018)</td></tr>
</table>

Note: 2005, 2007, 2010, 2012, 2013, 2014, 2015 and 2018 here refer to fiscal 2006 (April 1, 2005 – March 31, 2006), fiscal 2008 (April 1, 2007 – March 31, 2008), fiscal 2011(April 1, 2010 – March 31, 2011), fiscal 2013 (April 1, 2012 – March 31, 2013), fiscal 2014 (April 1, 2013 – March 31, 2014), fiscal 2015 (April 1, 2014 – March 31, 2015), fiscal 2016 (April 1, 2015 – March 31, 2016), and fiscal 2019 (April 1, 2018 – March 31, 2019), respectively.

*1 The size of contribution in reducing CO_2 emissions is defined as the amount achieved by deducting the actual emissions from the amount that would have been emitted without the improvements by the energy-saving performance of our products and productivity from fiscal 2006, and this amount is combined with the emission reduction resulting from power generation by energy-creating products (see pages 30-32). “47 million tons” represents the size of direct contribution in reducing emissions, and “products” refer to key consumer products.

*2 Size of direct contribution in reducing CO_2 emissions through products as indicated in *1, as well as indirect contribution in reducing CO_2 emissions such as air conditioning load reduction effects from improved insulation performance in Panaosnic housing, energy-saving effects from products by other companies equipped with Panasonic energy-saving compressors and motors, improved fuel economy effects from electric vehicles (EVs), plug-in hybrid vehicles (PHVs), and hybrid vehicles (HVs) equipped with Panasonic automotive batteries, and energy-saving effects of products by other companies that use Panasonic vacuum insulation material.

*3 CO_2 emissions per basic unit in logistics = CO_2 emissions in logistics/Transportation weight

*4 We achieved the previous target far earlier, and activities have been embedded into operation. Standards for making efforts under the Energy Conservation Law continue.

*5 Recycled resource utilization ratio = Recycled resources used/Total resources used

*6 Factory waste recycling rate = Amount of resources recycled/ (Amount of resources recycled + Amount of landfill)

*7 Air conditioners, refrigerators, TVs, washing machines, etc.

*8 Including nearly ZEH (see page 35).

*9 Audio-visual solutions and mobility solutions equipment (such as laptop PCs) etc.

*10 Regional Sustainability Management Practices have been established and embedded into operation. Each region plans and implements its own environmental sustainability activities in line with local environmental issues and business characteristics, based on the annual environmental management policy set by the Group.

Our performance in fiscal 2016 compared with the numerical targets in the Green Plan 2018 is shown below.

Numerical Targets and Performance Levels under Green Plan 2018

Numerical targets	Results in 2015	Pages
Size of contribution in reducing CO_2 emissions: 47 million tons in 2015	Size of direct contribution: 43.12 million tons	pp.30-41
	Additional size of indirect contribution: 10.47 million tons	
Reduction in CO_2 emissions per basic unit in logistics: By 46% or more in 2018 compared to 2005 (Japan and international)	39%	p.42
Reduction in CO_2 emissions from offices: By 2% or more on yearly average until 2018 compared to 2007 (Self-owned buildings in Japan)	4.2%	p.41
Recycled resource utilization ratio: 16% or more in 2018	16.9%	p.46
Factory waste recycling rate: 99.5% or more in 2018	99.2%	p.55
Provide environmental education to 2 million children around the world by 2018	2.709 million children*11	website*12

*11 Cumulative total from 2009 to 2015. Results for 2015 alone is 298,000.

*12 Contribution to Local Communities and Education for the Next Generation
http://www.panasonic.com/global/corporate/sustainability/eco/community.html

Note: 2005, 2007, 2009, 2015 and 2018 here refer to fiscal 2006 (April 1, 2005 – March 31, 2006), fiscal 2008 (April 1, 2007 – March 31, 2008), fiscal 2010 (April 1, 2009 – March 31, 2010), fiscal 2016 (April 1, 2015 – March 31, 2016), and fiscal 2019 (April 1, 2018 – March 31, 2019), respectively.

Environment: Environmental Governance

Promoting Corporate-wide Environmental Sustainability Management Centering on PDCA

Striving for the creation of a sustainable society, we are following our initiative under the executive officer in charge of environmental affairs and working to fulfill our corporate social responsibility through eco-conscious business activities as well as to resolve environmental issues such as climate change, resources, water, etc.

Panasonic Group formulates its annual environmental management policy in accordance with the Group business policy, Environmental Action Guideline, and the environmental action plan, “Green Plan 2018.” The annual environmental policy is shared across the entire organization through the Operation Policy Meeting led by the executive officer in charge of environmental affairs, who has the authority delegated from the president. Companies, business divisions, and Regional Headquarters outside Japan establish their own environmental policies and targets based on this Group policy, and plan and promote their activities accordingly.

The progress and results of activities for the key environmental targets we pledged achieving to society under the Green Plan 2018 are examined in the Group Strategy Meeting. This meeting is attended by the presidents of Panasonic Corporation and the four Companies as well as other members of senior management, for reviews of policy directions, issues, and, particularly important measures to be adopted.

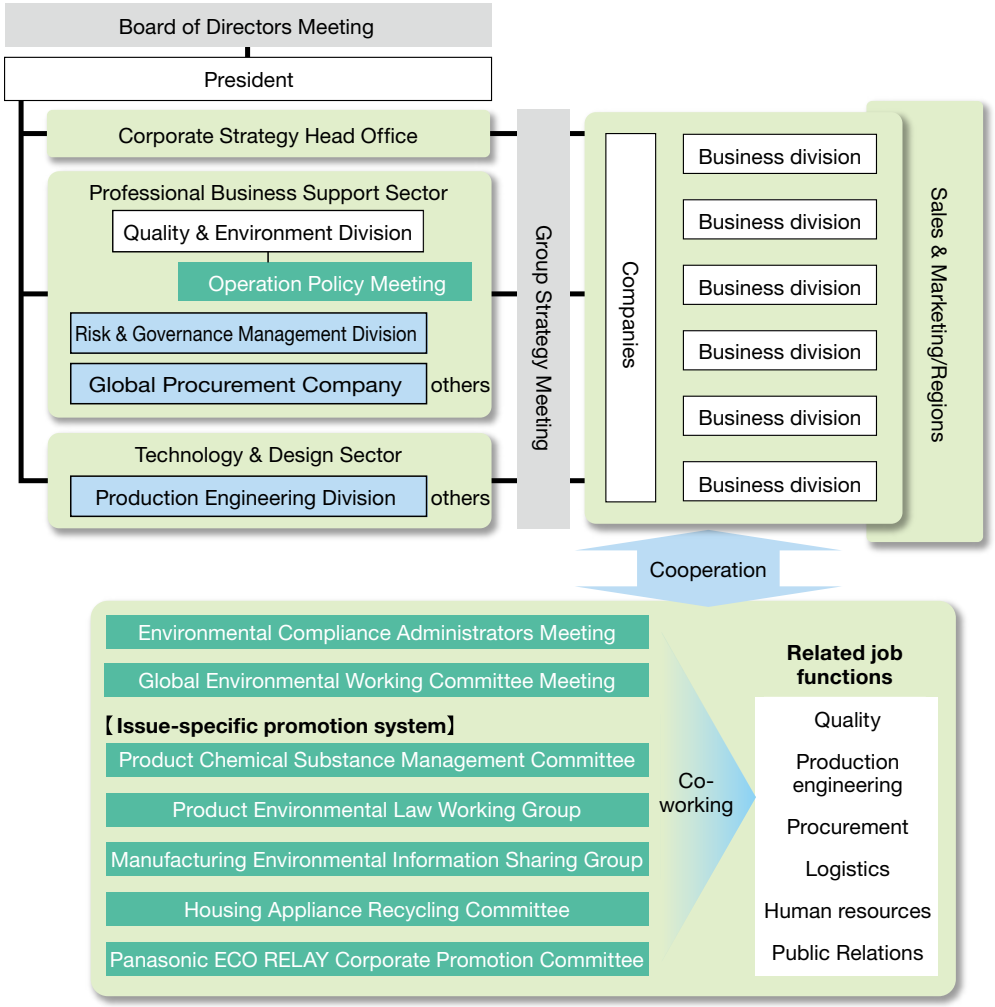
From fiscal 2017, the Environmental Compliance Administrators Meeting (to be held twice a year) attended by the executive officer in charge of environmental affairs and environmental compliance administrators at the four Companies was newly established to accelerate decision-making for corporate-wide action in the area of the environment. In addition, as has been the way until now, successful practices, challenges in implementation, and approaches to mid-term to long-term targets at Companies and various regions are shared and discussed at the Global Environmental Working Committee Meeting, held twice a year, which consists of environmental compliance administrators and environmental operation administrators at Companies and Regional Headquarters, seeking to enhance the level of corporate-wide environmental sustainability management through the PDCA management cycle.

In principle, results of activities relevant to environmental targets are gathered and assessed on a monthly basis as environmental performance data, to identify the achievements, and additional measures are taken as needed. Feedback of annual performance data is given internally and disclosed externally after review, onsite audits, and independent assurance by a third-party. Moreover, reviews and feedback from stakeholders are utilized in subsequent measures to ensure further continuous improvement.

Promotion System for Environmental Sustainability Management

To implement key measures across the entire company, theme-specific committees and working groups are formed to set a promotional structure that enables coordinated action across Companies, related job functions, and Regional Headquarters outside Japan. Specific examples include the Product Chemical Substance Management Committee which deliberates and ensures the implementation of chemical substance management guidelines, and the Product Environmental Law Working Group which engages in information sharing regarding product-related legislation and reviews the actions to be taken.

Promotion System of Environmental Sustainability Management in Fiscal 2017



Environment: Environmental Management Systems

Environmental Sustainability Management Founded on Environmental Management Systems (EMS)

As the foundation of environmental sustainability management, Panasonic established EMS in all of our manufacturing sites across the world in fiscal 1999, and has continued to have the sites ISO14001 certified since then.

In order to further reinforce environmental sustainability management globally, we have established EMS in all our sites including non-manufacturing sites across the world, and these sites have certified ISO14001 in principle. In October 2011, we published the Environmental Management System Establishment Guidelines that summarize EMS concepts for different business forms such as manufacturing, sales and services, and head office administration, aiming to build EMS in accordance with the Basic Rules for Environmental Affairs on a global scale. Based on the Guidelines, Group-wide action is underway to achieve the goals set out in the Green Plan 2018.

The revisions to ISO 14001 in September 2015 called for consolidation of environmental and business activities as well as for actions from a wider perspective. With actions necessary within three years of the revision, in-house seminars, discussion meetings, and lectures on the transition to the 2015 version by outside experts are being held at each Company and business division. Also with top management required to take on greater responsibility in their participation in environmental management, efforts are being directed to upgrading management awareness through the development of study materials customized for top management. Our activities will be strengthened further through consolidated actions by top management and employees to enable the Environmental Management System to function as a more effective scheme.


In-house seminar on transition to ISO 14001:2015

Obtainment of ISO 14001 Certification (as of end of March 2016)

Region	Number of certifications obtained*1		Total
	Manufacturing	Non-manufacturing	
Japan	16	16	32
North America & Latin America	16	4	20
Europe & CIS	12	3	15
Southeast Asia, & Oceania	42	9	51
China & Northeast Asia	54	2	56
India, South Asia, Middle East & Africa	7	1	8
Total	147	35	182

*1 Including multi-site certifications. Depending on the consolidation and closure of sites and promotion of multi-site certifications, the number of certifications obtained varies each year.

▶Obtaining of ISO 14001 Certification
http://www.panasonic.com/jp/corporate/sustainability/pdf/eco_isolist2015.pdf

Environment: Environmental Risk Management

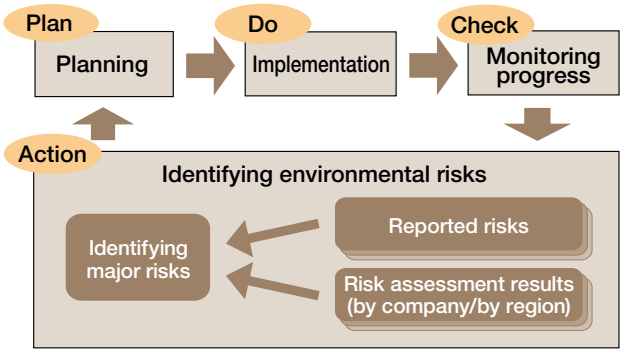
Group-wide Systems to Manage Environmental Risks

As a tool to continuously reduce environmental risks, Panasonic has established an Environmental Risk Management System specific to each Company. In accordance with the basic risk management policy for all Companies (see page 8), we promote (1) identification of environmental risks and group-wide risk management each year, and (2) ensuring quick responses to reported environmental risks.

To identify environmental risks and implement the management system, environmental risks are identified for each Company and for each region in the world each year. From these risks, environmental risks on a group-wide level are selected. The risks that show a high level of frequency or seriously impact business management are designated as major risks and prioritized in planning and executing risk-reducing measures. These measures are implemented for each major risk, and progress is monitored and followed up on a quarterly basis in the PDCA cycle.

When an environmental risk is found, the relevant Company, related job functions, and Regional Headquarters collaborate to promptly implement emergency measures and recurrence prevention measures adapted to the risk level. Also, the management flow in case of risk discovery is standardized to prevent the occurrence of secondary risks as a result of confusion.

Classification of Environmental Risks and Countermeasure Implementation



Environmental Compliance Management at Factories

Panasonic manages its environmental systems in full compliance with laws and regulations. We regularly measure emissions of gas, wastewater, noise, odor, etc., and introduce preventative measures for cases that may lead to serious violations.

Furthermore, key human resources are developed for information sharing among the Companies/Business Divisions, environment-related job functions, and Regional Headquarters, to ensure exhaustive compliance with legislation related to factory environment management in respective countries where Panasonic manufacturing sites are located. Specifically, activities to share information as well as specialized training is conducted for factory management officers in charge of the management of chemical substances, waste, wastewater and exhaust gas, either by country or by region in Japan, Europe, China, and Southeast Asia. In addition, field surveys were conducted on a global scale to confirm thorough implementation of environmental compliance, and we also started verifying the effectiveness of various measures.

However, in fiscal 2016, there were eight violations of environment-related legislation outside Japan. In response, they were reported promptly to the administrative authorities, and measures to address the causes were implemented. We will continue to ensure compliance with legislation as well as prevent recurrence.

Cases of Violations of Laws and Ordinances (such as exceeding the standard legal level, etc.) in Fiscal 2016

Region	Environmental pollution					Other	Total
	Air	Water quality	Noise	Odor	Waste	Permission/ Approval	
Global (including Japan)	3	1	0	0	3	1	8
Japan	(0)	(0)	(0)	(0)	(0)	(0)	(0)

Measures Against Soil and Groundwater Contamination

In the latter half of the 1980s, soil and groundwater contamination due to chlorinated organic solvents was detected at some Panasonic sites. In response, we have conducted anti-contamination activities across the company. Specifically in 1991 we created the Manual for Preventing Contamination of Soil and Groundwater and began conducting necessary surveys and measures. In 1995 we discontinued the use of chlorinated organic solvents, and in 1999 created Guidelines on the Prevention of Environmental Pollution to ensure there would be no recurrence of similar problems at our sites. In fiscal 2003 we began enhancing our surveys and measures to comply with relevant laws and regulations, including the Soil Contamination Countermeasures Act, which was enforced in Japan in 2003, and in fiscal 2004 started implementing measures to place all our bases across the globe under management supervision with regard to soil and groundwater.

Specifically, we conduct onsite inspections and interviews at the bases, in addition to surveying their use of VOCs and heavy metals. Furthermore, we implement surface soil surveys within the premises. For the sites where contamination was detected beyond the regulatory pollution standards, we conduct detailed borehole surveys to identify the boundaries of the contaminated areas and take remedial measures.

As a result of these efforts, we were able to place all our bases under management supervision in 2008. Furthermore, in fiscal 2011, the management supervision scheme was purpose-specifically reorganized and reinforced to establish a new management supervision scheme. With the highest priority given to preventing dispersion of pollution beyond our premises, this new scheme is implemented across all operating sites to further improve the level of measures against contamination.

In fiscal 2016, two new soil contaminations were detected at Panasonic sites as a result of soil surveys in land utilization reviews. We confirmed that there is no possibility of external dispersion, and have completed the purification.

Soil and Groundwater Risk Management Policy

Conditions subject to management supervision	Procedure
Pollution dispersion prevention beyond Panasonic premises	1. Conduct historical surveys 2. Determine and install monitoring wells at the premises' borders 3. Analyze groundwater at the borders 4. Check possibility of pollution from external sources 5. Report to management department 6. Determine the external pollution dispersion prevention methods 7. Install the external pollution dispersion prevention methods 8. Install assessment wells 9. Begin assessments (monitoring)
Thorough pollution source elimination	10. Conduct brief status check 11-1. Horizontal direction detailed analysis 11-2. Vertical direction detailed analysis 12. Determine the magnitude of pollution 13. Discuss the areas and methods of purification 14. Conduct purification and install pollution dispersion prevention measures 15. Monitor pollution source (groundwater) after purification 16. Report purification completion to management department

Soil and Groundwater Pollution Surveys and Remedial Measures for Fiscal 2016

Region	Number of sites that completed remedial measures	Number of sites currently taking remedial measures
Global (including Japan)	7	43
Japan	(7)	(37)

Initiatives for PCB Pollution

Our initiatives for PCB pollution are introduced in the following website.

http://www.panasonic.com/global/corporate/sustainability/eco/governance/risk.html

Environment: Environmental Information Systems

Integrated Management of Corporate Environmental Information

In order to implement the PDCA cycle for environmental sustainability management, it is essential to collect a significant amount of environmental performance data on energy, waste, chemical substances, and water, etc. at each business site in a prompt and accurate manner.

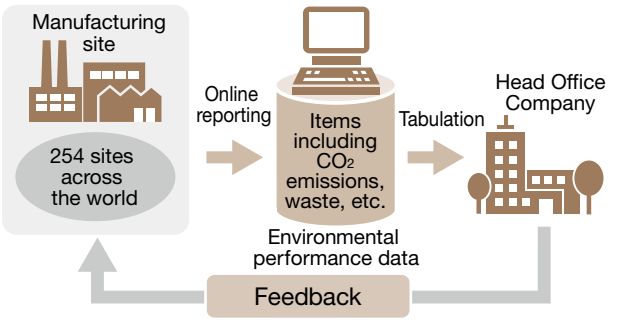
Panasonic has built and introduced an environmental performance system, the Eco System (Factory), to globally collect and manage environmental data from all of our business sites. With this system, monthly CO_2 emissions are managed in particular, allowing checking the progress of initiatives and identifying issues. The system plays an important role in achieving the reduction of CO_2 emissions by sharing the information and taking measures.

The Eco System (Factory) is also functioning as a scheme for sharing information on the status of compliance among sites across the world. In the event of complaints from local community residents or when a specific value exceeds ordinance-regulated levels, the person in charge at the business site enters such data, which is instantaneously e-mailed to relevant persons at the Company and the Head Office. This enables swift information-sharing and appropriate action.

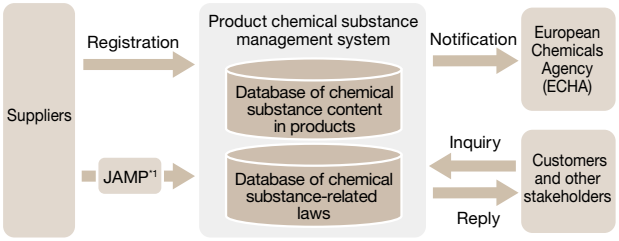
Panasonic has developed and implements its own product chemical substance management system, which is compatible with industry standards for information disclosure in this area. Through this system, we gather information from about 10,000 suppliers of components and materials for our products, both in and outside Japan, and promptly respond to investigation requests by customers concerning the chemical substances used in our products.

Also, we aim to cut down CO_2 emissions during product use by improving the energy-saving performance of our products. For this reason, the Eco System (Product) is used to globally assess the size of contribution in reducing CO_2 emissions by linking product performance data such as annual power consumption for each product category with other data such as sales volume and CO_2 emission factors in each region.

Mechanism of the Eco System (Factory)

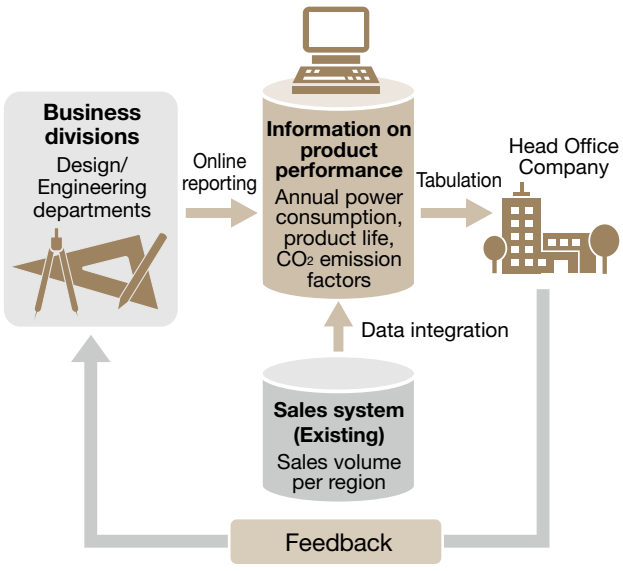


Mechanism of the Product chemical substance management system



*1 Joint Article Management Promotion Consortium.

Mechanism of the Eco System (Product)



Environment: Overview of Environmental Impact and Environmental Accounting

Overview of Environmental Impact from Business Operation

In order to mainly manufacture and market electrical and electronic products, Panasonic consumes petroleum and electricity as energy sources and resources as raw materials of parts and components. As a result, we emit CO_2 and waste into the environment. This diagram maps the environmental impact from our business operation from a procurement stage to recycling activities. Also, GHG throughout the entire supply chain is classified into Scope 1, Scope 2, and Scope 3, and assessed according to the GHG Protocol, the international calculation standard.

Overview of Environmental Impact from Business Operation

INPUT		Suppliers	OUTPUT	
Energy: 41 thousand TJ			CO_2: 2.32 million tons*3	
Renewable energy: 7.11 million kWh*1	Electricity: 3.80 billion kWh			
Town gas: 0.09 billion m³	LPG: 14 thousand tons		GHGs other than CO_2 from energy use (CO_2-equivalent): 0.10 million tons	
Heavy oil: 9 thousand kl	Kerosene: 3 thousand kl	Production		
Resources			Total wastes including revenue-generating waste: 356 thousand tons	Landfill: 2 thousand tons
Recycled plastic: 18.7 thousand tons				
Recycled iron: 106 thousand tons				
Water: 28.89 million m³			Water discharged: 22.46 million m³	
Chemical substances: 310,167 tons*2			Release and transfer of chemical substances: 3,641 tons*4	
Energy: 6.70 million GJ*5		Logistics	CO_2: 0.86 million tons	
Biodiesel fuel: 61 kl*6				
Electricity: 153.9 billion kWh		Product use	CO_2: 79.73 million tons	
Collected products: 136 thousand tons*6*7		Recycling	Recycled products: 99 thousand tons*6*7	
CRT TVs: 12 thousand tons	Plasma/LCD TVs: 4 thousand tons		Metals: 73 thousand tons	Glass: 5 thousand tons / Other: 21 thousand tons
Air conditioners: 23 thousand tons	Refrigerators/freezers: 56 thousand tons			
Washing machines/ clothes dryers: 41 thousand tons	PCs: 12 tons		Generated waste: 37 thousand tons*6	

Production: 254 manufacturing sites

Logistics: Logistics stage of procurement, production, marketing and waste by partner companies and Panasonic.

Product use: Lifetime power consumption (a) of major products*8 with large amounts of energy use and CO_2 emissions (b) associated therewith.

a = Annual power consumption of a model sold*9 x Sales quantity x product life*10

b = Annual power consumption of a model sold*9 x Sales quantity x product life*10 x CO_2 emission factor*11

Recycling: Recycling of products means to use by oneself or to make into a state available for sale or free of charge the components and materials of a separated product.

*1 Figures from photovoltaic and biomass sources. Heat pumps not included.

*2 Target substances include all substances in the Panasonic Group Chemical Substances Management Rank Guidelines (For Factories).

*3 The factors related to fuels are based on the Guidelines for Calculation of Greenhouse Gas Emissions (version 2.2) published by the Japanese Ministry of the Environment. The CO_2 emission factor for electricity purchased in Japan (kg-CO_2/kWh) is fixed at 0.410. The factors above are also used for electricity purchased from power producers and suppliers (PPS). The GHG Protocol factors for each country are used for electricity purchased outside Japan.
*4 Release amount: Includes emissions to air, public water areas, and soil.
Transfer amount: Includes transfer as waste and discharge into the sewage system. Recycling that is free of charge or recycling where Panasonic pays a fee for treatment under the Waste Management and Public Cleaning Law is included in “Transfer.” (Different from the transferred amount reported under the PRTR Law.)
*5 Intra-region outside Japan not included.
*6 Figures for Japan.
*7 Air conditioners, TVs, refrigerators/freezers, washing machines/clothes dryers, and PCs.
*8 Household air conditioners, commercial air conditioners, fluorescent lamps, LED lamps, household refrigerators, commercial refrigerators, LCD TVs, washing/drying machines, fully-automatic washing machines, clothes dryers, dish washer and dryers, IH cooking heaters, EcoCute, bathroom ventilator-dryers, humidifiers, dehumidifiers, air purifiers, extractor fans, vending machines, electronic rice cookers, microwave ovens, warm-water washing toilets, clothing irons, hair dryers, under-rug heaters, vacuum cleaners, electric thermal pots, extractor hoods, telephones, security cameras, projectors etc.
*9 For each product category, the model that was sold in the largest quantity in the region was selected.
*10 Number of years during which spare parts for the product are available (defined by Panasonic).
*11 Regional CO_2 emission factors (kg-CO_2/kWh) used: 0.410 (Japan); 0.487 (Europe); 0.579 (North America); 0.740 (China & Northeast Asia); 0.927 (India & South Asia); 0.527 (Southeast Asia & Oceania); 0.332 (Latin America); and 0.599 (Middle East & Africa).

GHGs from the Whole Supply Chain (by Scope)

Category		Emissions(10,000 tons)	
		FY2015	FY2016
Scope 1*12		47	43
Scope 2*13		211	200
Scope 3*14	1. Purchased goods and services	1,280	1,299
	2. Capital goods	65	71
	3. Fuel- and energy-related activities	14	13
	4. Upstream transportation and distribution	81	86
	5. Waste generated in operations	1.8	1.6
	6. Business travel	2.2*15	2.3*15
	7. Employee commuting	3.4*15	3.4*15
	8. Upstream leased assets	0.6*15	0.9*15
	9. Downstream transportation and distribution	2.1*15	2.1*15
	10. Processing of sold products	–	–
	11. Use of sold products	7,890	7,973
	12. End-of-life treatment of sold products	124	123
	13. Downstream leased assets	–	–
	14. Franchises	–	–
	15. Investments	–	–

*12 Direct emissions from facilities owned and controlled by Panasonic (e.g. emissions from use of town gas or heavy fuel oil).
*13 Emissions from production of energy consumed at facilities owned and controlled by Panasonic.
*14 Other indirect emissions, excluding Scope 1 and Scope 2.
*15 Figures for Japan.

Environmental Accounting

Panasonic globally collects data on its environmental conservation costs and economic benefits obtained through its environmental activities in relation to generated/controlled environmental impact. This data is internally utilized as basic information for our continuing environmental sustainability management.

Environmental Accounting for Fiscal 2016

Environmental conservation in factories	
Investments*16	3,555 million yen
Expenses*16,*17	139 million yen
Economic benefit	1,777 million yen

*16 Includes all investments relating to environmental conservation. The difference or appropriate portions (divided proportionally) are not calculated.
*17 Expenses include a cost of capital investment depreciation. For example, if latest energy-saving facilities were installed, the value includes depreciation for the first year but not for the second year and later.

Environmental Conservation Benefits for Fiscal 2016 (in physical terms)

Categories	Emission reduction	Reference indicator: environmental impact	
		Fiscal 2015	Fiscal 2016
CO_2 emissions from production activities	0.16 million tons	2.48 million tons	2.32 million tons
Human Environmental Impact	39 thousand counts	585 thousand counts	546 thousand counts
Landfill of waste	1.5 thousand tons	3.9 thousand tons	2.4 thousand tons
Water consumption	3.51 million m^3	32.40 million m^3	28.89 million m^3

Fiscal 2016 data on the reduced amount of electricity and effect of reduced electricity costs through our energy-saving products are as shown in the chart below. We are also engaged in R&D of new products that create environmental value. The R&D expenses related to environmental management were approx. 4.0 billion yen in fiscal 2016.

Economic Effects for Customers for Fiscal 2016

Electricity cost reduction from product usage (global)	
Reduced amount of electricity*18	70.4 billion kWh
Reduced electricity costs *19	1,621.9 billion yen

*18 Calculated under the same conditions as when determining the size of contribution in reducing CO_2 emissions through energy-saving products (see page 30).
*19 Electricity costs were set for each region based on IEA Statistics.

Environment: Eco-conscious Products and Factories

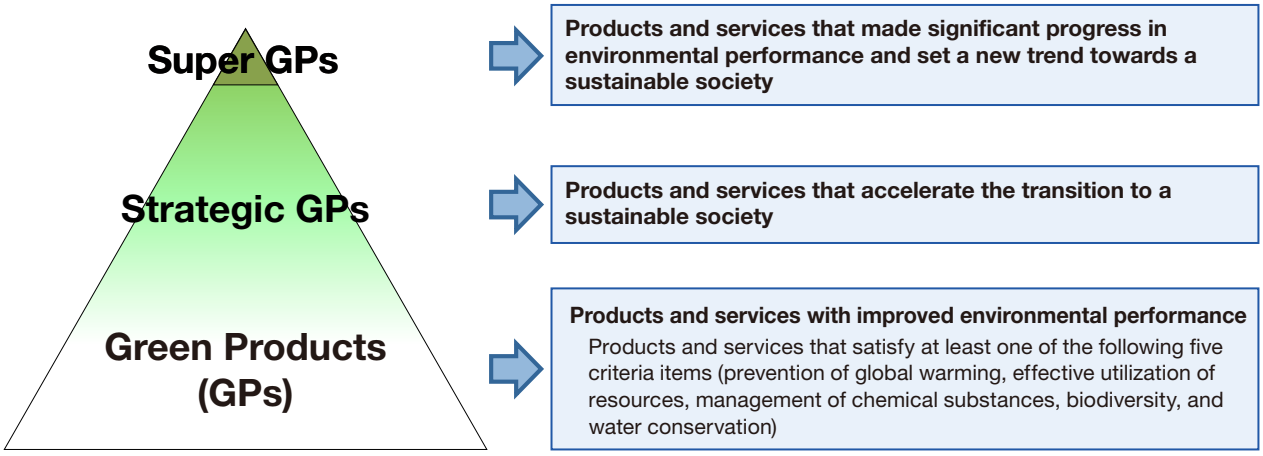
Initiatives for Eco-conscious Products (Green Products)

Panasonic uses a product assessment system that evaluates the environmental impacts of our products and services starting at the planning and design stages. Based on our criteria, we accredit our products and services that achieved high environmental performance as Green Products (GPs). At the same time, starting in fiscal 2014, the existing Superior GPs*1 have been enhanced to designate products and services that accelerate the transition to a sustainable society as Strategic GPs. Of these products, products that particularly create new consumer trends are certified as Super GPs.

In the GP accreditation criteria, we assess the performance of our products in terms of prevention of global warming, effective utilization of resources, and management of chemical substances by comparing not only among our own products but also with competitors' products. In fiscal 2012, we took steps to further enhance our accreditation criteria by adding biodiversity and water conservation to existing items. This has in turn enabled the creation of a wider range of GPs.

*1 Products and services that showed superior environmental performance to products in the same category in the industry.

Green Product Structure



Definition of Strategic GPs

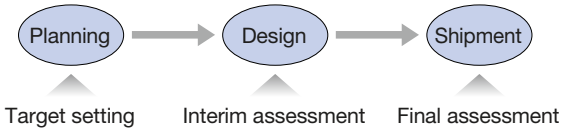
Products and services that accelerate the transition to a sustainable society:

(1) Products and services that reduce environmental impact with top-level environmental performance in the industry
(Energy-/Resources-/Water-saving products, etc.)

(2) Products and services whose promotion and dissemination lead to reducing environmental impact
(Recyclable or energy-creating products, energy-storing products, energy management systems, Smart Houses and Smart Cities, smart meters, products/services that support next-generation vehicles and environmental performances of stores, LED lighting, etc.)

(3) Products and services that reduce environmental impact on a specific region, or support measures to address environmental impact
(Air filtration devices, water filters, environmental engineering service, etc.)

Products Assessment System



Product Environmental Assessment		
Items for assessment		Assessment criteria
(1) Products	Prevention of global warming	CO_2 emissions and energy saving
	Effective utilization of resources	Resource saving, light weight/downsizing, number of reused parts, durability, amount of recycled resources used, structure to recovery/recycling, etc.
	Water and biodiversity conservation	Water saving, consideration for biodiversity
	Comparison with competitors' products	
(2) Production process (of relevant products)	Prevention of global warming	CO_2 emissions and energy saving
	Effective utilization of resources	Resource saving, mass of packaging materials to be wasted, amount of resources used, amount of waste from factories, etc.
(3) Packaging	Effective utilization of resources	Resource saving, light weight/downsizing, amount of foamed plastic used, amount of recycled resources used, etc.
(4) Instruction manual	Effective utilization of resources	Resource saving, light weight/downsizing, amount of recycled resources used
(1) (2) (3) (4)	Management of chemical substances	Panasonic's Chemical Substances Management Rank Guidelines (for products and factories)
LCA*2		Global warming
Information management		Green procurement, information provision across the supply chain, etc.

Laws/regulations and criteria, guidelines, and environmental action plan of Panasonic

*2 Life Cycle Assessment: Method of quantitatively assessing the environmental impact of products at each life cycle stage.

Expanding the Scope of Strategic GPs

Panasonic has been devoting much of its energies into the creation of No. 1 eco-conscious products (Superior GPs) until fiscal 2013. In the course of business reorganizations such as expansion of B2B businesses, Panasonic has decided not only to pursue environmental performance of consumer products but also to work on further expansion of products and services that lead to the mitigation of environmental impact. Starting in fiscal 2014, the concept of Strategic GPs has been introduced for the creation of such products and services. In addition to alleviating impact on the global environment with top-level environmental performance, we aim to accelerate the drive to shift to a sustainable society through a variety of business operations, including those that are expected to reduce impacts through wider dissemination and those directly cutting impact in specified regions.

The ratio of Strategic GPs rose from approx. 19% in fiscal 2015 to 21% in fiscal 2016. We will work to further push up this ratio in the future.

Of the Strategic GPs, the following two were named Super GPs for fiscal 2016–namely, High-reliability, Pb 0% ADDED Zinc Carbon batteries for its environmental performance ranking at the top class in the industry, and the LED high-ceiling lighting and LED flood light projector that can cut down environmental impact dramatically.

▶ High-reliability, Pb 0% ADDED Zinc Carbon battery
http://www.panasonic.com/global/consumer/battery/primary_batteries.html

▶ LED high-ceiling lighting (module type)
http://panasonic.net/ecosolutions/lighting/id/lighting_fixtures/in_highbay/highbay.php

▶ LED flood light projector (module type)
http://panasonic.net/ecosolutions/lighting/id/lighting_fixtures/out_flood/

Zinc Carbon batteries that are in wide use in developing and emerging countries commonly require the addition of lead to assure quality. However, because lead is a material with a high environmental impact, recycling is very difficult. For this reason, Panasonic developed a technology that assures the quality and reliability of Zinc Carbon battery that does not contain lead, and has made a head start in introducing the technology on a global scale. It is an eco-conscious product that responds to increasingly stricter environmental regulations as well as demands of eco-conscious consumers in countries around the world.

High-reliability, Pb 0% ADDED Zinc Carbon batteries

In addition to this, the LED high-ceiling lighting and LED flood light projector are an expansion of Panasonic's product lineup in this area, which had centered on products integrating the light source and its fixture, notwithstanding the dramatic improvement in energy conservation compared to products using an HID light source. The products chosen as Super GPs for fiscal 2016 are modular in design to create a wider variation in fixture style, light distribution and brightness. They can also easily replace existing lighting systems and contribute to wider LED use for high ceiling lighting and projector systems.


LED high-ceiling lighting with dispersion panel (module type)


LED flood light projector (module type)

▶ List of Certified Super Green Products (Super GPs)
http://www.panasonic.com/global/corporate/sustainability/eco/gp_gf/super_gp.html

Initiatives for Eco-conscious Factories (Green Factories)

Panasonic is working on Green Factories (GF) activities in its efforts to cut down environmental impact caused by manufacturing. Specifically, based on legal compliance, each factory develops a variety of plans for reducing environmental impact in production activities, focusing on CO_2 emissions, total waste generation, water consumption, and chemical substance releases and transfers. Progress control is implemented and improved through total emissions reduction and specific unit management to achieve both environmental impact reduction and business management.

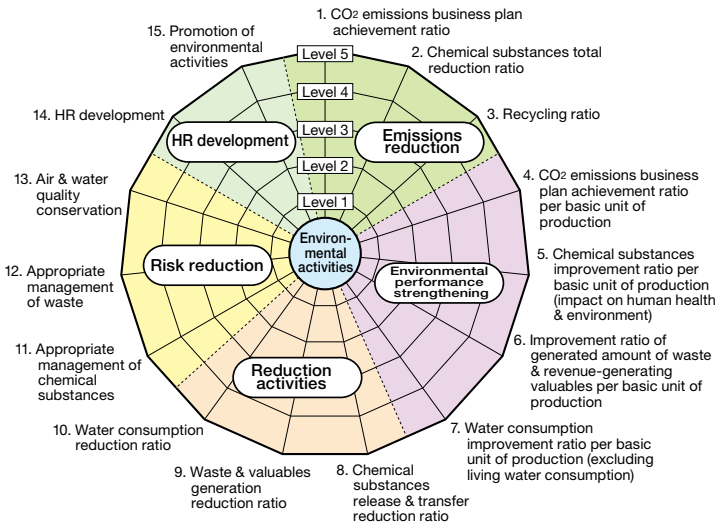
The GF assessment system was introduced in fiscal 2011, aiming for further advancement by visualizing the activity levels at factories. Under the system, the factories evaluate themselves on a one-to-five scale across 19 environmental activity items classified into six basic groups: emissions reduction, environmental performance enhancement, reduction activities, risk reduction, human resource development, and management. Comparing the progress with other sites and implementing relative assessment enables the factory to identify issues and voluntarily review/promote measures for improvement. In fiscal 2014, the system was upgraded to enable the addition of further assessment items to the existing 19, based on the Company's needs.

For regular checks on the progress state of subordinate factories and to lead to greater improvements, Companies share the best practices implemented at similar factories as well as management knowhow corporate-wide, to upgrade the efforts to higher levels through continuous improvement. The case studies on reduction implemented at each factory are registered in the Before/After (BA) Chart Search System and updated for application at other factories. Presently, more than 2,700 cases are registered.

Additionally, information exchanges among factories within each country, human resource development, and GF promotion activities on regional issues such as in Asia and Europe, are underway. Through the Manufacturing Environmental Information Sharing Group, information on global activities for environmental impact reduction, legislation, and social trends are shared, and discussions are held to resolve issues in GF promotion. Outside Japan, information exchanges are promoted within each country and region where Panasonic factories are located, such as in Europe, Southeast Asia, and China. Especially in Southeast Asia, where there are many Panasonic plants and diverse legislative frameworks and issues that vary by country, competitions in best practices for environmental impact reduction (presentation of awards for best practices and activities for horizontal promotion) covering all factories in the region are held to boost and accelerate action in this direction.

Furthermore, in order to support these GF activities, respective Regional Headquarters, Companies, and related divisions in each region are working on various human resource development programs every year in their respective regions. Training programs are being organized, including those on energy conservation, management of chemical substances, and waste management, which are in great demand in China and Southeast Asia where Panasonic has many sites. Special training programs on environmental laws and regulations are being held especially in China, to ensure compliance with the legislation being strengthened at great speed.

Indicators for GF Assessment System



Management

16. CO_2 emissions management/activity level
17. Chemical substances management level
18. Waste management level
19. Water management level

Essential items

Continuous acquisition of ISO14001
Compliance with environmental legislation
Promotion of measures against soil and groundwater contamination
Monthly data registration

We are working on optimal management of SOx (sulfuric oxide) and NOx (nitric oxide), the principal causes of air pollution, as well as the indicators of water contaminant concentration BOD (biochemical oxygen demand) and COD (chemical oxygen demand).

SOx/NOx management example: Panasonic Eco Solutions Interior Building Products Co., Ltd. Gunma factory

	FY	Facility name	Average measured	Maximum measured
SOx(Nm^3/h)	2014	Boiler No. 1	0.11	0.12
		Boiler No. 4	0.02	0.02
		Boiler No. 6	0.02	0.02
	2015	Boiler No. 1	0.08	0.10
		Boiler No. 3	0.06	0.06
		Boiler No. 4	0.03	0.03
	2016	Boiler No. 1	0.09	0.11
		Boiler No. 3	0.07	0.07
		Boiler No. 5	0.06	0.06

Boiler No. 1: Legal limit:23.44, Voluntary limit: 4.00, Measuring frequency: Twice a year
Other boilers (FY2014/2015): Legal limit: 0.65, Voluntary limit: 0.50, Measuring frequency: Once a year
Boiler No. 3 (FY2016): Legal limit: 1.12, Voluntary limit: 0.50, Measuring frequency: Once a year
Boiler No. 5 (FY2016): Legal limit: 0.61, Voluntary limit: 0.50, Measuring frequency: Once a year
The three boilers indicated above are those that resulted in high measured values in the respective fiscal year

	FY	Facility name	Average measured	Maximum measured
NOx(ppm)	2014	Boiler No. 1	280.00	290.00
		Boiler No. 4	80.00	80.00
		Boiler No. 6	78.00	78.00
	2015	Boiler No. 1	305.00	320.00
		Boiler No. 3	110.00	110.00
		Boiler No. 4	92.00	92.00
	2016	Boiler No. 1	295.00	320.00
		Boiler No. 3	100.00	100.00
		Boiler No. 5	100.00	100.00

Boiler No. 1: Legal limit: 350.00, Voluntary limit: 320.00, Measuring frequency: Twice a year
Other boilers: Legal limit: 250.00, Voluntary limit: 180.00, Measuring frequency: Once a year
The three boilers indicated above are those that resulted in high measured values in the respective fiscal year

BOD/COD management example: Panasonic Ecology Systems Co., Ltd. Head Quarter factory

	FY	Facility name	Average measured	Maximum measured
BOD(mg/l)	2014	Wastewater treatment facility/Integrated wastewater outlet	3.40	6.80
	2015	Wastewater treatment facility/Integrated wastewater outlet	2.91	9.50
	2016	Wastewater treatment facility/Integrated wastewater outlet	2.20	4.30

Legal limit: 25.00, Voluntary limit: 16.00, Measuring frequency: Once a year

	FY	Facility name	Average measured	Maximum measured
COD(mg/l)	2014	Wastewater treatment facility/Integrated wastewater outlet	4.13	5.80
	2015	Wastewater treatment facility/Integrated wastewater outlet	4.66	8.70
	2016	Wastewater treatment facility/Integrated wastewater outlet	3.80	7.60

Legal limit: 25.00, Voluntary limit: 16.00, Measuring frequency: Once a year

▶ Environmental performance data of Eco Solutions Company
http://panasonic.net/es/environment/report/

Examples of eco-conscious factories are also introduced in the following website.
http://www.panasonic.com/global/corporate/sustainability/eco/gp_gf.html#factory

Environment: CO_2 Reduction

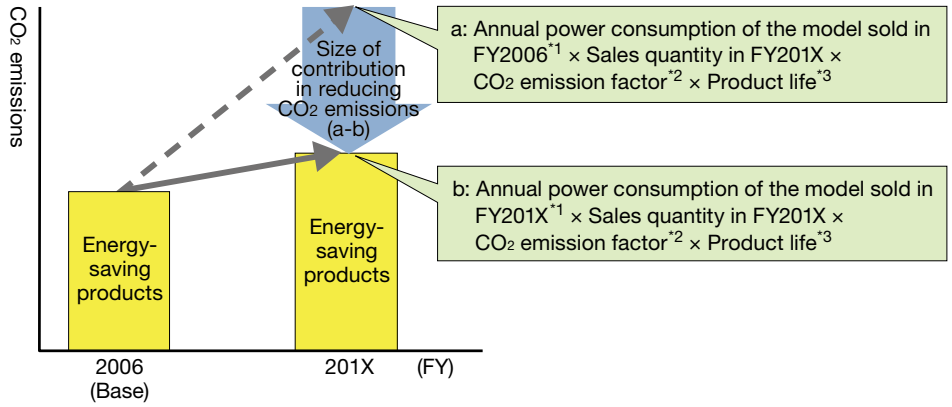
Size of Contribution in Reducing CO_2 Emissions

At the 21st session of the Conference of the Parties (COP21) of the United Nations Conference on Climate Change held in November-December 2015, the Paris Agreement was adopted, which limits global temperature increases to less than 2°C above pre-industrial levels and a more ambitious target of keeping global temperature increases to less than 1.5°C above preindustrial levels, as well as setting the goal for CO_2 and other greenhouse gas emission levels for the second half of this century to be virtually zero. In order to achieve this, CO_2 emissions should "peak out" (to reach a peak and decline thereafter) as soon as possible. With this background, companies are asked to contribute to reducing CO_2 more than ever.

Panasonic has introduced a unique indicator "size of contribution in reducing CO_2 emissions" to accelerate emissions reduction, targeting both our products (for energy saving and energy creation) and production activities. The size of contribution in reducing CO_2 emissions is defined as the amount achieved by deducting the actual emissions from the amount that would have been emitted without the improvements by the energy-saving performance of our products and productivity from fiscal 2006, and this amount is combined with the emission reduction resulting from power generation by energy-creating products. In other words, it reflects the continuous efforts being made to reduce CO_2 emissions. Panasonic will continue to maximize the size of contribution in reducing CO_2 emissions.

We will improve the energy-saving performance of our products to reduce the energy consumed in using the products. The more energy-saving products are introduced and promoted, the size of contribution in reducing CO_2 emissions will further increase.

Size of Direct Contribution in Reducing CO_2 Emissions through Energy-saving Products



*1 For each product category, the model that was sold in the largest quantity in the region was selected.

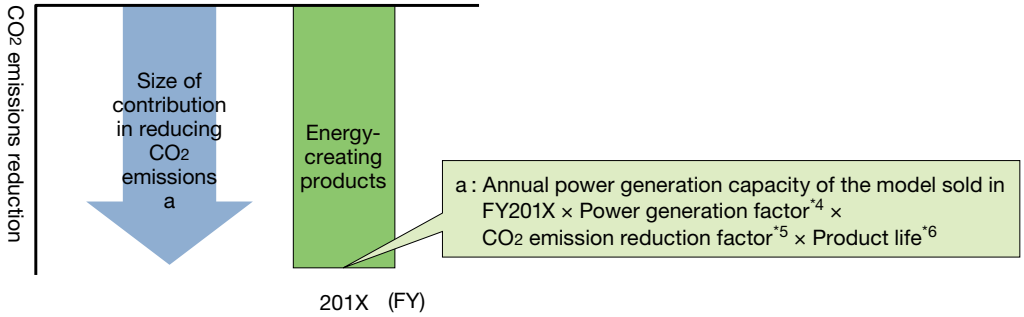
*2 Regional CO_2 emission factors (kg-CO_2/kWh) used: 0.410 (Japan); 0.487 (Europe); 0.579 (North America); 0.740 (China & Northeast Asia); 0.927 (India & South Asia); 0.527 (Southeast Asia & Oceania); 0.332 (Latin America); and 0.599 (Middle East & Africa).

*3 Number of years during which spare parts for the product are available (defined by Panasonic).

Meanwhile, since fiscal 2014, Panasonic has been reinforcing its housing, automotive, and B2B businesses, and is disclosing the CO_2 reduction effect results in these areas from fiscal 2015. Specifically, the data represents "air conditioning load reduction effects from improved insulation performance in Panasonic housing," "energy-saving effects from products by other companies equipped with Panasonic energy-saving compressors and motors," and "improved fuel economy effects from electric vehicles equipped with Panasonic automotive batteries." Beginning with the results for fiscal 2016, we will calculate and disclose the CO_2 reduction from the energy-saving effect of products by other manufacturers using Panasonic vacuum insulation materials. As with the calculation of energy-saving effects of our home appliances, the calculation of the size of contribution in reducing CO_2 emissions through these effects is based on comparison with the performances of fiscal 2006. We regard such contribution in reducing CO_2 emissions as "indirect" contribution to reducing CO_2 emissions, to distinguish them from the direct contribution from products under the Panasonic brand such as home appliances. This represents the fact that the energy-saving effect does not come from our finished products themselves but that our products support the CO_2 reduction effects for products by other manufacturers.

By using electricity generated by solar power generation and such, we can reduce CO_2 emissions from thermal power plants. Panasonic will further foster its energy creation business to increase the size of contribution in reducing CO_2 emissions.

Size of Contribution in Reducing CO_2 Emissions through Energy-creating Products



*4 For photovoltaic power generation: 1,204 kWh/kW (after fiscal 2015), 1,193 kWh/kW (fiscal 2014 and prior).Considering sunshine conditions, system loss, and other variables.

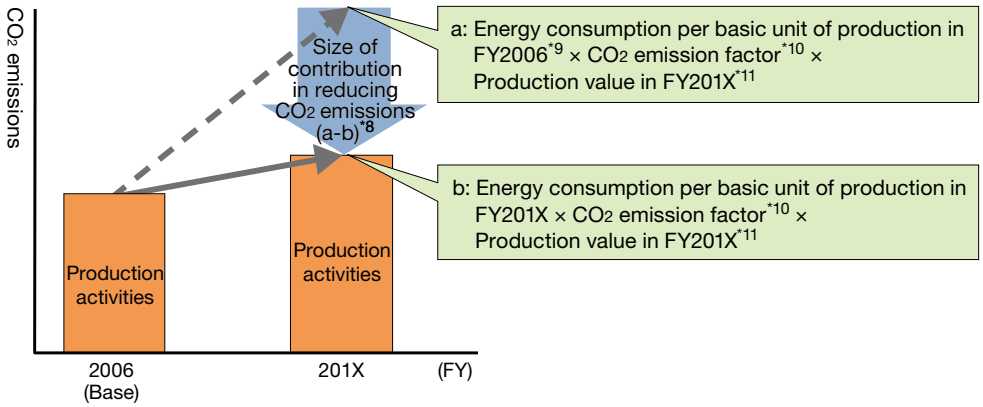
*5 For photovoltaic power generation: 0.360kg-CO_2/kWh (Source: Voluntary Rules on Indication (2010) by the Japan Photovoltaic Energy Association).

*6 For photovoltaic power generation: 20 years.

The smaller amount of CO_2 emissions per unit of production (tons/100 million yen),*7 the more efficient productivity is, the size of contribution in reducing CO_2 emissions in production activities will increase.

*7 Productivity indicator (Energy consumed in manufacturing products whose total monetary value is 100 million yen, converted to the amount of CO_2 emissions).

Size of Contribution in Reducing CO_2 Emissions through Production Activities



*8 Factories whose nominal energy consumption per basic unit of production had increased from the fiscal 2006 level due to sharp declines in product prices recorded negative figures in the size of contribution in reducing CO_2 emissions. For the size of contribution made by factories consolidated or sold in fiscal 2007 onwards, CO_2 emissions in fiscal 2006 were used for the calculation. For factories purchased, CO_2 emissions in fiscal 2006 were not deemed as a negative contribution.

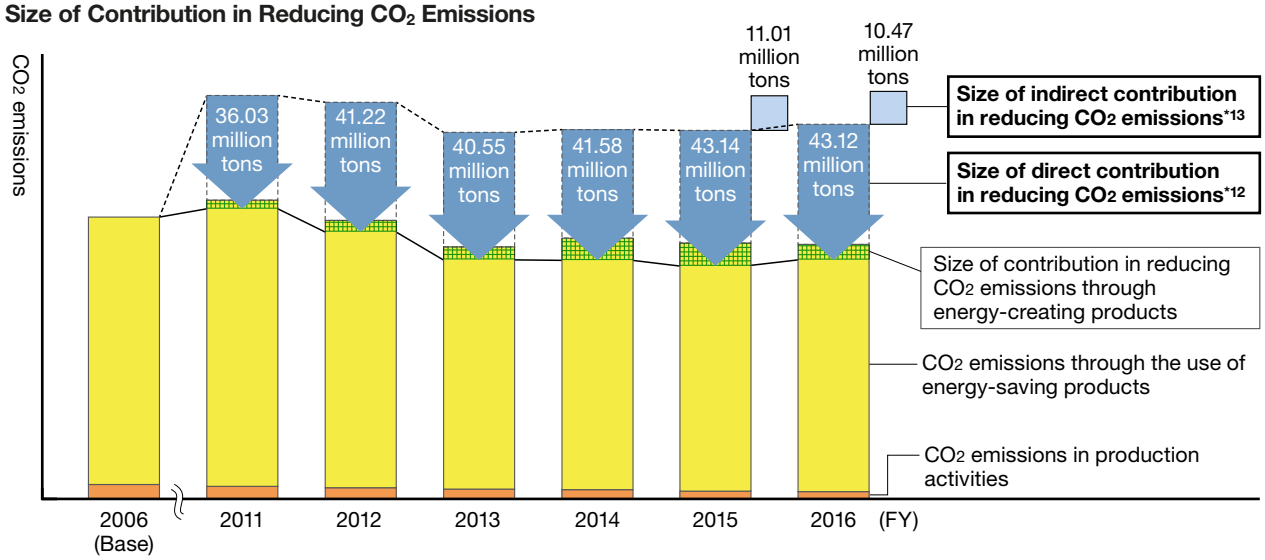
*9 CO_2 emissions per basic unit for fiscal 2006 were used for factories acquired; while for factories newly constructed, the CO_2 emissions per basic unit for the fiscal year in which they were constructed were used.

*10 The factors related to fuels are based on the Guideline for Calculation of Greenhouse Gas Emissions (version 2.2) published by the Japanese Ministry of the Environment. The CO_2 emission factor for electricity purchased in Japan (kg-CO_2/kWh) is fixed at 0.410. The factors above are also used for electricity purchased from power producers and suppliers (PPS). The GHG Protocol's factors for each country are used for electricity purchased outside Japan.

*11 Nominal production value.

In fiscal 2016, the size of contribution in reducing CO_2 emissions came to 43.12 million tons. In addition, the size of indirect contribution in reducing CO_2 emissions through Panasonic products marked 10.47 million tons. The size of contribution in reducing CO_2 emissions reached a total of 53.60 million tons.

Size of Contribution in Reducing CO_2 Emissions



------ Trend of estimated CO_2 emissions without improvements in energy-saving performances of products and productivity from fiscal 2006

—— Trend of total CO_2 emissions through production activities and energy-saving products, minus the size of contribution in reducing CO_2 emissions through energy-creating products.

*12 Amount achieved by deducting the actual emissions from the amount that would have been emitted without the improvements by the energy-saving performance of our key consumer products and productivity from fiscal 2006, and this amount is combined with the size of contribution in reducing CO_2 emissions resulting from power generation by energy-creating products.

*13 Size of contribution in reducing CO_2 emissions in the housing, automotive, and B2B businesses. Specifically, the data represents “air conditioning load reduction effects from improved insulation performance in Panasonic housing,” “energy-saving effects from products by other companies equipped with Panasonic energy-saving compressors and motors,” “improved fuel economy effects from electric vehicles equipped with Panasonic automotive batteries,” and “energy-saving effect from products by other manufacturers using Panasonic vacuum insulation materials (FY2016 only).”

Environment: Energy-saving/creating/storing Products

Direct Contribution in Reducing CO_2 Emissions through Energy-saving Products

The size of direct contributions in reducing CO_2 emissions through our energy-saving products in fiscal 2016 was 34.93 million tons due to strong sales of LED lighting etc., despite a decrease in sales of televisions and air conditioners. In the breakdown of the size of contribution in reducing CO_2 emissions by global product category, 75% was from air conditioners, lighting equipment, and TVs. By region, Japan, Southeast Asia & Oceania, China & Northeast Asia made up approx. 78%. CO_2 emissions from the use of our major products*1 in fiscal 2016 was estimated to be approx. 79.73 million tons. We will continue to further reduce the CO_2 emissions from the use of major products by making energy-saving products even more widely available.

*1 Lifetime CO_2 emissions from major products*2 with large amounts of energy use.
Lifetime CO_2 emissions = Annual power consumption of a model sold*3 x Sales quantity x Product life*4 x CO_2 emission factor*5

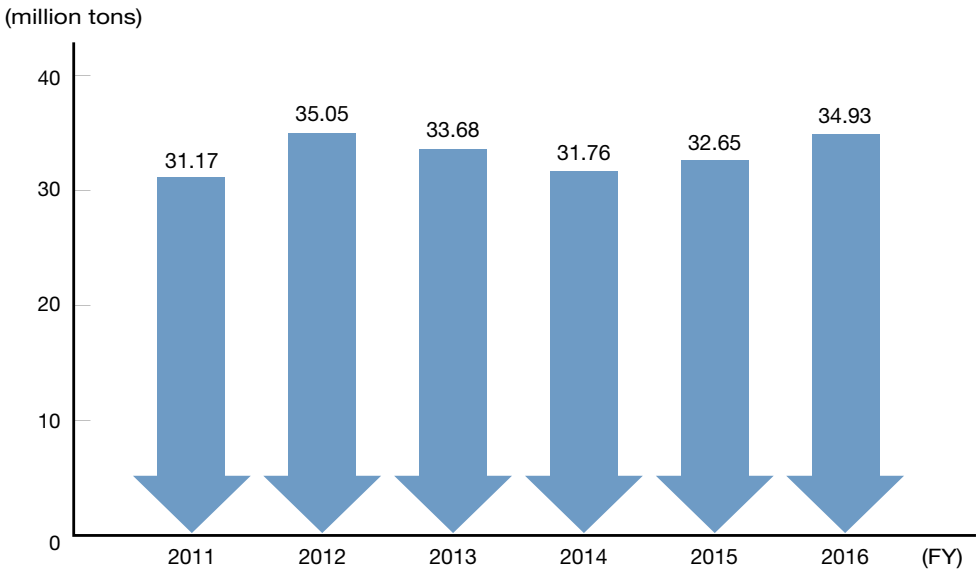
*2 Household air conditioners, commercial air conditioners, fluorescent lamps, LED lamps, household refrigerators, commercial refrigerators, LCD TVs, washing/drying machines, fully-automatic washing machines, clothes dryers, dish washer and dryers, IH cooking heaters, EcoCute, bathroom ventilator-driers, humidifiers, dehumidifiers, air purifiers, extractor fans, vending machines, electronic rice cookers, microwave ovens, warm-water washing toilets, clothing irons, hair dryers, under-rug heaters, vacuum cleaners, electric thermal pots, extractor hoods, telephones, security cameras, projectors, etc.

*3 For each product category, the model that was sold in the largest quantity in the region was selected.

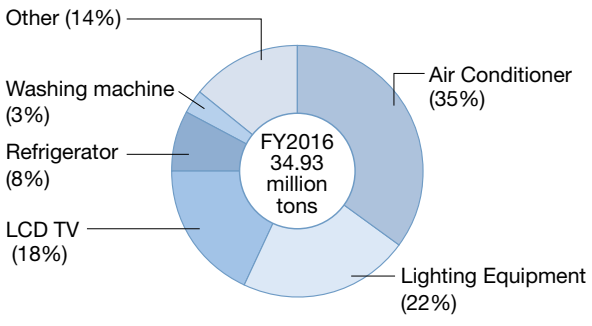
*4 Number of years during which spare parts for the product are available (defined by Panasonic).

*5 Regional CO_2 emission factors (kg-CO_2/kWh) used: 0.410 (Japan); 0.487 (Europe); 0.579 (North America); 0.740 (China & Northeast Asia); 0.927 (India & South Asia); 0.527 (Southeast Asia & Oceania); 0.332 (Latin America); and 0.599 (Middle East & Africa).

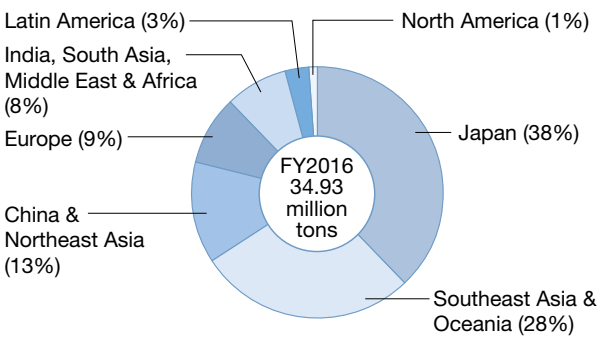
Size of Contribution in Reducing CO_2 Emissions through Energy-saving Products



Size of Contribution in Reducing CO_2 Emissions through Energy-saving Products (by product)



Size of Contribution in Reducing CO_2 Emissions through Energy-saving Products (by region)

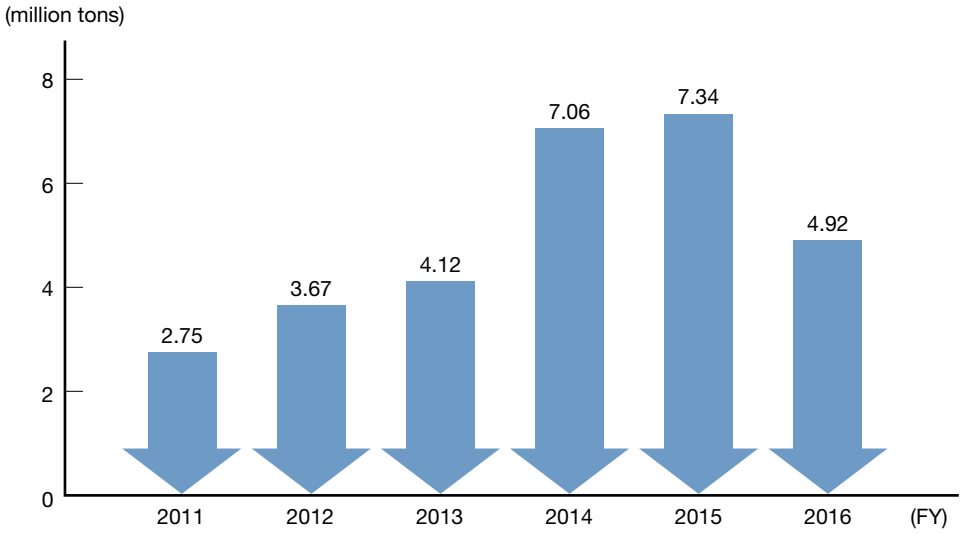


Contribution in Reducing CO_2 Emissions through Energy-creating Products

We actively develop our energy creation business to maximize the size of contribution in reducing CO_2 emissions. By delivering photovoltaic power generation systems and household fuel cell cogeneration systems as means to create necessary electricity with few CO_2 emissions, we reduce CO_2 emissions in society.

The size of contribution in reducing CO_2 emissions through energy-creating products in fiscal 2016 fell to 4.92 million tons due to a slowdown in the photovoltaic power generation system business within Japan. However, Japan accounts for the vast majority by region.

Size of Contribution in Reducing CO_2 Emissions through Energy-creating Products



Initiatives for Energy-storing Products

Energy-storing products such as lithium-ion batteries can be used in various situations for electric power storage and contribute to CO_2 reduction through installation in offices, homes, etc. Panasonic is actively engaged in the development of energy-storing products.

Examples of Energy-saving/creating/storing products are also introduced on the following website.
http://www.panasonic.com/global/corporate/sustainability/eco/co2/product.html

Environment: Global Warming Mitigation and Adaptation

Global Warming Mitigation

While people seek for affluent lifestyles, the acceleration of global warming caused by the increase in CO_2 emissions from people's daily lives and corporate activities is becoming a concern. Panasonic promotes measures to mitigate the progress of climate change and to minimize the impact by reducing the greenhouse gases emitted from its products and services as well as production activities.

As measures to mitigate the impact of our products and services, we offer energy-management products and solutions that link and control a range of energy-saving/creating/storing products. At the same time, PanaHome Corporation has set a target to build 26% of the detached houses commissioned for fiscal 2017, 68% of those for fiscal 2019, and 80% of those for fiscal 2021 as net-Zero Energy Houses (ZEH)*1, whose balance of energy consumption and creation remains at zero, or Nearly ZEH*2.

In addition to these energy management solutions in the housing area, the Panasonic Group is also promoting Smart Town projects in Fujisawa City and Yokohama City in Kanagawa Prefecture.

More details on reducing CO_2 emissions at our factories and offices can be found on pages 37–41. For details on reducing CO_2 emissions in logistics, see pages 42–44.

*1 A ZEH is a house designed to produce net-zero or nearly zero consumption of primary energy per year by improving the energy-saving performance of the housing structure and equipment and utilizing energy efficient means such as renewable energy. The Japanese government aims to make ZEH as the standard for new houses by 2020.

*2 A house that reduces its primary energy consumption per year by 75% to less than 100% by utilizing energy efficient means such as renewable energy.

Examples of solutions for global warming mitigation are also introduced on the following website.

http://www.panasonic.com/global/corporate/sustainability/eco/co2/solution.html

Global Warming Adaptation

Panasonic is also making efforts for adaptation to address unavoidable impacts on the global environment that cannot be addressed by mitigation measures. Such adaptation is based on the matters indicated by the Intergovernmental Panel on Climate Change (IPCC) etc., focusing on the impact of climate change on the ecosystem, society, and the economy. Further, we understand that it is important for the measures to take account of regional characteristics, as impacts of climate change vary according to the region.

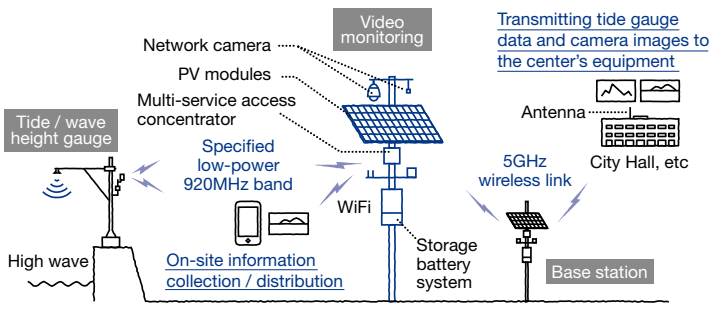
Coastal tsunami monitoring system in Higashi Matsushima City in Miyagi Prefecture

Our measures are currently implemented from the viewpoints of the following two aspects:

(1) Efforts to reduce the impact of climate change through our products, services, and solutions; and

(2) Efforts to reduce the impact on our corporate activities

Specific examples of (1) include the coastal monitoring system and the passive greenhouse agricultural system. Panasonic has developed the coastal monitoring system that sources power independently. This system continuously operates wireless network cameras and wireless transmission devices by photovoltaic power generation modules and storage batteries. It would contribute to preparing for high tides that are expected to increase due to climate change. The passive greenhouse agricultural system is designed to utilize natural forces such as sunlight, water, and wind, in order to optimally

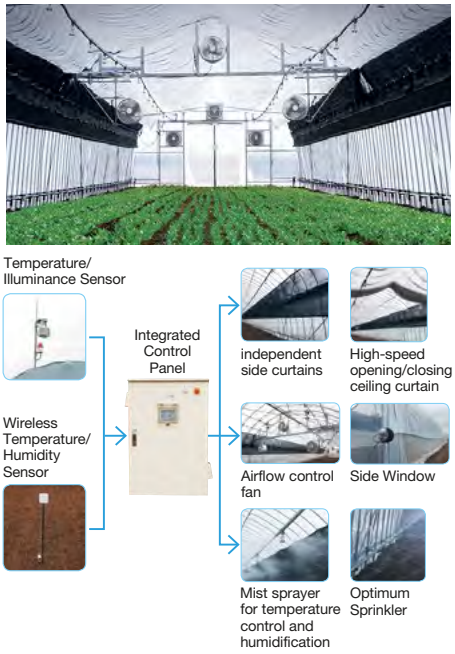


Coastal Tsunami Monitoring System Configuration

control greenhouse environment conditions for growing crops. This system is expected to reduce the adverse effects of global warming on growing vegetables.

▶ Coastal tsunami monitoring system in Higashi Matsushima City in Miyagi Prefecture (An example of a coastal monitoring system)
http://panasonic.net/es/solution-works/higashimatsushima/

As for (2), the importance lies in first identifying the issues to be addressed by assessing the impact of climate change on Panasonic. One such issue is the effect of water shortages on our production activities. We are currently working on assessing water-related risks, and we plan to examine necessary measures based on the assessment results. For more details, see the chapter on Water Resource Conservation (pages 57–58).



Passive Greenhouse Agricultural System

Environment: Global Warming Prevention at Factories and Offices

Contribution in Reducing CO_2 Emissions through Production Activities

Panasonic is working to reduce CO_2 emissions in factories with the aim of contributing to climate change mitigation, as well as improving production efficiency in factories and reducing energy costs.

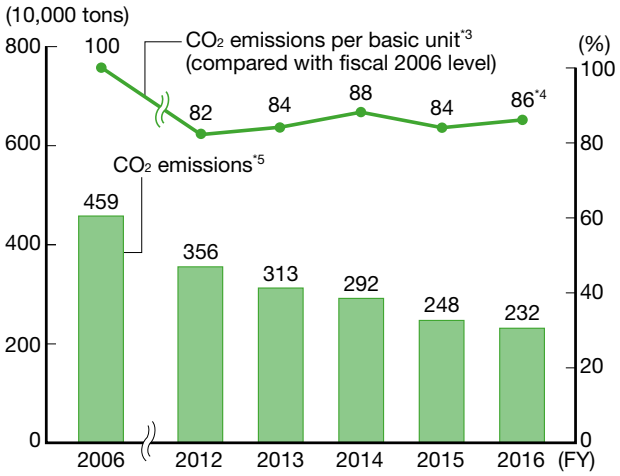
In fiscal 2008, we set a company-wide business goal to reduce CO_2 emissions by 0.3 million tons in fiscal 2010 compared to fiscal 2007. As a result of our unified efforts, we achieved 0.84 million tons in CO_2 emissions reduction, surpassing our target figure. Since fiscal 2011, we have been using our unique indicator, the size of contribution in reducing CO_2 emissions (see pages 30-32), to further improve our energy management capabilities and reduce the CO_2 emissions per basic unit, aiming towards maximizing the size of contribution in reducing CO_2 emissions in production activities. In addition to individual efforts implemented in each factory, energy-saving and CO_2 emission reduction measures including horizontal introduction of good examples across the company, specialist training, and CO_2 ITAKONA initiatives*1 are promoted. The size of contribution in reducing CO_2 emissions in production activities achieved in fiscal 2016 was 3.26 million tons (compared with the fiscal 2006 level). Furthermore, we are also reducing energy consumption. Our investment in CO_2 emissions reduction in fiscal 2016 was 3.2 billion yen*2.

Panasonic is a member of Keidanren's Commitment to a Low Carbon Society, a voluntary action program for global warming prevention across the entire electric and electronic industry, with the targets set aiming at 2030. Specifically, we are steadily implementing energy-saving measures in factories and offices in order to achieve the goals set by the industry in Japan, aiming improvement in energy consumption rate in factories and large offices at an annual rate of 1% on average towards 2030. We are also working to expand contributions to energy conservation in other industries through our products and components.

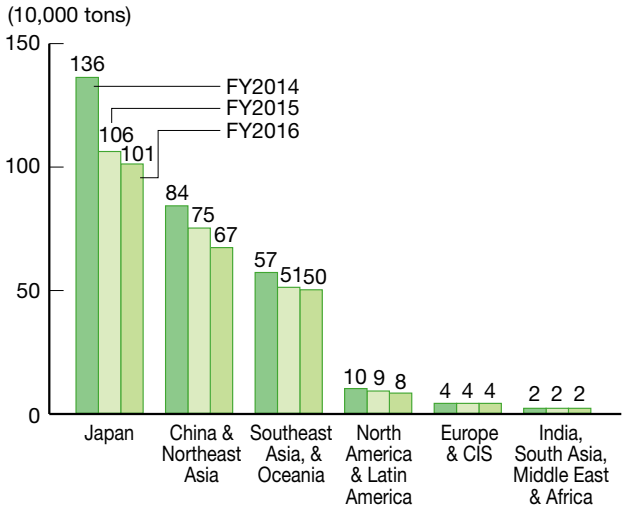
*1 ITAKONA is a term unique to Panasonic which refers to a process by which we review stages prior to production to study raw materials to ensure waste is minimized and quality is maintained. We apply a similar review process for our CO_2 emissions reduction efforts and call these our CO_2 ITAKONA initiatives. The activity is aimed at discovering energy conservation measures from a new viewpoint through continuous display of energy consumption levels (energy consumption per basic unit), and analyzing the factors that influence the variables in each basic unit.

*2 Includes all investments concerning CO_2 emissions reduction. Differences or appropriate portions are not calculated.

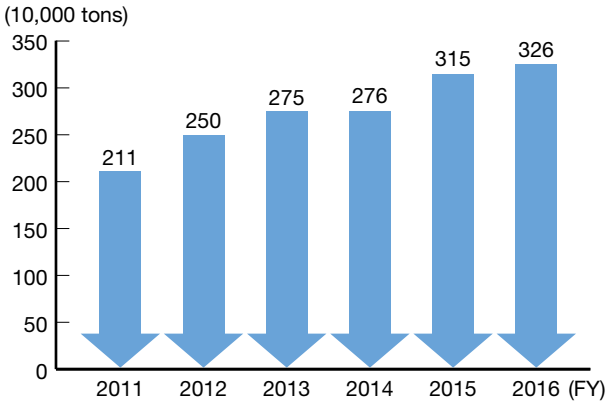
CO_2 Emissions in Production Activities and CO_2 Emissions Per Basic Unit



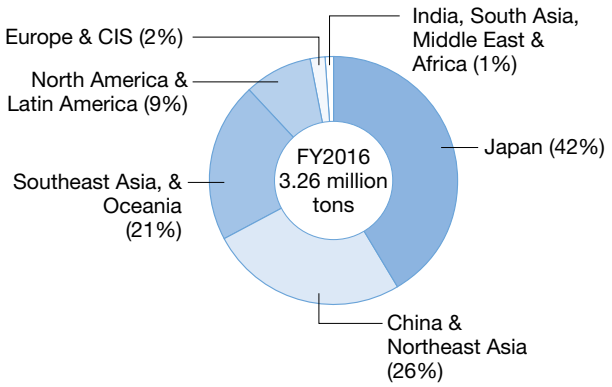
CO_2 Emissions in Production Activities (by region)



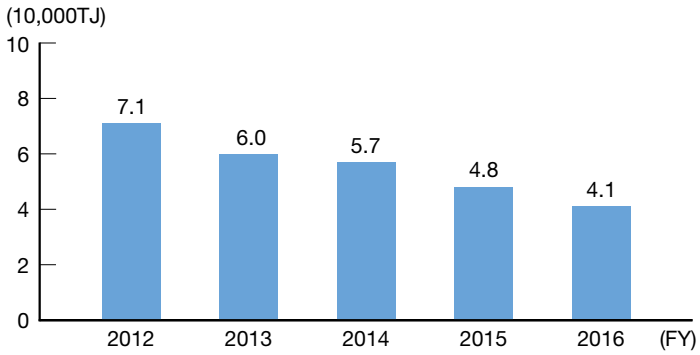
Size of Contribution in Reducing CO_2 Emissions through Production Activities



Size of Contribution in Reducing CO_2 Emissions through Production Activities (by region)



Energy Consumption in Production Activities



*3 Calculated with the weighted average of the improvement rate for CO_2 emissions per basic unit of nominal production for each factory. The amount of CO_2 emitted from each factory was used for weighting cases that had no improvements. Basic unit of fiscal 2006 was converted into an index as 100.

*4 Increase in CO_2 emissions per basic unit in fiscal 2013, 2014 and 2016 is due to the decline in production volume, which was more than the amount of CO_2 emissions reduced through various efforts.

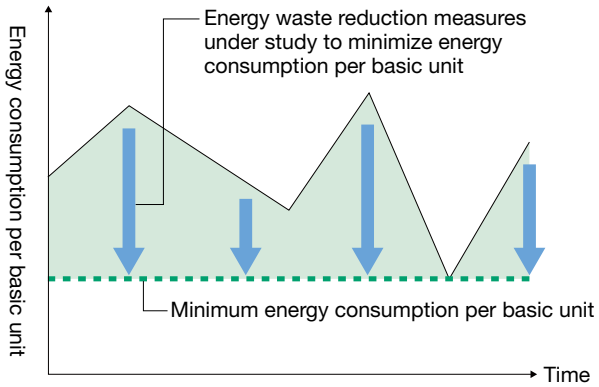
*5 The factors related to fuels are based on the Guidelines for Calculation of Greenhouse Gas Emissions (version 2.2) published by the Japanese Ministry of the Environment. The CO_2 emission factor (kg-CO_2/kWh) for electricity purchased in Japan in each fiscal year is fixed at 0.410 to accurately reflect efforts for CO_2 emissions reduction. If the factors set for each fiscal year are used instead (0.425 for fiscal 2006, 0.476 for fiscal 2012, 0.487 for fiscal 2013, 0.57 for fiscal 2014 and 2015, and 0.55 for fiscal 2016), total CO_2 emissions will be 4.63 million tons for fiscal 2006, 3.81 million tons for fiscal 2012, 3.35 million tons for fiscal 2013, 3.18 million tons for fiscal 2014, 2.80 million tons for fiscal 2015, and 2.61 million tons for fiscal 2016. The factors above are also used for electricity purchased from power producers and suppliers (PPS). The GHG Protocol factors for each country are used for electricity purchased outside Japan.

Promotion of CO_2 ITAKONA Initiative

To ensure the reduction of CO_2 emissions at our factories, it is important to track the energy consumption of each factory and the effects of specific emissions reduction measures to visualize reduction effects. To date, we have introduced more than 40,000 measurement systems and Factory Energy Management Systems (FEMS) at all of our global manufacturing sites, and we have continued to promote our CO_2 METAGEJI *6 initiative.

Based on this scheme, the CO_2 ITAKONA initiative has been implemented since fiscal 2011. The activity is aimed at discovering energy conservation measures from a new viewpoint through continuous

Concept of the CO_2 ITAKONA Initiative



display of energy consumption per basic unit of production, and analyzing the factors that influence the variables in each basic unit.

In order to accelerate action under the CO_2 ITAKONA initiative, we developed the SE-Navi software that displays energy and production data simultaneously and analyze energy consumption per basic unit. The “energy-saving navigation function” of this software quantitatively extracts energy loss per device as well as loss per factor, based on the automatic energy loss analysis results through CO_2 ITAKONA analysis. With this function, energy-saving efforts prioritizing processes with large energy loss have been made easier .

Conventionally, energy consumption and other data had been analyzed manually by specialists in order to develop energy conservation measures. This function automatically analyzes data and enables users to consider energy conservation measures based on the energy-saving measure database. Not only did this contribute to a reduction in working time but also to the identification of energy-saving measures without the assistance of specialists.

▶ An example of factory energy conservation support service is introduced in the following website.

http://www.panasonic.com/global/corporate/sustainability/eco/co2/service.html

*6 METAGEJI is a term unique to Panasonic which refers to visualizing energy consumption and implementing measurable reduction initiatives by introducing measurement instruments, such as meters and gauges.

Utilization of Renewable Energy

Panasonic actively and globally promotes renewable energy usage in the industry by employing renewable energy such as photovoltaic power generation in our business activities, while at the same time reducing CO_2 emissions. We set a target of 10,000 MWh of renewable energy utilization in our company by fiscal 2019 when we revised Green Plan 2018, our Environmental Action Plan, in 2016. We are now striving to achieve this target across the world. As a specific example, we installed a photovoltaic power generation system with a capacity of 2.4 MW in a factory of Panasonic Appliances Refrigeration Devices Singapore (PAPRDSG) in October 2015. Along with the existing photovoltaic system, the total power that can be generated in the factory is now 2.8 MW, and is expected to power 10% of the factory’s entire operations at its peak. The system was installed through a leasing agreement with Sunseap, the largest clean energy provider in Singapore.


PAPRDSG photovoltaic power generation system

As a result of such efforts, our power generation from renewable energy across the entire company[*7] reached 7.11 million kWh[*8] in fiscal 2016.

▶ [Press Release] Panasonic Signs Solar Leasing Agreement with Sunseap for Refrigeration Devices Factory

http://news.panasonic.com/global/stories/2015/44374.html

*7 Includes power generated from renewable energy at non-production sites.

*8 Includes photovoltaic and biomass power but not power from heat pumps.

Working toward the Emissions Trading Scheme in China

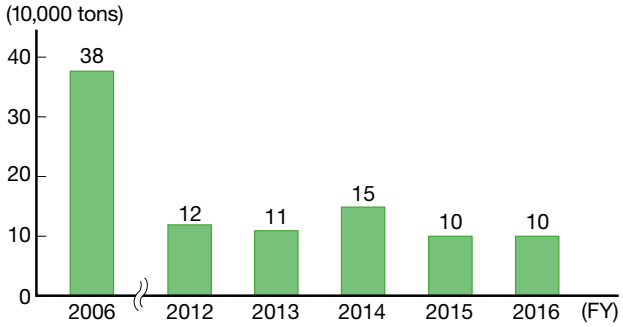
In China, a pilot program of the Emissions Trading Scheme (ETS) is currently being conducted in two provinces and five cities (provinces of Guangdong and Hubei and cities of Beijing, Tianjin, Shanghai, Chongqing, and Shenzhen). Panasonic Industrial Devices Taiko (Shenzhen) Co., Ltd. and Panasonic Industrial Devices (Shanghai) Co., Ltd. are included in the list of pilot enterprises. The Emissions Trading Scheme is expected to be expanded throughout entire China in FY2018, and in response to this, we are accelerating our drive to cut CO_2 emissions in manufacturing.

Reducing the Emissions of GHGs Other than CO_2 from Energy Use

GHGs other than CO_2 from energy use emitted by Panasonic include HFCs used in air conditioner factories as refrigerants for products and NF_3 used as a cleaning gas in LCD factories. To reduce these gases, we implement a variety of measures, such as preventing leakage of refrigerants, recovering waste refrigerants, decomposing at external parties, and installing removal devices.

GHG emissions other than CO_2 from energy use in fiscal 2016 amounted to 0.1 million tons (CO_2 equivalent), which was the same level as the previous fiscal year.

Emissions (CO_2-equivalent) of GHGs Other than CO_2 from Energy Use in Production Activities



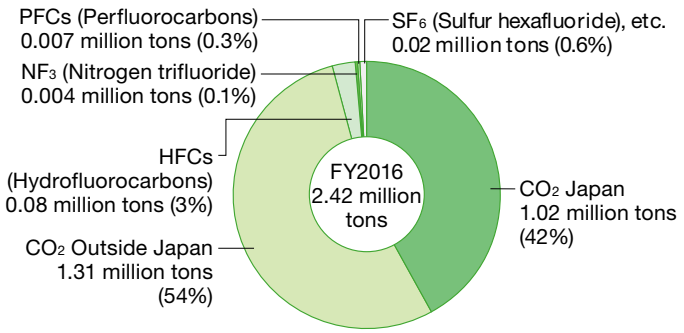
With nitrogen trifluoride (NF3) being newly added to the fiscal 2014 measurements due to the new GHG coverage in the second commitment period of the Kyoto Protocol, the Global Warming Potential (GWP) was reviewed, resulting in the increase of 0.04 million tons. Meanwhile, a reduction of 0.04 million tons was derived from the transfer of management of the wafer manufacturing process in the Hokuriku semiconductor diffusion plant to a joint venture from fiscal 2015.

Breakdown of Total GHG Emissions (by gas and by scope)

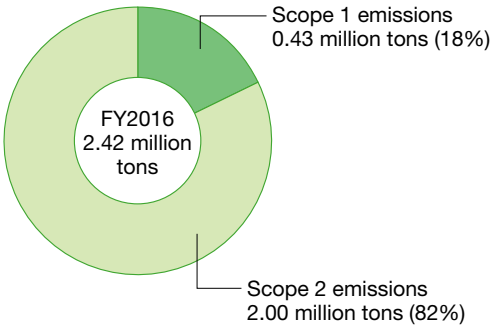
Our GHG emissions, including emissions from energy sources and other sources, reached 2.42 million tons in fiscal 2016, the breakdown being 18% for Scope 1 emissions*9 and 82% for Scope 2 emissions*9 (see page 23 for Scope 3 emissions).

*9 GHG emissions defined by the GHG Protocol, an international calculation standard for GHG emissions. Scope 1 emissions refer to all direct GHG emissions from facilities that are owned or controlled by the reporting entity (e.g. emissions from usage of town gas or heavy oil). Scope 2 emissions refer to GHG emissions from manufacturing of the energy that is consumed in facilities owned or controlled by the reporting entity (e.g. emissions from generation of electricity that the reporting entity purchased).

Breakdown of Total GHG Emissions (CO_2-equivalent) in Production Activities (by category)



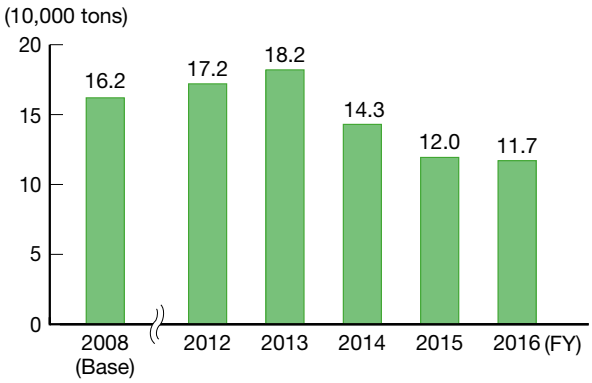
Breakdown of Total GHG Emissions (CO_2-equivalent) in Production Activities (by scope)



CO_2 Emission Reduction at Non-manufacturing Sites

We also focus on measures aimed at curtailing emissions at non-manufacturing sites, including offices and research centers. We have set a company-wide target of reducing CO_2 emissions by an average of 2% or more each year, over a baseline year of fiscal 2008, at 47 self-owned office buildings in Japan. To meet this goal, major sites have formulated energy conservation plans and taken steps such as conducting energy conservation diagnoses by specialists. As a result, we have reached our goal for fiscal 2016, reducing our CO_2 emissions to 0.117 million tons, marking an annual average reduction of 4.2%*10 compared with the fiscal 2008 baseline level. Furthermore, our original tool for energy conservation self-assessment, Green Office Assessment, is employed to inspect the status of activities in this area, based on 40 specific energy-saving items, in order to upgrade management levels. We also implement initiatives in utilizing renewable energy, such as installing solar panels on the roofs of offices and research buildings.

CO_2 Emissions from Non-manufacturing Sites (self-owned office buildings in Japan)



Note: The sites covered by this information are non-manufacturing sites (owned by Panasonic) with 100 or more employees in each fiscal year. For the CO_2 emission factor of purchased electricity, 0.410 kg-CO_2/kWh was used.

*10 Figure representing CO_2 emissions for the base year (fiscal 2008; 165,000 tons) is one wherein the figure of past fiscal years were corrected based on the sites covered in fiscal 2016.

An example of global warming prevention at offices is also introduced in the following website.
http://www.panasonic.com/global/corporate/sustainability/eco/co2/site.html

Environment: Green Logistics

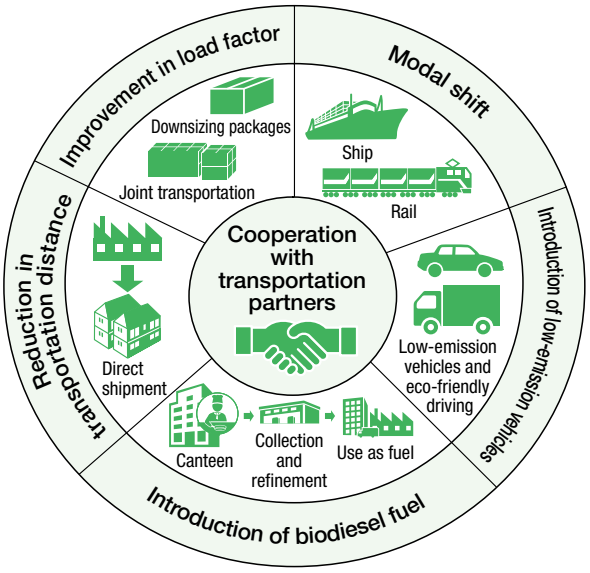
Reducing CO_2 Emissions in Logistics

To contribute to the prevention of global warming as well as to improve transportation efficiency while reducing costs, Panasonic is working to reduce CO_2 emissions in logistics. We have set the targets of reducing CO_2 emissions per basic unit*1 by at least 1% year-on-year, and by 46% from the fiscal 2006 level by fiscal 2019, focusing on modal shift, introduction of low-emission vehicles and biodiesel fuel, reduction in transportation distances, and improvement in load factor.

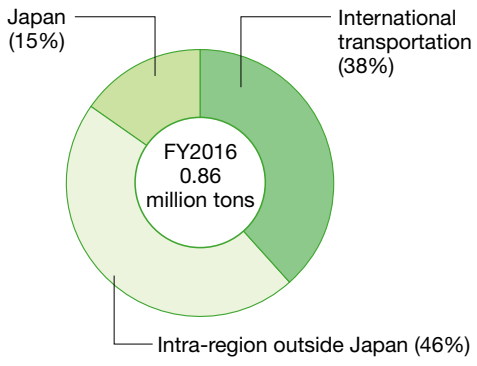
In fiscal 2016, our global CO_2 emissions from logistics activities came to 0.86 million tons across the world, of which international transportation was 0.33 million tons (38%), and domestic transportation within Japan was 0.132 million tons (15%). CO_2 emissions per basic unit improved by 6% from the previous fiscal year due to the decrease in international air freight, resulting in a reduction of 39% from the fiscal 2006 level.

*1 CO_2 emissions per transportation weight; the scope covers both international and domestic transportations.

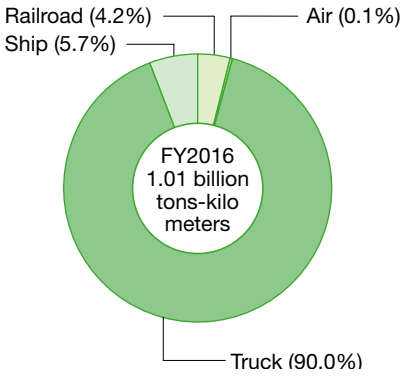
Major Initiatives Taken for Green Logistics



CO_2 Emissions from Logistics



Transportation Amount by Transportation Method (Japan)



Modal Shift*2 Initiative in Collaboration with Logistics Partners

Panasonic promotes modal shift in transportation from trucks to railroad in order to reduce CO_2 emissions.

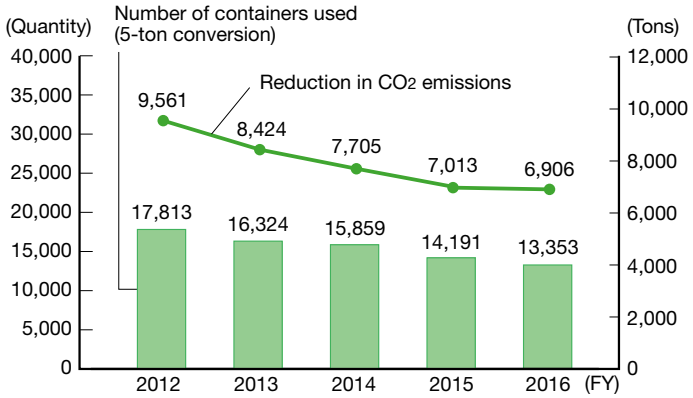
In fiscal 2016, Panasonic took the initiative in modal shift, collaborating with our logistics partners, including Mitsui-Soko Logistics Co., Ltd., Japan Freight Railway Company, and Nippon Express Co., Ltd.

Conventionally, we delivered cold chain equipment from Gunma Prefecture to Fukuoka Prefecture by truck based on requests from customers. However, to achieve stable product supply, we established the Kyushu Stock Point (SP) in 2015. Because it is necessary to send and place products to the Kyushu SP under a planned schedule, we changed the mode of transport from trucks to rail and the products are stably delivered once a day on weekdays. The CO_2 emissions reduction effects from this change are equivalent to 269 tons per year. As a result, our railway transportation in Japan in fiscal 2016 reached 13,353 five-ton containers, reducing 6,906 tons of CO_2 emissions.


Rail freight transportation

*2 Switch from truck and air transport to railroad and sea vessel transport that has less environmental impact.

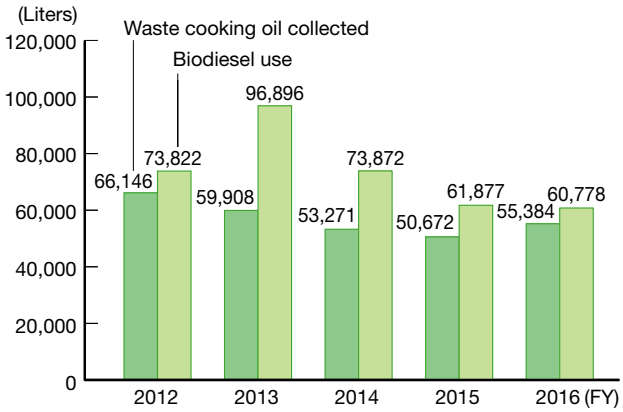
CO_2 Emissions Reduction Effect by Railroad Transportation (Japan)



Use of Biodiesel Fuel (Japan)

Panasonic promotes transforming waste cooking oil collected from its business sites into biodiesel fuel and utilizing it for vehicles used in production, procurement, and marketing activities. Since fiscal 2010, we have been using 100% biodiesel fuel for the joint transportation with the Asahi Shimbun Company in the Tokai and Tokyo Metropolitan areas to enhance further usage of biodiesel fuel. Biodiesel fuel consumption in fiscal 2016 decreased due to less logistics of waste that uses 100% biodiesel fuel for transportation.

Changes in Volume of Collected Waste Cooking Oil and Biodiesel Fuel Use (Japan)



Recycling of Stretching Film Used in Transportation

As an effort to reduce logistics waste, we jointly entered into a full recycling scheme for used stretch film with Nozoe Industry INC. (Nozoe) in fiscal 2015, and are continuing the initiative in fiscal 2016. The stretch film used for our transport was previously discarded, but is now recycled by Nozoe as a material for plastic garbage bags, which we then purchase. A total of 155 tons of stretching film was recycled in fiscal 2016 (250% compared to fiscal 2015) as a result of expanding the number of sites using this scheme (150% compared to fiscal 2015). We plan to introduce this recycling scheme to sites in the Kanto area in fiscal 2017. We will continue to make effective use of used stretch film and reduce logistics waste.

Stretch Film Recycling Scheme with Nozoe

Shifting to Direct Delivery of Products

Panasonic is currently expanding direct delivery of products to our corporate customers such as home appliance mass retailers, aiming for higher efficiency in transporting products. Although we conventionally distributed our products from factories to logistics hubs and then transported the products to corporate customers, we are now changing this method to directly deliver the products from our factories to customers. In fiscal 2016 we expanded this scheme in washing machine logistics. Previously, washing machines produced in the Fukuroi Factory in Shizuoka Prefecture were transported to the West Japan Global Logistics Center (GLC) in Amagasaki City in Hyogo Prefecture or to the East Japan GLC in Urayasu City in Chiba Prefecture, and then delivered to mass retailers and other customers. Now, we have increased the number of direct delivery from the Fukuroi Factory to inventory bases of mass retailers. A shorter transportation distance not only reduces CO_2 emissions but also reduces the number of circuitous routes to these warehouses as well as overall costs for inbound and outbound deliveries and storage. Through this scheme, we reduced 98.9 tons of CO_2 emissions per year. We will expand this scheme for delivering refrigerators, TVs, and air conditioners, which all have high volumes of transportation, to meet a wider range of orders, as well as for products with lower traffic volumes.

Environment: Resources Recycling

eco ideas

Recycling-oriented Manufacturing

With swift economic growth advancing worldwide and bringing heightened attention to concerns over resources, the sourcing of new resources and materials not only significantly impact the environment, but mineral resource depletion and material pricing run-up have also become issues.

To address these concerns, and as a responsibility of a manufacturer that uses a large volume of resources, Panasonic has been propelling Recycling-oriented Manufacturing under the theme of recycling resources since 2010, placing it as an important issue along with CO_2 emissions reduction.

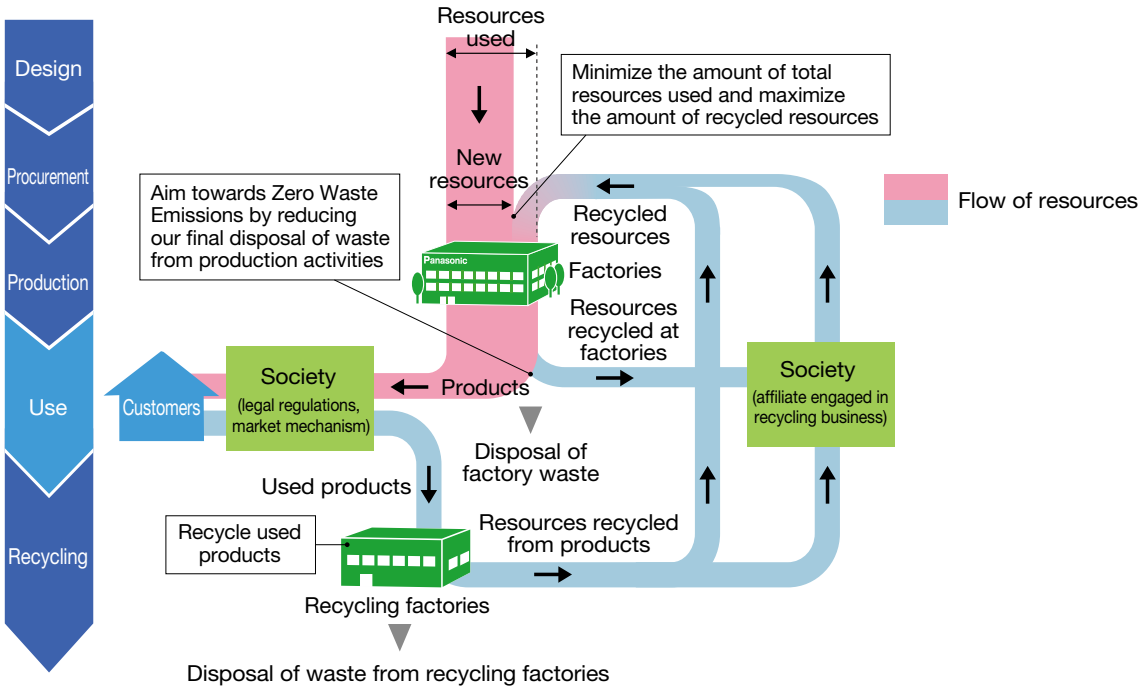
Recycling-oriented Manufacturing has three aspects under this concept, which are to minimize the amount of total resources used and maximize the amount of recycled resources, aim towards Zero Waste Emissions by reducing our landfill of waste from production activities, and recycle used products.

We have been working on the weight reduction and downsizing of products to minimize the total resources used, and are continuing to increase resource collection through introduction of new recycling technologies and systems to expand the usage of recycled resources.

Furthermore, by reducing the amount of factory waste and thoroughly recycling resources from waste, we are working to eliminate the amount of waste treated in landfills to as close to zero.

In addition to utilizing the resources that were previously wasted across the entire production process, we have established a process where resources are recovered from used products, recycled into products, and further delivered to customers, to realize sustainable business activities throughout the product life cycle.

Goal of Recycling-oriented Manufacturing



We use many kinds of resources, including iron (27% of total resources used) and plastic (10% of total resources used), due to our wide range of products and businesses, from home appliances, components such as semiconductors and batteries, to housing. In Recycling-oriented Manufacturing, it is important to promote the reduction of total resources used, and at the same time develop a recycling process according to the specific characteristics of each resource for expansion of our usage of recycled resources.

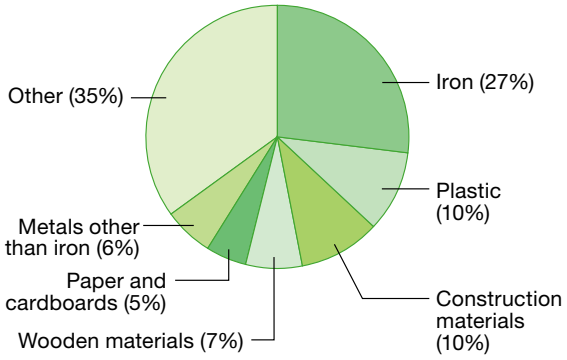
Furthermore, we clarify recycled resource utilization issues by identifying the volume of each type of resource used across the Panasonic Group. For example, in the case of recycled plastic, we used approx. 18,700 tons of recycled plastic in our products in fiscal 2016 by identifying the characteristics required in the materials to be used, securing a stable supply, researching how to recycle it in production, and developing new recycling technologies. The amounts of total resources used and recycled resources used in Panasonic are both on the decrease. However, the recycled resource utilization ratio*1 in fiscal 2016 marked 16.9%, which is higher than that of the previous fiscal year, due to increased usage of recycled resin and recycled steel plates. We will continue to work on further reducing total resources used and maximizing utilization of recycled resources, to maintain and improve our recycled resource utilization ratio.

In addition, as for the recycling rate of waste at factories, we had traditionally set different targets for Japan and countries outside Japan according to the relevant local infrastructures. However, with the awareness of the importance of zero waste emission activities, we have set a globally standardized target since fiscal 2011 and are taking steps to improve the standard level of waste recycling across the entire Group. The factory waste recycling rate*2 was 99.2% for fiscal 2016 against the target of 99.5% or more in fiscal 2019. (see page 55)

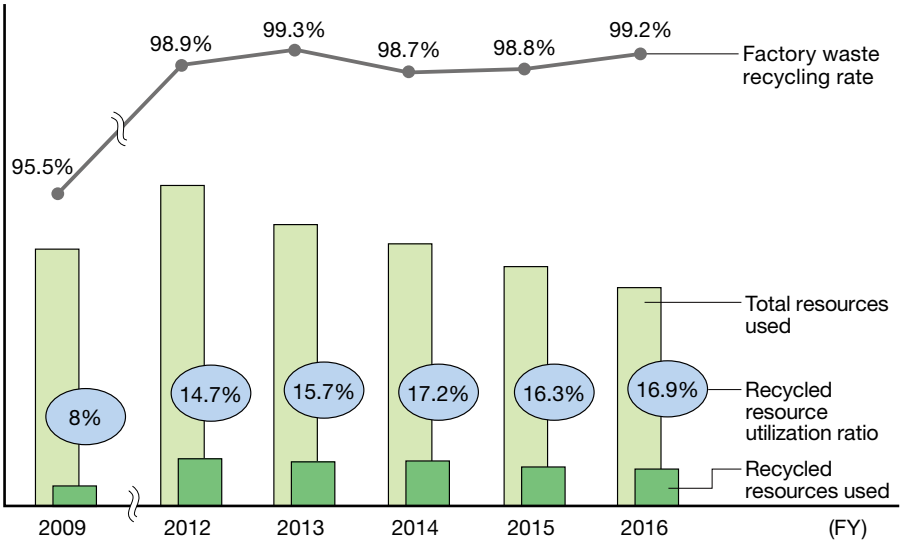
*1 Recycled resource utilization ratio = Recycled resources used/Total resources used

*2 Factory waste recycling rate = Amount of resources recycled/(Amount of resources recycled + Amount of landfill)

Breakdown of Total Resources Used in Fiscal 2016 (by category)



Recycled Resource Utilization Ratio and Factory Waste Recycling Rate



Environment: Reduction in Resources Used

Reducing Product Mass

To minimize the use of resources for production, we continuously look to reduce the weight of our products.

Through the Product Environmental Assessment (see page 26), Panasonic has been promoting resource saving from the product planning and design stage, such as using less resources, making our products lighter and smaller, and using less components. We also implement various measures from the standpoint of resource recycling throughout the product life cycle, such as component reuse, longer durability, use of recycled resources, easier battery removal, and labels necessary for collection/recycling.

Examples of weight reduction and recyclable product design are also introduced in the following website.
http://www.panasonic.com/global/corporate/sustainability/eco/resource/reduce.html

Environment: Product Recycling

Global Initiatives for Used Product Recycling

Aiming toward the effective use of natural resources and the prevention of environmental pollution, a growing number of recycling laws have been enacted in various countries throughout the world. Examples include the Law for Recycling of Specified Kinds of Home Appliances (Home Appliance Recycling Law) and the Act on the Promotion of Effective Utilization of Resources in Japan, the WEEE Directive in the European Union, and recycling laws in many states in the United States. In China as well, a similar law has been taking effect. In addition to complying with the Basel Convention which controls the transfer of hazardous waste to non-OECD countries as well as with related laws in respective countries, we strive to establish the most efficient recycling system in each country in view of its local recycling infrastructure including the utilization of third-parties.

Product recycling results in fiscal 2016 are as shown below. Due to the decrease in the volume of collection and recycling of CRT TVs and the increase of flat screen TVs, the collected products are becoming more compact and lighter, resulting in a flat or downward trend in the weight.

FY2016 Results

Japan	Recycled approx. 115,000 tons of four kinds of home appliances
Europe	Collected approx. 31,000 tons of used electronic products
USA	Collected approx. 7,200 tons of used electronic products

Product Recycling Initiatives in Japan

In response to the Home Appliance Recycling Law of 2001, which covers four specified kinds of home appliances, we established Ecology Net Co., Ltd. jointly with Toshiba Corporation, which manages a geographically dispersed recycling network through the effective use of existing recycling facilities nationwide. The recycling management company operates all the recycling-related services, which includes supervising 350 designated collection sites (shared with “Groups A and B”) and 32 recycling facilities, on behalf of the “Group A” manufacturers (18 companies including Panasonic). Our recycling factories, Panasonic Eco Technology Center Co., Ltd. (PETEC), Panasonic Eco Technology Kanto Co., Ltd. (PETECK), and Chubu Eco Technology Co., Ltd. (CETEC)[*1] conduct unique research to improve our recycling processes for more efficient treatment of the four kinds of home appliances[*2] and for the recovery and supply of more resources. In fiscal 2016, we recycled approx. 115,000 tons of the four specified home appliances.

Amendment of the Home Appliance Recycling Law was considered in 2014 in order to make recycling charges clearer and lower, as well as to improve recycling rates.[*3] As a result, the statutory recycling rate[*4] was revised in April 2015. Panasonic recycling factories are working to further enhance resource recycling by improving the productivity and recycling rates through efforts of applying different recycling methods according to the characteristics and materials of products.

For example, the number of discarded used flat screen TVs is expected to increase significantly around the time of the Tokyo Olympics in 2020, and treating them requires manual disassembly which takes much time and labor. In fiscal 2016, PETECK and CETEC installed automatic screw removers in the disassembly process to improve recycling productivity. As for refrigerators, fluorocarbons and cyclopentane that are used as foaming agents for the insulation material cannot be treated at the same time since the recycling processes for the two substances are different. Recycling of refrigerators that use cyclopentane is increasing in recent


Automatic screw remover for flat screen TVs at PETECK


Dedicated line for crushing & sorting Cyclopentane at PETEC


Near-infrared simultaneous sorting machine for three types of resin at CETEC

years, and PETEC newly established a dedicated line in 2015 to crush and sort cyclopentane to improve productivity as well as the value of the recycled materials. PETECK and CETEC are also adapting to various changes to respond to trends.

In addition, in 2014 Panasonic developed a resin sorter that can simultaneously identify and sort three types of resins using near-infrared (NIR) spectroscopy. Following installation of the sorter in PETEC in 2014, the same equipment was installed in PETECK and CETEC. This has increased the recovery volume of recycled resin whose purity is high, further enhancing our resource recycling. Our NIR spectroscopy technology received the Minister of Ministry of Economy, Trade and Industry Prize under the Awards for Resource-Recycling Technologies and Systems 2015 hosted by the Japan Environmental Management Association for Industry (see page 52-53 for details).

*1 PETECK and CETEC are joint ventures between Mitsubishi Materials Corporation and Panasonic.
*2 Air conditioners, TVs, refrigerators/freezers, and washing machines/clothes dryers.
*3 Recycling rate = Valuable resource weight/Total weight of used home appliances.
*4 The amended statutory recycling rates are at least: 80% for air conditioners, 55% for CRT TVs, 74% for LCD and plasma TVs, 70% for refrigerators and freezers, and 82% for washing machines and clothes dryers.

▶ Overview of Recycling of Specified Home Appliances
http://www.panasonic.com/global/corporate/sustainability/eco/resource/recovery/recycling.html

▶ Panasonic Eco Technology Center Co., Ltd. (PETEC) http://panasonic.net/eco/petec/

Recycling Efforts in the Europe / CIS Region

Since its establishment, we have been closely involved in the operations of the Recycling Electrical Products Industry Consortium (REPIC), a compliance scheme for electrical appliance recycling in the UK. It was more than 10 years ago that the UK originally started discussing legislation concerning Waste Electrical and Electronic Equipment (WEEE). We examined how to establish a recycling system and other related issues, and eventually established a nonprofit compliance scheme, known as REPIC, in collaboration with other corporations. REPIC manages almost a half of the total weight of WEEE in the UK, which is processed in the UK WEEE system.

Over the years, we have contributed to the revised WEEE regulations put into effect in 2014 through working with REPIC, the UK government, and other stakeholders. The UK WEEE regulations previously allowed trading of “evidence notes,” which is proof of treated WEEE, between schemes. However, the limited visibility of such trading became an issue, and the revised 2014 regulations resulted in evidence trading being abolished. The change enabled schemes to have a full audit trail of which treatment company was being used, so helping to improve treatment quality and reduce unnecessary costs. We will continue to contribute to the sustainable operation of the electrical appliance recycling system in the UK through an industry association.

In 2015, we collected approx. 31,000 tons*5 of used products covered by the WEEE Directive across Europe.

The Russian Waste Law has been amended several times. The most recent amendment came into force in January 2015 (comprehensive law). Implementation rules are still under development and Panasonic is working on developing appropriate regulations through an industry association, RATEK.
The new Executive Order of December 9, 2015 sets the WEEE collection target to 5% in 2017. The Russian government is planning to collect the recycling fee for applicable products from manufacturers uniformly in a form similar to a tax. Therefore, as actions against this plan, RATEK is working towards building efficient recycling schemes under the initiative of manufacturers.

*5 Calculated by multiplying the weight of collected products per collection system by Panasonic market share in terms of weight per collection system.

Promoting Recycling Activities in North America

Panasonic continues its leadership role in establishing and operating a recycling system for waste batteries and consumer electronic products in North America. Following the startup of a state recycling law in Minnesota in July 2007, we established the Electronic Manufacturers Recycling Management Company, LLC (MRM), jointly with Toshiba Corporation and Sharp Corporation in September of the same year, and began recycling TVs, PCs, and other electronic equipment. With collaborative ties to several recycling companies, MRM operates collection programs on behalf of 40 companies across 20 states. Through more than 1,600 collection bases, Panasonic collected approx. 7,200 tons of used electronic products according to each state mandate as well as voluntary efforts in 2015. The collection results fall short of the

previous year due to the decrease in mandatory collection volume affected by the decline of sales volume.

As for waste batteries, we established Call2Recycle in 1994 jointly with other battery manufacturers, and now provide recycling programs for rechargeable batteries throughout the US and Canada. Call2Recycle provides collection programs and a robust retail collection network for over 300 companies, and collected approx. 5,730 tons of rechargeable batteries in the U.S. and Canada.

Recycling end-of-life products in Canada started in 2004 with the Alberta Government Extended Producer Responsibility (EPR) Regulation. Since then a total of 9 provinces and one territory have legislated WEEE, each with their own unique parameters and requirements. In an effort to harmonize these programs, Panasonic Canada takes part in and is a leading member of the Electronic Product Recycling Association, a not-for-profit management organization which was established with the mandate to standardize operations and bring about economies of scale on a national basis through 2,200 collection sites.They are now responsible for managing all the provincial programs with the exception of Alberta and the Northwest Territories, as both these programs are under the direct jurisdictions of their governments and not industry. The currently active provincial EPR programs have proven to be very effective in diverting e-waste as reflected in last year's totals, where 146,423 tons were collected and resulted in an average of 4.32 kg per capita in Canada.

Only the province of New Brunswick and the two territories of Yukon and Nunavut have yet to legislate e-waste. However, consultations are continuing with regulators in order to determine the best approach for these very low population density regions.

Recycling Business in China

The Regulation for the Management of Recycling and Disposal of Waste Electrical and Electronic Products was enforced in January 2011. With this background, we established a joint recycling company in Hangzhou, Zhejiang Province, with a Chinese company, and its operation started in February 2014. This new company aims at becoming an advanced model for home appliance recycling in China in accordance with the above regulation. Utilizing the methods of advanced and practical technology and a contemporary control system that have developed through our recycling business in Japan for over 15 years, the company engages in collecting and disassembling used appliances as well as selling resources from used appliances. The volume of recycled home appliances in fiscal 2016 reached 550,000 units.


TV disassembly line in the new recycling company

In February 2015, Chinese government revised Treatment Catalogue of Waste Electrical and Electronics Equipment, and it came into effect on March 1, 2016. In response to the increase of product categories subject to the new policy from 5 to 14, the company plans to expand the recycling business to wider industrial areas. Through these businesses, the company aims to contribute to environmental conservation and the effective use of resources in the country.

International Collaboration in Southeast Asia and Oceania

Heartland E-waste Recycling Programme is a voluntary activity in Singapore that serves as an integrated platform for proper recycling of home appliances and electronic waste. The program is designed based on the shared responsibility concept among manufacturers, recyclers, retailers, local communities, and the government. In the 12 months from February 2015 through January 2016, approximately 3,000 home appliances and electronic waste, weighing over 8,700 kg in total, were collected at 76 collection points in 7 neighborhoods in Southeast Singapore. In addition, Heartland E-waste Recycling Programme also contributed to raising recycling awareness among the community with close to 500 student volunteers conducting house visits to more than 20,000 households in Southeast Singapore.

Student volunteers participating in the monthly collection of Heartland E-waste Recycling Programme

Regulators in Vietnam, Malaysia, Thailand and Singapore are gearing towards the global trend of mandating responsible end-of-life product recycling. Discussions with regulators and industry bodies are in progress. Such examples include

Malaysia Department of Environment-Japan International Cooperation Agency (JICA) e-waste management system feasibility study, Joint initiative between Japanese and Vietnamese governments, and Thailand local industry association.

Continuous discussions with the Australian government to support the review of the existing e-waste recycling regulation are also in progress. The National Television and Computer Recycling Scheme was established in Australia in 2011, and it aims to increase the recycling rates of televisions and computers to 50% from July 1, 2015 and 80% in 2026-2027. Panasonic Australia is a member of the Electronic Product Stewardship Australasia (EPSA), a co-regulatory arrangement approved by the Australian government to fulfill our obligation under the national scheme. Below are the recycling-related data for televisions and computers from 2012–2015:

Period	Collection Ratio (Volume)
July 2012 – June 2013	30% (1,452 tons)
July 2013 – June 2014	33% (1,052 tons)
July 2014 – June 2015	35% (1,166 tons)

Through such engagements between the government and industry bodies, Panasonic hopes to contribute to the formulation of sustainable e-waste management policy in each country.

Recycling Efforts in India

In India, the recycling law was enforced in May 2012, requiring manufacturers to form their own recycling systems. In response to this enforcement, we established the “I Recycle” program that collects and treats waste home appliances. Panasonic has also been taking part in the Consumer Electronics and Appliances Manufacturers Association (CEAMA) to help develop the white paper containing reports on an analysis of current recycling activities in India, and a long-term plan for waste problem solutions. The white paper was submitted to the Ministry of Environment, Forests and Climate Change in January 2015.

The market penetration of home appliances is expected to continue to grow at a fast pace in India. We will hold further discussions with the Indian government through various industry associations to help establish an even more efficient and robust recycling system.

Recycling Initiatives in Latin America

As the trend of reinforcing environmental laws progresses in Latin American countries, discussions on establishment of recycling laws and actual enforcement are being conducted.

We are having dialogues with the Brazilian government, jointly with an industry association and retailers, about the establishment of local recycling systems. We are also actively engaged in a resource collection campaign in major cities. Our efforts also include participation in the improvement program of reverse logistics systems in Brazil through an industry association to reinforce the system and making it more effective. The project is planned to run for three years with technical support from JICA, following a request by the Brazilian government.

In Peru, Mexico, and Costa Rica, we submitted a recycling management plan to each government and started our efforts from 2016. In Colombia, we also formed a recycling management organization under an alliance of manufacturers liaising with governmental organizations and industrial groups, and started collecting refrigerators from 2014, aiming to resolve ozone depletion issues.

Environment: Use of Recycled Resources

Products Using Recycled Resources

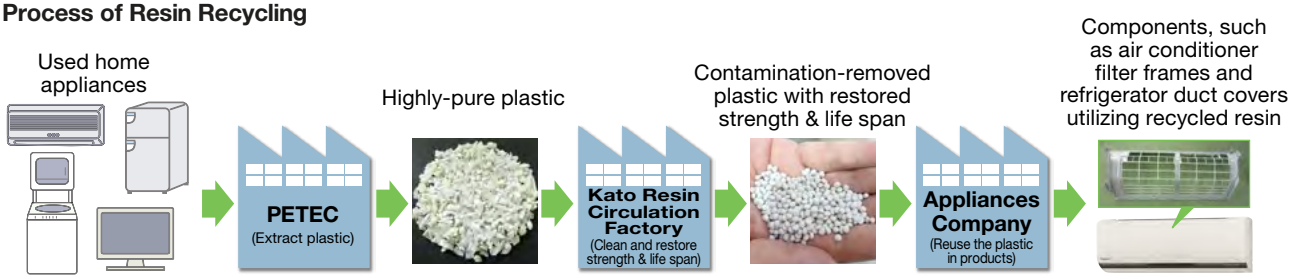
Under the concept of “product-to-product,” we are enhancing our initiatives of utilizing resources recovered from used products. As for resin, we promote the reuse of resin recovered from our used home appliances (refrigerators, air conditioners, and washing machines) for our products. We also started recycling scrap iron recovered from used home appliances in our products in 2013.

▶ Our approaches to Resources Recycling
http://www.panasonic.com/global/corporate/sustainability/eco/resource_sp.html

Enhanced Use of Recycled Resin in Home Appliances

To efficiently utilize resin recovered from collected waste home appliances in addition to metals such as iron, copper, and aluminum, our recycling factory, Panasonic Eco Technology Center Co., Ltd. (PETEC), and Kato Plastic Recycling Factory of the Appliances Company work together for resin recycling.

Process of Resin Recycling



PETEC is capable of sorting three major types of resins with different purposes and properties—polypropylene (PP), acrylonitrile butadiene styrene (ABS), and polystyrene (PS)—from shredder residue of waste home appliances, with an accuracy of at least 99%. This precision separation is realized by our original near-infrared identification technology. Conventionally, shredder residues were generally discarded or used as fuel, however, this technology has enabled the sorting and recovering of single resins.

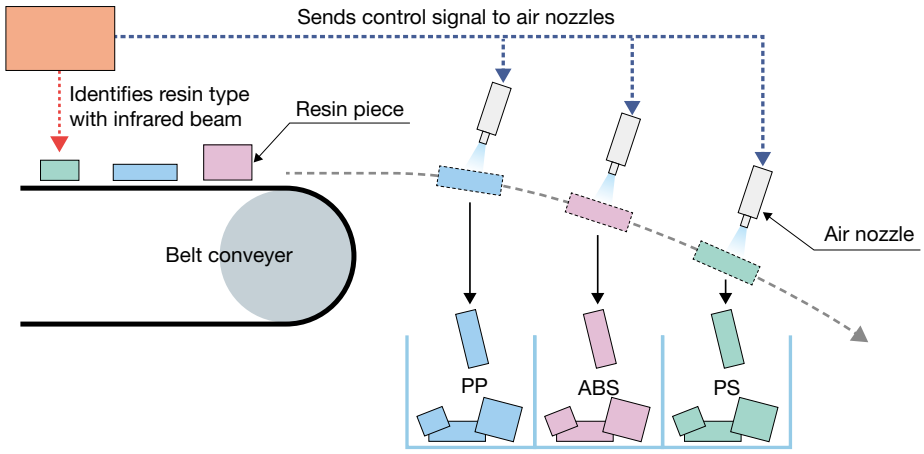
Near-infrared sorting machine that can sort three types of resin simultaneously

PP, ABS, and PS were conventionally sorted by each type at a time over three processes, but in fiscal 2015, we developed new technologies to sort these three types of resin simultaneously. The first of the new technologies is airflow control technology, which is used to blow resin pieces of different shapes and sizes after their types have been identified. The technology reduces the impact of aerodynamic drag caused when blowing the pieces into the air from the conveyer and stabilizes the trajectory of the resin pieces. The second is the air discharge technology to instantaneously optimize the duration of the air jet and nozzle position to shoot down the flying resin pieces. The third is high-speed signal processing technology to instantaneously detect the type of resin of the flying piece that is moving at 3 m/second, and ensures continuously shooting the piece down using more than 700 air nozzles.

Won the Minister of Economy, Trade and Industry Prize under the 2015 Awards for Resource-Recycling Technologies and Systems

These three technologies have significantly improved the resin sorting efficiency. Through development and introduction of such technologies, we are striving to improve recycling treatment efficiency and to enhance the scope of resource recycling. The technology also detects and removes specific hazardous substances during sorting, which keeps the substance content significantly lower than regulated by stringent European legislation. Moreover, because no water is necessary for this sorting process and there is no need for effluent treatment, it contributes to reducing environmental impact caused by wastewater after the recycling process. Our efforts in resin recycling from mixed resins in waste home appliances won the Minister of Economy, Trade and Industry Prize under the 2015 Awards for Resource-Recycling Technologies and Systems, hosted by the Japan Environmental Management Association for Industry.

Diagram of Near-infrared Simultaneous Sorting Machine for Three Types of Resin



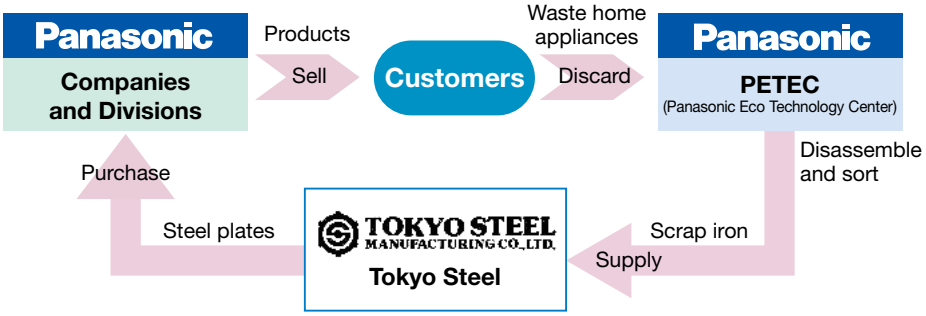
The recycled single resins sorted and recovered at PETEC are then transferred to the adjacent Kato Plastic Recycling Factory to be washed and processed to recover their chemical properties. Kato Plastic Recycling Factory is a manufacturing and development site that demonstrates promotion of use of recycled resin at our Appliances Company, a home appliance manufacturer and seller. The factory plays an important role in enhancing recycled resin utilization by developing recycling technologies, such as a more efficient method for cleaning recycled resins. Recycled resin is generally weaker in strength and has a shorter life than new resin. This is why its chemical properties have to be recovered to the level of new resin to make them usable as materials and components in new products. Different properties are required for different resins. We have established techniques that make full use of the properties optimal to each resin such as PP, ABS, and PS, which include adding antioxidants or mixing recycled and new resins.

Recycled resin processed and quality-assured by PETEC and Kato Plastic Recycling Factory are reborn in our manufacturing factories as filter frames for air conditioners or internal parts in IH cooking heaters and refrigerators according to the resin type to serve the right functions in the right places.

Building a Recycling Scheme for Scrap Iron

Jointly with Tokyo Steel Co., Ltd., we started a recycling scheme for scrap iron in July 2013. In this scheme, we recover the scrap iron from used home appliances and Tokyo Steel makes it into steel sheets. We then purchase the sheets back as a material for our products. Supplying scrap iron for recycling and repurchasing the recycled iron is the first scheme of its kind in the Japanese electrical manufacturing industry.

Self-recycling Scheme for Electric Steel Plates

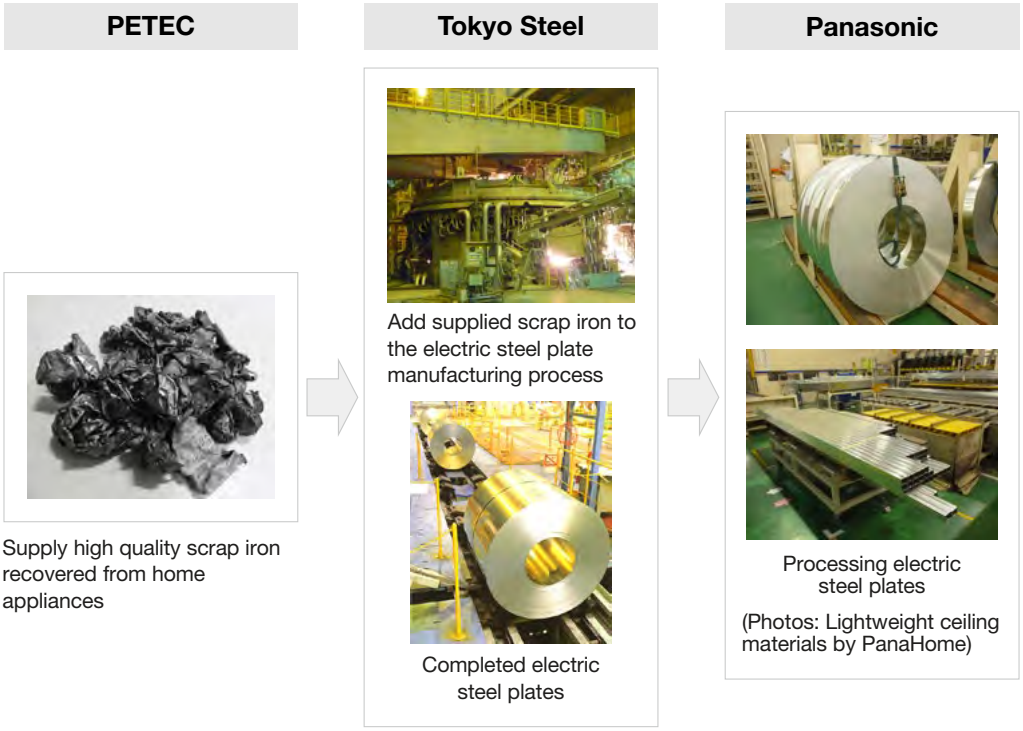


Specifically, scrap iron from home appliances collected at PETEC is supplied to Tokyo Steel's Okayama Plant, where the scrap iron is processed into electric steel plates.*1 Panasonic procures the recycled steel plates and utilizes them in products. Discussions with Tokyo Steel commenced in 2010, and we have worked together since then to improve the quality of recycled iron to a level sufficient for production use, as well as developing the technology to improve the applicability of the recycled iron. From this we identified the optimum application of the electric steel plates, and refined its specific features (e.g. shape, strength, and weldability) to meet application-specific requirements. Use of thin electric steel plates in our products was first made possible in 2011. Through this close collaboration, we materialized this recycling

scheme in 2013, a scheme where a home appliance recycling company that we own supplies scrap iron to be used to make electric steel plates.

The amount of scrap iron we initially supplied to Tokyo Steel was about 50 tons per month. In fiscal 2015 and 2016, it reached over 2,100 and 2,400 tons, respectively, and the recycled steel is being used in our products, including washing machines and ceiling materials for housing.

Self-recycling Scheme Process



The increase in electric steel plate usage leads to an increase in the usage of scrap iron, which is one of the most important resources in Japan. In addition, producing steel plates from scrap iron emits much less CO_2 compared with producing steel plates from scratch. This scheme also stabilizes the procurement price, because the price of scrap iron supplied from PETEC and the price of electric steel plates procured from Tokyo Steel are determined by the scrap iron fluctuation rate agreed between the two companies. We will further expand this recycling scheme for more efficient resource utilization, CO_2 emissions reduction, and stabilization of procurement prices.

*1 Steel produced from scrap iron melted and refined in an electric arc furnace.

Examples of use of recycled resources are also introduced in the following website.
http://www.panasonic.com/global/corporate/sustainability/eco/resource/reuse.html

Environment: Factory Waste Management – Zero Waste Emissions

eco ideas

Improving Factory Waste Recycling Rate

From the viewpoint of effective usage of resources, we believe that generation of waste and revenue-generating waste at factories must be minimized, even if such waste could be sold as valuable commodities. Based on this belief, we identify the amount of generated waste (including both revenue-generating waste and factory generated waste) and classify it into: (1) recyclable waste (including those that can be sold and those which can be transferred free of charge or by paying a fee), (2) waste that can be reduced by incineration or dehydration, and (3) landfill (waste with no option other than being sent to landfills).

We reduce the emission of waste by boosting yield in our production process and increasing the recycling rate of our waste materials. Accordingly, we strive globally toward achieving our Zero Waste Emissions from Factories *1 goal by reducing the amount of landfill to nearly zero.

We have reinforced our efforts in China and other Asian regions, as well as in Europe. The recycling scheme in a new factory that caused the overall recycling rate to fall in fiscal 2014 entered into full operation in fiscal 2016. This resulted in the fiscal 2016 recycling rate reaching 99.2%, an increase of 0.4 point over the previous fiscal year. We will continue our initiatives to achieve the factory waste recycling rate target of 99.5% by fiscal 2019.

As a means to reduce the generation of waste, we are fostering resource-saving product design. In our production activities, we are engaging in resource loss reduction, employing our own unique material flow analysis methods. We consider materials that do not become products and excessive use of consumables as resource losses, and make the material flow and lost values for each process visible in order to resolve the issues with the involvement of the design, manufacturing, and other relevant business divisions. In the future, we will promote further reductions in resource losses through the Resource Loss Navigation, our original system developed to automatically display information to help reduce resource losses.

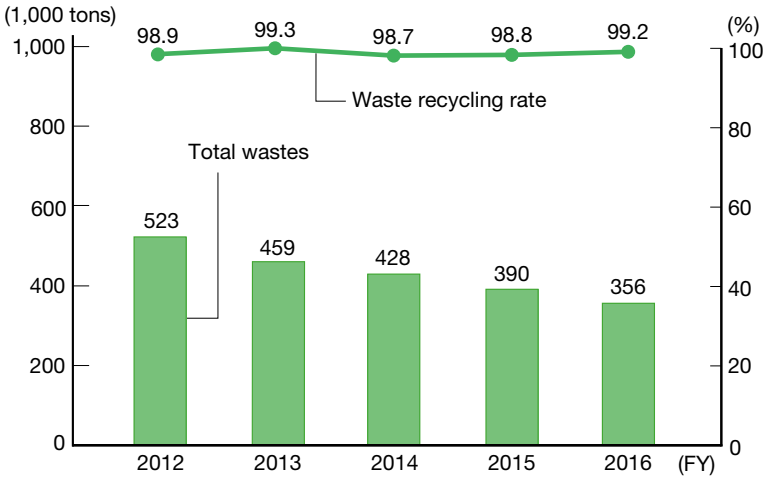
As measures to reduce the amount of landfill of waste and revenue-generating waste, we constrain the amount of waste materials that are particularly difficult to recycle, such as thermosetting resin. We are also strictly adhering to waste sorting practices in production processes to further expand the reuse of resources.

Because waste recycling rates in our overseas factories lag behind those in Japan, we have worked to improve the average level of recycling activities by sharing information within and between regions outside Japan. Specifically, in addition to accelerating the information sharing on waste recycling issues between our local factories and group companies in Japan, we also promote the sharing of excellent examples and know-how among our factories across regions by utilizing BA Charts*2 prepared by each region, following our long-standing approach toward CO_2 reduction activities.

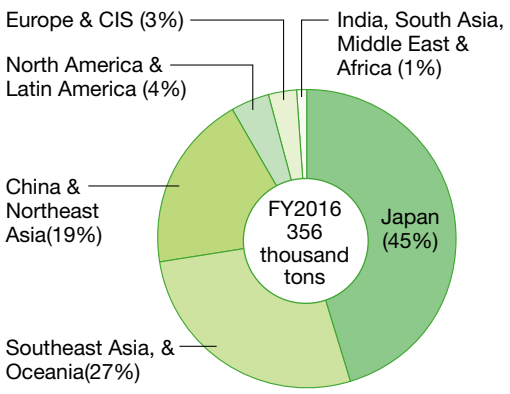
*1 Definition by Panasonic: Recycling rate of 99% or higher. Recycling rate = Amount of resources recycled/(Amount of resources recycled + Amount of landfill).

*2 A chart-format summary of comparisons between “before and after” implementation of waste reduction and recycling measures.

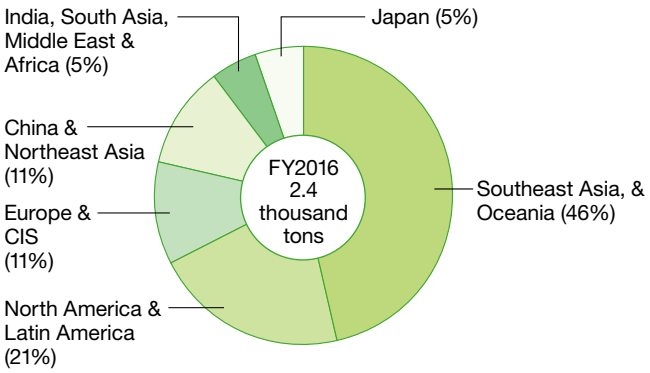
Amount and Recycling Rate of Total Wastes Including Revenue-generating Waste



Breakdown of Total Wastes Including Revenue-generating Waste (by region)



Breakdown of Landfill (by region)



Breakdown of Total Wastes Including Revenue-generating Waste for Fiscal 2016 (by category)

(1,000 tons)

Items	Total wastes	Recycled	Landfill
Metal scrap	148	146	0.5
Paper scrap	38	36	0.1
Plastics	37	33	0.2
Acids	35	25	0.003
Sludge	17	13	0.3
Wood	22	18	0.006
Glass/ceramics	6	5	0.07
Oil	15	13	0.1
Alkalis	22	18	0.01
Other *3	17	15	1.1
Total	356	321	2.4

*3 Combustion residue, fiber scraps, animal residue, rubber scraps, debris, ash particles, items treated for disposal, slag, infectious waste, polychlorinated biphenyls (PCBs), waste asbestos.

An example of factory waste reduction is also introduced in the following website.
http://www.panasonic.com/global/corporate/sustainability/eco/resource/zero.html

Environment: Water Resource Conservation

Approaches to Water Resource Conservation

It is said that available fresh water is only about 0.01% of the Earth's total water resources. In addition, the World Economic Forum, host of the Davos meetings, has stated in its annual report on global risks that the water crisis continues to be one of the top risks with global impact, in view of the increase in water consumption to be caused by future economic growth and population increases.

With water shortages becoming an increasingly grave social problem, Panasonic is working to conserve water resources both in its products and production activities, in order to fulfill its social responsibility and to reduce management risks. Our Environmental Policy (page 12) stipulates that we make efforts to conserve water resources by using water efficiently and preventing pollution. In Green Plan 2018, our Environmental Action Plan toward fiscal 2019, we aim to expand the range of products that contribute to saving and recycling water. At the same time, we will work on conserving water resources throughout our business activities, in order to reduce the volume of water we consume and to use more recycled water in our production processes. In risk management, we are aiming to complete our water risk assessments for all our production sites by fiscal 2019.

Concrete action that we have taken for this includes an evaluation of the scale of water risks in all regions where our production sites are located, in order to identify and mitigate the impact of our production activities on our use of water. In the evaluation, we employ evaluation tools such as the mapping tool Aqueduct by the World Resources Institute (WRI) and the Water Risk Filter by the World Wide Fund for Nature (WWF), which can not only assess the physical risks of water shortages but also examine the risks in water-related regulations as well as reputation risks in each region. We are also making use of public databases available from respective national governments. Going forward, we will conduct detailed analyses of regions with high water risks, closely examine production site data such as local information and water use volume, and specifically identify the impacts on our production activities. Additionally, we will work to conserve water resources and reduce business risks in regions where water risks are determined to be high, by focusing on promotions to reduce water consumption and expand water recycling.

To promote such activities, we have established an Environmental Management System for these activities, including water management (page 16-17), and are aiming to raise the environmental management level by implementing the PDCA cycle. In addition, we have established an Environmental Risk Management System to continuously reduce risks, and (1) identify environmental risks and promote company-wide risk management every fiscal year and (2) promptly respond to occurrence of environmental risks (page 19). We will continue to manage our environmental risks through these activities.

We are also a member of the Water Project, a public-private collaborative project aimed at boosting awareness, organized under the initiative of Japan's Ministry of the Environment in 2014. Its objective is to maintain a sound water cycle and promote its recovery, and presents water-related activities by business corporations as well as communicates of information on the importance of water as its activities. We will work in cooperation with the Japanese government and other companies to conserve water resources.

Water Resource Conservation through Products

By thoroughly analyzing the use of water through our products, we have developed functionalities that allow a considerable amount of water conservation by utilizing water at a maximum level through improvement of water flow control and cyclic use. In fiscal 2012, we enhanced one of the criteria, water conservation, in our Green Product accreditation criteria (see pages 25-27), and are speeding up the development of industry-leading products that contribute to water saving.

▶ Examples of water-saving products are introduced in the following website.
http://www.panasonic.com/global/corporate/sustainability/eco/water.html

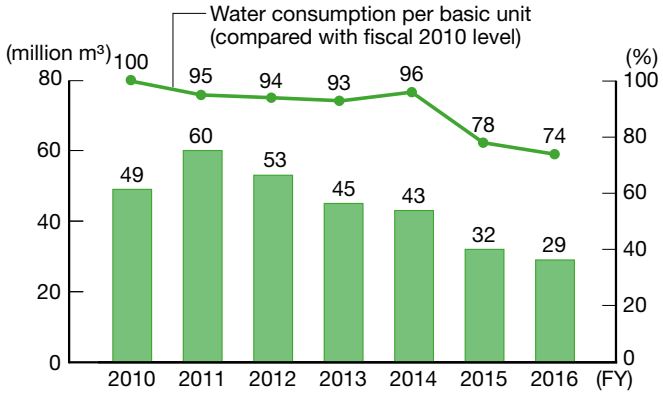
Initiatives for Water Resource Conservation through Production Activities

By collecting and reusing wastewater from our manufacturing processes and air conditioning systems, we reduce the amount of water use and wastewater effluent. This reduces the impact of the intake and effluent of water in production activities on water resources. With many regions around the world threatened by water shortages, we focus on certain regions to address our use of water in our activities. Water used at factories in fiscal 2016 resulted in 28.89 million m³, reduced by 10.8% compared to fiscal 2015. The water used at our factories per basic unit of production*1 improved year-on-year due to consolidation of manufacturing business sites by structural reform and other factors. Our use of recycled water*2 in fiscal 2016 amounted to 8.92 million m³, accounting for 31% of our total water consumption.

*1 Water used at factories per basic unit of production = Water used at factories / Production volume.

*2 The calculation excludes the water circulating for a single purpose (e.g. water in a cooling tower).

Water Consumption in Production Activities and Water Consumption Per Basic Unit



Note: Then-SANYO Electric and Panasonic Liquid Crystal Display not included in fiscal 2010.

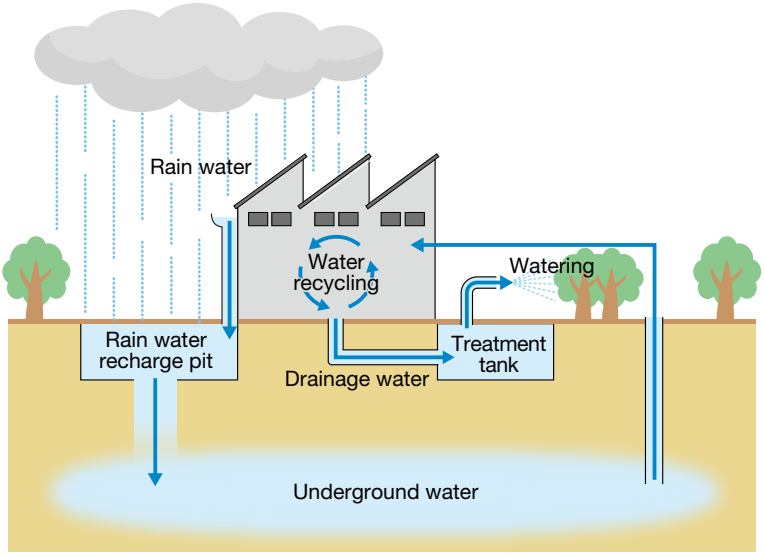
FY2016 Breakdown of Water Consumption (by region)

(10,000 m³)

Region	Consumed	Municipal water/ industrial water	Groundwater	Rivers/lakes	Discharged	Sewer systems	Waterways
Japan	1,792	698	1,094	0	1,491	261	1,230
China & Northeast Asia	500	495	5	0	325	228	97
South East Asia, & Oceania	520	443	72	5	384	189	195
North America & Latin America	44	32	12	0	26	25	0
Europe & CIS	19	9	10	0	17	7	10
India, South Asia, Middle East & Africa	14	3	11	0	3	1	2
Total	2,889	1,680	1,204	5	2,246	711	1,534

In the Automotive & Industrial Systems Company under the Panasonic Group water used at factories in fiscal 2016 resulted in 17.26 million m³, against a target of 18.5 million m³. We are also active in making use of recycled water. Panasonic Technopark in India is designed to recycle 100% of the water used at the plant as part of the sustainable use of water resources. Ground water is used inside the plant and undergoes wastewater treatment after use. Rather than discharging the water into sewage or rivers, it is reused as toilet flushing water and for lawn sprinkling, and is recirculated again as ground water. Also, the necessary ground water level for the land area has been calculated to prevent water consumption beyond what is necessary, thereby contributing to ground water preservation.

Panasonic Technopark Water Recycling System

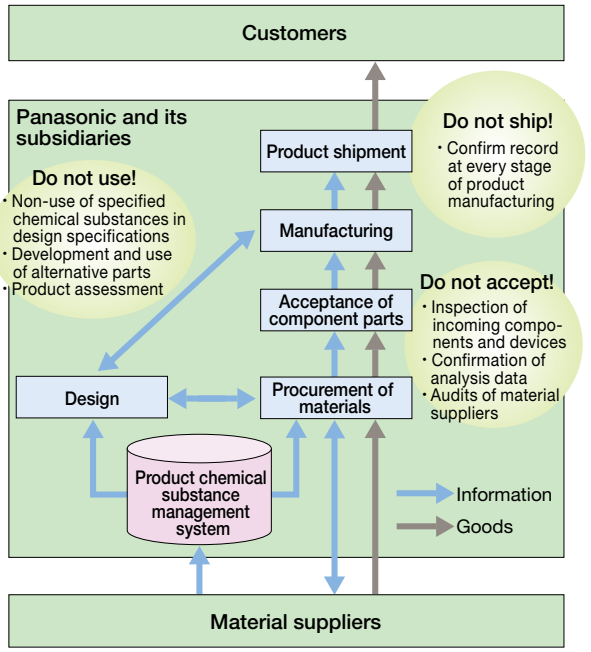


Environment: Chemical Substance Management

Initiatives to Reduce the Environmental Impact of Chemical Substances

In order to prevent content of hazardous substances prohibited under the EU RoHS Directive*1, published in 2002 and recast in 2011, and the like to Panasonic products, it is important not only to be aware during the product design stage but also to be aware that certain substances are not contained in purchased components. To ensure compliance with the Directive, Panasonic has been promoting the "Do not accept! Do not use! Do not ship!" campaign throughout the various production stages from designing to shipment inspection in business sites across the world since October 2005. Specifically, we employ a range of mechanisms using screening devices to search for and exclude specific chemical substances. We also conduct environmental audits on suppliers of parts and materials with high risk of content of specified hazardous chemical substances to support them in building a sound chemical substance management system.

Specified chemical substance management system

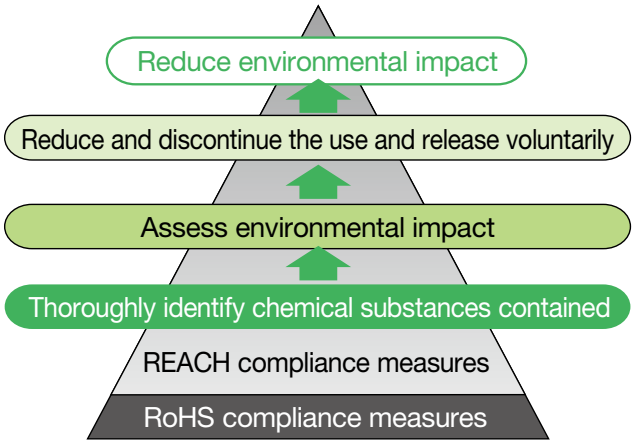


Meanwhile, as represented by the enforcement of the REACH regulation*2 in the European Union, the world is moving toward the goals agreed at the World Summit on Sustainable Development (WSSD) held in 2002, which is to produce and use all chemical substances in a manner that minimizes their impact on human health and the environment by 2020. In support of the precautionary approach proposed in the Rio Declaration made at the Earth Summit in 1992, we have been manufacturing products in line with our basic policy of reducing the use of chemical substances that might adversely affect human health and the environment throughout their lifecycles. As specific initiatives, we aim to reduce the environmental impact of our products by (1) identifying hazardous substances contained in our products, (2) evaluating these substances on their environmental impact, and (3) voluntarily reducing or discontinuing their use in case of any environmental risks.

*1 Directive on the Restriction of the use of certain Hazardous Substances in electrical equipment

*2 Regulations on the registration, evaluation, authorization, and restriction of chemical substances.

Process to Reduce the Environmental Impact of Chemical Substances



To promote our initiatives clearly, we set forth our Chemical Substances Management Rank Guidelines, which prohibit or specify certain substances for management in terms of our products and factory activities. Companies in the Panasonic Group are requested to follow the Guidelines, and suppliers are also requested for support as necessary. In fiscal 2013, we added Level 3 to the Chemical Substances Management Rank Guidelines (For Products) to review the timing for the prohibition of further substances that may adversely affect humans and the environment, in addition to the current and forthcoming prohibitions.

Chemical Substances Management Rank Guidelines (For Products).and relevant documents, which prohibit or specify certain substances for management, can be downloaded from the website shown below (Green Procurement)

▶ Green Procurement (Download of Chemical Substances Management Rank Guidelines (For Products))
http://www.panasonic.com/global/corporate/management/procurement/green.html

Chemical Substances Management Rank Guidelines (For Products)

Rank		Definition
Prohibit	Level 1	(1) A substance contained in products that is prohibited by existing laws and regulations; or a substance where the upper limit of concentration is specified. (2) A substance that will be prohibited in products by laws and regulations or where the upper limit of concentration will be specified within one year of the revision of these Guidelines.
	Level 2	(1) Substances other than those specified as the Level 1 Prohibited Substances that will be prohibited in products after a certain period by a treaty, law, or regulation. (2) Substances that are prohibited in products by the Panasonic Group prior to the effective period specified by a treaty, law, or regulation. (3) Substances whose use is voluntarily restricted by the Panasonic Group.
	Level 3	Any substance other than those specified as a Level 1 or Level 2 Prohibited Substance that is reviewed for prohibition by legislation etc., and the clarification of substitution-related issues as well as the timing for prohibition is reviewed by the Panasonic Group in light of future legislation trends.
Manage		Substances whose consumption needs to be monitored and for which consideration needs to be given to human health, safety and hygiene, adequate treatment, etc. The intentional use of these substances is not restricted, but their use and contained concentration must be monitored.

Note: Covered legislation and chemical substances include: Class I Specified Chemical Substances under the Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc.; substances whose manufacture etc. is prohibited by Article 55 of the Industrial Safety and Health Act; EU RoHS Directive; and Annex XVII of the EU REACH Regulation. For more details, see the chapter on Specified Managed Substances in the Chemical Substances Management Rank Guidelines (For Products).

Chemical Substances Management Rank Guidelines (For Factories)

Rank	Definition
Prohibit	Use of the following substances should be immediately discontinued: Carcinogens for humans Ozone depleting substances Substances whose use is prohibited by Panasonic Chemical substances designated as Class I Specified Chemical Substances by the Japanese Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc. Substances whose manufacture is prohibited by the Japanese Industrial Safety and Health Act Substances whose manufacture and use are prohibited by international treaties
Reduce	Substances whose use, release and transfer should be identified and reduced. Substances other than prohibited substances that might pose risks to human health and the environment.

Note: Covered legislation include: PRTR Act (chemical substances), environmental criteria under the Basic Environment Act; the Industrial Safety and Health Act; and the Stockholm Convention. For more details, see the contents on The Aim of Establishing the Chemical Substances Management Rank Guidelines (For Factories) in the Chemical Substances Management Rank Guidelines (For Factories).

History of Our Initiatives to Reduce the Environmental Impact of Chemical Substances

Social trends

- 1989: The Montreal Protocol entered into force
- 1992: Earth Summit in Rio de Janeiro—Agenda 21
- 1996: Discontinuance of the use of specified chlorofluorocarbons by industrialized countries
- 2002: WSSD in Johannesburg
- 2006: The RoHS Directive entered into force
- 2007: The REACH Regulation entered into force

1990 | 1995 | 2000 | 2005 | 2010 | 2015

Panasonic

All products

- 1992: Discontinued use of PVC resin in packaging materials
- March 2003: Discontinued use of lead in solders globally*3
- October 2005: Discontinued use of six RoHS substances globally*3
- March 2009: Discontinued use of PVC in internal wiring of new products to be sold in Japan*3
- March 2011: Discontinued use of PVC in internal wiring of new products globally*3
- July 2018 (planned): Use of four types of phthalates specified by the RoHS Directive to be discontinued in new products globally

Individual products

- 1991: Released mercury-free manganese dry cells
- 1992: Released mercury-free alkali dry cells
- 1995: Discontinued use of CFC refrigerant in refrigerators globally
- 2002: Discontinued use of HCFC refrigerant in air conditioners (Japan)
- 2004: Refrigerators in Japan market became fluorocarbon-free (Japan)
- 2006: Released lead-free plasma display panels
- 2010: Released fluorocarbon-free freezers using CO_2 refrigerant and compatible display cases
- 2013: Released air conditioners using new refrigerant R32 with low Global Warmer Potential (GWP) (Japan)

Chemical substances used at factories

- 1996: Discontinued use of chlorinated organic solvents
- 1997: Began identification work for PRTR
- 1999: Launched the “33/50” reduction activity*4
- 2004 (Japan): Achieved Voluntary Action Plan Reduced use by 75% Reduced release and transfer amount by 62% compared to fiscal 1999 level
- 2010 (Global): Achieved Voluntary Action Plan Reduced release and transfer amount of key-reduction target substances by 46% compared to fiscal 2006 level

*3 Excluding applications where the quality such as safety cannot be ensured, or applications where the material is designated by laws and regulations.

*4 A reduction activity that promotes cutbacks in the use, release, and transfer of chemical substances by 33% in three years and by 50% in six years, compared to the fiscal 1999 level.

Management of Chemical Substances in Products

To minimize the environmental impact of chemical substances contained in products, we endeavor to identify chemical substances used in the components and materials of our products. In addition, for substances that are prohibited in products in major developed countries due to legislation such as the European RoHS Directive, we specify prohibited substances to globally ensure that they are not used or contained in our products, except in certain cases where substitution of the substances is infeasible. We will also conduct environmental impact assessments for managed substances contained in our products, take steps to reduce the use of substances where the impact on human health and the environment cannot be ignored, and plan to eventually prohibit the use.

Identifying Chemical Substances in Products

To contribute to the achievement of the global goals set at the WSSD, it is important for us to disclose and communicate information on the chemical substances used in our products across the supply chain, for which we must promote cross-industrial initiatives to establish and disseminate an effective system. We are a member of the Joint Article Management Promotion consortium (JAMP) together with about 440 major companies from various industries, such as chemical, component, and equipment manufacturers. We are proactively formulating, utilizing, and disseminating chemical substance management standards and systems through this organization. Since fiscal 2005, we have been using a product chemical substance management system, to gather data concerning the chemical substances contained in the components and materials for our products from our suppliers. In July 2009 we asked our suppliers to submit the data in a common format by JAMP, and approx. 10,000 suppliers are currently using this format.

Meanwhile, in Japan alone, burden on companies grew, as a number of hazardous substance inspections were carried out throughout the supply chain using formats unique to each company that were not standardized such as the JAMP format for information communication. The Ministry of Economy, Trade and Industry recognized this issue and presented a new scheme, “chemSHERPA,” for sharing and exchanging information about chemicals contained in components and products throughout the supply chain. Because chemSHERPA follows the standardized JAMP format to communicate information, Panasonic has joined the scheme and adopted the use as the information-gathering format in its system. We plan to replace the current JAMP mechanism with chemSHERPA by June 2018 when the JAMP support and maintenance period will discontinue (excluding communication of information on automotive equipment for the automobile sector for which the industry’s standard information sharing system is already established).

In addition, with the supply chain expanding to a global scale, it is particularly important for overseas suppliers to deepen their understanding on the handling of hazardous chemical substances. Towards a full changeover to the chemSHERPA format, we will continue to promote the use to our suppliers through collaboration with JAMP and JAMP counterparts in respective countries.

▶JAMP http://www.jamp-info.com/english
▶Chemicals in Products (Ministry of Economy, Trade and Industry) http://www.meti.go.jp/policy/chemical_management/english/cip-e_index.html
▶ChemSHERPA https://chemsherpa.net/chemSHERPA/english/

Companies that procure electronic components may need to have a full understanding of the substances contained in the components at the point of selection or usage in order to adhere to the EU RoHS Directive and REACH regulation.

Particularly, as the REACH Substances of Very High Concern (SVHC) List is updated every six months, those companies expect their suppliers to provide the latest substance data to demonstrate compliance with the list.

Also, as a company supplying electronic components to other companies, we have published a table of RoHS and REACH compliance status on our website since November 2012 so that our clients can obtain relevant chemical substance information from us quickly and efficiently. The table covers our RoHS Directive compliance information and the substances designated in the RoHS / REACH Confirmation Report for all our major generic electronic components.

▶RoHS / REACH Confirmation Report for major generic electronic components
http://industrial.panasonic.com/ww/downloads/rohs-reach

Assessing the Impact of Chemical Substances

Scientifically identifying the impact on human health and the environment of products containing chemical substances is vital to the development of products with low environmental impact. We are engaging in activities designed to assess the levels to which customers are exposed to substances of very high concern (SVHC), as well as safety at the time of product use.

To date, we have undertaken assessments on cases such as impact of children's oral exposure to phthalate esters contained in a power cable, or the impact of ceramic fibers used in certain models of commercial microwave ovens. As part of our efforts to comply with the EU REACH regulation which requires preparing information for the safe use of products containing a certain amount of SVHC, we have created and disclosed a safety assessment document for both cases. In both cases, the exposure was considered to be nominal with little concern for any impact on human health.
Furthermore, in fiscal 2015 and 2016, we conducted a risk assessment of dermal exposure to phthalates through contact with power cables, etc., and have determined that the concentration levels in assumed Panasonic products have little risk to human health.

▶Management of Chemical Substances in Products http://www.panasonic.com/global/corporate/sustainability/eco/chemical/reach.html

Reduction in Usage and Emissions of Chemical Substances

Fluorocarbons used as a heat insulator and a refrigerant for freezers and air conditioners can damage the ozone layer and cause global warming. We developed the technology to utilize CO_2, which has much smaller impact than fluorocarbons, as a refrigerant and have been supplying a home boiler using CO_2 refrigerant since 2001. Although the CO_2 refrigerant is suitable for heating purposes, it was difficult to apply to refrigerators and freezers, especially in large professional equipment due to insufficient cooling efficiency and size problems. However, with support from the New Energy and Industrial Technology Development Organization (NEDO), we developed a refrigeration system using CO_2 refrigerant and now supply these fluorocarbon-free freezers and refrigerator display cases to supermarkets and convenience stores in Japan. Further, new development of a dedicated CO_2 refrigeration system has enhanced the product lineup from 272 models to 651 models, and we started accepting orders from May 2015.

OCU-CR2001VF, a fluorocarbon-free freezer using CO_2 refrigerant

FPW-EV085, a display case compatible with a fluorocarbon-free freezer

In addition, as measures against ozone depletion caused by HCFCs, a refrigerant called R410 that does not deplete the ozone layer was used in compact air conditioners, but this substance has a very high Global Warming Potential (GWP). Panasonic then developed a model that uses a new refrigerant R32, which has a lower GWP, and introduced it to the

market in 2013. Furthermore, PT. Panasonic Manufacturing Indonesia, which owns the factory for manufacturing compact air conditioners in Indonesia, redesigned its production facility that used an ozone-depleting HCFC refrigerant R22 to one using R32 in fiscal 2015, and commenced supplying new R32-based air conditioners. Panasonic contributed to the Indonesian government's initiative to eliminate the use of HCFCs.

Mercury lamps are currently widely used as the light source for projectors, because they provide high luminosity easily. However, mercury can have a serious impact on human health and the environment if not treated properly, and the short life of the lamps causes high consumption of resources as well as high environmental impact. For these reasons, Panasonic is developing products that adopt laser light sources. The PT-RZ12K Series are projectors for professional use that provide high luminosity by employing a high-output semiconductor laser light source module and a heat-resistant phosphor wheel. In addition, the casing material does not use halogenated flame retardant, making the projector an eco-conscious product that contributes to reducing the use of hazardous substances.

PT-RZ12K Series, a laser projector for professional use

Reducing the Use of PVC Resin

Polyvinyl chloride (PVC) is a material of concerns to the generation of hazardous substances from inappropriate disposal, as well as the harmful effects of certain additive agents (phthalate ester) used to render PVC more pliable. In light of the significant potential for inappropriate disposal of the PVC resin used in the internal wiring of products, due mainly to difficulties associated with the sorting of this resin from used products, we have switched our new products launched from April 2011 to non-PVC. Phthalates are often contained in PVC materials. As a preventative measure in view of the phthalate restriction to be enforced in 2019 under the EU RoHS-2, we have listed the substances as Level 2 and Level 3 Prohibited Substances to be applied from July 22, 2018 onwards in the Panasonic Group Chemical Substances Management Rank Guidelines Ver. 10 (for products) published in June 2016, and are working for substitution of substances.

▶ List of Our PVC-free Products http://www.panasonic.com/jp/corporate/sustainability/pdf/eco_pvclist2015.pdf

Management of Chemical Substances at Factories

Panasonic is working to minimize environmental impact by identifying the hazardous substances used in our products, assessing the impact of such use, and voluntarily discontinuing the use or reducing the release of such substances. Since 1999, we have been conducting the 33/50 Reduction Activity to materialize reduction by 33% in three years and by 50% in six years. In Japan, we started promoting cutbacks in the use, release, and transfer of chemical substances at our factories in fiscal 2000. Against the target in our voluntary action plan, a reduction by 50% from the fiscal 1999 level, we achieved a 75% reduction in chemical substance use and a 62% reduction in release and transfer in fiscal 2005. Since then we have been continuing the activity, focusing on substances with particularly large amounts of release and transfer, setting a voluntary action target of reduction by 30% compared to the fiscal 2006 level. As a result, we achieved a 46% reduction in the amounts of release and transfer of specified key reduction-target substances across all factories worldwide in fiscal 2011.

Reflecting international trends in chemical substance management, our reduction measures have focused increasingly on particularly hazardous substances from fiscal 2011. Our Chemical Substances Management Rank Guidelines (for Factories) was established in 1999 as a guideline to help manage the above chemical substance reduction activities. In Version 1, the guidelines specified a list of chemical substances to be managed, mainly focusing on carcinogenic substances. The guidelines were later updated to Version 2 in 2000 to include rules concerning the Japan PRTR Law. Version 3, introduced in 2004, additionally covered a list of substances specified by chemical substances management legislation in Japan. The chemical substances covered by Version 4 and later from 2009 are those specified in legislation on human health and environmental impact in Japan, the U.S., and Europe, as well as those specified under international treaties.

Under our Chemical Substances Management Rank Guidelines (For Factories), we have focused our management on select chemical substances that are hazardous to human health and the environment. Further, we have created a unique indicator, the Human Environment Impact,[*5] which is used globally in all our factories. Conventionally the chemical substances were managed by "quantity," such as usage amount or emissions/release. However, such quantity-based management has a problem in that some highly hazardous substances do not become subject to reduction or management if the usage amount was small, and therefore would fall out of the scope of impact assessments. In addition, the toxicity criteria varied according to substance types and regional legislation, which made standardized management across the

Group difficult. To address this issue, Panasonic worked together with experts from both within and outside the company, reclassified chemical substances based on an overall assessment of their hazardousness, and specified a hazardousness factor for each classification. Specifically, we set a hazard classification to each substance by utilizing carcinogen risk assessments issued by international organizations, together with publically available hazard information and lists of ozone depleting substances. For substances that have multiple hazard information items, the item ranked with the highest hazard risk is used for classification. We utilize this internal indicator as the Human Environmental Impact indicator to promote efforts to ensure reduction of highly hazardous substances with greater environmental impacts, such as carcinogens and ozone depleting substances, according to the risk level. The Panasonic Group Chemical Substances Management Rank Guidelines is also available on the website on our Green Procurement activities to promote collaboration with our suppliers, encouraging them to offer materials that do not contain hazardous substances.

▶ Green Procurement (PDF Download of Chemical Substances Management Rank Guidelines (For Factories))
http://www.panasonic.com/global/corporate/management/procurement/green.html

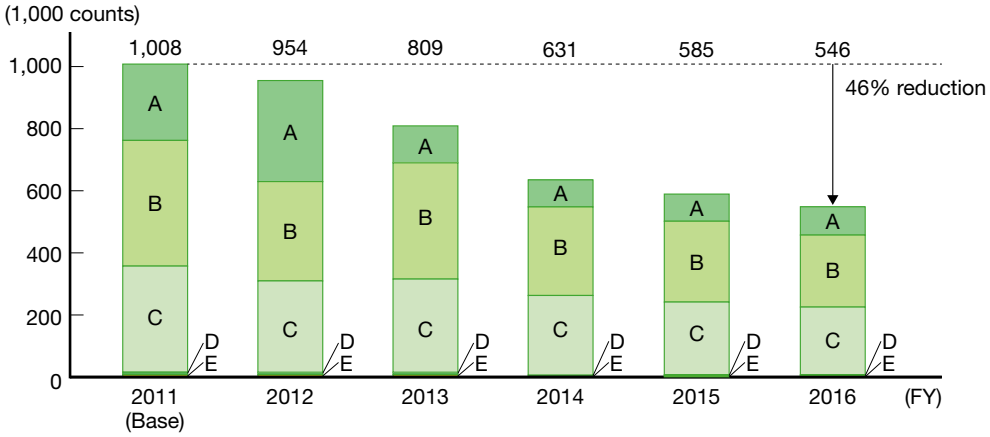
*5 Human Environmental Impact = Hazardousness factor x Release and transfer amount.

Classification of Hazards

Classification	Hazards*6	Hazardousness factor
A	Carcinogenicity/Ozone layer depletion	x 10,000
B	Serious or direct impact	x 1,000
C	Medium impact	x 100
D	Small or indirect impact	x 10
E	Minor impact or not assessed	x 1

*6 In addition to carcinogenicity, hazards to human health include genetic mutation, reproductive toxicity, and acute toxicity. In addition to ozone depleting substances, hazards to/substances with impact on the environment include ecological toxicity, substances that impact global warming, and substances that generate photochemical oxidants.

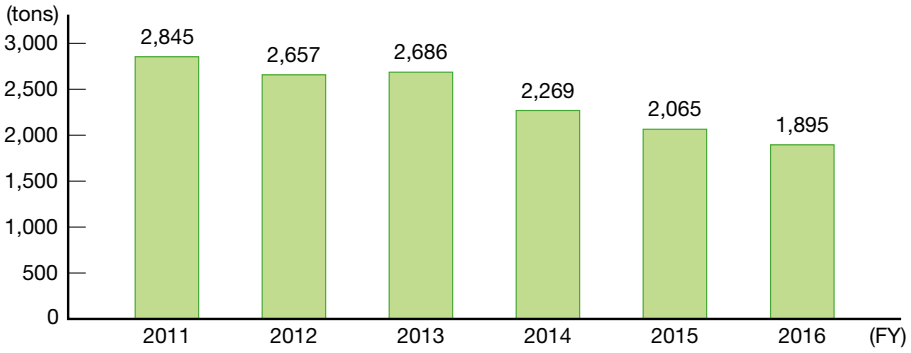
Human Environmental Impact



Note: Overseas sites of former SANYO Electric not included in fiscal 2011 through 2012.

In fiscal 2016, we were able to reduce Human Environmental Impact by 46% compared to fiscal 2011 by substituting highly hazardous substances in paints, improving yields, promoting recycling, introducing substances with low-solvents and hazards, and improving processes, including reviewing the amount of paint or the number of washing cycles, as well as improving the efficiency of removal/deodorization equipment. We will continue our initiatives to minimize the amount of substances with environmental impact released through our production activities.

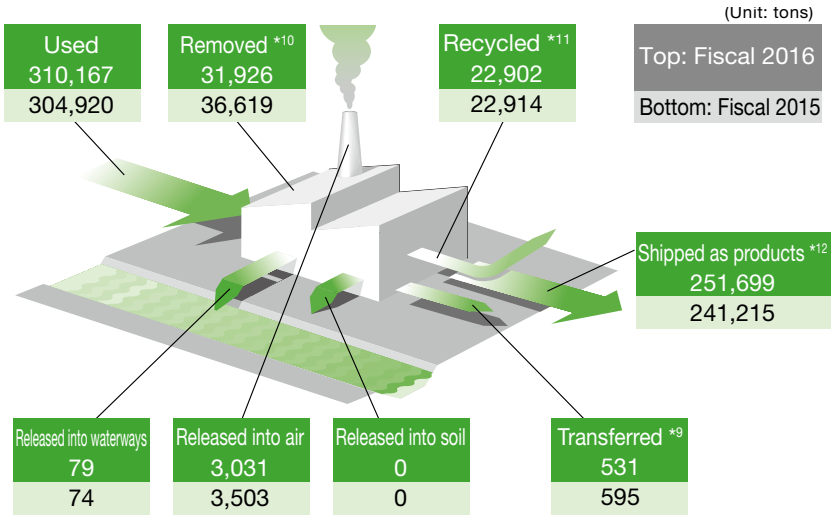
VOC*7 Emissions



Note: Overseas sites of former SANYO Electric not included in fiscal 2011 through 2012.

*7 Emissions of Volatile Organic Compounds (VOC) into the air caused by use. The calculation covers 100 major VOC substances that Panasonic selected from those listed in the Air Pollution Control Act.

Material Balance of Substances in the Management Rank*8



*8 Based on the Chemical Substances Management Rank Guidelines (for factories). Includes all the substances specified in the Pollutant Release and Transfer Register Act.

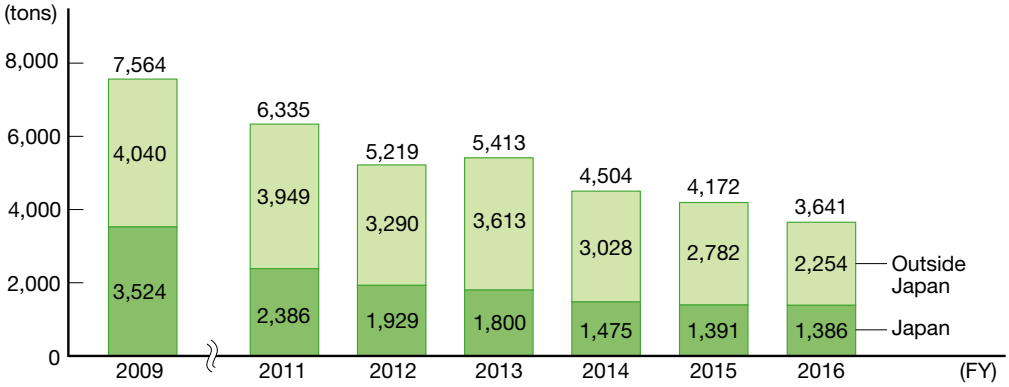
*9 Includes substances transferred as waste, as well as those discharged into the sewage system. Recycled amount which is free of charge or accompanies treatment cost under the Waste Management Law is included in “Recycled.” (Different from the transferred amount reported under the PRTR Law.)

*10 The amount of substances converted into other substances through neutralization, decomposition, or other chemical treatment.

*11 The amount of substances recycled with revenue, as well as those recycled free of charge or with any payment.

*12 The amount of substances that have been changed to other substances as a result of chemical reactions, and/or those that are contained in or accompanied with products and shipped out of factories.

Release/Transfer of Substances Requiring Management



Note: Overseas sites of former SANYO Electric not included in fiscal 2011 through 2012.

Environment: Biodiversity Conservation

eco ideas

Approach to Biodiversity

Business management and human life in our society is founded on the ecosystem services—a multitude of nature's blessings provided by our natural capital, including soil, air, water, and animals and plants. It is important to preserve biodiversity to sustain the benefits derived from this natural capital towards the future; however, this biodiversity is experiencing significant damage at an unprecedented speed. Accordingly, corporate enterprises are now expected to address the issues of conservation and sustainable use of resources.

We are committed to properly understanding the impact of our business activities on biodiversity and contributing to conservation. To this end, we are promoting initiatives in cooperation with local governments, environmental conservation NGOs, and specialized agencies. Specifically, in 2009, we launched a biodiversity project focusing on the three key areas of land use, procurement, and products, in order to promote biodiversity conservation as an initiative incorporated into our businesses. In promoting the key areas, we formulate a biodiversity action plan (BAP), which is the basic concept of Article 6 of the Convention on Biological Diversity, and implement measures, check the achievement progress, and improve the initiatives.

Initiatives in Land Use

Green areas in our business sites can potentially contribute to conserving biodiversity in that area. In particular, hardly any natural environments where wild animals can live and breed remain in urban areas. Therefore, even small areas of green in corporate premises can become a precious environment for a variety of living organisms if they retain indigenous vegetation and a watery environment, since such areas are often closed from the outside world and hard for foreign species to blend in.

In terms of biodiversity, these green areas take on the roles of reinforcing the ecological network and protecting threatened wild fauna and flora.

Preservation of Biotopes in Collaboration with Governments and Experts

An ecological network refers to the organic relationship between ecological spaces such as the greenery and waters where a variety of creatures lives and breeds. The greenery in our sites helps expand the overall space where wild animals including birds, butterflies, and dragonflies live, as they can fly from one green area to another dotted in the area. In addition, protecting wild fauna and flora in local areas is an activity in collaboration with governments and with help and advice of experts, to preserve endangered species designated by the Ministry of the Environment or local government that are deemed to be disappearing from that area. Our business sites that promote such activities include: the Ecological Network at the Kusatsu Factory of Appliances Company in Kusatsu City, Shiga Prefecture; the Biotope at Eco Solutions Company in Kadoma City, Osaka Prefecture; and Tsunagari no Hiroba at the PanaHome headquarters in Toyonaka City, Osaka Prefecture.

▶ Examples of activities are introduced in the following website.
http://www.panasonic.com/global/corporate/sustainability/eco/biodiversity.html

Acquisition and Upgrade of External Certification Based on Quantitative Evaluation

In October 2010, the Matsumoto Factory of the Automotive & Industrial Systems Company became the first factory green space in Japan to obtain the JHEP Certification (future prospect type), which is based on the biodiversity quantitative evaluation method developed by the Ecosystem Conservation Society - Japan. The Factory was certified as a business site with prospective contributions to biodiversity in terms of creating a suitable environment that encourages habitation for local wildlife.

Since then, the formulation of the factory green space management policy was combined with diligent conservation


Deadwood planted in forests


The Common Five-Ring (*Ypthima argus*) identified at the plant

efforts such as changing lawn into sawgrass, placing of deadwood, and replacing trees of foreign origin, resulting in an increase in reproduction levels for birds and butterflies. Confirmation of these concrete results led to an upgrade in the evaluation ranking to Level A in September 2015, which was the year for certification renewal. The upgrade in ranking not only recognizes our biodiversity conservation effect objectively, but also holds great significance for further development of our efforts.

Efforts in Procurement

In an effort to address biodiversity conservation and sustainability, we consulted extensively with World Wide Fund for Nature (WWF) Japan and formulated Panasonic Group Green Procurement Guidelines for Wood. In fiscal 2016, the total procurement of timber and wood materials was measured at approx. 360,000 m3. By category, this breaks down to 79.6% meeting Category 1 “Priority” procurement standards (a 2.7-point year-on-year decrease), 20.4% in Category 2 “Acceptable” (a 2.7-point year-on-year increase), and 0% in Category 3 “Avoiding” (same as previous year). Since the establishment of the Procurement Guideline, efforts to achieve zero procurement for Category 3 have been implemented; it was realized for the first time in fiscal 2015, and was maintained also in fiscal 2016. We will continue our efforts and maintain zero procurement for Category 3.

Green Procurement Guidelines for Wood Consulted and Formulated with WWF

Implementation of Consistent PDCA, Achievement Check, and Measure Review

In green procurement for wood, we implement the PDCA cycle based on development of the annual plan, and confirm the progress status at the end of the fiscal year as well as review the measures for the subsequent fiscal year. We are also engaged in the reduction of the use of natural raw materials, from the perspective of preserving timber resources. Flooring materials (woody flooring material) Fit Floor Natural Wood Type (heat resistant & non-heat resistant) and Fit Floor (heat resistant & non-heat resistant) use “Fit Board,” our unique new material made of 100% recycled wood material (excluding adhesives).

Fit Floor Natural Wood Type (heat resistant & non-heat resistant) & Fit Floor (heat resistant & non-heat resistant)

Initiatives in Products

Together with the NGO BirdLife International, we have established a third-party assessment system to provide customers with information about product contributions to biodiversity. Through this system, we have assessed products which are closely linked to biodiversity.

We have also enhanced our Green Product accreditation criteria (see pages 25-27) by adding biodiversity to the existing items. We define products that contribute to biodiversity conservation as those that use biodiversity-conscious materials in their major components and those that include functions to help biodiversity conservation.

In fiscal 2014, Panasonic Environmental Systems & Engineering Co., Ltd. developed ATPS-BLUEsys, a Ballast Water Management System (BWMS) to reduce disturbance from maritime transportation of the marine ecology of local sea areas. Ballast water is sea water used to retain the balance of a freight vessel at sea when it is not carrying shipment. Because the ship travels across the sea taking sea water from one port and then draining the water into another port, the impact of foreign organisms such as plankton and bacteria on the local ecology, environment, and resources is becoming an increasingly serious problem. ATPS-BLUEsys treats microorganisms in the water with inline electrolysis without using filters, which is the first in Japan. The system can treat the water to a level lower than the standards by the International Maritime Organization IMO), and successfully acquired the IMO G9 Basic Approval (G9BA).

▶ Ballast Water Management System ATPS-BLUEsys
http://news.panasonic.com/global/press/data/2014/01/en140128-2/en140128-2.html

Collaboration with NGOs and NPOs through the Keidanren Committee on Nature Conservation

We collaborate with NGOs and NPOs through the Keidanren Committee on Nature Conservation, in an effort to promote biodiversity conservation on a global scale as well as in coordination with the industrial sector.


Weeding at Tsunami Memorial Park Nakanohama

The Keidanren Committee on Nature Conservation is an organization consisting of more than 110 Keidanren member enterprises that are actively involved in nature protection and biodiversity conservation. Since its establishment in 1992, it has been engaged in supporting NGO efforts in nature conservation, promoting exchanges between business enterprises and NGOs, promoting awareness of nature protection and biodiversity among businesses, and supporting the efforts in the Tohoku region to recover from the earthquake disaster through the restoration of nature. Through corporate and private donations to the Keidanren Nature Conservation Fund, including donations from Panasonic, support worth a cumulative total of approx. 3.6 billion yen has been donated as of fiscal 2016 to 1,214 NGO projects in Japan and other countries.

In addition to donating and participating in projects promoted by the Committee, we fulfill our responsibility to ensure solid implementation of these projects through on-site inspections, etc. In fiscal 2016, we participated in the Tohoku Region recovery support project implemented in September. At the Tsunami Memorial Park Nakanohama opened by the Ministry of the Environment in May 2014, we are contributing to preserve biodiversity through planting mainly local flora and working on plantation area management activities. We have also been engaged in the protection of rare species (such as Monochoria korsakowii (oval-leafed pondweed), which is classified by the Nature Conservation Society of Japan as a near-threatened species by the Ministry of the Environment) in the fallow fields of Sanriku-cho in Iwate Prefecture, and conducted investigation on the state of recovery of seagrass meadows and inspection on oyster farms by the NPO organization Mori wa Umi no Koibito of Kesennuma City, Miyagi Prefecture.

Despite the fact that nature conservation activities are an area in biodiversity conservation that is difficult for companies to be directly involved in, solid actions are possible through collaboration with industry associations and through support for NGOs and NPOs. We will continue contributing to conservation of the ecosystem through continuous participation in these initiatives in the future.

Conservation of Rare Species in Coordination with Citizens Groups

Companies, the labor union and the retiree association under the Panasonic Group in Japan unify the Panasonic ECO RELAY Japan (PERJ) and implement various nature conservation activities.


Itasenpara


Investigation of non-native fish with beach seine

Itasenpara (*Acheilognathus longipinnis*), a fish that is the symbol of the Yodogawa River, is designated a protected species and rare wildlife species in Japan. PERJ is participating in the Citizens Network for Itasenpara in the Yodogawa River System (nicknamed Itasen-net), which is working to conserve and recover biodiversity in the Yodogawa River System and work for the return of Itasenpara to the wild.

Established in 2011, the Itasen-net works in coordination with Panasonic and other business enterprises as well as administrative authorities, research institutes, universities, NPOs, and citizens groups, and implements activities including investigation and eradication of non-native species as well as riverbank cleaning. These activities won the Minister of the Environment Prize in the 17th Japan Water Prize organized by the Japan Water Prize Committee and the Ministry of Land, Infrastructure, Transport and Tourism. PERJ will continue collaboration for activities to preserve the Itasenpara and biodiversity for the Yodogawa River System.

Environment: Collaboration Across the Supply Chain

eco ideas

Collaboration with Suppliers and Transportation Partners

As a company backed by a number of suppliers, we must consider the environmental impacts of our entire supply chain, and not just of our own operations. Through our coordination efforts with suppliers and transportation partners, who form an integral part of our business operations, we strive to minimize our environmental impact across the entire supply chain, focusing on the reduction of CO_2 emissions, resource recycling, chemical substance management, and biodiversity conservation.

Measures for Green Procurement

Since the publication of the Green Procurement Standards in 1999, we have been promoting the manufacture of eco-conscious products in partnership with our suppliers. Furthermore, in the Green Procurement Standards, we set out the establishment of a group of suppliers who support our Environmental Policy in supplying products and goods in order to materialize the targets in supplier collaboration in our Green Plan 2018. In addition to cooperation in “reducing environmental impact in supplier business operations” and “sharing achievements through collaboration,” we are asking our suppliers to “seek the cooperation of upstream business partners” to expand the scope of activities of reducing environmental impact throughout the entire supply chain.

Also, based on the Green Procurement Standards, we have been conducting the Green Procurement Survey, where we monitor the implementation status of our suppliers regarding our requests, to promote environmental impact reduction activities more effectively with our suppliers. In fiscal 2013, we conducted a trial survey targeted at our major global suppliers. We received responses from 415 companies, and were able to confirm the level of activity in areas such as environmental management system development, thorough implementation of chemical substance management, reduction of greenhouse gas emissions, promotion of resource recycling, and biodiversity conservation.

From fiscal 2014, we have replaced surveys conducted on a group-wide scale with surveys at a site level as a means of communication with our suppliers.

In China, to respond to the first amendment to the Environmental Protection Law in 25 years, 42 companies under the Panasonic Group conducted a survey targeting some 700 major suppliers in China to mainly review the state of pollutant emissions and day-to-day environmental management, in an effort to identify risks in the supply chain and reduce environmental impact.

In response to the enhancement of regulations such as EU RoHS Directive, we have been engaging in continual environmental quality assurance audits of our suppliers since 2005 to improve the management level throughout the entire supply chain. In fiscal 2016, we assessed the environmental quality assurance systems of some 1,600 suppliers and have supported their efforts to upgrade their management levels.

▶ Green Procurement Standards http://www.panasonic.com/global/corporate/management/procurement/green.html

Estimation of Environmental Impacts in Business Activities by Suppliers

In order to assess greenhouse gas (GHG) emissions across the entire supply chain (scope 3[*1]), we made our original calculations based on the Greenhouse Gas Protocol, the international accounting standard for GHG emissions. Since fiscal 2012 we have conducted assessment surveys on four occasions, with the cooperation of 185 suppliers in the areas of raw materials, electrical and electronic components, and processed parts.

From fiscal 2012, we started estimating our overall GHG emissions in the upstream range by multiplying the volume of materials purchased with the resource-specific GHG emissions per basic unit based on the Input-Output Table published by the Japanese government. The estimation results based on fiscal 2015 data is 12.99 million tons, roughly five times the GHG emissions of our own production activities.

*1 Other indirect emissions, excluding Scope 1 (direct emissions from facilities owned and controlled by Panasonic) and Scope 2 (emissions from production of energy consumed at facilities owned and controlled by Panasonic).

Sharing Achievements through Collaboration

Since fiscal 2010, we have been implementing the ECO-VC*2 Activity with our suppliers. This program is a collaboration between Panasonic and our suppliers, aimed to both reduce environmental impact as well as reinforce product capability and achieve further rationalization for our products and our suppliers. In fiscal 2010, the target for reducing environmental impact was limited to energy saving (CO_2 emission reduction). However, this was extended in fiscal 2011 to Recycling-oriented Manufacturing aiming at saving resources and using recycled materials. The geographical range of our activities has also extended. Initially centered in Japan, actions accelerated to China and other parts of Asia in fiscal 2013, and later extended to a global scale in fiscal 2015. ECO-VC activities are stored in a database for effective use within the Panasonic Group. Furthermore, exemplary activities are recognized through awards at the Panasonic Excellent Partners Meeting held every autumn. These activity presentations are also shown at the meeting venue to be shared with participating suppliers for use and application in future activities.

Although the number of cases presented by suppliers in fiscal 2016 fell from the previous year to 933, many excellent proposals were presented. One of the outstanding practices recognized and selected was “support for optimal design of LCD TV under-frames” by Nippon Steel & Sumitomo Metal Corporation, which involves LCD TV under-frames that were conventionally designed specifically for each flagship/generic model. This proposes identifying potential problems during the diagram design stage based on analytic support in rigidity, strength, and metal molding CAE*3, and reflecting the findings to the design to achieve the steel material best suited to the shape of the frame part. This enabled cutting down the number of molds used, reducing the thickness of the metal plates and the number of design steps, and resulted in dramatic cost cuts and a reduction in CO_2 emissions by approx. 1,300 tons.

Continuing efforts will be made together with as many suppliers as possible in realizing reduction of environmental impacts, product capability reinforcement and further rationalization through ECO-VC activities, and further strengthen partnerships with our suppliers.


Exhibition of outstanding ECO-VC practices

*2 VC: Value Creation

*3 CAE (computer-aided engineering) is a tool that uses computer technology to assist product design and review.

Environmental Achievements Made through Proposals

Items	FY2013	FY2014	FY2015	FY2016
Number of proposals	866	1,077	1,445	933
CO_2 reductions derived from proposals	412,000 tons	483,387 tons	512,675 tons	484,532 tons
Use of recycled resources derived from proposals	17,011 tons	19,353 tons	21,323 tons	21,243 tons
Reduction in resources used derived from proposals	18,431 tons	21,211 tons	24,311 tons	19,153 tons

Collaboration with Environmental NGOs

Panasonic has more than 50 manufacturing sites in China. With environmental issues in China becoming more serious due to its economic development, we are working to improve the environmental challenges through coordination and continuous communication with environmental NGOs. In September and November 2015, we conducted exchange of views with Institute of Public and Environmental Affairs (IPE) in regard to information disclosure and reduction of environmental impact in the supply chain.

The IPE announced its 2015 Green Supply Chain Ranking at the Green Supply Chain Forum held in October 2015 in Tianjin City, China, and Panasonic ranked in sixth place overall and second in the IT company field, out of 167 global companies. These are the results of winning recognition for our management of compliance with environmental regulations by suppliers based on the IPE database, as well as our unique activities in building a green supply chain, including ECO-VC activities. Examples of these activities were presented at the Forum.

Increasingly stringent environmental restrictions are anticipated to be implemented in China. We will strive to reinforce our green supply chain activities, aiming for further advancement of our brand value.

Green Supply Chain Forum

Environment: Human Resource Development

Encouraging All Employees to Become Practitioners of Environmental Activities

We believe that the development of human resources is important in laying the foundations and promoting environmental sustainability management. To put this into action, a training curriculum is in place for each specialty and position. General Programs are organized for all employees to acquire environmental knowledge as well as learn about our environmental policy and activities. Specialized Programs are designed to bring employees' environmental skills to an advanced level.

General Programs are held every year at each business site for employees to acquire a wide range of knowledge, such as energy problems, trends in global society, and environmental activities by Panasonic. Additionally, training catered to the distinctive features of each operation is organized to provide information directly linked to business and operational activities. Other creative initiatives that we continue include environmental sustainability education to new employees and engineering-related employees using exclusive textbooks specific to their respective job experiences and skills to enable them to practice environmental action in their job activities.

Textbooks for new employees

In fiscal 2016, eight courses were held in the Specialized Programs, such as ISO 14001 internal environmental auditor training, environmental legislation, chemical substance management, and factory energy conservation diagnosis, and a total of 135 people took the courses. The programs are not limited to employees in environment-related job functions, and allow attendance of those in related divisions to expand the scope of practitioners of environmental activities.

Fostering Environmental Awareness and Skills through Global Competitions and On-site Training

The Eco Mind Skills Competition and Energy Conservation Diagnosis Skills Competition are held; as environment-related events in the Panasonic Group Manufacturing Skills Competition held annually for Panasonic employees worldwide, aimed at training employees to acquire advanced skills and become top runners in Panasonic manufacturing. We hope that these events will bring greater environmental awareness and continuous environmental activities among our employees, and thus lead to more active proposals to address and resolve wide-ranging environmental issues and business risks.

The Eco Mind Skills Competition tests the participants' capabilities in overall environmental knowledge and expertise including global environmental issues and environmental sustainability management by Panasonic, as well as environmental improvement skills of proposing and implementing improvement measures that cut down environmental impact. Training materials for the Competition, preparatory study sessions, and mock tests are held at each business site, aiming for promising contenders to win high-ranking places. Additionally, voluntary activities are being organized actively to encourage competitors to acquire and improve their knowledge in the area. In fiscal 2016, 1,121 people participated in the Competition.


Eco Mind Skills Competition

In China, which is one of the major regions where we focus business strategies on, the Eco Mind Skills Competition China has been held since fiscal 2012 at the Manufacturing Technology Learning Center (our in-house center for manufacturing education) in Hangzhou. In fiscal 2016, it was also held in Beijing. Matters unique to the region, including essential environmental impact reduction at the business site, energy-saving and improvement activities and environmental trends and laws in China, are being included to foster greater employee awareness of the environment.


Energy Conservation Diagnosis Skills Competition

In the Energy Conservation Diagnosis Skills Competition, 54 employees participated in fiscal 2016 and competed in various fields such as air-conditioning, furnace & heat, etc. The Competition requires competitors to identify energy-saving issues and improvement measures through analysis of the state of facility operations and energy use within a designated time period. It is an event that requires problem-solving capabilities based on advanced expertise and experience in environmental engineering. We award outstanding performers in the competition, and continue to promote further development of human resources capable of more advanced practices to raise the overall level of the company.

Environment: Environmental Communication

Promoting Environmental Communication

Panasonic has been focusing on maintaining close communications with stakeholders. We are actively engaged in environmental communication with our customers, business partners, local communities, governments, investors, employees, NGOs, experts, etc., through a variety of perspectives, including products and services, factories, and cooperation in environmental activities, as well as advertising, exhibitions, and website communication.

Proposals on Environmental Policy

In addition to publicity through Keidanren (Japanese Business Federation) and other industrial organizations, we submit environmental policy proposals not only to the Japanese government but also to governments of other countries through a wide range of opportunities. We joined in policy deliberations on environmental issues that the society is facing today: a future vision for national governments, industry, and people's lives aimed at the creation of a sustainable society, and information sharing and exchange related to international activities. Through this approach we established a deeper understanding of government policy. Based on this, we are engaging in a drive to promote environmental management with an awareness of preventing business risks as well as creating opportunities, through actively presenting proposals from the standpoint of manufacturing, marketing, and technology development.

Communication with assessment bodies and investors

Panasonic is engaged in constant communication with assessment bodies and investors to foster better understanding of its environmental contribution activities.

In December 2015, Panasonic Europe Ltd. (PE) held IR meetings in Zurich and London focused on CSR with three leading assessment bodies and institutional investors. As environmental issues, our presentation featured activities related to Green Products. We received positive ideas on our sustainability activities from the assessment bodies, and will continue to hold similar meetings in the future.


1st PE Investors Day

During the same month, the first PE Investors Day meeting was held in London. The head of PE Environmental Affairs gave a presentation on our sustainability activities and on the concept underlying Fujisawa Sustainable Smart Town (Fujisawa SST) and engaged in lively exchanges of opinions. The meeting concluded with a constructive discussion and exchange of views.

Engagement with Third Parties

Panasonic actively conducts a number of dialogues with experts from both within and outside Japan, and utilizes their comments in its environmental strategies. With the Natural Step, in particular, we have built a partnership since 2001. We hold an annual meeting with them to share the most advanced environmental information in Europe and seek their opinions on our environmental strategies and activities to assist us in further improvements.


Meeting with the Natural Step

Publishing Environmental Information

Although Panasonic had been publishing its environmental reports in paper format since 1997, these reports were shifted to solely web-based publication in 2010. In fiscal 2014, our environmental activity website was integrated with the CSR website for all-round and exhaustive corporate communication from the standpoint of sustainability. Starting from FY2016, major information disclosed on the web, such as Environmental Policy and approaches, performance data, etc., is provided in a PDF file titled Sustainability Data Book.

▶ Sustainability Data Book 2016
http://www.panasonic.com/global/corporate/sustainability/downloads.html

In the efforts to foster greater awareness of the five major areas of our Environmental Action Plan "Green Plan 2018" (CO_2 reduction, resource recycling, water, chemical substances, and biodiversity) among general consumers worldwide, we offer an overview of our activities on Panasonic websites in 56 countries and regions (in 33 languages). In the area of chemical substances, for example, activities involving the entire supply chain to control certain chemical substances hazardous to the human health and the environment are presented in an easy-to-understand style.

Example of the management of chemical substances

▶ Example of the Panasonic website for general customers (Australia)
http://www.panasonic.com/au/corporate/sustainability/eco.html

Other examples of environmental communication are introduced in the following website.
http://www.panasonic.com/global/corporate/sustainability/eco/communication.html

Environment: History of Environmental Activities

Era	Year	Panasonic Group	World	Japan
~1970s	1967			• Basic Law for Environmental Pollution Control enacted
	1968			• Air Pollution Control Law enacted
	1970	• Pollution Survey Committee established		• Water Pollution Control Law enacted • Waste Disposal and Public Cleansing Law enacted
	1971			• Environment Agency established
	1972	• Environmental Management Office established	• U.N. Conference on Human Environment held in Stockholm (Declaration of Human Environment adopted)	
	1973		• First oil shock occurred	
	1975	• Environmental Management Regulations enacted		
	1979		• Second oil shock occurred	• Energy Conservation Law enacted
1980s	1985		• Vienna Convention for the Protection of the Ozone Layer adopted	
	1987		• Montreal Protocol on Substances that Deplete the Ozone Layer adopted • World Commission on Environment and Development (the Brundtland Commission) advocated the concept of sustainable development	
	1988	• CFC-reduction Committee established		• Ozone Layer Protection Law enacted
	1989	• Environmental Protection Promotion Office established		
1990s	1991	• Matsushita Environmental Charter (Environmental Statement and Code of Conduct) enacted • Matsushita Product Assessment adopted and implemented		• Keidanren Global Environment Charter enacted by Japan Federation of Economic Organizations • Law for Promotion of Effective Utilization of Resources enacted
	1992	• Environmental Policy Committee established	• The Earth Summit held in Rio de Janeiro, Brazil; Agenda21 and Rio Declaration on Environment and Development adopted • United Nations Framework Convention on Climate Change adopted	
	1993	• Matsushita Environmental Voluntary Plan (Year 2000 targets) adopted • Matsushita Group' global environmental internal audits launched		• The Basic Environment Law enacted
	1995	• Acquired Environmental Management System Certification at AV Kadoma Site (first in the Matsushita Group)	• First Conference of Parties to the U.N. Framework Convention on Climate Change (COP1) held in Berlin	• Containers and Packaging Recycling Law enacted
	1996		• ISO 14001 International Standard on Environmental Management Systems launched	
	1997	• Corporate Environmental Affairs Division (CEAD) established • Environmental Conference established (held semi-annually)	• COP3 held in Kyoto and adopted the Kyoto Protocol	• Keidanren Appeal on the Environment announced by Japan Federation of Economic Organization
	1998	• Love the Earth Citizens' Campaign commenced • Recycling Business Promotion Office established • First environmental report (1997) published		• Home Appliance Recycling Law enacted (took effect in 2001) • Law Concerning the Promotion of the Measures to Cope with Global Warming enacted • Energy Conservation Law revised: Top Runner Approach introduced
	1999	• Green Procurement launched • Chemical Substances Management Rank Guidelines established • Acquired ISO14001 Certification in all manufacturing business units		• PRTR (Pollutant Release and Transfer Register) Law enacted
2000s	2000	• Lead-free Solder Project commenced • Held first environmental exhibition for general public in Osaka	• Global Reporting Initiative (GRI) issued The Sustainability Reporting Guidelines	• Basic Law for Establishing the Recycling-based Society enacted • Law for Promotion of Effective Utilization of Resources enacted
	2001	• Environmental Vision and Green Plan 2010 adopted • Held Environmental Forum in Tokyo and Freiburg,Germany • Panasonic Eco Technology Center launched	• Reached final agreement on the actual rules of Kyoto Protocol in COP7 held in Marrakesh	• Reorganized into the Ministry of the Environment • Law Concerning Special Measures against PCBs enacted
	2002	• Panasonic Center Tokyo opened	• Johannesburg Summit (Rio+10) held	• Kyoto Protocol ratified • Vehicle Recycling Law enacted • Law for Countermeasures against Soil Pollution enacted

Era	Year	Panasonic Group	World	Japan
	2003	• Declared 'Coexistence with the Global Environment' as one of the twin business visions • Factor X advocated as an indicator for Creating Value for a New Lifestyle • Completely introduced lead-free soldering globally • Super GP Accreditation System launched • Achieved zero waste emissions in Japanese manufacturing business sites (ongoing program) • Held Environmental Forum in Tokyo	• EU's WEEE Directive was enacted	
	2004	• Environmental Vision and Green Plan 2010 revised • PCB Management Office established • Superior GP Accreditation System launched		• Prohibited manufacturing and use of products containing asbestos in principle
	2005	• Participated in Expo 2005 Aichi, Japan as an official sponsor • Green Plan 2010 revised • Continued with the nationwide Lights-out Campaign • 3R Eco Project launched • Completed the elimination of specified substances (6 substances) in products • Matsushita Group's Green Logistics Policy established • CF Accreditation System introduced • Panasonic Center Osaka opened • Eco & Ud HOUSE opened • Installed the first commercial household fuel cell cogeneration system in the new official residence of the Japanese Prime Minister • Won the first place in Nikkei Environmental Management Survey	• Kyoto Protocol entered into force	• Expo 2005 Aichi, Japan held • National campaign against global warming "Team −6%" launched • Marking for the presence of the specified chemical substances for electrical and electronic equipment (J-Moss) established
	2006	• Environmental specialist position established • ET Manifest introduced into all manufacturing sites of Panasonic in Japan • Realized lead-free plasma display panels and introduced them to the market • Full-fledge introduction of biodiesel fuel in logistics	• Restriction of Hazardous Substances (RoHS) Directive took effect in EU	• Relief Law for Asbestos Victims enacted • Energy Conservation Law revised: new cargo owner obligations, widened product scope of its application, and top runner standard revision
	2007	• Energy conservation activities at our factories in Malaysia approved as CDM project by the U.N. • A new environmental mark 'eco ideas' introduced • Panasonic Center Beijing opened • Environmental Forum in China held • "Declaration of Becoming an Environmentally Contributing Company in China" announced • Panasonic 'eco ideas' Strategy announced	• The Fourth Assessment Report of the Intergovernment Panel on Climate Change (IPCC) released • Registration, Evaluation, Authorisation and Restriction of Chemicals entered into force in EU • Framework for CO_2 reduction agreed at Heiligendamm Summit (G8) • The Bali Road Map for the post Kyoto Protocol agreed at COP13 • Administration on the Control of Pollution Caused by Electronic Information Products (China RoHS) came into effect	• 'Cool Earth 50' announced by Prime Minister Abe • '21st Century Environment Nation Strategy' formulated • 'The Third National Biodiversity Strategy of Japan' formulated • 'Ministerial ordinance partially amending the Enforcement Regulation of the Waste Management and Public Cleansing Law' promulgated • 'Domestic Emissions Trading Scheme Review Committee' established • 'The Second Fundamental Plan for Establishing a Sound Material-Cycle Society' formulated
	2008	• Established the Corporate CO_2 Reduction Promoting Committee • Held environmental exhibitions, 'eco ideas' World • Home Appliances Company announced environmental statement in which named its Kusatsu site as 'eco ideas' Factory • Announced 'eco ideas' Declaration in Europe • Established Environmental Strategy Research Center	• G20 (conference of key countries' environmental and energy ministers) held • Hokkaido Toyako Summit held	• Cool Earth Promotion Program announced by Prime Minister Fukuda • Mislabeling incident of waste paper pulp percentage • Long-term Energy Demand and Supply Outlook announced • Japan's Voluntary Emission Trading Scheme started
	2009	• Opened the 'eco ideas' House to demonstrate a lifestyle with virtually zero CO_2 emissions throughout the entire house • Announced the Asia Pacific 'eco ideas' Declaration • Announced 'eco ideas' factories (in Czech, Malaysia, Thailand, and Singapore) • Sanyo Electric joined the Panasonic Group	• China WEEE law promulgated • New framework for countermeasures against global warming on and after 2013 (post-Kyoto Protocol), the Cophenhagen Accord, was adopted at the COP15 (Copenhagen conference) • Seeking to emerge from the Lehman collapse, countries throughout the world accelerated actions for the Green New Deal	• Energy Conservation Law amended: Covered area expanded from factories to commercial sector facilities • Flat-panel TV and clothes dryer added as covered products under the Home Appliance Recycling Law • 'Eco point' system started
2010s	2010	• Announced "Vision looking to the 100th anniversary of our founding in 2018" • Announced new midterm management plan, "Green Transformation 2012 (GT12)" • Announced 'eco ideas' Declarations (Latin America, Asia Pacific, and Russia) • Established 'eco ideas' Forum 2010 in Ariake, Tokyo • Launched Panasonic ECO RELAY for Sustainable Earth • Kasai Green Energy Park eco-friendly factory completed	• COP10 held in Nagoya—Nagoya agreement made • APEC meeting held in Yokohama • Ruling party lost in US midterm election—changes in anti global warming policy • Cancun agreement made in COP16—Post-Kyoto framework still to be discussed	• Draft legislation of Basic Law of Global Warming Countermeasures submitted but remained in deliberation • Obligatory greenhouse gas emissions reduction started as a part of Tokyo Emissions Trading Scheme • Waste Management and Public Cleansing Law amended: self treatment regulations tightened • Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc. (CSCL) and Law concerning Pollutant Release and Transfer Register (PRTR) amended

Era	Year	Panasonic Group	World	Japan
	2011	• Announced North America & Taiwan 'eco ideas' Declarations • Announced establishment of Panasonic Dadi Dowa Summit Recycling Hangzhou Co., Ltd. • Announced the Fujisawa Sustainable Smart Town Project • Established Corporate Electricity Saving Division that bridges functions across the organization	• Rare earth prices soared • Revised RoHS directives enforced in EU • COP17 (Durban Climate Conference): Agreement made on long-term future of the scheme, and the second commitment period for the Kyoto Protocol (Japan announced non-commitment)	• Home appliance eco-point incentive program finished • The Great East Japan Earthquake • Revised Air Pollution Control Act and Water Pollution Control Act enforced • Act on Special Measures Concerning Procurement of Renewable Electric Energy by Operators of Electric Utilities enacted (Feed-in tariff system to be enforced July 2012)
	2012	• Business reorganization due to full acquisition of Panasonic Electric Works and SANYO Electric • Commenced sales of Resources Recycling-oriented Product series • Terminated production of household incandescent light bulbs • Establishment of Environmental Management Group, Environment & Quality Center, Global Manufacturing Division • Communication of 'eco ideas' Declaration (Vietnam)	• United Nations Conference on Sustainable Development (Rio +20) • "Doha Climate Gateway" adopted at COP 18 Doha 2012, to lay down a future legal framework in which all nations can participate by 2020 and onwards • Revised WEEE Directive implemented in Europe	• The Recycle Resource Project, national campaign by Ministry of the Environment, commenced • 2012 Japan Tax Reform Bill enacted (Environment tax came into force in October 2012) • Feed-in tariff for recyclable energy put into effect
	2013	• Announced new midterm management plan Cross-Value Innovation 2015 • Announced new brand slogan "A Better Life, A Better World" • PETEC's home appliance recycling reached a cumulative total of 10 million units • Announced 'eco ideas' factory (Philippines)	• Phase I of the Kyoto Protocol ends. Japan's target expected to be achieved in combination with forest CO_2 absorption and application of the Kyoto Protocol mechanisms. • GRI announced G4, the next guidelines for CSR reports • Minamata Convention on Mercury to internationally regulate import and export of mercury adopted at UN conference • IPCC Fifth Assessment Report (Working Group 1) announced the possibility of human activity being the principal cause of global warming observed since the mid-20th century is "extremely high." Global average surface temperature is expected to rise as high as 4.8°C • COP 19 Warsaw reaffirmed participation of all nations in the future framework of the Convention for 2020 and later. Nations were asked to submit emission pledges well in advance of 2015.	• Home Appliance Recycling Law for small household appliances enforced • Basic Plan for Establishing a Recycling-Based Society implemented • Keidanren's "Action Plan Towards Low-Carbon Society" started (until FY 2021) • Amended Law Concerning the Rational Use of Energy and Amended Law Concerning the Promotion of the Measures to Cope with Global Warming established. Amended Act on the Rational Use and Management of Fluorocarbons promulgated (June) • Voluntary Action Plan by the electric and electronics industry terminated. Achieved improvement by 48% in CO_2 emissions per basic unit in average actual production output for fiscal 2009–2013 (compared with fiscal 1991 level) to the target of 35% • Japan announced in November its fiscal 2021 reduction target of 3.8% over fiscal 2006 and registered this with UNFCCC Office (but with a possible review of the tentative target, which does not include possible resumption of nuclear power plant operations)
	2014	• Panasonic DADI DOWA Summit Recycling Hangzhou Co., Ltd., started operation • Opening of Fujisawa Sustainable Smart Town • Announced Eco Declaration (Southeast Asia & Pacific) • Communication of housing & town development at the International Greentech & Eco Products Exhibition & Conference (IGEM) (Malaysia)	• Targets for product environmental regulations in Europe begin to shift from energy saving to resource efficiency and environmental impact • EU Parliament reelection results in the appointment of Mr. Jean-Claude Juncker as President of the European Commission. Review of the circular economy package was decided. • IPCC 5th Assessment Report analyzed that the current multiple ways to achieve control of global temperature rise to less than 2°C cannot be materialized unless the target becomes nearly zero by the end of the century. Attention to "adaptation" is growing. • COP12 Convention on Biodiversity, PyeongChang concluded the interim assessment of the Aichi Biodiversity Targets as "progress has been made but remains inadequate" • COP 20 (Peru) reached agreement on the policy of developing reduction targets based on common rules for publication of "a new legal framework beyond 2020 applicable to all Parties"	• The amended Energy Conservation Act was enforced, incorporating action on power conservation during peak periods into existing qualitative reduction targets • Phase II of the Commitment to a Low Carbon Society, a voluntary program promoted by Keidanren as measures against global warming, was newly established in response to government request, setting the target year to 2030 • Toyota Motor launched fuel-cell vehicle MIRAI into the commercial market
	2015	• Won Zayed Future Energy Prize 2015 • Wonder Japan Solutions (Tokyo) held for the first time • Announced the introduction of indirect contributions through housing, automotive, and B2B solutions in the size of contribution in reducing CO_2 emissions • Announced the Tsunashima Sustainable Smart Town development project, together with Yokohama City and Nomura Real Estate Development Company	• Paris Agreement on the international legal framework for global warming control from 2020 and later was adopted at COP21 (Paris) • 2030 Agenda for Sustainable Development was adopted at the UN Summit, focusing chiefly on sustainable development goals (SDGs)	• Draft proposal to cut greenhouse gases by 26% over 2013 levels as its 2030 greenhouse gas reduction target announced by the Japanese government • COOL CHOICE, a new nationwide movement for greenhouse gas reduction, started

Raising Quality Levels and Ensuring Product Safety

Management System

Based on the management philosophy that its founder espoused—that the company should strive “to contribute to society through its products and services while always placing the customer first”—Panasonic engages in manufacturing, while continuously improving its various systems and mechanisms relating to raising levels of quality, and ensuring product safety as a leader in global trends.

Panasonic has established a basic policy relating to quality and has installed, under the responsibility of the executive in charge of quality, quality managers at its Companies, business divisions, and overseas subsidiaries. Using the Panasonic Quality Management System, the company is engaged in continuously improving the quality of its products with a perspective that puts the customer first.

Panasonic expresses profound regret for the accidents involving FF-type kerosene heaters and reflects the lessons it has learned when ensuring the safety of its products. The company regards product safety to be its top management priority. Furthermore, to improve the level of safety of its products, Panasonic strives to ensure product safety with a groupwide General Product Safety Committee playing a leading role.

Policy

Panasonic’s Groupwide Quality Policy states that the company will “truly serve customers by way of providing products and services that continuously meet and satisfy the needs of customers and society.”

The company has also established a basic policy regarding an autonomous code of conduct for product safety.

*This basic policy was approved at a meeting of the board of directors of what was then called Matsushita Electric Industrial Co., Ltd., held on June 27, 2007.

▶Basic Policy Regarding the Autonomous Code of Conduct for Product Safety
http://www.panasonic.com/jp/corporate/management/code-of-conduct/quality-policy.html

* Japanese only

The Panasonic Code of Conduct also states that the company will strive to ensure the safety of its products.

▶Panasonic Code of Conduct, Chapter 2: Implementing the Code in Business Operations; II-2. Product Safety
http://www.panasonic.com/global/corporate/management/code-of-conduct/chapter-2.html#section2-2

Based on these foundational policies, each of the four Companies and each business division has established quality policies, which have been thoroughly implemented in all subsidiary organizations.

Regulations

Quality Management System

To establish self-regulating quality assurance processes in each group company, Panasonic published Quality Management System Development Guidelines in 2004 (in Japanese, English, and Chinese). Each group company then implemented the Panasonic Quality Management System (P-QMS).

P-QMS complements the requirements of the ISO9001 standard with Panasonic’s own quality assurance methods and experience to create a quality management system that aims to deliver the level of quality that the company demands.

Based on its implementation of the P-QMS, Panasonic continuously improves the quality of its products, and it is bolstering its efforts to prevent quality problems from happening in the first place and to achieve more consistent quality.

In December 2014, Panasonic drew up and began applying the Automotive Quality Management System Development Guidelines (the Automotive P-QMS), which compile Panasonic’s fundamental stances on the quality of components installed on board motor vehicles.

The company is also evolving these guidelines in light of the 2015 revisions to ISO9001 to make them easier to handle while encompassing all requirements, making it a more effective management tool.

Education

To establish a corporate culture in which product safety is the top priority in manufacturing, Panasonic conducts product safety education, such as by providing employees with learning initiatives such as the Fundamentals of Product Safety e-learning program and by holding Product Safety Forums, at which engineers can learn from one another about product safety.

Panasonic has also established a Product Safety Learning Square at a Human Resources Development Company in Hirakata, Osaka Prefecture, with the aims of fostering a “safety culture” deeply ingrained by the practice of going to see the actual location and the actual items in question, and providing opportunities to learn about safety technologies relating to products that have reached the end of their life cycles, with full consideration to the deterioration of materials and components over time after long-term use and so forth. The Product Safety Learning Square has displays of actual products that were recalled in the past and illustrates the causes of the problems and the steps that were taken, with the aim of passing down the lessons learned from the FF-type kerosene heater accidents and of eliminating seven major product safety problems the Company has identified.

This fiscal year has seen 6,445 visitors to this facility, ranging from new hires visiting for their training at the Human Resources Development Company to management-level employees.

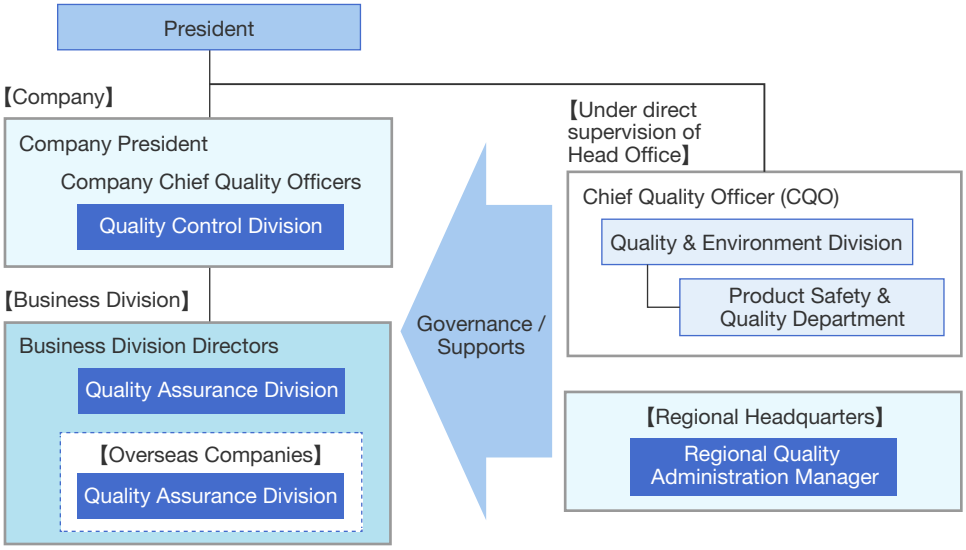
Product Safety Learning Square

Responsible Executive and Framework

As of August 2016, the Chief Quality Officer (CQO) is Senior Managing Director Yoshiyuki Miyabe.

Under his supervision, each Company has implemented systems for performing its business with independent responsibility and self-sufficiency.

Quality Management Structure



Since September 2014, regional quality administration managers have been appointed for six regions: North America; Latin America; Europe and CIS; Southeast Asia and Pacific; India, South Asia, Middle East and Africa; and China and Northeast Asia.

These managers monitor regional quality conditions and provide feedback including information on quality risks, report even slight mishaps or trouble from the field to each business division as necessary, and respond rapidly to risks. They also endeavor to gather the latest information on technical regulations in their regions, centrally managing it online, and updating and sharing it within the Company on a daily basis as Technical Regulations Flash Notices.

Committee, Organization

Activities of the Meetings to Exchange Information on Environment and Quality Activities/ Quality Managers' Meeting

Panasonic periodically holds "Meetings to Exchange Information on Environment and Quality Activities" as a venue for reviewing the state of groupwide quality improvement efforts. The meetings are attended by CQOs at each Company and stakeholders in relevant job functions. At the meetings, the different Companies share best practices relating to quality improvement measures, discuss how Panasonic should handle quality over the medium and long terms, and engage in other activities in pursuit of a stronger foundation of quality for the whole group.

Panasonic also periodically holds Quality Managers' Meetings, attended by the managers responsible for the departments that oversee quality-related operations within each Company, as a place for more specific discussions. These meetings both enhance cooperation within the group and promote quality improvement efforts.

Since fiscal 2016, Panasonic has held a "Global Quality Managers Meeting" once a year as an occasion for individuals responsible for quality in regions across the globe and managers responsible for departments that oversee quality-related operations within each Company to come together to share issues and best practices, facilitating quality improvement efforts.

Activities of the General Product Safety Committee

To implement manufacturing with product safety as its top priority, in 2012 Panasonic reorganized its groupwide General Product Safety Committee and established a Safety Technology Working Group and a Safety Standards Working Group under its umbrella. Using these working groups, the company has firmly entrenched the safety technologies that it developed in response to the 2005 FF-type kerosene heater accidents and the product safety standards that it devised, making the use of these technologies and standards even more consistent.

Because of the increasing need for safety features in automobiles, robots, and other products, Panasonic is promoting the acquisition of safety standard certifications through intragroup partnerships to assure safety in these product categories.

Activities of the Safety Technology Working Group

The Safety Technology Working Group takes into account the possibility that customers may use products longer than anticipated during a product's design phase. It develops scientific evaluation methods for testing material durability—including accelerated deterioration tests—accumulates data, and stores them in databases.

Because air conditioners, refrigerators, and other home appliances are joining audiovisual devices in becoming Internet-connected, and because it is predicted that Internet-of-Things (IoT) technologies will continue to advance, the importance of security measures is greater than ever. Panasonic has compiled guidelines on threat analysis and other security methods for product security, and has refined its education in relevant divisions. The company has set up risk data collection sites in Japan, Europe, and China, creating a system that can detect vulnerabilities early and implement countermeasures rapidly.

Panasonic established a Product Security Center in January 2016, concentrating groupwide governance, human resource training, technological development, and device verification functions related to product security there in an effort to bolster these systems.

Activities of the Safety Standards Working Group

Beyond complying with public safety standards and to realize a higher level of product safety, Panasonic established the 1999 Panasonic Corporation Safety Standards (PCSS), consisting of design rules that must be followed when developing products.

The Safety Standards Working Group has reflected in the PCSS what it has learned from the activities of the Safety Technology Working Group, and it has strengthened standards relating to major safety issues, such as long-term use, flame-retarding measures, and fall prevention. The working group is also making efforts to enhance its product safety standards to actively prevent risks that it anticipates could occur because of the expanded areas in which the company does business. For example, to ensure the safety of the storage battery systems that constitute one of Panasonic's growing lines of business, the working group created the Panasonic System Safety Standards (PSSS), which cover, among

other systems, those for managing generated and stored energy. To ensure the safety of the personal-care robots that are anticipated to become commonplace in the relatively near future, the working group established the Panasonic Personal-Care Robot Safety Standards (PRSS) prior to the creation of an international standard (ISO 13482). Panasonic's standards complemented ISO13482 with its own unique perspective, thus ensuring even greater safety.

Global Safety Standard Certifications Obtained

Personal care robot safety certification ISO 13482[*1] acquired: February 2014

With Resyone, a robotic device for nursing care that combines the functionality of a bed and a wheelchair, Panasonic was the first company worldwide to acquire certification based on the global safety standard for service robots, ISO 13482. Through participation in a project by the New Energy and Industrial Technology Development Organization (NEDO), Panasonic contributed to the creation of international safety standards. The company will continue to develop and offer personal care robots that customers can trust.

Road vehicle functional safety standard ISO 26262[*2] certification acquired: February 2012

Panasonic acquired process certification in the ISO 26262 road vehicle functional safety[*3] standard from the German third-party organization TÜV SÜD. The body recognized that Panasonic is able to comply with the highest level of safety in the standard, ASIL-D, during the process of developing on-board devices and device software.

Taking advantage of being process-certified, Panasonic will strive to make even safer products and to contribute to creating a society in which cars are safe, environmentally friendly, convenient, and comfortable to drive.

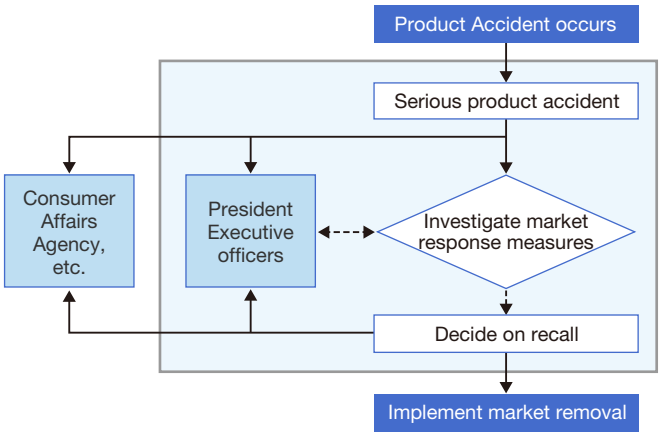
*1: The lone international standard relating to the safety of personal care robots, issued by the International Organization for Standardization (ISO). Three types of robots are covered: physical assistant robots, mobile servant robots, and person carrier robots.
*2: An international standard for road vehicle functional safety that was published on November 15, 2011. The standard sets out four Automotive Safety Integrity Levels (ASILs): ASIL A through ASIL D.
*3: Safety achieved through the working (functioning) of electric or electronic devices, such as microcomputers. Functions include detection of malfunctions, safe stop controls, and user warnings.

Quality and Product Safety : Major Accidents and Responses

Responding to Product-Related Incidents

In the event that a product-related accident has occurred in the market, Panasonic immediately confirms the facts relating to the incident, analyzes the causes, and performs tests. If the company determines that a product-related accident is serious, the Panasonic Corporation's president and senior management rapidly and accurately report what has happened to the Consumer Affairs Agency or other relevant government bodies. Meanwhile, to ensure the safety of its customers, the Panasonic group acts as one to take all appropriate measures.

Product Accident Response Flowchart



Serious Product-Related Accident Information

In Japan, Panasonic publicly reports serious product accidents[*1], accidents suspected of being caused by products[*2], and accidents for which it has been determined that it is unclear whether a product was the cause[*3], based on the Consumer Product Safety Act and Panasonic's basic policies laid out in its Autonomous Code of Conduct for Product Safety.

*1 "Serious product accidents" are the following accidents specified in the Consumer Product Safety Act:
1. Accidents resulting in death
2. Accidents resulting in serious injury or illness (injury or illness requiring at least 30 days of treatment), or accidents resulting in permanent injury
3. Carbon monoxide poisoning
4. Fires (confirmed as such by firefighting authorities)

*2 Panasonic publicly releases information on the following types of accidents, suspected of being caused by products, as soon as they come to light:
- Accidents relating to gas devices or kerosene devices (including accidents in which it has yet to be determined whether the product was the cause)
- Accidents relating to products other than gas or kerosene devices and for which it is suspected that the product was the cause

*3 "Accidents for which it has been determined that it is unclear whether a product was the cause" refer to the accidents announced by the Consumer Affairs Agency as accidents for which it cannot be determined whether a product was the cause. Out of these accidents, Panasonic publicly releases information on those for which the Product Safety Group of the Consumer Affairs Council of the Ministry of Economy, Trade and Industry has determined that it remains unclear whether a product was the cause.

List of Information Concerning Serious Product-Related Accidents
http://panasonic.co.jp/info_psc/
* Japanese only

Other initiatives for raising quality levels and ensuring product safety are introduced in the following website.
http://panasonic.com/global/corporate/sustainability/safety.html

Customer Relations

Management System

Panasonic has established a set of Basic Rules for Response to Customers (compliant with ISO 10002 and JIS Q 10002) for responding appropriately groupwide to inquiries and complaints from customers. The Head Office CS Center oversees the implementation of these regulations, which apply to all work relating to customer relations in Japan by Panasonic or by affiliates that handle products bearing the Panasonic brand. In those business sites in Japan, the company has implemented a Management System for Response to Customers as a mechanism for utilizing information in management that is received from customers. These sites conduct periodic self-audits and make other efforts to improve the quality of customer relations.
Overseas, the company has implemented ISO-compliant management systems based on the Basic Rules for Response to Customers and tailored to the legal system in each country or region.

Policy

Fundamental Stance on Customer Satisfaction (CS)

Since its foundation, Panasonic's management philosophy has been to contribute to society through its products and services while always putting the customer first. Based on this philosophy, the company strives to improve customer satisfaction and offers products, solutions, and services that enrich the lives of people around the world.
When providing customer service, Panasonic strives for sincerity, accuracy, and speed, and acts with humility and appreciation. This finds its basis in the principle of "true service" that the company's founder described. The company's fundamental stance is thus to provide customers with trust, peace of mind, and satisfaction.

The Fundamental Concept of Customer Satisfaction (The Pursuit of Customer Satisfaction)

The only way for those of us engaged in business to earn trust is to have everyone, regardless of whether they are working in the manufacturing division or the sales division, cater completely to the demands of the customers on all points and work strictly under the basic rule of producing or selling not even one product that cannot perform its function well.

Perfection can be reached only by paying careful attention not only to the manufacturing details but also to where our products are going and making efforts to completely satisfy the customers and provide flawless service.

Konosuke Matsushita
August 1940 statement calling for a quality products campaign
(From Matsushita Electric's 50-Year History)

Service Philosophy (True Service)
The customer's satisfaction is our satisfaction.
True service resides in mutual satisfaction.

Service is an integral part of any business. A business that does not provide service is no business at all. Service, therefore, is the duty and obligation of any business person. But there's nothing more aggravating than service provided only out of a sense of duty. Customers can sense it.

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

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

Konosuke Matsushita
August 1967 issue of PHP Magazine

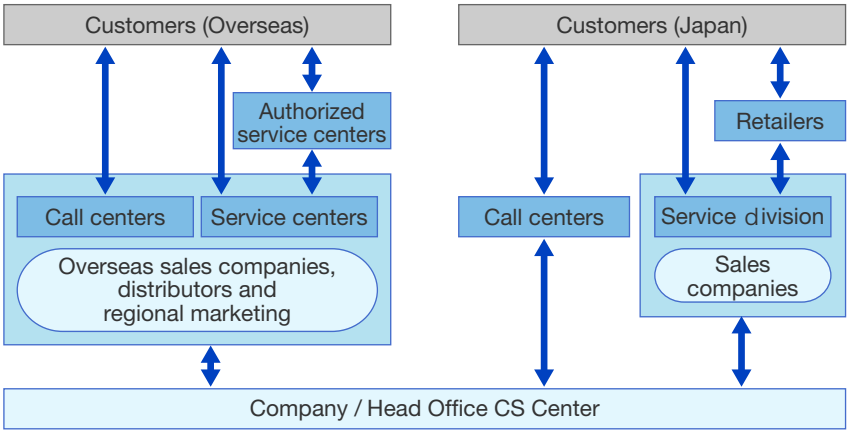
Responsible Executive and Framework

The executive officer in charge of CS is Executive Vice President Kazunori Takami (as of August 2016).

The CS Center established at the Panasonic head office and the CS departments established at each of the four Panasonic Companies (Appliances, Eco Solutions, AVC Networks, and Automotive & Industrial Systems) cooperate to implement Panasonic's customer satisfaction initiatives. Overseas, the CS departments of Panasonic's sales companies around the world collect local information concerning services and quality, as well as customer requests and so forth. This information is used to ensure the quality and safety of products and to help develop products that match the needs of customers in each market.

CS staff in Japan and abroad share the knowledge and experience that they have accumulated to endeavor to provide better customer service around the world.

Customer Relations Structure



Customer Inquiry Response System

In Japan, Panasonic deals with inquiries from customers before they purchase products as well as with their concerns about how to use them after purchase through the Customer Care Center. The Customer Care Center is open from 9:00 am to 8:00 pm, 365 days per year. There are separate phone numbers for each product. Customers rarely spend a long time on hold; the Customer Care Center is organized to provide accurate and rapid service.

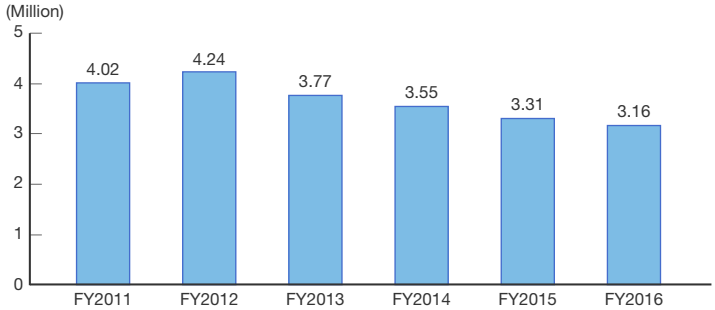
When customers make inquiries on the Panasonic website by typing in a question, the site displays multiple relevant FAQs. Thus, the company strives to provide quick responses to questions. The company analyzes the search keywords that bring customers to FAQs and the number of times that the questions are viewed to increase the precision of the FAQS, so that the information that customers require is accurate and displayed quickly.

Because these FAQs are organized so that customer's problems can be solved without the customer needing to contact the Customer Care Center, the number of inquiries at the center is trending downward.

Panasonic operates call centers in each country/region outside of Japan as well, handling all types of inquiries as well as intake for repairs.

The website for each country includes FAQs, and we are working on building ways to allow customers to resolve their own issues as they are able to in Japan.

Number of Inquiries at the Customer Care Center (for Individual Customers) Over Time



Repair Service Organization

The CS Company (repairs and spare parts department) of Panasonic Consumer Marketing Co., Ltd. is in charge of repair services for consumer electronics products in Japan. Panasonic Eco Solutions Techno Service Co., Ltd. is in charge of housing facility products.

These service companies constitute a network across Japan and employ full-time customer engineers who have close ties to their local regions as well as advanced technical skills and experience. The network provides swift and reliable at-home repair services in response to customer requests. The repair services system is organized such that repair requests are received 24 hours per day, 365 days per year; Panasonic makes particular efforts to provide repair services as quickly as possible for products that are everyday necessities.

Number of Service Locations of the CS Company, Panasonic Consumer Marketing Co., Ltd.:
102 locations throughout Japan (as of March 2016)

Number of Service Locations of Panasonic Eco Solutions Techno Service Co., Ltd.:
40 locations throughout Japan (as of March 2016)

Initiatives for Improving Repair Service Windows

With the goal of making it more convenient for customers requesting repairs, Panasonic has made arrangements for receiving requests via websites and for courier services to pick up customers' products before repair and to deliver the repaired products when they are ready. The company has also established repair service windows at its Repair Factory in Tokyo's Akihabara for its LUMIX digital cameras and Let's note notebook PCs, which offer same-day repair service. The company has also started up a LUMIX Concierge Service that provides product and repair consulting, as well as cleaning services at the Repair Factory and the Panasonic Center Osaka. Panasonic is working to provide service offerings that mesh with customer lifestyles and life stages, including one-stop service.

LUMIX and Let's note Repair Factory in Akihabara

LUMIX Concierge Service in Osaka

Global Repair Service Centers

With the aim of providing satisfactory service to all its customers around the world, Panasonic is focused on building a global service network. In recent years, there has been an increase in the number of overseas tourists visiting Japan and a corresponding increase in the number of customers who purchase Panasonic products during trips to the country. Because of this, Panasonic is striving to enhance the functionality of its repair services overseas for customers who have purchased products (specifically Tourist Models) as tourists.

Numbers of Repair Service Centers (Overseas Numbers for FY2015)

Region	Number of Repair Service Centers
Japan	102
North America	1,605
Latin America	1,032
Europe & CIS	676
Southeast Asia & Pacific	1,714
India, South Asia, Middle East & Africa	1,144
China & Northeast Asia	776

*Japan: CS Company, Panasonic Consumer Marketing Co., Ltd.

CS System for Enterprise Business

Housing Facilities-Related Products

Through its corporate customer-oriented support window for energy-related products—which include lighting fixtures, information systems, electrical facility materials, housing facilities and materials, and solar power generators / power storage facilities—Panasonic has created a rapid system that can respond to its corporate customers (partners) with problems regarding construction, installation, and configuration.

Commercial Equipment

In the area of commercial equipment—which includes video, security, information, communications, automotive, and commercial air conditioning equipment—Panasonic's sales companies in each field provide unified support at every stage, from product proposals to design, construction, and repair services. By providing total solutions that meet its customers' needs, Panasonic strives to raise levels of CS.

Commercial Networking Equipment

Panasonic Group sales companies that are in charge of commercial networking equipment, as well as Panasonic sales partners, understand the diverse needs of individual customers and provide total solutions that include everything from product proposals to system implementation, sales, construction, maintenance, repairs, operations services, and cloud services.

In addition, Panasonic delivers "new value" that supports customers in executing their business strategies and improving their work processes.

Through its CS-related activities, the company uses its points of contact with its customers—including support desks, repair services, and maintenance—to build trusting relationships. Panasonic provides continued support to its customers when they experience any difficulties and aims to contribute to improving their productivity and profitability.

Automotive Equipment

Concerning automotive equipment, the Panasonic group sales company (Panasonic Automotive Electronics Co., Ltd.) cooperates with dealerships to provide after-service for Panasonic-produced car navigation, audio, and other equipment in an effort to improve CS.

Panasonic is also building organizations and systems that allow early detection and early resolution of nonconforming products to provide rapid and thorough services to meet the needs of car manufacturers in the provision of genuine on-board equipment.

Management Indicators

Panasonic has established common global management items whose goal is to deliver higher levels of service quality by setting targets. It periodically measures its success at achieving those targets and strives to make improvements based on the results. The company is also engaged in creating new standards and indicators with the aim of optimizing service costs.

Activities for Improving Customer Satisfaction in BtoB Systems Solutions Business

Once every year, Panasonic conducts a survey of customer satisfaction in solutions business from sales proposals to maintenance and service to check for gaps between customer expectations and customer evaluations of Panasonic, and connects those results to improvements of services to our customers. The survey is given to roughly 400 companies from among Panasonic's partners that resell systems products to other businesses within Japan and our direct sales customers. The company has been conducting these surveys continuously since 2008. The survey consists of 46 questions concerning five major items: sales proposals, products and SE, repairs and maintenance, construction, and CSR. In addition to asking that respondents answer those questions, Panasonic also provides respondents with spaces to freely write their opinions of and requests to the company. The company also follows a cycle of improvement based on analyses of the results of the survey as follows: Plan: Draft plans for improvement initiatives → Do: Execute improvement activities → Check: Verify improvement progress → Act: Survey customer satisfaction. The company works to improve customer satisfaction by implementing improvements to products, system solutions and services by making the most of the results of the survey, in cooperation with manufacturing divisions such as product planning, design, engineering, and quality, and customer support divisions such as marketing, sales, construction, and maintenance services.

Other initiatives for customer relations are introduced in the following website.
http://www.panasonic.com/global/corporate/sustainability/customer/satisfaction.html

Information Security and Protection of Personal Information

Policy

Panasonic Code of Conduct
Chapter 2: Implementing the Code in Business Operations; II-4. Use and Control of Information
http://www.panasonic.com/global/corporate/management/code-of-conduct/chapter-2.html#section2-4

Panasonic Privacy Policy

Panasonic Corporation (hereinafter referred to as “Panasonic”) aims to ensure the satisfaction of customers and gain their confidence by providing superior products and services, guaranteeing transparency based on the Basic Business Philosophy.

To achieve these goals, Panasonic will strive to establish a better relationship not only with our customers but also stakeholders such as business partners, shareholders, employees, etc.

As part of its efforts, Panasonic will implement the following policies to protect and handle Personal Information appropriately.

1. Panasonic will appoint a personal information protection manager in each organization where personal information is handled, whose role will be to manage such information appropriately.
2. Panasonic will collect personal information with the consent of individuals after specifying the purpose of use, contact for inquiries, etc.
3. Panasonic will use personal information only within the scope of the purpose of use consented to by the information subject.
4. Panasonic will not provide or disclose personal information to any third party without prior consent from the information subject except when prescribed by laws and regulations.
5. Panasonic will respond properly to inquiries from the individuals about his/her personal information.
6. In order to prevent any unauthorized access to, and loss, destruction, falsification, or leakage of personal information, Panasonic will manage personal information safely and make efforts to guarantee and enhance its information security.
7. In addition to complying with the relevant laws and regulations, Panasonic will continue to improve its personal information protection activities, taking environmental changes into consideration.

Information Security Management System

Panasonic is well aware of the importance of protecting personal information and other information with which it has been entrusted by its customers; has created a system for the management of information security; and endeavors to manage information appropriately on a groupwide basis through the establishment and enforcement of global rules and regulations.

Panasonic works to raise the level of knowledge and awareness of each employee, and to enable them to handle information properly through training.

Fair Operating Practices

Management System

As corporate activity expands globally, improprieties occur with some frequency, due not just to deliberate dishonest and criminal acts but also to a lack of awareness and understanding. Employees doing business in countries and regions where legal systems are incompletely realized must perennially exercise a high degree of awareness of norms.

We at Panasonic have set down a clear set of rules for compliance with the law and corporate ethics. We strive to achieve thorough adherence to these rules, with the aim of promoting fair operating practices in all countries and regions of the world, and to realize a sustainable society. This is the “Panasonic Code of Conduct,” which incorporates the requirements of the OECD (Organisation for Economic Co-operation and Development) Guidelines for Multinational Enterprises and other norms.

In our observance of our own Code of Conduct, we have a global network of legal departments, directors, and executive officers in charge of ensuring adherence to the Code of Conduct, as well as managers in charge of export control and other persons responsible for supervising various other functions in our Companies, business divisions, and regional headquarters outside Japan.

Each year, we designate September to be “Compliance Awareness Month,” marked by efforts to strengthen our awareness of the need to observe ethical and legal requirements. We conduct a “Compliance Awareness Survey” to check the degree of compliance awareness dissemination among our employees around the world. Once each year, we check the status of observance and practice of the “Panasonic Code of Conduct” in our business locations around the world.

In addition, to prevent improprieties and achieve quick resolutions, we have established hotlines for whistleblowers in our domestic and foreign business locations, and for our business partners.

In addition to initiatives aimed at correcting the issues that we have discovered through such efforts at the business division level, we also bring those issues together centrally and comprehensively at our Head Office and reflect them in groupwide policies with consideration to societal conditions and the like, and repeat this process in the pursuit of continuous improvement. We are currently promoting activities under the themes of abiding by antitrust laws and preventing bribery of government officials.

Also, Panasonic has been a member of the Business Ethics Research Center (BERC) since BERC was founded in 1997. Together with BERC and other member companies, we have engaged in research, practice, education, and promotional activities for management ethics through panels, study groups, information-exchange activities, and so on.

Policy

Panasonic has established as part of our management philosophy the Basic Management Objective set forth by Konosuke Matsushita, Founder of Panasonic Corporation, that says “Recognizing our responsibilities as industrialists, we will devote ourselves to the progress and development of society and the well-being of people through our business activities, thereby enhancing the quality of life throughout the world.” With this Basic Management Objective, we will engage in our business activities in a manner that ensures that our business contributes to the improvement of living standards around the world and to the progress of society. In order to put our management philosophy into practice, we have established the Panasonic Code of Conduct which includes elements from the OECD (Organisation for Economic Co-operation and Development) Guidelines for Multinational Enterprises and other norms, have translated it into 22 languages, and share our basic stance as a company in terms of our aspirations for the Panasonic brand and answering the demands of society in relation to corporate social responsibility (CSR) with all of our directors and employees globally.

Panasonic Code of Conduct (Excerpts)

The Panasonic Code of Conduct defines our efforts to establish fair business practices as a public entity of society.

Chapter 1: Our Core Values

An Enterprise as a Public Institution

Since our business is dependent on our customers and other stakeholders, we must remember that “an enterprise is a public institution,” that must strive to fulfill its social responsibilities. In addition to listening to stakeholders’ opinions, we must conduct our business activities transparently in order to be accountable. In short, we must continue to be fair, truthful, honest and swift in taking action to comply with our social responsibilities.

▶ Panasonic Code of Conduct, Chapter 1: Our Core Values
http://www.panasonic.com/global/corporate/management/code-of-conduct/chapter-1.html

Chapter 2: Implementing the Code in Business Operations

II-3. Compliance with Laws, Regulations and Business Ethics

(1) Compliance with Laws, Regulations and Business Ethics

We will conduct business with integrity, a law-abiding spirit, and the highest ethical standards.

We will fulfill our tasks by always observing not only applicable laws and regulations, but also the highest standards of business ethics. Compliance with laws, regulations and business ethics in all our business activities is essential to the survival of our business.

(2) Fair and Sincere Action

We will respect free and fair competition, and abide by all applicable antitrust (competition law) and other laws and regulations. All of our transactions shall be properly and fairly recorded.

We will not engage in bribery of any kind. We will be sensitive to, and shall abide by laws and regulations and social ethics that govern the offer of benefits of any kind, including gifts, meals and entertainment. In the same manner, we will not receive personal benefits from any of our stakeholders.

Moreover, we remain steadfast in our attitude to oppose any illegal group or organization.

(3) Thorough Observation of Relevant Laws and Regulations

To ensure that all employees observe applicable laws and regulations and respect their spirit, we will establish appropriate in-house codes and promote employee understanding through seminars and training.

(4) Prompt Redress and Strict Treatment for Violations of Laws and Regulations

If we suspect that our activities violate applicable laws, regulations or business ethics, we will report such information to a superior, or to the legal affairs section or other relevant section, or via an in-house notification hotline. Whistleblowers shall be protected from dismissal, demotion, or any other retaliatory treatment because of their well-intentioned reporting of possible violations of any law or regulation. We will ensure thorough and confidential treatment of information reported.

Once we have established that a law or regulation has been violated, we will immediately seek to remedy the violation, take appropriate action and prevent it from recurring.

▶ Panasonic Code of Conduct, Chapter 2: Implementing the Code in Business Operations
II-3. Compliance with Laws, Regulations and Business Ethics
http://www.panasonic.com/global/corporate/management/code-of-conduct/chapter-2.html#section2-3

Communications

Panasonic aims to make compliance and fair business practices penetrate our worksites globally through our directors and executive officers in charge of ensuring adherence to the Code of Conduct; the legal divisions we have created at the Companies, business divisions, and regional headquarters; and the export control chief officer and individuals with job function responsibilities, based on the thinking that the level of compliance awareness of the chief executive of the business is of upmost importance. Specifically, we share the compliance policies for the fiscal year with the Companies and regional headquarters at the beginning of each fiscal year at our Global Legal Conference, and September is designated as Compliance Month (for details, refer to Compliance Training). We also contact and notify those responsible for legal matters at the Companies and other relevant organizations whenever there are changes to laws, governmental or ministerial ordinances, or notices from other authorities that have any effect on our business.

Compliance Training

Panasonic conducts training on compliance and the Code of Conduct regularly, including when employees join the company or are promoted.

We have assembled a Compliance Guidebook to serve as a tool for putting into practice items related to compliance with the Code of Conduct. The Guidebook explains 54 topics that Panasonic considers critical from a compliance perspective, explaining each of them through examples in a way that is easy to understand, addressing how employees at Panasonic can stay in compliance with the law in the course of their daily work activities and answer societal expectations, covering topics such as preventing corruption and preventing cartels.

We also implement e-learning on compliance with a variety of laws that involve antitrust laws including those concerned with cartels, export controls, and copyright laws in sales, procurement, engineering, and other functional divisions at each Company.

Each year, we designate September as “Compliance Awareness Month” to check up on our efforts to ensure that the mental attitude of strict adherence to ethics and the law has taken hold globally and to respond to risks. In recent years, as our business and the business environment have changed, this has presented opportunities to strengthen our efforts to accurately grasp signs of changing risks, legal violations, and improprieties in specific fields / units of business, countries and regions.

In this interval, the President, the heads of Companies and business divisions, regional representatives, and other senior executives have clarified policies and positions on the observance of ethics and the law, ensuring the dissemination of the importance of compliance down to the ground level.

During this period, we also conduct a “Compliance Awareness Survey” among our employees.

In fiscal 2016, compliance training through e-learning was held in eight languages, with 47,000 employees from 19 regional offices taking part.

Responsible Executive and Framework

The executive in charge is Managing Director Jun Ishii (as of August 2016).

To ensure the dissemination of compliance and fair business practices at the ground level throughout the world, we have legal departments, directors, and executive officers in charge of ensuring adherence to the Code of Conduct, as well as managers in charge of export control and other persons responsible for supervising various other functions in our Companies, business divisions, and regional headquarters outside Japan.

In fiscal 2016, we established a new organization unifying multiple response functions whose aim is to identify compliance, risk, and governance issues that span multiple work functions. This should help speed up our support for fair operating practices in all business units.

Whistleblowing Systems

Within our company, we have established the following whistleblower hotlines as systems for receiving a variety of internal reports regarding compliance:

- “Business Ethics Global Hotline” for general information on compliance in Japan and abroad.
- “Equal Employment Opportunity Office” for consultations regarding sexual harassment, equitable treatment, and the like.
- “Fair Trade Hotline” for the reporting of legal violations concerning cartels, bribery, the Subcontract Act, and so on.
- “Internal Control Promotion Office Hotline” for accounting irregularities.
- “Fair Business Hotline” for receiving reports from our business partners.
- “Auditor Report System” for reports concerning our accounting and audits.

The Panasonic Code of Conduct stipulates that “Whistleblowers shall be protected from dismissal, demotion, or any other retaliatory treatment because of their well-intentioned reporting of possible violations of any law or regulation. We will ensure thorough and confidential treatment of information reported.” At all the hotlines above, mistreatment of whistleblowers is strictly forbidden and confidentiality is assured. In addition, reports can be made anonymously if there is no need to contact the whistleblower for additional information (some hotlines are excluded).

In fiscal 2016, roughly 230 reports and consultations were handled through these whistleblowing systems. These systems respond to all reports and consultations by investigating and verifying facts with the cooperation of the relevant divisions.

Outside Japan, in addition to the “Global Hotline,” region-specific reporting systems have been set up in North America, Europe, Asia, and Latin America.

Fair Operating Practices : Performance Evaluation

To monitor the understanding of compliance policies, the effectiveness of measures, and the degree of adherence, once each year we conduct checks on the status of observance and practice of the “Panasonic Code of Conduct” in all our business locations around the world.

More specifically, at each group member company, a director / executive officer is appointed to be in charge of ensuring adherence to the Code of Conduct. Education and training are conducted regarding the Code of Conduct; written pledges regarding the observance of the Code of Conduct are obtained; and checks are made regarding the status of these items. Our auditor conducts an audit of internal control.

Once each year, employees fill out “Compliance Awareness Surveys.” These surveys include topics that are common globally, such as compliance, and information security, and also other topics that are specific to particular Companies, places of business, and regions. In fiscal 2016, approximately 132,000 employees participated in these surveys globally. The survey results are analyzed from a variety of perspectives – region, company, employee rank, and so on – and are used in a wide variety of functions, such as the formulation of policies and measures regarding compliance and responses to specific issues.

For example, in Asia, which has been designated an overseas strategic region for our group, the results of the fiscal 2013 survey were used to formulate a mid-term action plan for fiscal 2014-2016. Within the Asian region, there exists a wide variety of legal systems in various countries, and there are high risks in terms of the need to prevent corruption. In this business environment, in order to develop fair and powerful solution business – including BtoB and BtoG – we were able to identify issues through this survey such as: (1) the need for ongoing efforts to instill compliance awareness, (2) the need for repetition of compliance education, and (3) the national differences in compliance awareness. Based on these results, various elements were incorporated in the mid-term action plan to practice in the daily business activities, including (1) the formulation of action guidelines and education campaigns at the level of the regional headquarter, (2) the strengthening of e-learning and training programs in each national language, and (3) the fortification of alliances involving legal departments in each region and the raising of the level of compliance through auditing.

Grave Violations and Corrective Measures

Panasonic paid fines in fiscal 2016 related to a claim* that we engaged in cartel activity in past times in our cathode ray tube business in violation of EU competition law. We take this fact very seriously, and continue to carry out thorough control to prevent any such involvement from recurring. (Please refer to the next chapter ‘Fair Trade’ for our measures to prevent cartels.)

*Part of the claim is still being contested; fines for that portion have not been paid.

In the rare event that Panasonic becomes aware of any serious ethical or legal violations, we stop the violating behavior immediately, and in addition to reporting to executive management, we will consider countermeasures after verifying facts and analyzing the causes of the violation in relevant divisions. We report on such matters to the Board of Directors as necessary and correct the violations swiftly and cross-sectionally groupwide based on the resolution of the Board.

Fair Operating Practices: Fair Trade

Preventing Cartels

We at Panasonic are taking the fact that our company has been implicated in multiple international cartel incidents seriously, and we have positioned the prevention of cartels as a critical groupwide issue. If Panasonic were to become involved in the creation of a cartel, we would not only lose the trust of our customers but also be required to pay high penalties and compensation for damages, as well as lose our designation in public procurement. We take very serious and detailed care to prevent any such involvement, because it would have a variety of negative impacts on our business.

Basic Policies

We have put the following basic policies in place in an effort to prevent cartels, collusive bidding, and other such violations.

- Contact with competitors is allowed only in absolutely necessary cases and subject to prior approval.
- Agreements and exchanges of information with competitors regarding prices, quantity, and other competition-related matters are strictly prohibited.
- One who encounters behaviors that may give rise to suspicions of cartel must make an objection, leave the room, and file an internal report.
- The company establishes whistle-blowing systems and internal leniency systems to improve its ability to self-regulate and conduct appropriate monitoring based on risk assessment, whereby maintains an effective anti-cartel system.

Rules Concerning Activity and Relationship with Competitors

In 2008, we established the Rules Concerning Activity and Relationship with Competitors for the purpose of preventing behaviors that could lead to cartels or bid rigging or cause suspicion of same, which apply to all group employees. These rules include items such as the following:

- Prohibition of agreements or exchanges of information regarding product pricing, quantity, performance or specifications that may cause suspicions of cartels or bid rigging
- Prior approval system under which contact with competitors requires prior approval of the head of the business group and the person in charge of legal affairs
- Responses to inappropriate activities
- Duty of reporting possible violations
- Measures taken in response to violations
- Internal leniency system

In the device business where the risk of cartels is particularly high, we are promoting global initiatives meant to prevent cartels through activities including making sure once again that these policies are fully understood by executives at Company Management Conferences and Managing Directors Conferences at overseas subsidiaries, cartel prevention training for all employees, identifying suspicious behaviors, submitting written pledges, conducting cartel audits, and speeding up personnel rotations.

Preventing Corruption

Prevention of Bribery of Government Officials

Even as the authorities in different countries continue to bear down harder on corruption, along with the expansion of business in developing countries and solutions business comes a higher risk of bribery of public officials. Panasonic continues to engage in efforts to prevent bribery of government officials through means such as issuing bribery prevention policies from senior executives, establishing standards and approval processes for spending on dinners and the like with public officials, managing business partners, and ensuring that training and awareness-raising activities for executives and employees are thoroughly carried out, especially for business sites located in countries and regions that rank high in the Corruption Perceptions Index.

Rules on Dealing with Government Officials

In 2010, we established the Rules on Dealing with Government Officials for the purpose of preventing bribery of

government officials or actions that my raise suspicions of such unlawful behavior.

These rules stipulate that no employee may offer, give, pay for, promise to pay for or authorize the payment or the grant of any benefit to any government officials in connection with obtaining or retaining business.

An approval process and specific standards were established such as for meals with government officials. These are intended to prevent the direct offering of benefit to government officials and also the indirect offering of benefit through consultants, distributors, lobbyists, or other business partners. Careful screening and designation of business partners must be conducted, and contracts must include provisions prohibiting bribery.

In cases of violations of these rules, swift steps must be taken to redress the situation, and strict measures must be taken against the violation.

In addition, regarding expenses for social interactions or gifts, prior approval is required, and detailed reports must be filed. There is also a process for ensuring that no government officials are involved, in an effort to preclude corrupt acts.

Respect for Human Rights

Management System

The Panasonic Code of Conduct expressly states that “we must respect human rights and do our best to understand, acknowledge and respect the diverse cultures, religions, mindsets, laws and regulations of people in the different countries and regions where we conduct business.” Panasonic supports the fundamental principles of the United Nations Universal Declaration of Human Rights, the International Labour Organization (ILO) Declaration on Fundamental Principles and Rights at Work, and the OECD Guidelines for Multinational Enterprises. The major parts of these principles are embodied in the Panasonic Code of Conduct.

Panasonic is also taking an active approach to reflecting ideas concerning global human rights in its management, including by making reference to the Guiding Principles on Business and Human Rights, which were adopted by the UN Human Rights Council in June 2011.

In fiscal 2015, Panasonic complemented the Code of Conduct by setting a “Global Human Rights and Labor Policies” and by implementing a management system for abiding by that policy. The management system consists of self-assessment checklists for properly evaluating risks involving, and the impact on, human rights and for identifying risks, a manual outlining the procedures for correcting the risks that have been identified and for carrying out continuous improvement, and other components.

Going forward, in addition to efforts conducted with its employees, Panasonic will continue to cooperate with its suppliers throughout the world to fully understand laws and labor practices in different countries and to respect human rights.

Policy

As a company doing business globally, Panasonic treats, as a fundamental principle behind its business activities, interactions with not just its employees but all stakeholders with the maximum degree of concern and respect for their human rights. Panasonic’s policies concerning human rights are expressly outlined in Panasonic Code of Conduct and Global Human Rights and Labor Policies. These policies include items concerning such issues as working hours; wages; humane treatment; prohibition of discrimination; protection of privacy; concern for the human rights of foreign workers, trainees, and younger laborers; and the freedom of association plus labor-management dialogues, among others.

▶ Panasonic Code of Conduct, Chapter 3: Employee Relations
http://www.panasonic.com/global/corporate/management/code-of-conduct/chapter-3.html

Education

Panasonic conducts periodic training concerning its Code of Conduct—which sets forth its policies on respect for human rights—including when employees join the company or are promoted.

The company conducts “Overseas Employee / Pre-Overseas Appointment Training” for employees on assignment from Japan and posted at overseas subsidiaries. It provides education on issues of human rights that demand particular attention overseas, including fair treatment, the prohibition of employment discrimination, and respect for union activities.

Responsible Executive and Framework

The executive in charge is Senior Managing Director Mototsugu Sato (as of August 2016).

The departments responsible consist of the Human Resources & Industrial Relations Department established at the Panasonic headquarters, the human resources departments established at each of the four Panasonic Companies (Appliances, Eco Solutions, AVC Networks, and Automotive & Industrial Systems), and all business divisions and affiliated companies under the Panasonic umbrella.

Human Rights Support Desk

Panasonic has established an Equal Employment Opportunity Office at its headquarters and appointed full-time consultants to staff it. In addition, a consultation desk was established at each Company and business division in an effort to provide a place for employees to go to discuss their concerns about sexual harassment, harassment based on power differentials, topics related to the rights of members of sexual minorities (LGBT*), and a wide range of other topics relating to human rights.

The Equal Employment Opportunity Office also conducts activities aimed at resolving workplace problems and creating workplaces without barriers to employees performing their jobs. For example, in fiscal 2016, the office conducted training for managers concerning, among other things, creating a stimulating workplace culture; 97% of managers who attended the training responded that they “were able to change ways of thinking.” On more concrete terms, respondents provided positive opinions on the training, such that they reaffirmed the importance of initial responses and were able to clearly understand what efforts they needed to undertake; that the training had served as a good opportunity to once again re-evaluate their own actions and words; and that they wanted to work toward sharing with all workplace members respect for individuals, communication, and mutual support, and toward creating a workplace in which such shared ideals could be put into practice. In addition, some attendees provided suggestions for further improvements to the activities of the Office, including that the range of attendees for the training should be expanded while the training itself should be conducted periodically.

In its overseas subsidiaries as well, Panasonic is acting with all due attention to the privacy of those who seek consultation or report misdeeds, including by establishing consultation offices and suggestion boxes similar to those in Japan.

*LGBT: An acronym for lesbian, gay, bisexual, and transgender

Respect for Human Rights: Performance Evaluation

As a company doing business in countries around the world, Panasonic strives to respect human rights and considers it a precondition for all its behavior to abide by international standards, the laws and regulations of each country or region, and the Panasonic Code of Conduct.

Further to these efforts, since 2007, the company has been conducting Overseas Human Resources and Labor Assessments intended to identify, comprehend, and resolve issues in personnel management and labor management overseas. The checklist used in the survey contains around 300 items, including those concerning proper implementation of labor management; compliance with local labor laws, employment systems, and business practices; and discovery of bad influences on business and of latent labor-related risks that could cause problems.

After the local affiliate has conducted a self-assessment based on the checklist, an assessor who belongs to a Company or business division in Japan performs an audit with the support of the regional headquarters. Efforts to resolve problems discovered via assessments are undertaken primarily by Assessor-Leaders (mainly managers in charge of human resources), who strive to raise the level of labor management. Panasonic periodically runs “Assessor Seminars” to systematically promote the education of assessors and to raise the levels of their checking skills.

In fiscal 2016, assessments were conducted at a total of 9 sites, consisting of 3 sites in China, and 6 sites elsewhere in Asia. Panasonic will continue to strive to improve labor management capabilities through close partnerships between its Japanese and overseas locations, thereby to improve the company’s ability to respect human rights in all its businesses.

Furthermore, since fiscal 2015, Panasonic has implemented risk assessment and improvement efforts based on a “Self-Assessment Checklist” relating to human rights and labor that was established that year. We have expanded the implementation of these in fiscal 2016, engaging in efforts toward self-assessments as well as corrections and improvements at 52 sites overseas.

Because issues with working hours management have been observed at some companies through self-assessments, we have proposed improvement plans that include revisions to the organization of personnel, work management methods, and equipment automation, and are moving forward in our efforts to correct these issues.

Respect for Human Rights: Efforts Concerning Fundamental Human Rights

Prohibition of Forced Labor, Effective Abolition of Child Labor, and Attention to Young Workers

When recruiting employees, Panasonic adopts a perspective of protecting fundamental human rights and engages in recruitment activities that comply with the laws and regulations of the respective countries. It also prohibits forced labor, labor against the will of any employee, or child labor. In order to prevent child labor, we have built items such as age verification into the “Self-Assessment Checklist” used when individuals join the company. The risk that child labor will be performed is thought to be especially high in China and elsewhere in Asia, and Panasonic is thoroughly implementing age checks in these regions. The company does not make employees under the age of 18 engage in heavy labor and offers them consideration and support so that they may have opportunities to receive education.

Providing Employment Opportunities for Young People

Panasonic holds our Professional Internship Program (PIP) twice annually through industry-university cooperation.

PIP has the following three goals:
- To train human resources in industry-university cooperation
- To provide an opportunity for learning through work experience
- To eliminate employment mismatches by verifying work appropriateness

Employing Foreign Workers

Because there tend to be greater human rights and labor-related risks for migrant and foreign laborers, Panasonic has established items to be checked that include ensuring that Panasonic-affiliated entities are not allowing temp agencies to collect any fees and are not retaining workers’ passports or identification documents, as well as ensuring that they are providing workers with employment contracts, including terms of employment, in those workers’ native languages. Panasonic recruits employees and accepts temporary workers based on the laws and regulations of the respective country, so that no employees are made to work against their will or are unduly subjected to disadvantageous working conditions.

Prohibition of Discrimination

Panasonic strives to create workplaces where diverse and talented individuals can respect one another as vital partners irrespective of differences such as race, sex, age, nationality, beliefs, religion, social status, disability, sexual orientation and gender identity, and can work in a lively and active manner in a supportive environment, with consideration of the laws and regulations of each country.

The company has established recruitment standards that select employees based on the applicants’ aptitudes, capabilities, and desires. To thoroughly implement these standards, the company in Japan, for instance, educates interviewers based on the handbook “Recruitment and Human Rights,” which the “Hellowork” public employment stability office established by the national government has drafted for the purpose of promoting fair recruitment selection.

For employee discipline, Panasonic has, among other provisions in its work regulations, those mandating respect for human rights, those forbidding illegal behavior, and those forbidding sexual harassment in the workplace; in the event of a violation of any one of these provisions, expressly stated disciplinary measures are to be taken.

Furthermore, the company is engaged in the following efforts to prevent sexual discrimination, including sexual harassment, as well as harassment based on power differentials, in order to create a more fair, equal, and pleasant workplace:

- Establishment, publication, and thorough implementation of policies concerning sexual harassment
- Distribution of leaflets and manuals concerning sexual harassment
- Seminars and training on sexual harassment, harassment based on power differentials, and revitalizing workplace culture
- LGBT training

Managing Working Hours

Based on labor standards legislation in the respective countries and on labor agreements, Panasonic has established in its work regulations provisions relating to appropriate working hours, break times, overtime work, holidays, leave, and so forth.

To abide by these provisions, the company operates a working-hours management system and is also engaged in comprehensive employee health management.

With a work management system, Panasonic has implemented a variety of measures with an eye to employees' health, including a mechanism by which warnings are issued and other steps are taken at the point when a certain length of overtime has been reached; optimal placement of personnel so that overtime is not overly imposed on only certain employees; and additional health checks performed in the rare event that an employee has worked excessively long hours.

Managing Wages

Based on labor standards legislation in the respective countries and on labor agreements, Panasonic has established in its employee wage regulations provisions for adequate wages, allowances for commuting and other expenses, bonuses, other compensation paid on occasional bases, retirement allowance, and so forth.

The company has implemented a "Role / Grade System" that determines compensation based on the work or role in which employees are currently engaged; there are no gender-based inequalities in this compensation system.

In Japan, to ascertain whether employees' wages are being paid correctly, labor unions conduct annual surveys of wage conditions among their members and check whether those members are being properly paid the salaries resulting from wage negotiations decided between labor and management.

Overseas, Panasonic establishes, by country, company regulations that comply with all wage-related laws and regulations pertaining to matters such as the minimum wage, statutory benefits, and overtime. The company conducts its operations based on these regulations and—for the specified period of payment and at the specified time of payment—notifies its employees through pay statements and electronic data, and pays them directly.

In cases where the laws of the country or region in question do not prohibit monetary disciplinary action, Panasonic recognized such disciplinary action as a possibility, and does not prohibit it. However, this is all predicated on the procedures for such actions as well as the monetary amounts involved being established within legal limits with consideration given to the impact on the recipient's life, as well as such measures being codified in internal regulations and made well known to employees. Japanese law does not prohibit monetary discipline, but Panasonic's disciplinary rules within Japan do not include monetary disciplinary measures.

The Freedom of Association and Respect for the Right to Collective Bargaining

Panasonic believes that the freedom of association, combined with the right to collective bargaining, is one of the fundamental human rights that companies should respect.

In countries and regions that permit the formation of labor unions—for instance, in Japan—Panasonic and the Panasonic Group Workers Union Association have stipulated in their labor agreement that unions retain the rights to organize, to collectively bargain, and to strike.

In addition, even in countries and regions where the formation of labor unions is not permitted because of legislation, regulations, or conventional labor practices, the Panasonic Code of Conduct stipulates the de facto promotion of issue resolution through labor-management dialogues, which are the goals of the principles of the freedom of association and the right to collective bargaining. In addition, the company expressly lists these dialogues as one of the conditions for doing business with suppliers in its Standard Purchase Agreement and demands suppliers comply with this condition.

Panasonic Code of Conduct (Excerpts)

Chapter 3: Employee Relations

(Omitted)
(2) Respect for Human Rights
5) Taking into account the laws and labor practices of each country, the Company will try to foster a good relationship with its employees and to resolve issues of, among others, workplace and working conditions by constantly having a sincere and constructive dialogue.

▶ Panasonic Code of Conduct, Chapter 3: Employee Relations
http://www.panasonic.com/global/corporate/management/code-of-conduct/chapter-3.html

Standard Purchase Agreement (Excerpts)

(Demand on Suppliers to Respect Human Rights)
The Supplier shall try to foster a good relationship with its employees and to resolve issues by constantly having a sincere and constructive dialogue.

Japan

Panasonic has adopted a “union shop” system, whereby all full-time company employees automatically become labor union members upon being hired with that status, and it has concluded labor agreements and a basic agreement with the Panasonic Group Workers Union Association. Except for some employees engaged in work relating to management, all full-time Panasonic employees in non-managerial jobs belong to a labor union. In addition, the company respects the right of non-regular employees to join a labor union if they choose to do so. At Panasonic, important management issues are discussed in advance with the labor union, and Management-Labor Committees are established as a forum for people to express their opinions on these issues. Particularly, important decisions are explained to the labor unions, and Labor-Management Councils are held to provide an opportunity for people to express their approval or proposals for change.

Both Management-Labor Committees and Labor-Management Councils are held periodically and separately at the groupwide, Company, and business division levels. The groupwide-level Management-Labor Committee includes the Panasonic Group President, executives in charge of human resources, the head of the labor union’s Central Executive Committee, and others, and is held once per month. The groupwide-level Labor-Management Council includes all executives who are managing directors or above, all members of the labor union’s Central Executive Committee, and others, and is held twice per year.

There is no established minimum notification period when a vital matter for consideration, such as a structural change, has arisen. However, after the company has issued a proposal, there will be discussions, if necessary, every single day at every level—groupwide, Company, and business division—until both labor and management have reached complete agreement.

Europe

Following an EU directive* adopted in 1994, Panasonic set up a voluntary labor-management agreement to provide a venue for meaningful discussions between labor and management, and established the Panasonic European Employee Congress (PEEC).

In fiscal 2016, 29 employee representatives and 13 company representatives assembled in Warsaw, Poland; exchanged information concerning management strategy, business issues, and other matters; and had active discussions.

* EU directive: A directive that obliges all companies employing 1,000 or more employees in two or more countries of the European Union to establish a pan-European labor-management consultation committee

China

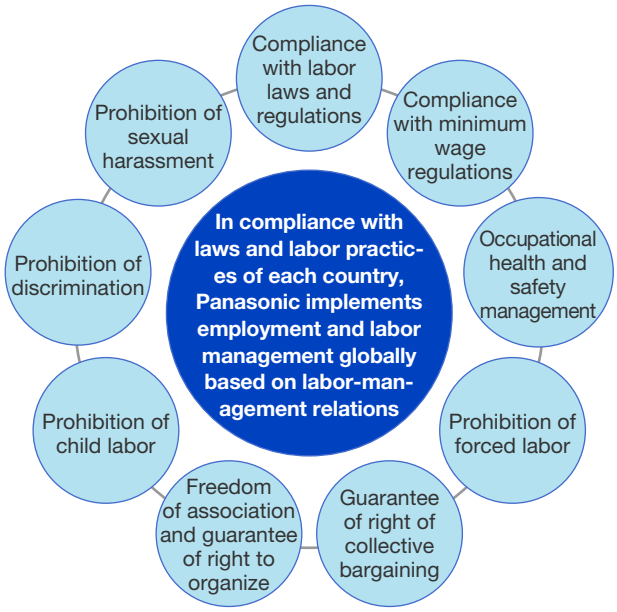
The unionization rate among private companies in China varies among different groups of firms, but nearly all Panasonic affiliated companies have organized labor unions (gōnghuì) and are actively engaged in labor-union related activities.

Specifically, Panasonic conducts—among other initiatives—periodic labor-management dialogues, proactive joint labor-management recreational events, and prior explanations to unions concerning important management decisions. The company is thus focusing its efforts on building good relations between labor and management—the basis for business development.

Structure of the Fundamental Human Rights that Panasonic Respects

The major structure of the fundamental human rights that Panasonic respects is shown in the following diagram:

Structure of the Fundamental Human Rights that Panasonic Respects



Respect for Human Rights: Initiatives Relating to Global Standards, Legislation, Regulations, and So Forth

State of Efforts Relating to the ILO Core Labour Standards

Panasonic supports the fundamental principles of the United Nations Universal Declaration of Human Rights, the International Labour Organization (ILO) Declaration on Fundamental Principles and Rights at Work, and the OECD Guidelines for Multinational Enterprises. The major parts of these principles are embodied in the Panasonic Code of Conduct. Panasonic's headquarters and each regional headquarters serve as bases for the collection of information on critical changes in legal requirements related to human rights and labor, and every one of our business sites works to ensure and strengthen our compliance with them.

The freedom of association and the right to collective bargaining
No. 87 (Freedom of Association and Protection of the Right to Organise Convention)
No. 98 (Right to Organise and Collective Bargaining Convention)

▶ "The Freedom of Association and Respect for the Right to Collective Bargaining"
http://www.panasonic.com/global/corporate/sustainability/human_rights/approach/#freedom

Prohibition of forced labor
No. 29 (Forced Labour Convention)
No. 105 (Abolition of Forced Labour Convention)

▶ "Prohibition of Forced Labor, Effective Abolition of Child Labor, and Attention to Young Workers"
http://www.panasonic.com/global/corporate/sustainability/human_rights/approach/#labor

Effective abolition of child labor
No.138 (Minimum Age Convention)
No.182 (Worst Forms of Child Labour Convention)

▶ "Prohibition of Forced Labor, Effective Abolition of Child Labor, and Attention to Young Workers"
http://www.panasonic.com/global/corporate/sustainability/human_rights/approach/#labor

Rejection of discrimination in employment and occupation
No. 100 (Equal Remuneration Convention)
No. 111 (Discrimination (Employment and Occupation) Convention)

▶ "Prohibition of Discrimination"
http://www.panasonic.com/global/corporate/sustainability/human_rights/approach/#discrimination

Initiatives for the Prevention of Slavery and Human Trafficking

Modern slavery can occur in various forms including servitude, forced or compulsory labour and human trafficking, all of which include the deprivation of a person(an adult or a child's) liberty by another (collectively "Modern Slavery"). This document sets out the procedures Panasonic has put in place with the aim of preventing opportunities for Modern Slavery to occur within our business or supply chain.

Panasonic ("We" "Us" or "Our") is committed to a work environment that is free from Modern Slavery in accordance with the laws and regulations of the respective countries in which we operate.

We operate a zero-tolerance approach to Modern Slavery and we are committed to acting ethically and with integrity in all our business dealings and relationships and to implementing and enforcing effective systems and controls to ensure Modern Slavery is not taking place anywhere in our own business or in any of our supply chains. We will not knowingly use Modern Slavery in any of our products and/or services supplied, nor will we accept commodities, products and/or services from suppliers that we believe to utilise Modern Slavery.

Our Business and Key Risk Areas:

Our business

Panasonic's global business is organised into four key business units:

- Appliances;
- Eco Solutions;
- AVC Networks; and
- Automotive & Industrial Systems.

Our Supply Chain

Our supply chains include the sourcing of raw materials and minerals principally related to the provision and manufacture of electrical products. Please refer to http://www.panasonic.com/global/corporate/sustainability/supply_chain/minerals.html for more details.

Our key risk areas

The risk that Modern Slavery will occur is thought to be especially high in certain regions of the world. Panasonic is actively implementing a program of enhanced checks in these regions to ensure compliance with local legislation.

Due Diligence Process for Modern Slavery:

As part of our initiative to identify and mitigate risk we have taken a number of actions to verify the absence of Modern Slavery in our supply chain, including the following:

Panasonic Code of Conduct (Excerpts)

Chapter 3: Employee Relations

(Omitted)

(2) Respect for Human Rights

2) The Company will not employ people against their will, and will not use child labor. The Company will comply with the employment laws and regulations of the countries and regions in which it conducts business.

▶ Panasonic Code of Conduct, Chapter 3: Employee Relations
http://www.panasonic.com/global/corporate/management/code-of-conduct/chapter-3.html

Standard Purchase Agreement (Excerpts)

(Demand on Suppliers to Respect Human Rights)

The Supplier shall not engage in forced or child labor, illegal employment of foreign workers, or other illegal or illegitimate employment practices; employment conditions, including wages and shift lengths, shall be based on the laws and regulations of the respective countries and regions in which the Supplier does business.

3 STEP PROCUREMENT POLICY

This ensures respect for human rights and safety of labour.
http://www.panasonic.com/global/corporate/management/procurement/policy.html

SUPPLIERS

We ask our suppliers to meet our CSR requirements, including safeguarding human rights and the health and safety of labourers

Panasonic Supply Chain CSR Promotion Guidelines (Excerpts)

1-1 Prohibition of Forced Labor

Suppliers shall employ all workers of their own free will with no worker being subject to forced labor.

Specific action items

- Suppliers shall not engage in all forms of forced labor, involuntary prison labor, bonded labor, compulsory labor, indentured labor, or trafficking in persons.
- Suppliers shall not impose unreasonable restrictions on entering or exiting dormitories and workplaces.
- Suppliers shall give written notice to a worker concerning working conditions in the national language of the worker before entering into a definitive agreement (in the case of a foreign worker, before leaving his/her home country).

- Suppliers shall permit workers to freely terminate their employment.
- Suppliers, manpower supply companies, and staffing agencies shall not retain any government-issued identification card, passport, working permit (except the case where the retention of a working permit is required by law), immigration application, and any other similar document.
- Suppliers, manpower supply companies, and staffing agencies shall not collect any recruitment fee from workers.
- Suppliers shall inform workers of all items deducted from their salaries.
- Suppliers shall request and confirm that manpower supply companies and staffing agencies comply with above items.

http://www.panasonic.com/global/corporate/management/procurement/for-suppliers.html

TRAINING

We conduct training for all new, permanent staff on our Basic Business Philosophy and Code of Conduct. This includes training on: compliance with local laws and a respect for basic human rights with emphasis on not employing persons against their will and on compliance with local employment laws.

RECRUITMENT

We have strict recruitment policies and comply with laws and regulations of the respective countries in which we operate. Our self-assessment checklist includes: checking whether we are confirming ages in order to prevent child labour; not allowing temp agencies to collect fees or are themselves retaining workers' passports or identification documents; and providing workers with employment contracts, including terms of employment in those workers' native languages.

SUPPLIER CSR SELF CHECK QUESTIONAIRE

We are in the process of formulating and testing tools which will allow us to measure the degree to which our suppliers comply with our Supply Chain CSR Promotion Guidelines in our supply chain. This includes issues concerning Modern Slavery and requires suppliers to complete a self-assessment questionnaire on their compliance with CSR and Modern Slavery principles. We have already circulated the self-assessment questionnaire to around 700 suppliers in Japan, China and other countries throughout Asia.

CONFIDENTIAL WHISTLE-BLOWING

We protect whistle blowers by providing an anonymous whistle-blowing hotline for employees. Employees are regularly reminded of the whistle-blowing hotline and are encouraged to use it if they suspect any potentially illegal behaviour or practice.

Plans for the Future and Continuous Improvement:

We have expressed our commitment towards better understanding our supply chains and working towards greater transparency and responsibility towards people working in them. We will continue to work with our suppliers to encourage commitment to and compliance with our anti-slavery and human trafficking policies and legislation.

We have begun to circulate a CSR check questionnaire to our suppliers to ensure compliance with our CSR core values and policies on anti-slavery and human trafficking. We will continue to circulate this questionnaire and ensure compliance. Once our suppliers have responded we will evaluate their compliance with anti-modern slavery laws and our CSR policies and assess how we can achieve continuous improvement in the coming years.

Initiatives Relating to Compliance with Matters Demanded by SA8000

SA8000 is an international standard concerning labor and human rights that has been issued by the US NGO Social Accountability International. The standard provides for voluntary requirements that employers should fulfill, including those concerning the rights of workers in the workplace, the working environment, and management systems. The eight requirements that SA8000 demands and the state of Panasonic's initiatives concerning each management system are publicly available from the following websites:

1. Child Labor
▶"Prohibition of Forced Labor, Effective Abolition of Child Labor, and Attention to Young Workers"
http://www.panasonic.com/global/corporate/sustainability/human_rights/approach/#labor

2. Forced or Compulsory Labor
▶"Prohibition of Forced Labor, Effective Abolition of Child Labor, and Attention to Young Workers"
http://www.panasonic.com/global/corporate/sustainability/human_rights/approach/#labor

3. Health and Safety
▶"Occupational Health and Safety"
http://www.panasonic.com/global/corporate/sustainability/health_safety.html

4. Freedom of Association & Right to Collective Bargaining
▶"The Freedom of Association and Respect for the Right to Collective Bargaining"
http://www.panasonic.com/global/corporate/sustainability/human_rights/approach/#freedom

5. Discrimination
▶"Prohibition of Discrimination"
http://www.panasonic.com/global/corporate/sustainability/human_rights/approach/#discrimination

6. Disciplinary Practices
▶"Prohibition of Discrimination"
http://www.panasonic.com/global/corporate/sustainability/human_rights/approach/#discrimination

7. Working Hours
▶"Managing Working Hours"
http://www.panasonic.com/global/corporate/sustainability/human_rights/approach/#hours

8. Remuneration
▶"Managing Wages"
http://www.panasonic.com/global/corporate/sustainability/human_rights/approach/#wages

HR Development and Diversity : Initiatives Relating to LGBT* (sexual minority groups) Concerns

Policy

Panasonic's Code of Conduct makes it clear that discriminatory speech or conduct with regard to sexual orientation or gender identity, as defined by applicable laws, are not permitted.

Panasonic Code of Conduct, Chapter 3: Employee Relations (2) Respect for Human Rights

http://www.panasonic.com/global/corporate/management/code-of-conduct/chapter-3.html

*LGBT: An acronym for lesbian, gay, bisexual, and transgender, LGBT is used in this section to refer to these and other sexual minority groups.

Treatment of Individuals in Panasonic's HR Systems

Effective April 2016, Panasonic Corporation now recognizes same-sex domestic partners as equivalent to legal spouses within its HR systems, except in areas where such recognition cannot be applied due to legal restrictions. This is part of the company's promotion of diversity in management, which is based on valuing, accepting and making the most of individuality. Affiliates both within and outside of Japan are addressing this matter on an individual basis, subject to the condition of compliance with applicable local laws.

Advancement in Understanding

In order to encourage understanding of the concerns of LGBT individuals and communities and to create a more LGBT-friendly workplace, Panasonic has been conducting successive seminars geared toward HR functional divisions, managerial positions, and employees, since February 2016. Seminars for HR functional divisions offer not only basic knowledge about LGBT concerns, but also methods for dealing with discriminatory speech or conduct, and methods for responding to the needs of those involved. Information on how to advance understanding of LGBT issues and invitations to participate in events that support LGBT causes are also sent out via Panasonic's intranet system.

Support for External Activities

Since fiscal 2015, Panasonic has been engaged in cooperation with work with Pride, a private organization that works on initiatives to create more LGBT-friendly workplaces. Panasonic provided a hall in its Tokyo building as a venue for an event in 2014, with roughly 200 people taking part, most of them from corporate HR departments.

In fiscal 2016 as well, the company cooperated with work with Pride in other events such as their Tokyo Rainbow Week exhibits and provided ongoing cooperation with an event held at a venue provided by Recruit Holdings. Panasonic has made contributions to the policy working group for a corporate LGBT evaluation index held from December 2015 to May 2016 as a secretariat member.

Other initiatives for human resources development and promoting diversity are introduced in the following website.
http://www.panasonic.com/global/corporate/sustainability/employee.html

Occupational Health and Safety

Management System

The purpose of the Panasonic Group's occupational health and safety management is to promote a comfortable, safe workplace through efforts based on the most advanced best practices, which will contribute to the welfare of the group's employees and the development of its business. In addition, the group has established in its regulations that it will give careful consideration regarding the health and safety of subcontractors' employees who work full-time on Panasonic premises.

To maintain our efforts regarding occupational health and safety—and to improve on them continuously—Panasonic has implemented an occupational health and safety management system at nearly all its manufacturing locations globally (some of which are now under construction). The systems implemented at company locations consist primarily of the Panasonic Occupational Safety and Health Management System, which encompasses the OHSAS18001 standard, supplemented with the company's unique perspective. Panasonic also acquires external OHSAS18001 certification in locations in countries where it has been requested to do so by customers.

Using the system, Panasonic gives all employees clear roles and responsibilities, promoting engagement in health and safety-related activities by setting clear targets. The system also involves periodic reviews by the directors of business sites, thus allowing the company to revise these activities as needed. Panasonic periodically—at least annually—conducts risk assessments to uncover any remaining risks of workplace accidents or illnesses and to reduce these risks, which it does so decisively, in order of severity. Furthermore, when a workplace accident has happened within the company, Panasonic shares it as a case study through its corporate intranet so that it can implement steps to prevent re-occurrences at all business sites.

At all business sites in Japan, health and safety committees composed of members from both employee and management investigate and debate issues of health and safety management that could affect employees. Moreover, to achieve a similar level of protection for employees of partner companies, Panasonic has established occupational health and safety councils, which are involved in a variety of activities, including formulating occupational health and safety policy, as well as various forms of information sharing.

Panasonic Group staff in charge of health and safety participate in an annual Employee Health and Occupational Health and Safety Forum, where together they study case studies of efforts at different business sites, attend lectures by visiting instructors, and engage in other activities to increase their knowledge and put it into practice at each business site.

In addition, sites that have kept no accident during a certain period of time receive awards, as do those that have initiated activities relating to safety, health, or to the promotion of healthy lifestyles among employees, that can stand as models of behavior for other sites.

Policy

Panasonic Code of Conduct (Excerpts)

In its Code of Conduct, Panasonic has established that it will pay attention to the health of its employees and strive to secure a safe and comfortable workplace environment for them.

Chapter 3: Employee Relations
(2) Respect for Human Rights 4. The Company will give due consideration to the health of its employees and will maintain a comfortable workplace that meets all applicable safety standards.

▶Panasonic Code of Conduct, Chapter 3: Employee Relations
http://www.panasonic.com/global/corporate/management/code-of-conduct/chapter-3.html

Panasonic Occupational Safety and Health Policy

Panasonic Occupational Safety and Health Policy consists of an Occupational Safety and Health Declaration, as well as a set of Activity Guidelines for Occupational Safety and Health. The company has set initiatives that it is thoroughly undertaking in eight areas.

Occupational Safety and Health Declaration
Based on the basic management philosophy of respecting people, Panasonic Corporation is committed to creating safe and both physically and mentally healthy workplaces through appropriate and careful attention, and consistent effort.

Activity Guidelines for Occupational Safety and Health

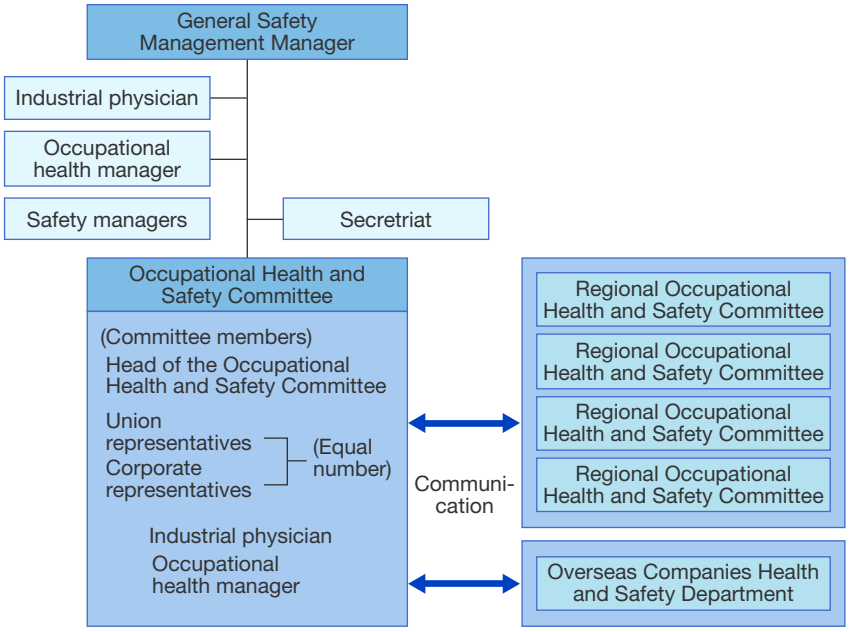
1. Legal and regulatory compliance
   Each business unit should establish its own internal policies and procedures to fulfill the relevant legal and regulatory obligations relating to occupational safety and health and ensure compliance.
2. Management resources
   Each business unit should devote staff, technology, and capital to creating workplaces that are safe and healthy.
3. Establish, maintain, and improve an occupational safety and health management system
   Each business unit should establish an occupational safety and health management program and regularly maintain and improve it.
4. Definitions of roles, authorities, and responsibilities, and organizational maintenance
   To administer the occupational safety and health management program and promote continuous autonomous improvement, each business unit should define the roles, authorities, and responsibilities of the elected head, legal staff, managers, and supervisors of the program.
5. Removal and reduction of hazards and potential causes of damage
   Each business unit should assess risks, identify hazards and potential causes of damage, and remove or reduce them.
6. Setting goals and formulating and implementing a plan for occupational safety and health management
   The management and employees of each business unit should work together to assess the occupational safety and health of workplaces, identify disasters and potential threats to health, establish goals, and formulate and execute a management plan for the occupational safety and health program.
7. Auditing, and review by management
   Each business unit should conduct regular audits to monitor the occupational safety and health program. Management should review the audit results and recommend improvements to the program.
8. Education and training
   Each business unit should provide its employees and those of its business partners on its premises with education and training in accordance with the occupational safety and health management program, and ensure that all relevant people are kept informed of and familiarized with the program’s charter and management system.

Responsible Executive and Framework

The executive responsible (as of August 2016) for occupational health and safety-related matters is Senior Managing Director Mototsugu Sato.

Panasonic has organized health and safety committees composed of equal numbers of union and company representatives.

Division Occupational Health and Safety Management Organization (Japan)



Occupational Health and Safety Support Desk

Panasonic has established the following lines of support to help employees prevent or deal with mental or physical stress:

Employee Consultants (or the human resources department of the employee's place of work)

Since 1957, Panasonic has designated employees with abundant work experience as "consultants" and has implemented a "Consultant System" whereby other employees may consult with them. The consultants answer any questions other employees have concerning welfare systems and provide support aimed at helping employees take charge of resolving worries or problems that they face in their work or private lives.

EAP* Consultation Office

For this program, Panasonic has engaged specialist counselors to listen to the personal concerns of employees, who can rest assured that what they have discussed will not be disclosed to the company or to their health insurance association.

* EAP: Employee Assistance Program

Company Clinic

Panasonic staffs these offices with full-time occupational physicians and occupational health staff to provide a health support program that performs functions such as handling illnesses that manifest during work, consulting on mental and physical health, preventing lifestyle-related diseases, and helping smoking cessation.

Initiatives Relating to Health Issues

Prevention of HIV/AIDS and support for those infected and their families

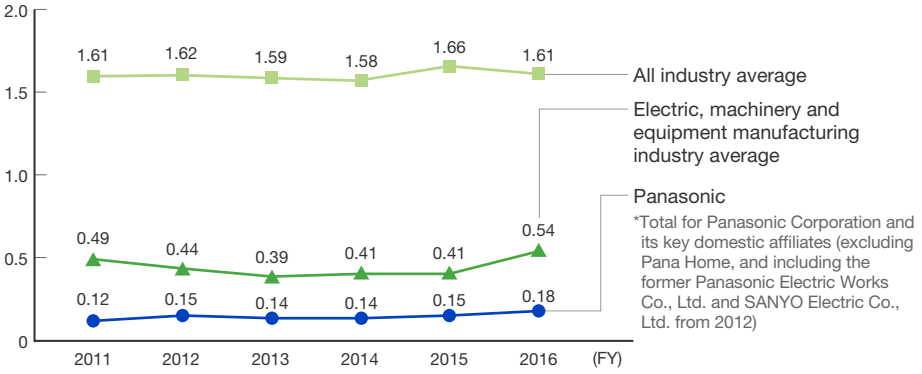
Panasonic believes that, armed with the proper knowledge, HIV/AIDS can be prevented, and unnecessary confusion and worry in the workplace can be avoided. Thus, the company has undertaken education of all its employees as the cornerstone of its initiatives in this area. When conducting human resources management, the company deems the protection of the human rights of all employees, including those who may be infected with HIV, as a foundational principle and adheres to four subsidiary principles: Panasonic keeps personal information confidential, prohibits discrimination in personnel matters, bans compulsory testing for HIV antibodies, and carries out educational activities.

Occupational Health and Safety: Performance Evaluation

Incidence of Occupational Accidents and Responses

Incident Rate of Work-related Accidents

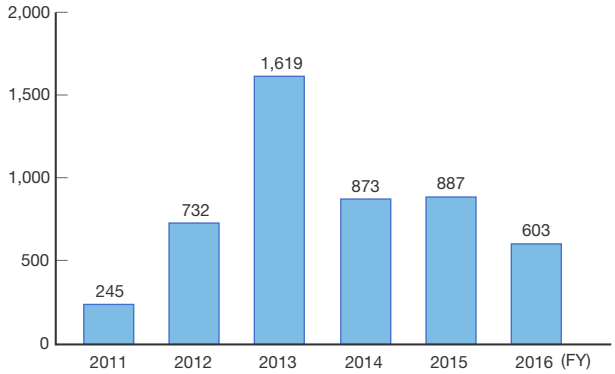
(Number of accidents per one million working hours)



Source: “All industry average” and “Electric, machinery and equipment manufacturing industry average” figures were from the website of the Ministry of Health, Labour and Welfare, Japan.

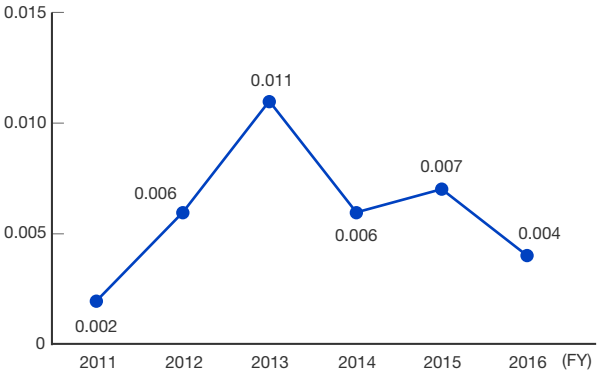
Time Lost due to Work-related Accidents

(Days)



Note: Total time-lost of victims due to labor accidents

Severity Rate of Accidents



Note: Proportion of time-lost per 1,000 hours of total working hours

At business sites where workplace accidents have occurred, Panasonic investigates the causes behind the incidents, implements measures to prevent re-occurrence, and shares accident case studies groupwide, so that all business sites may implement preventive measures so as not to experience the same kinds of accidents themselves.

For special tasks, such as handling heavy materials or chemical substances, the company conducts work inspections based on Safety Data Sheet (SDSs) and provides employees with appropriate personal protective equipment, making every effort to minimize the required amount of such work. Panasonic also conducts additional health screenings and monitoring for employees engaged in such work to prevent negative impacts on health, in accordance with laws and regulations. Concerning work in front of visual display terminals (VDTs) in indirect departments, as well, the company provides annual special health screenings for those employees who perform at least four hours of work in front of such displays and for whom they themselves, their bosses, or an occupational physician have determined screening to be necessary.

Responsible Supply Chain

Management System

With social responsibility in procurement, including consideration for the environment and human rights, being expected from society, we at Panasonic are working to conduct our business with suppliers that not only provide excellent technology and quality, but also honor social responsibilities including clean procurement; green procurement; compliance; information security; and human rights, labor, health and safety.

To ensure at employees involved in procurement activities better understand CSR procurement, and in order to raise their awareness of CSR procurement, we have created internal rules and manuals on CSR procurement, and disseminated the necessary information via handouts, our intranet, and training sessions.

We sign a Standard Purchase Agreement with each of our suppliers provided that the supplier agrees with our management philosophy and CSR procurement policies. This Agreement includes items related to CSR such as human rights, safe working environments, and consideration for the environment.

We also issue and distribute the guidelines we expect our suppliers to follow as the Supply Chain CSR Promotion Guidelines and conduct regular evaluations of supplier initiatives related to CSR in addition to evaluations related to standards for evaluating quality, cost, delivery, and service (QCDS) and business results.

With regard to conflict minerals that fund organizations that behave without proper regard for human rights, engage in environmental destruction, practice corruption, and otherwise act unethically in conflict zones, we strive to adhere to the Organisation for Economic Cooperation and Development's (OECD) Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas.

Through these efforts, together with our suppliers, we strive to create sustainable supply chains.

Policy

Procurement Policy

Panasonic has summarized its core thinking on procurement in a 3-item set of Procurement Policy. The fundamental basis of this policy is the concept that, based on relationships of mutual trust, and through diligent study and cooperation, our suppliers are invaluable partners in creating the value our customers demand.

- **Implementation of Global Procurement Activities**

  The Company globally establishes partnerships with suppliers to respond to production activities on a global scale, and works to create the functions and values our customers demand based on relationships of mutual trust and through diligent studies and cooperation.

- **Implementation of CSR Procurement**

  Complying with laws and regulations, social norms, and corporate ethics, the Company promotes procurement activities together with suppliers that fulfill their social responsibilities, such as human rights, labor, safety and health, global environmental conservation, information security.

- **Procurement Activities Working Closely with Suppliers**

  In order to achieve product values expected by customers, the Company serves as the contact point of suppliers with respect to information, such as the market trends of materials and goods, new technologies, new materials, and new processes, and works to ensure and maintain the quality of purchased goods, realize competitive prices, and respond to market changes.

For details, please see our Procurement Policy at our Procurement Activities website.
http://www.panasonic.com/global/corporate/management/procurement/policy.html

Ensuring Fair Business

- **Prohibition of Receiving Money and Valuables from Suppliers**

Panasonic has established Rules on Entertainment and Gifts from Suppliers, which lays out strict rules that prohibit receiving any entertainment or meals, money, goods, or property, obtaining any advantages, or receiving other payoffs

from any business partners from which Panasonic purchases goods or obtains services, or who may become such business partners. These rules also both encourage reporting to or consultation with superiors in the workplace, HR or Legal departments, or the internal hotline established for when a violation has been discovered, and lay out disciplinary actions for those who violate these rules.

• Establishing of a Purchasing Ombudsperson Fair Business Hotline

Panasonic promotes fair and equal procurement activities based on our Clean Procurement Declaration.

We have created the Fair Business Hotline, a fair and objective organization, as a means for reporting in the event that any of our procurement staff have violated any laws or regulations, agreements with suppliers, the Panasonic Code of Conduct, or other procurement rules, or is suspected to be about to do so in the near future.

▶ Our Company (Clean Procurement Declaration)
http://www.panasonic.com/global/corporate/management/procurement/declaration.html

Education

Training is spread out over seven sessions in one year, divided into introduction, fundamentals, and practice.

The purpose of this training is for employees to be able to gain a basic knowledge of our approach to CSR and procurement compliance, and to train our personnel to become individuals who can fulfill their responsibilities to society in the context of procurement work.

Responsible Executive and Framework

The person responsible is Senior Managing Director Yoshiyuki Miyabe (as of August 2016).

The department responsible is the Global Procurement Company. Each of our group Companies and their business divisions and other affiliated companies has its own procurement department.

The Global Procurement Company is responsible for CSR procurement activities at the company-wide level. It works together with the group Companies and their business divisions and other affiliated companies to strengthen our efforts in this area.

Each Company and business division draws up plans to follow and promote the company-wide rules and manuals, in order to keep the PDCA cycle in motion. Issues that arise in this process are addressed by the conference and other opportunities composed of executives responsible for the procurement functions in each Company and business division, which devises appropriate solutions.

Responsible Supply Chain: Enforcement of CSR for Suppliers

Issuance of the Panasonic Supply Chain CSR Promotion Guidelines

In March 2016, the Panasonic Group issued the CSR requirements we have created in order to convey our stance on CSR procurement that we want our suppliers to adhere to known as the Panasonic Supply Chain CSR Promotion Guidelines (hereafter, “Procurement Guidelines”), with reference to international standards and standard approaches in industry.

These Procurement Guidelines have been created in Japanese, English, and Chinese, and we are working on distributing them to all of our suppliers via email and ensuring that they have been notified, in addition to posting them on our website.

▶ For details, please see our “For Suppliers” regarding our procurement activities.
http://www.panasonic.com/global/corporate/management/procurement/for-suppliers.html

Related Links

▶ Initiatives for the Prevention of Slavery and Human Trafficking
http://www.panasonic.com/global/corporate/sustainability/human_rights/global_standards.html#anti-slavery

Requests to Our Suppliers for CSR Self-checks

Since fiscal 2016, we have begun requesting that our suppliers start conducting CSR self-checks concerning the state of their initiatives related to human rights, health and safety, the environment, and ethics.

We also analyze and evaluate supplier risks based on the results of these self-checks, holding hearings and audits as necessary.

In fiscal 2016 we requested CSR self-checks from roughly 700 suppliers, mostly in Japan and China.

No suppliers with serious issues were found in this round of self-checks, but we will continue to expand the number of suppliers that we request self-checks of, and we will work to take swift corrective action in the event that we find any issues, and build up a solid, healthy supply chain.

Cooperation with Suppliers in Reducing the Burden on the Environment

We work to reduce the burden we place on the environment through cooperation with our suppliers and logistics partners.
http://www.panasonic.com/global/corporate/sustainability/eco/supplychain.html
http://www.panasonic.com/global/corporate/management/procurement/partner/contest.html

Responsible Supply Chain: Response Regarding Conflict Minerals

Basic Stance on Conflict Minerals

The issues of conflict minerals* are considered important by Panasonic. These minerals are mined in the Democratic Republic of Congo (DRC) and neighboring countries (hereinafter, “the covered countries”), and their extraction funds organizations that violate human rights, cause serious harm to the environment, perpetrate corruption, and are otherwise involved in illegal activity.

To fulfill our social responsibilities in our procurement activities, our policy prohibits the usage of illegally obtained conflict minerals as raw materials.

In the rare event that such use is discovered, efforts aimed at to terminate any usage must be made without delay.

To this end, a notice was issued in December 2010 to the entire group requiring a thorough approach to non-use. In February 2011, efforts began to require checks of our major suppliers’ sources for procuring minerals.

However, in the covered countries, there are also companies and individuals engaged in legal business activities, with no connection to any illegal activities. We also must strive hard to ensure that such companies or individuals’ business activities and livelihoods are not harmed by our efforts to avoid using minerals that are illegally obtained.

To this end, we need to cooperate with a wide range of stakeholders, including countries, companies, and Non-profit organizations (NPOs) that are taking measures to build fair supply chains of minerals in the covered countries. Based on these concepts, Panasonic has been participating in the Organisation for Economic Cooperation and Development’s (OECD) Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas, which began in August 2011.

Alongside our involvement in this project, we are also engaged in other efforts aimed at the implementation of the OECD guidance, building management processes that conform to global standards, with the aim of contributing to international efforts to resolve the problem of conflict minerals.

* Tin, tantalum, tungsten, gold

Panasonic’s Systems for Dealing with Conflict Minerals

Panasonic is making efforts to build company-wide systems, with ultimate responsibility residing with the executive officer in charge of manufacturing and procurement (Senior Managing Director Yoshiyuki Miyabe, as of August 2016). With the start of the four-company system in April 2013, we designated a person at each company to be in charge of investigating and reporting on conflict minerals. Under the aegis of these individuals, each company is making efforts to build systems and carry out investigations based on the characteristics of its own business.

Due Diligence Efforts

In addition to communicating Panasonic’s policies to our suppliers, we also ask them to put reasonable efforts toward being DRC conflict free and procure materials from conflict-free smelters (CFS) to the extent possible.

Investigations of conflict minerals require the cooperation of all suppliers, and all the refiners / smelters they work with. To reduce the burden on suppliers, and to enhance the efficiency of such investigations, we have found it effective to use common investigating tools and explanatory materials. Based on this realization, Panasonic uses, as an investigative tool, the Conflict Minerals Reporting Template (CMRT) issued by the Conflict-Free Sourcing Initiative (CFSI). We are also active participants at investigative briefings held by JEITA’s (Japan Electronics and Information Technology Industries Association) Responsible Minerals Trade Working Group, where we work as a presenter. We make active use of manuals and other handbooks jointly prepared by Japanese automobile makers and the Japan Auto Parts Industries Association for conducting investigations.

Status of Investigations

In fiscal 2016, the Panasonic Group as a whole has surveyed 1,300 supplier companies on conflict minerals, and has had responses from 86% of those surveyed (as of the end of December 2015). Based on the CMRTs that we have collected, we have already conducted a risk analysis and assessment, and have requested further investigations from suppliers according to risks.

A total of 256 smelters have been identified by the Panasonic Group for the four specified minerals. Among those, 65% of tin, 100% of tantalum, 66% of tungsten, and 65% of gold smelters have been certified as CFS (as of the end of December 2015).

At the present time, we have not confirmed any minerals that have served to finance military power either directly or indirectly for the metals that have been reported in the survey as being sourced from covered countries, but we will continue our work of closely examining and identifying smelter information.

Furthermore, through our industry activities, we have urged smelters to acquire CFS certification. Our suppliers continue to perform due diligence, but in the rare event minerals are discovered to have been supportive of conflict, we are asking that these suppliers strive to change their suppliers, or take other steps toward non-use.

Participation in Forums on Implementing Due Diligence for Responsible Mineral Supply Chains

Beginning in 2011, Panasonic has been participating in OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas projects (currently, the Forum on Responsible Mineral Supply Chains). At the forum in November 2013, we learned about ongoing efforts toward conflict-free minerals procurement, including mines, exchanges, and traceability systems for responsible minerals procurement, in Rwanda, and ways to identify mines through analysis of mineral composition and generation. We also participated in the forum in Paris in May 2015, where we were able to exchange views with other interested persons and learn about effective approaches to the problem of conflict minerals.

Industry Cooperation Initiatives

Investigations of conflict minerals require the cooperation of all suppliers in the supply chain. Accordingly, Panasonic has been working with JEITA (Japan Electronics and Information Technology Industries Association) as co-chair and co-leader of the Responsible Minerals Trade Working Group, engaging in educational activities and efforts to make the investigative process more efficient through industry cooperation.

More specifically, we have been working with industry groups both inside and outside Japan and holding seminars and briefings about investigations to promote correct efforts regarding conflict minerals. We have checked information on smelters / refiners, and helped plan the IPC-1755 standards for the sharing of U.S. data on conflict minerals. In November 2013, JEITA's Responsible Minerals Trade Working Group teamed up with Japanese automakers to create the Conflict-Free Sourcing Working Group, in order to engage in dialog with the smelting industry and to accelerate efforts to verify information about smelters / refiners. Panasonic was also a participant in this activity.

Since January 2016, along with other corporate members of JEITA's Responsible Minerals Trade Working Group, we have begun working toward getting smelters that have not yet received CFS certification to do so.

We have also visited smelters in Japan and conducted information exchanges on the conditions and issues surrounding conflict minerals, and have considered what sensible ways of dealing with conflict minerals should look like.

Support for Efforts in Democratic Republic of Congo and Neighboring Countries

Panasonic has engaged in due diligence initiatives to fulfill its social responsibilities as a downstream company, but we think the most important development towards resolving the problem of conflict minerals would be the establishment of mechanisms for responsible procurement of minerals in the covered countries.

Based on this thinking, since March 2013, we have been participating, with industry groups, the U.S. government, and citizen groups, in the Public-Private Alliance for Responsible Minerals Trade (PPA).

The PPA supports efforts to create mechanisms and develop capabilities for certification and traceability of minerals transactions that are unrelated to any conflict in the Africa's Great Lakes region. At the same time, it creates a platform for dialog and cooperation between participating organizations, in the interest of realizing sustainable, responsible minerals trade in the region.

Panasonic is a participant in PPA, and supports efforts aimed at responsible minerals trading, aiming to make a contribution to healthy economic development in the region.

Related Link

▶PPA Web site http://www.resolv.org/site-ppa/

Support for Sustainable Development of the Covered Countries

As Panasonic's corporate citizenship activity in this region, in 2010 we began the Panasonic NPO Support Fund for Africa, as a means of supporting and strengthening the public relations foundation for NPOs / NGOs working to resolve issues in African nations. This is our way of supporting organizations working to resolve issues in African nations. Included among the organizations that Panasonic has supported so far are the NPO Terra Renaissance (2011 to 2013), which works on issues including landmines, small arms, and child soldiers in countries including Uganda and the Democratic Republic of the Congo, and Reborn Kyoto (2014 to 2016), an NPO that provides opportunities for women in Rwanda to take part in vocational training in order to support their economic independence. In March 2016, Panasonic donated roughly 500 of its solar lanterns to the United Nations High Commissioner for Refugees (UNHCR) which carries out humanitarian assistance in the Democratic Republic of the Congo.

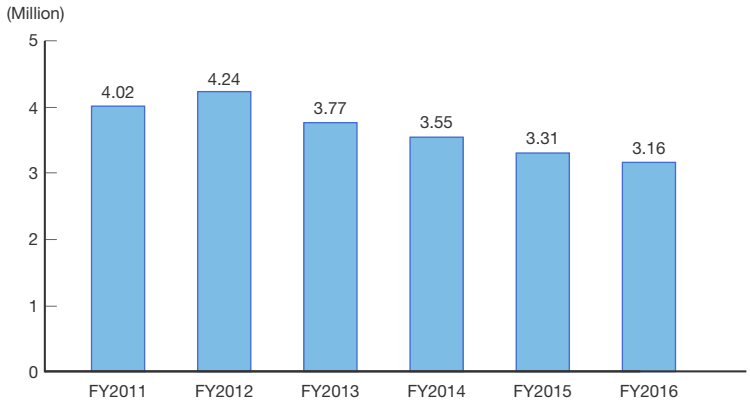
Dialog with NGOs

We are engaged in dialog with NGOs regarding handling of conflict minerals. In March 2015, we participated in an "ethical mobile phone campaign" seminar promoted by the international environmental NGO A Seed Japan, sharing our views on our handling of conflict minerals with representatives of corporations and NGOs. We also exchanged views regarding the importance of sector-cooperative efforts on the handling of conflict minerals. Going forward, we plan to continue this kind of dialog and cooperation.

List of Social Performance Data

Customer Relations

Number of Inquiries at the Customer Care Center (for Individual Customers) Over Time



Repair Service Organization

Number of Service Locations of the CS Company, Panasonic Consumer Marketing Co., Ltd.:
102 locations throughout Japan (as of March 2016)

Number of Service Locations of Panasonic Eco Solutions Techno Service Co., Ltd.:
40 locations throughout Japan (as of March 2016)

Numbers of Repair Service Centers (Overseas Numbers for FY2015)

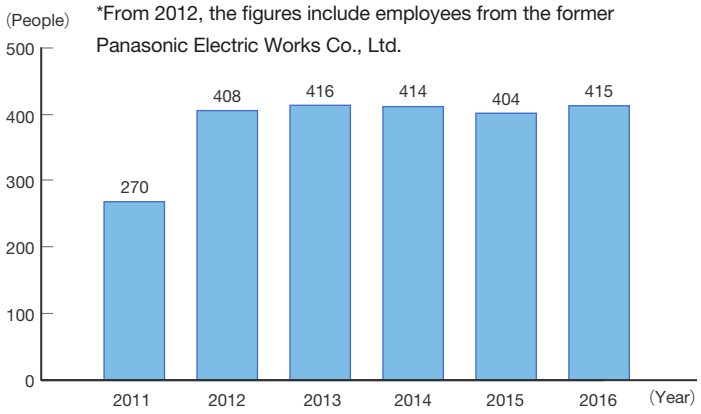
Region	Number of Repair Service Centers
Japan	102
North America	1,605
Latin America	1,032
Europe & CIS	676
Southeast Asia & Pacific	1,714
India, South Asia, Middle East & Africa	1,144
China & Northeast Asia	776

*Japan: CS Company, Panasonic Consumer Marketing Co., Ltd.

Initiatives Related to Improving Customer Satisfaction

Promoting the Acquisition of Consumer Affairs Advisor Credentials

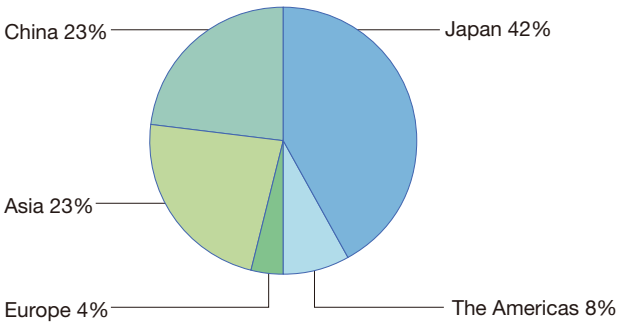
Number of Employees Certified over Time (as of April 2016)



Employees

Proportions of Employees by Region

Total Number of Employees on a Global Consolidated Basis: 249,520 (as of the end of March 2016)



Numbers of Trainees and Time Spent on Training

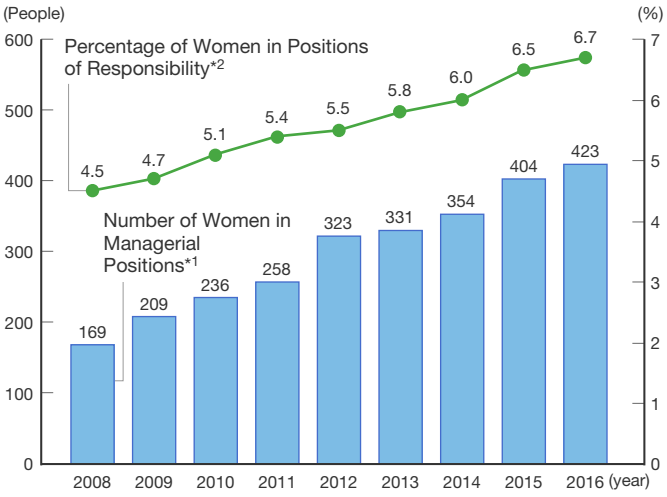
In FY2016, participation in human resources development at the Human Resources Development Company totaled 73,200 person-days.

The participation broken down by type of training among main ones was as follows:

- Job-rank-based Training: 11,729 person-days
- Technology Training: 18,735 person-days
- Manufacturing Training: 26,898 person-days
- Skill-Change Training: 15,386 person-days

*Person-days = number of people × number of days in training

Number of Women in Managerial Positions, Percentage of Women in Positions of Responsibility

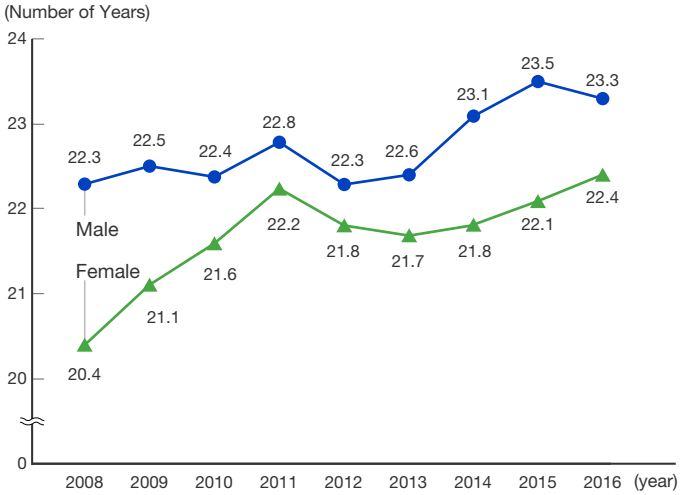


Note: Figures as of April in each year

*1: Managerial position is defined as section leader or higher. Total of Panasonic Corporation and its key domestic affiliates (excluding SANYO Electric Co., Ltd. [SANYO], and including the former Panasonic Electric Works Co., Ltd. [PEW] from 2012)

*2: Positions of responsibility include positions such as chief or assistant chief. Total of Panasonic Corporation and its key domestic affiliates (excluding SANYO, and including the former PEW from 2012)

Average Number of Years of Service



Notes:

Figures as of March in each year

Total of Panasonic Corporation and its key domestic affiliates (excluding SANYO, and including the former PEW from 2012)

Employment of Workers with Disabilities (Japan)

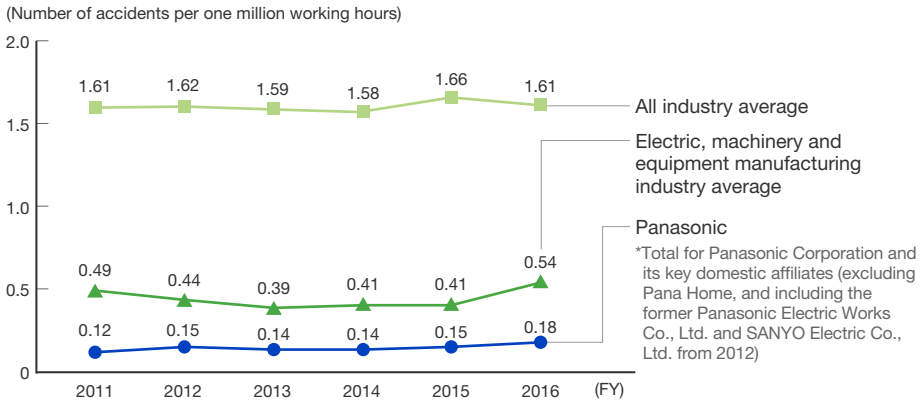
	June 2009	June 2010	June 2011	June 2012	June 2013	June 2014	June 2015
Panasonic Corporation	1.93%	2.01%	2.07%	2.04%	2.15%	2.16%	2.15%
Key Group Member Companies	2.16%	2.10%	2.08%	2.11%	2.21%	2.24%	2.46%
Group (whole)	2.00%	2.07%	2.08%	2.06%	2.17%	2.18%	2.21%

Special Subsidiaries (employee figures are as of June 2015)

Company Name	Year of Establishment	Number of Employees (Number of Persons with Disabilities)	Description of Business
Panasonic Kibi Co., Ltd.	1980	76 (32)	Assembly of video camera LCD units, video accessories
Panasonic Katano Co., Ltd.	1981	38 (30)	Assembly of avionics products, inspection and packaging of AV accessories
Panasonic Associates Shiga Co., Ltd.	1994	55 (32)	Assembly of electronic circuits (for massage chairs, shavers, etc.)
Panasonic Ecology Systems Kyoei Co., Ltd.	1980	32 (21)	Assembly of ventilating fan parts, printing of user manuals
Sanyo Heart Ecology Co., Ltd.	1998	72 (35)	Growing/selling orchids, distribution of company-internal mail
Harima Sanyo Industry Co., Ltd.	1982	45 (22)	Assembly of vacuum cleaner parts, maintenance of internal environment
Sendai Sanyo Industry Co., Ltd.	1992	39 (13)	Manufacture of LED products, light sensors

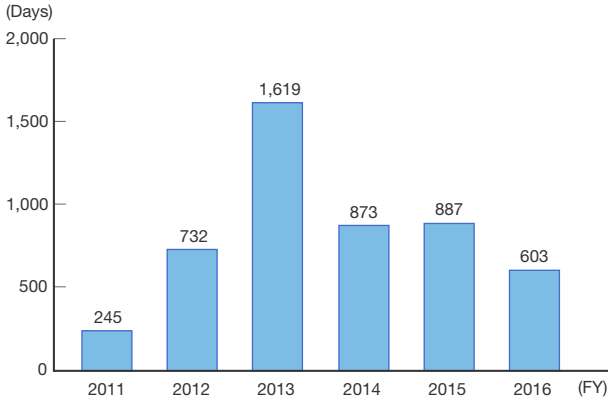
Work-related Accidents

Incident Rate of Work-related Accidents



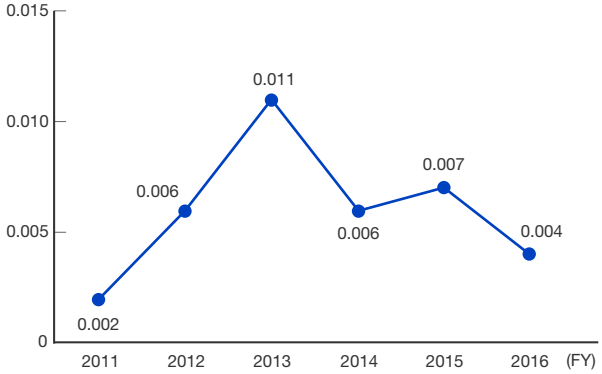
Source: “All industry average” and “Electric, machinery and equipment manufacturing industry average” figures were from the website of the Ministry of Health, Labour and Welfare, Japan.

Time Lost due to Work-related Accidents



Note: Total time-lost of victims due to labor accidents

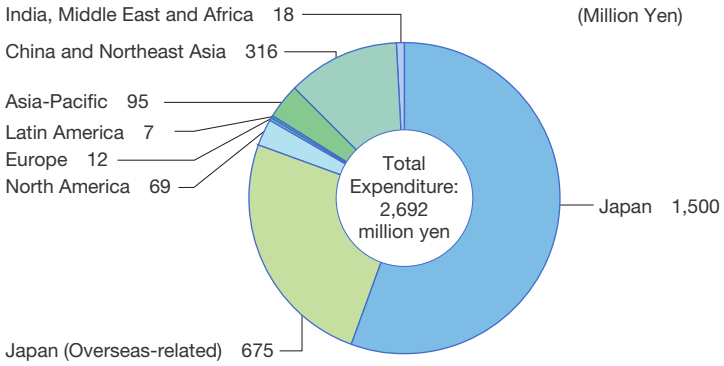
Severity Rate of Accidents



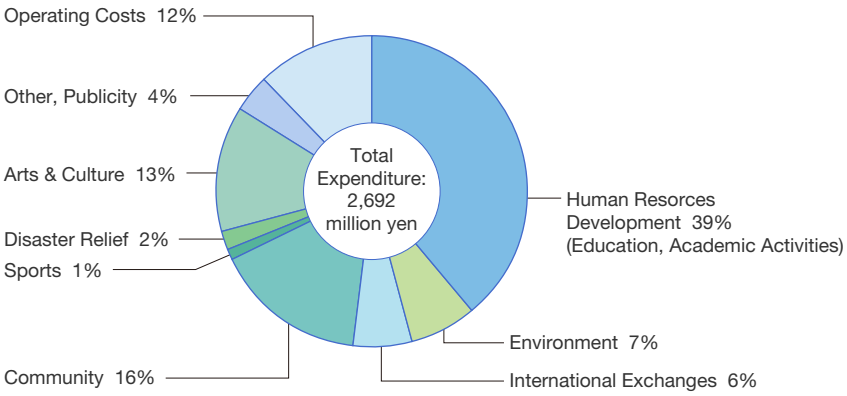
Note: Proportion of time-lost per 1,000 hours of total working hours

Spending on Corporate Citizenship Activities

Spending on Activities by Region (FY2016)



Spending on Activities by Area of Activity (FY2016)



Types of Donations

(million yen)

Type of Donation and amount		Percentage of Total Costs
Charitable Donations	754	28%
Community Investments	1,863	69%
Commercial Initiatives	75	3%
Total	2,692	100%

Methods of Donation

(million yen)

Method of Contribution	Amount
Cash contributions	718
Time: employees volunteering during paid working hours	73
In-kind giving: product or service donations, projects/partnerships, or similar	1,525
Management overhead	376
Total	2,692

External Recognition

Major Recognition in the CSR and Environmental Fields

Dow Jones Sustainability Indices

Panasonic Corporation was named again in 2015 to the Dow Jones Sustainability Indices (DJSI World), one of the world's renowned socially responsible investment (SRI) indexes. This is the twelfth consecutive year that the company was named to DJSI World since 2005. The indexes evaluate the sustainability of companies in terms of the economy, environment, and society. Each year, about 2,500 of the world's largest companies are evaluated, and only the top 10 percent of these companies are named to DJSI World.

▶DJSI website http://www.sustainability-indices.com/

FTSE4Good Index Series

Panasonic Corporation has again been selected for the FTSE4Good Index Series, one of the world's leading socially responsible investment (SRI) index series. The series was begun by the London-based FTSE Group in 2001, and Panasonic has been included for 16 consecutive years since the series was launched.

▶FTSE website http://www.ftse.com/products/indices/FTSE4Good

RobecoSAM Sustainability Rating

Panasonic was awarded the Bronze Class distinction in the 2016 CSR category by RobecoSAM (Sustainable Asset Management), one of the most highly recognized asset management companies for sustainability investments.

▶RobecoSAM website
http://www.robecosam.com/en/sustainability-insights/library/the-sustainability-yearbook.jsp

CDP 2015

The U.K.-based non-profit organization CDP (formerly the Carbon Disclosure Project) announced its thirteenth survey results on the world's largest companies in regard to greenhouse gas emissions and strategies for climate change in the fall of 2015. Panasonic has been highly scored for its disclosure, and was listed in the Climate Disclosure Leadership Index in the CDP Japan 500 Climate Change Report.

Nikkei Environmental Management Survey

Panasonic was ranked 7th in the manufacturer category of the 19th Nikkei Environmental Management Survey announced in January 2016. The Company scored particularly high marks in the resources recycling category.

Environmental Brand Survey by Nikkei BP Eco Management Forum

Panasonic ranked 3rd, moved up 1 place from the previous year, in the ranking of the 16th Environmental Brand Survey conducted in 2015 by Nikkei BP Eco Management Forum. The Company received high evaluations in the areas such as energy saving, creation, and storage; resources recycling; as well as environmental communication.

Environment-related Awards

Environmental activities by Panasonic gained recognition again in fiscal 2016, with various awards received globally.

Major Awards in the Environmental Field (Fiscal 2016)

Category		Presenter and awards	Specific prize	Recipient companies and details
Environmental sustainability management		Osaka Prefecture (Japan) Osaka Environment Award 2015	Encouragement Award Collaboration Award	Panasonic Corporation, Eco Solutions Company Biodiversity conservation activities by biotopes in the company premises (Collaboration Award: jointly awarded with Osaka Prefecture University and Research Institute of Environment, Agriculture and Fisheries, Osaka Prefecture)
		Kids Design Association (Japan) Kids Design Award 2015	Designs to create the future of children-education and understanding category	PanaHome Corporation General interactive learning at “Tsunagari-no Hiroba” (Community Ties Plaza) and “Sumai to Kurashi no Jyohokan - Senri” (House and Lifestyle Information Center, Senri)
CO_2 Reduction	Products & services	Energy Conservation Center, Japan Energy Conservation Grand Prize 2015 (Products and Business Models category)	Chairman’s Prize of ECCJ	Panasonic Ecology Systems Co., Ltd. (jointly awarded with DAIHEN Corporation) Cooling unit for solar energy power conditioners
			Chairman’s Prize of ECCJ	Panasonic Corporation, Appliances Company Air Conditioner Company, Air Conditioner Business Division WX Series Eco Navi-equipped Home Air Conditioners
		Okochi Memorial Foundation (Japan) 62nd Okochi Memorial Prize	Okochi Memorial Prize for Production Technology	Panasonic Corporation Development of multi-layer circuit board material with high-frequency capacity, low transmission loss, and high heat resistance
		Reader’s Digest (Taiwan) Trusted Brands Asia 2015	Platinum Awards, and others	Panasonic Corporation Refrigerators and washing machines, and others
		Heat Pump & Thermal Storage Technology Center of Japan 2015 Demand Side Management Award	Chairman’s Awards	Panasonic Corporation High efficient double-effect absorption chiller, WE Type steam-driven Genelink
			Chairman’s Awards	Panasonic Corporation (jointly awarded with Hitachi Appliances, Inc. and Kawasaki Thermal Engineering Co.,Ltd.) Power Saving Natural Chiller
		Association for Resilience Japan Japan Resilience Award 2016	Best Resilience Award (Energy)	Panasonic Corporation (jointly awarded with Tokyo Gas Co., Ltd.) Household fuel cell cogeneration system ENEFARM
		Japan Institute of Design Promotion 2015 Good Design Award	Good Design Long Life Design Award, and others	Panasonic Corporation Lighting fixtures HomeArchi, and others
		The Nikkan Kogyo Shimbun, Ltd., (Japan) 18th Grand Prix Contest for Ozone Layer Preservation & Global Warming Prevention	Award for Excellence	Panasonic Corporation Development of new freezers compatible with CO_2 coolants
		Kanagawa Prefecture/Kanagawa Conference for the Promotion of Global Environmental Preservation 2015 Kanagawa Global Environment Award	Kanagawa Smart Energy Planning Category	Fujisawa Sustainable Smart Town (SST) Council Realization of a smart town with autonomous-symbiosis energy management
		Aichi Prefecture (Japan) 2016 Aichi Environmental Award	Award for Excellence	Panasonic Ecology Systems Co., Ltd. Cooling unit for photovoltaic power generation power conditioners
		iF International Forum Design (Germany) iF Design Award 2016	Product Category/Packaging Category	Panasonic Corporation eneloop tones Organic, and others
		Kids Design Association(Japan) Kids Design Award 2015	Designs to contribute to the security and safety of children - general category, and others	PanaHome Corporation Hepafilter Equipped Ventilation System with ECO NAVI, and others
	Energy conservation activities	Energy Conservation Center, Japan Energy Conservation Grand Prize 2015 (Products and Business Models category)	Minister’s Prize, the Ministry of Economy, Trade and Industry (Electricity conservation category)	Panasonic Corporation, Automotive & Industrial Systems Company Rechargeable Battery Business Division, Kasai Division Establishment of a new energy conservation method with zero investment through mathematical operations at an automobile battery factory
Resources Recycling	Reduction in resources used	Nikkei Inc. (Japan) 2015 Nikkei Superior Products and Services Awards	Nikkei MJ Grand Prize Awards for Excellence	Panasonic Corporation “J Concept” appliances series
		Japan Industrial Designer’s Association JIDA Design Museum Selection Vol.17 2015	Gold Selection, and others	Panasonic Corporation J Concept Series Paper Dust Bag Vacuum Cleaner MC-JP500G/JP500GS, and others
		International Association for Universal Design (japan) IAUD Award 2015	Category of Product Design Gold Award , and others	Panasonic Corporation “J Concept” appliances: Proposing high-quality living in harmony with the Japanese lifestyle, and others
	Use of Recycled Resources	Japan Environmental Management Association for Industry FY 2015 Awards for Resources Recirculation Technologies and Systems	Minister’s Prize, the Ministry of Economy, Trade and Industry	Panasonic Corporation, Appliances Company, Production Engineering Division Panasonic Eco Technology Center Co., Ltd. Recycling of mixed resin recovered from used home appliances
		Osaka Prefecture (Japan) 2015 Osaka Environment Award	Encouragement Award	Panasonic Corporation, Production Engineering Division/Environmental Technology Practical Use Group Development and practical realization of energy saving and recycling technologies for resolution of social problems
Water Resource Conservation		Public Utilities Board, Singapore Water Efficient Building	Industry (Electronics) Sector Silver Award	Panasonic Factory Solutions Asia Pacific
Environmental communication		The Nikkan Kogyo Shimbun, Ltd., (Japan) 50th Japan Industry Advertisement Award	Nikkan Kogyo Shimbun Advertising Grand Award	Panasonic Corporation “Light Solutions” Three-item Series advertisement
		Dentsu Advertising Awards Screening Committee(Japan) 68th Dentsu Advertising Awards	Dentsu Advertising Grand Award	Panasonic Corporation Panasonic’s River Monitoring Camera System, and others
		Fujisankei Communications Group (Japan) 44th Fujisankei Group’s Advertising Grand Award	Media Mix Category Grand Prize	Panasonic Corporation “J Concept” Series
		Fuji Sankei Business i (Japan) 54th Business Advertisement Grand Award	Business Advertisement Grand Award	Panasonic Corporation ”Lighting Series” advertisement
		League of American Communications Professionals LLC 2014/15 Vision Awards Annual Report Competition	Overall Winner Best Report Narrative	Panasonic Corporation Annual Report 2015
		Ministry of the Environment / Global Environmental Forum (Japan) 19th Environmental Communication Awards	Award for Excellence	Panasonic Corporation Sustainability Data Book 2015

Note: Company names are given as of the time of award.

Content Index: EICC Code of Conduct

Panasonic adheres to The Electronic Industry Citizenship Coalition® (EICC®) Code of Conduct Version 5.1 as follows.

	Standards	Location of Information at Sustainability Website or Other Relevant Websites, and Notes (URL)	Management System	Location of Information at Sustainability Website or Other Relevant Websites, and Notes (URL)
A Labor	1) Freely Chosen Employment 2) Young Workers	Prohibition of Forced Labor, Effective Abolition of Child Labor, and Attention to Young Workers http://www.panasonic.com/global/corporate/sustainability/human_rights/approach#labor	1) Company Commitment	Respect for Human Rights - Policy http://www.panasonic.com/global/corporate/sustainability/human_rights.html#policy
		Employing Foreign Workers http://www.panasonic.com/global/corporate/sustainability/human_rights/approach#foreign		
	3) Working Hours	Managing Working Hours http://www.panasonic.com/global/corporate/sustainability/human_rights/approach#hours	2) Management Accountability and Responsibility	Respect for Human Rights - Responsible Executive and Framework http://www.panasonic.com/global/corporate/sustainability/human_rights.html#structure
	4) Wages and Benefits	Managing Wages http://www.panasonic.com/global/corporate/sustainability/human_rights/approach#wages	3) Legal and Customer Requirements	Respect for Human Rights - Management System http://www.panasonic.com/global/corporate/sustainability/human_rights.html#management
				Respect for Human Rights - Initiatives Relating to Global Standards, Legislation, Regulations, and So Forth http://www.panasonic.com/global/corporate/sustainability/human_rights/global_standards
	5) Humane Treatment	Prohibition of Discrimination http://www.panasonic.com/global/corporate/sustainability/human_rights/approach#discrimination	4) Risk Assessment and Risk Management	Respect for Human Rights - Management System http://www.panasonic.com/global/corporate/sustainability/human_rights.html#management
				Respect for Human Rights: Performance Evaluation http://www.panasonic.com/global/corporate/sustainability/human_rights/performance.html
	6) Non-Discrimination	Prohibition of Discrimination http://www.panasonic.com/global/corporate/sustainability/human_rights/approach#discrimination	5) Improvement Objectives	Respect for Human Rights: Performance Evaluation http://www.panasonic.com/global/corporate/sustainability/human_rights/performance.html
	7) Freedom of Association	The Freedom of Association and Respect for the Right to Collective Bargaining http://www.panasonic.com/global/corporate/sustainability/human_rights/approach#freedom	6) Training	Respect for Human Rights - Education http://www.panasonic.com/global/corporate/sustainability/human_rights.html#education
			7) Communication	Respect for Human Rights - Management System (to employees) http://www.panasonic.com/global/corporate/sustainability/human_rights.html#management
				Respect for Human Rights - Policy (to employees) http://www.panasonic.com/global/corporate/sustainability/human_rights.html#policy
			8) Worker Feedback and Participation	Respect for Human Rights - Management System http://www.panasonic.com/global/corporate/sustainability/human_rights.html#management
				Respect for Human Rights: Performance Evaluation http://www.panasonic.com/global/corporate/sustainability/human_rights/performance.html
			9) Audits and Assessments	Respect for Human Rights - Management System http://www.panasonic.com/global/corporate/sustainability/human_rights.html#management
				Respect for Human Rights: Performance Evaluation http://www.panasonic.com/global/corporate/sustainability/human_rights/performance.html
			10) Corrective Action Process	Respect for Human Rights - Management System http://www.panasonic.com/global/corporate/sustainability/human_rights.html#management
				Respect for Human Rights: Performance Evaluation http://www.panasonic.com/global/corporate/sustainability/human_rights/performance.html
			11) Documentation and Records	Respect for Human Rights - Management System http://www.panasonic.com/global/corporate/sustainability/human_rights.html#management
			12) Supplier Responsibility	Responsible Supply Chain: Enforcement of CSR for Suppliers http://www.panasonic.com/global/corporate/sustainability/supply_chain/suppliers
B Health and Safety	1) Occupational Safety	Management System *The respective standards are covered within the occupational health and safety management system implemented at each company location. Please also refer to the following websites for relevant information. Occupational Health and Safety Occupational Health and Safety : Performance Evaluation http://www.panasonic.com/global/corporate/sustainability/health_safety.html#management http://www.panasonic.com/global/corporate/sustainability/health_safety.html http://www.panasonic.com/global/corporate/sustainability/health_safety/performance.html	1) Company Commitment	Occupational Health and Safety - Policy - Panasonic Code of Conduct http://www.panasonic.com/global/corporate/sustainability/health_safety.html#policy
				Occupational Health and Safety - Policy - Panasonic Occupational Safety and Health Policy http://www.panasonic.com/global/corporate/sustainability/health_safety.html#policy
	2) Emergency Preparedness		2) Management Accountability and Responsibility	Occupational Health and Safety - Responsible Executive and Framework http://www.panasonic.com/global/corporate/sustainability/health_safety.html#structure
	3) Occupational Injury and Illness		3) Legal and Customer Requirements	Occupational Health and Safety - Policy - Activity Guidelines for Occupational Safety and Health 1. Legal and regulatory compliance http://www.panasonic.com/global/corporate/sustainability/health_safety.html#policy
	4) Industrial Hygiene		4) Risk Assessment and Risk Management	Occupational Health and Safety - Policy - Activity Guidelines for Occupational Safety and Health 5. Removal and reduction of hazards and potential causes of damage http://www.panasonic.com/global/corporate/sustainability/health_safety.html#policy
				Occupational Health and Safety - Management System http://www.panasonic.com/global/corporate/sustainability/health_safety.html#management
	5) Physically Demanding Work		5) Improvement Objectives	Occupational Health and Safety - Policy - Activity Guidelines for Occupational Safety and Health 6. Setting goals and formulating and implementing a plan for occupational safety and health management http://www.panasonic.com/global/corporate/sustainability/health_safety.html#policy
	6) Machine Safeguarding		6) Training	Occupational Health and Safety - Policy - Activity Guidelines for Occupational Safety and Health 8. Education and training http://www.panasonic.com/global/corporate/sustainability/health_safety.html#policy
				Occupational Health and Safety - Management System http://www.panasonic.com/global/corporate/sustainability/health_safety.html#management

	7) Sanitation, Food, and Housing		7) Communication	Occupational Health and Safety - Management System (to employees) http://www.panasonic.com/global/corporate/sustainability/health_safety.html#management
				Occupational Health and Safety - Policy - Panasonic Code of Conduct (to employees) http://www.panasonic.com/global/corporate/sustainability/health_safety.html#policy
				Occupational Health and Safety - Policy - Panasonic Occupational Safety and Health Policy (to employees) http://www.panasonic.com/global/corporate/sustainability/health_safety.html#policy
	8) Health and Safety Communication		8) Worker Feedback and Participation	Occupational Health and Safety - Policy - Activity Guidelines for Occupational Safety and Health 4. Definitions of roles, authorities, and responsibilities, and organizational maintenance http://www.panasonic.com/global/corporate/sustainability/health_safety.html#policy
				Occupational Health and Safety - Responsible Executive and Framework http://www.panasonic.com/global/corporate/sustainability/health_safety.html#structure
				Occupational Health and Safety: Performance Evaluation http://www.panasonic.com/global/corporate/sustainability/health_safety/performance.html
			9) Audits and Assessments	Occupational Health and Safety - Policy - Activity Guidelines for Occupational Safety and Health 7. Auditing, and review by management http://www.panasonic.com/global/corporate/sustainability/health_safety.html#policy
			10) Corrective Action Process	Occupational Health and Safety - Policy - Activity Guidelines for Occupational Safety and Health 7. Auditing, and review by management http://www.panasonic.com/global/corporate/sustainability/health_safety.html#policy
			11) Documentation and Records	Occupational Health and Safety - Management System http://www.panasonic.com/global/corporate/sustainability/health_safety.html#management
			12) Supplier Responsibility	Responsible Supply Chain: Enforcement of CSR for Suppliers http://www.panasonic.com/global/corporate/sustainability/supply_chain/suppliers

C Environmental	1) Environmental Permits and Reporting	Environmental Management Systems http://www.panasonic.com/global/corporate/sustainability/eco/governance/ems.html	1) Company Commitment	Environmental Policy http://www.panasonic.com/global/corporate/sustainability/eco.html
	2) Pollution Prevention and Resource Reduction	Eco-conscious Products and Factories http://www.panasonic.com/global/corporate/sustainability/eco/gp_gf.html	2) Management Accountability and Responsibility	Environmental Governance http://www.panasonic.com/global/corporate/sustainability/eco/governance.html
		Global Warming Prevention at Factories and Offices http://www.panasonic.com/global/corporate/sustainability/eco/co2/site.html		Environmental Management Systems http://www.panasonic.com/global/corporate/sustainability/eco/governance/ems.html
		Business of Factory Energy Conservation Support Service http://www.panasonic.com/global/corporate/sustainability/eco/co2/service.html	3) Legal and Customer Requirements	Environmental Governance http://www.panasonic.com/global/corporate/sustainability/eco/governance.html
		Green Logistics http://www.panasonic.com/global/corporate/sustainability/eco/co2/logistics.html		Environmental Management Systems http://www.panasonic.com/global/corporate/sustainability/eco/governance/ems.html
		Resources Recycling http://www.panasonic.com/global/corporate/sustainability/eco/resource.html		Environmental Risk Management http://www.panasonic.com/global/corporate/sustainability/eco/governance/risk.html
		Reduction in Resources Used http://www.panasonic.com/global/corporate/sustainability/eco/resource/reduce.html		Environmental Information Systems http://www.panasonic.com/global/corporate/sustainability/eco/governance/it.html
		Product Recycling http://www.panasonic.com/global/corporate/sustainability/eco/resource/recovery.html	4) Risk Assessment and Risk Management	Water Resource Conservation http://www.panasonic.com/global/corporate/sustainability/eco/water.html
		Use of Recycled Resources http://www.panasonic.com/global/corporate/sustainability/eco/resource.html		Environmental Governance http://www.panasonic.com/global/corporate/sustainability/eco/governance.html
		Factory Waste Management – Zero Waste Emissions http://www.panasonic.com/global/corporate/sustainability/eco/resource/zero.html		Environmental Management Systems http://www.panasonic.com/global/corporate/sustainability/eco/governance/ems.html
		Water Resource Conservation http://www.panasonic.com/global/corporate/sustainability/eco/water.html		Environmental Risk Management http://www.panasonic.com/global/corporate/sustainability/eco/governance/risk.html
	3) Hazardous Substances	Chemical Substance Management http://www.panasonic.com/global/corporate/sustainability/eco/chemical.html		Environmental Information Systems http://www.panasonic.com/global/corporate/sustainability/eco/governance/it.html
	4) Wastewater and Solid Waste	Eco-conscious Products and Factories http://www.panasonic.com/global/corporate/sustainability/eco/gp_gf.html	5) Improvement Objectives	Environmental Policy http://www.panasonic.com/global/corporate/sustainability/eco.html
		Resources Recycling http://www.panasonic.com/global/corporate/sustainability/eco/resource.html	6) Training	Environmental Management Systems http://www.panasonic.com/global/corporate/sustainability/eco/governance/ems.html
		Reduction in Resources Used http://www.panasonic.com/global/corporate/sustainability/eco/resource/reduce.html		Environmental Risk Management http://www.panasonic.com/global/corporate/sustainability/eco/governance/risk.html
		Product Recycling http://www.panasonic.com/global/corporate/sustainability/eco/resource/recovery.html		Human Resource Development http://www.panasonic.com/global/corporate/sustainability/eco/hr.html
		Use of Recycled Resources http://www.panasonic.com/global/corporate/sustainability/eco/resource.html	7) Communication	Environmental Policy (to employees, suppliers, and customers) http://www.panasonic.com/global/corporate/sustainability/eco.html
		Factory Waste Management – Zero Waste Emissions http://www.panasonic.com/global/corporate/sustainability/eco/resource/zero.html		Collaboration Across the Supply Chain (to suppliers) http://www.panasonic.com/global/corporate/sustainability/eco/supplychain.html
		Water Resource Conservation http://www.panasonic.com/global/corporate/sustainability/eco/water.html		Environmental Communication (to customers, and suppliers) http://www.panasonic.com/global/corporate/sustainability/eco/communication.html
	5) Air Emissions	Eco-conscious Products and Factories http://www.panasonic.com/global/corporate/sustainability/eco/gp_gf.html	8) Worker Feedback and Participation	Environmental Governance http://www.panasonic.com/global/corporate/sustainability/eco/governance.html
		Chemical Substance Management http://www.panasonic.com/global/corporate/sustainability/eco/chemical.html		Environmental Management Systems http://www.panasonic.com/global/corporate/sustainability/eco/governance/ems.html
	6) Materials Restrictions	Chemical Substance Management http://www.panasonic.com/global/corporate/sustainability/eco/chemical.html		Environmental Risk Management http://www.panasonic.com/global/corporate/sustainability/eco/governance/risk.html
		Biodiversity Conservation http://www.panasonic.com/global/corporate/sustainability/eco/biodiversity.html		Environmental Information Systems http://www.panasonic.com/global/corporate/sustainability/eco/governance/it.html
		Collaboration Across the Supply Chain http://www.panasonic.com/global/corporate/sustainability/eco/supplychain.html	9) Audits and Assessments	Environmental Governance http://www.panasonic.com/global/corporate/sustainability/eco/governance.html
	7) Storm Water Management	(We currently do not disclose the information.) —		Environmental Management Systems http://www.panasonic.com/global/corporate/sustainability/eco/governance/ems.html
	8) Energy Consumption and Greenhouse Gas Emissions	Eco-conscious Products and Factories http://www.panasonic.com/global/corporate/sustainability/eco/gp_gf.html		Environmental Risk Management http://www.panasonic.com/global/corporate/sustainability/eco/governance/risk.html
		Energy-saving/creating/storing Products http://www.panasonic.com/global/corporate/sustainability/eco/co2/product.html		Environmental Information Systems http://www.panasonic.com/global/corporate/sustainability/eco/governance/it.html

		Global Warming Prevention at Factories and Offices http://www.panasonic.com/global/corporate/sustainability/eco/co2/site.html	10) Corrective Action Process	Environmental Governance http://www.panasonic.com/global/corporate/sustainability/eco/governance.html
		Global Warming Mitigation and Adaptation http://www.panasonic.com/global/corporate/sustainability/eco/co2/solution.html		Environmental Management Systems http://www.panasonic.com/global/corporate/sustainability/eco/governance/ems.html
		Business of Factory Energy Conservation Support Service http://www.panasonic.com/global/corporate/sustainability/eco/co2/service.html		Environmental Risk Management http://www.panasonic.com/global/corporate/sustainability/eco/governance/risk.html
		Green Logistics http://www.panasonic.com/global/corporate/sustainability/eco/co2/logistics.html		Environmental Information Systems http://www.panasonic.com/global/corporate/sustainability/eco/governance/it.html
		Collaboration Across the Supply Chain http://www.panasonic.com/global/corporate/sustainability/eco/supplychain.html	11) Documentation and Records	Environmental Management Systems http://www.panasonic.com/global/corporate/sustainability/eco/governance/ems.html
				Environmental Information Systems http://www.panasonic.com/global/corporate/sustainability/eco/governance/it.html
			12) Supplier Responsibility	Environmental Policy http://www.panasonic.com/global/corporate/sustainability/eco.html
				Collaboration Across the Supply Chain http://www.panasonic.com/global/corporate/sustainability/eco/supplychain.html
D Ethics	1) Business Integrity	Preventing Corruption http://www.panasonic.com/global/corporate/sustainability/fair_practices/fairtrade#decrease	1) Company Commitment	Fair Operating Practices - Policy http://www.panasonic.com/global/corporate/sustainability/fair_practices.html#policy
	2) No Improper Advantage	Policy http://www.panasonic.com/global/corporate/sustainability/fair_practices.html#policy	2) Management Accountability and Responsibility	Fair Operating Practices - Responsible Executive and Framework http://www.panasonic.com/global/corporate/sustainability/fair_practices.html#structure
		Preventing Corruption http://www.panasonic.com/global/corporate/sustainability/fair_practices/fairtrade#decrease		
	3) Disclosure of Information	Panasonic Code of Conduct Chapter 2. II-5. Information Disclosure http://www.panasonic.com/global/corporate/management/code-of-conduct/chapter-2.html#section2-5	3) Legal and Customer Requirements	Panasonic Code of Conduct Chapter 2. II-3. Compliance with Laws, Regulations and Business Ethics (3) Thorough Observation of Relevant Laws and Regulations http://www.panasonic.com/global/corporate/management/code-of-conduct/chapter-2.html#section2-3
	4) Intellectual Property	Panasonic Code of Conduct Chapter 2. I-1. Research and Development (3) Respect for Intellectual Property Rights http://www.panasonic.com/global/corporate/management/code-of-conduct/chapter-2.html#section1-1	4) Risk Assessment and Risk Management	Fair Operating Practices - Management System http://www.panasonic.com/global/corporate/sustainability/fair_practices.html#management
	5) Fair Business, Advertising and Competition	Responsible Publicity and Advertising http://www.panasonic.com/global/corporate/sustainability/communication.html	5) Improvement Objectives	Fair Operating Practices - Performance Evaluation http://www.panasonic.com/global/corporate/sustainability/fair_practices/performance.html
	6) Protection of Identity and Non-Retaliation	Whistleblowing Systems http://www.panasonic.com/global/corporate/sustainability/fair_practices/whistleblowing.html	6) Training	Fair Operating Practices - Compliance Training http://www.panasonic.com/global/corporate/sustainability/fair_practices.html#education
	7) Responsible Sourcing of Minerals	Responsible Supply Chain: Response Regarding Conflict Minerals http://www.panasonic.com/global/corporate/sustainability/supply_chain/minerals.html	7) Communication	Fair Operating Practices - Management System (to employees) http://www.panasonic.com/global/corporate/sustainability/fair_practices.html#management
				Fair Operating Practices - Policy (to employees) http://www.panasonic.com/global/corporate/sustainability/fair_practices.html#policy
	8) Privacy	Information Security and Protection of Personal Information http://www.panasonic.com/global/corporate/sustainability/security	8) Worker Feedback and Participation	Fair Operating Practices - Performance Evaluation http://www.panasonic.com/global/corporate/sustainability/fair_practices/performance.html
				Fair Operating Practices - Whistleblowing Systems http://www.panasonic.com/global/corporate/sustainability/fair_practices/whistleblowing.html
			9) Audits and Assessments	Fair Operating Practices - Performance Evaluation http://www.panasonic.com/global/corporate/sustainability/fair_practices/performance.html
			10) Corrective Action Process	Fair Operating Practices - Performance Evaluation http://www.panasonic.com/global/corporate/sustainability/fair_practices/performance.html
			11) Documentation and Records	Fair Operating Practices - Management System http://www.panasonic.com/global/corporate/sustainability/fair_practices.html#management
			12) Supplier Responsibility	Responsible Supply Chain: Enforcement of CSR for Suppliers http://www.panasonic.com/global/corporate/sustainability/supply_chain/suppliers
E Management System	1) Company Commitment	Our Unchanging Management Philosophy and Sustainability http://www.panasonic.com/global/corporate/sustainability/management/philosophy.html		
		Panasonic Code of Conduct http://www.panasonic.com/global/corporate/management/code-of-conduct/list.html		
	2) Management Accountability and Responsibility	System for the Promotion of CSR Activities http://www.panasonic.com/global/corporate/sustainability/management/structure.html		
	3) Legal and Customer Requirements	System for the Promotion of CSR Activities - Respecting Global Standards, Norms, Guidelines, and Initiatives http://www.panasonic.com/global/corporate/sustainability/management/structure.html		
	4) Risk Assessment and Risk Management	Risk Management http://www.panasonic.com/global/corporate/sustainability/management/riskmanagement.html		
	5) Improvement Objectives	*Please refer to 5) Improvement Objectives of each section, A through D.		
	6) Training	Compliance Training (training on the Code of Conduct) http://www.panasonic.com/global/corporate/sustainability/fair_practices.html#education		

	7) Communication	Our Unchanging Management Philosophy and Sustainability (to employees) http://www.panasonic.com/global/corporate/sustainability/management/philosophy.html		
		Panasonic Code of Conduct (to employees) http://www.panasonic.com/global/corporate/management/code-of-conduct/list.html		
		Sustainability Initiatives website (to customers) http://www.panasonic.com/global/corporate/sustainability.html		
		Responsible Supply Chain - Policy (to suppliers) http://www.panasonic.com/global/corporate/sustainability/supply_chain.html#policy		
		Responsible Supply Chain: Enforcement of CSR for Suppliers (to suppliers) http://www.panasonic.com/global/corporate/sustainability/supply_chain/suppliers		
	8) Worker Feedback and Participation	Risk Management - Organizational System http://www.panasonic.com/global/corporate/sustainability/management/riskmanagement.html#structure		
		Risk Management - Increasing Risk Sensitivity http://www.panasonic.com/global/corporate/sustainability/management/riskmanagement.html#education		
	9) Audits and Assessments	Fair Operating Practices - Management System (checks on the status of observance and practice of the Code of Conduct) http://www.panasonic.com/global/corporate/sustainability/fair_practices.html#management		
		Fair Operating Practices - Performance Evaluation (checks on the status of observance and practice of the Code of Conduct) http://www.panasonic.com/global/corporate/sustainability/fair_practices/performance.html		
	10) Corrective Action Process	Fair Operating Practices - Management System (checks on the status of observance and practice of the Code of Conduct) http://www.panasonic.com/global/corporate/sustainability/fair_practices.html#management		
		Fair Operating Practices - Performance Evaluation (checks on the status of observance and practice of the Code of Conduct) http://www.panasonic.com/global/corporate/sustainability/fair_practices/performance.html		
	11) Documentation and Records	*Please refer to 11) Documentation and Records of each section, A through D.		
	12) Supplier Responsibility	Responsible Supply Chain - Management System http://www.panasonic.com/global/corporate/sustainability/supply_chain.html#management		

Independent Assurance Report by KPMG AZSA Sustainability Co., Ltd.

Independent Assurance Report

To the Board of Directors of Panasonic Corporation

We were engaged by Panasonic Corporation (the "Company") to undertake a limited assurance engagement of the environmental performance indicators listed in the table below for the period from April 1, 2015 to March 31, 2016 (the "Indicators") included in its Sustainability Data Book 2016 (the "Data Book") for the fiscal year ended March 31, 2016.

Table: The Indicators subject to the independent assurance and corresponding page numbers in the Data book

Indicators	Pages
Size of indirect contribution in reducing CO_2 emissions	32
CO_2 emissions from the use of our major products	33
Size of Contribution in Reducing CO_2 Emissions through Energy-saving Products	33
Size of Contribution in Reducing CO_2 Emissions through Energy-creating Products	34
CO_2 Emissions in Production Activities	37
Size of Contribution in Reducing CO_2 Emissions through Production Activities	38
Emissions (CO_2-equivalent) of GHGs Other than CO_2 from Energy Use in Production Activities	40

Indicators	Pages
Total GHG Emissions (CO_2-equivalent) in Production Activities (Scope 1 emissions)	40
Total GHG Emissions (CO_2-equivalent) in Production Activities (Scope 2 emissions)	40
CO_2 Emissions from Non-manufacturing Sites (self-owned office buildings in Japan)	41
CO_2 Emissions from domestic transportation within Japan	42
Amount of Total Wastes Including Revenue-generating Waste	56
Water Consumption in Production Activities	58
Release/Transfer of Substances Requiring Management (Total)	65

The Company's Responsibility

The Company is responsible for the preparation of the Indicators in accordance with its own reporting criteria (the "Company's reporting criteria"), as described in the Data Book, which are derived, among others, from the G4 Sustainability Reporting Guidelines of the Global Reporting Initiative and Environmental Reporting Guidelines of Japan's Ministry of the Environment.

Our Responsibility

Our responsibility is to express a limited assurance conclusion on the Indicators based on the procedures we have performed. We conducted our engagement in accordance with 'International Standard on Assurance Engagements (ISAE) 3000, Assurance Engagements other than Audits or Reviews of Historical Financial Information', 'ISAE 3410, Assurance Engagements on Greenhouse Gas Statements', issued by the International Auditing and Assurance Standards Board, and the 'Practical Guidelines for the Assurance of Sustainability Information' of the Japanese Association of Assurance Organizations for Sustainability Information. The limited assurance engagement consisted of making inquiries, primarily of persons responsible for the preparation of information presented in the Data Book, and applying analytical and other procedures, and the procedures performed vary in nature from, and are less in extent than for, a reasonable assurance engagement. The level of assurance provided is thus not as high as that provided by a reasonable assurance engagement. Our assurance procedures included:

- Interviewing with the Company's responsible personnel to obtain an understanding of its policy for the preparation of the Data Book and reviewing the Company's reporting criteria.
- Inquiring about the design of the systems and methods used to collect and process the Indicators.
- Performing analytical reviews of the Indicators.
- Examining, on a test basis, evidence supporting the generation, aggregation and reporting of the Indicators in conformity with the Company's reporting criteria, and also recalculating the Indicators.
- Visiting to three of the Company's production sites selected on the basis of a risk analysis.
- Evaluating the overall statement in which the Indicators are expressed.

Conclusion

Based on the procedures performed, as described above, nothing has come to our attention that causes us to believe that the Indicators in the Data Book are not prepared, in all material respects, in accordance with the Company's reporting criteria as described in the Data Book.

Our Independence and Quality Control

We have complied with the Code of Ethics for Professional Accountants issued by the International Ethics Standards Board for Accountants, which includes independence and other requirements founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality and professional behavior. In accordance with International Standard on Quality Control 1, we maintain a comprehensive system of quality control including documented policies and procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements.

KPMG AZSA Sustainability Co., Ltd.

KPMG AZSA Sustainability Co., Ltd.
Osaka, Japan
July 27th, 2016

Reports on Business Activities of Panasonic

Please visit our Sustainability website for the detailed information on our CSR and environmental initiatives, and IR Information website for our business strategies and financial data intended for shareholders and investors.

Sustainability website

http://www.panasonic.com/global/corporate/sustainability.html

Sustainability Data Book [PDF] is also available on this website

IR Information website

http://www.panasonic.com/global/corporate/ir.html

Annual Report [PDF], covering business strategy; financial situation; and ESG (initiatives relating to the environment, society, and governance) among others, is also available on this website

Panasonic

Inquiries

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