

Environmental Standardization for Electrical and Electronic Products and Systems (TC111)

The Standardization Management Board (SMB) of the International Electrotechnical Commission (IEC) authorized the establishment of TC111 in October 2004. This opened up a new method for international environmental standardization by formulating standards from the stage of guidelines that the Advisory Committee on Environment Aspects (ACEA) used to develop.

Japan has the chairmanship of TC111, and is doing much to formulate international environmental standards for electrical and electronic products and systems. Since the launch of TC111, Japan has proactively proposed environmentally conscious designs and techniques for measuring environmental standards, and is pushing ahead with joint development. JEITA is the secretariat for TC111's Japanese deliberative committee, and liaises with electrical and electronics equipment associations.

TC111 is working on the following five themes and is looking into adding another two. Working Group 1 (WG1) is working on standardization for

material declaration procedures and is deliberating on a working draft (WD). Japan serves as the convener of Working Group 2 (WG2), which is looking into environmentally conscious design standards and recently finished soliciting comments from each country on its second committee draft (CD). Working Group 3 (WG3) focuses on the determination of levels of hazardous substances and is producing a revised CD in response to the negative voting results on its committee draft for vote (CDV) in 2006. Project team PT62476 is deliberating the "Guidance for assessing the compliance of finished goods regarding restrictions on the use of hazardous substances" and aims to produce a WD. Unfortunately, Japan's fifth proposal regarding a hazardous substance guideline was rejected in April 2007, so Japan is considering future steps.

A new proposal for recycling and defining of terms is being given now. JEITA looks forward to working with associations in other countries to produce new standards for themes that will likely arise in the years ahead.

Japan Green Procurement Survey Standardization Initiative (JGPSSI)

The environment is now a key issue for corporate management. The European Union's Restriction of Hazardous Substances directive (EU-RoHS) is one of several official efforts around the world to legislate on the management of chemical substances used in equipment. Properly ascertaining information on specific chemical substances contained in electronic components and materials is crucial to ensure compliance.

Such considerations prompted a group of Japanese electrical and electronic equipment manufacturers to launch the Japan Green Procurement Survey Standardization Initiative (JGPSSI) in January 2001. A secretariat within JEITA began operating in April 2002. Since then, electronic components and materials makers have participated in JGPSSI, which has explored using shared information from surveys of chemical substances contained in electrical and electronic equipment to create a reliable and efficient survey system. In July 2003, JGPSSI issued survey guidelines, determined a chemical substances survey list and produced survey response formats as part of efforts to ensure the use of uniform survey approaches.

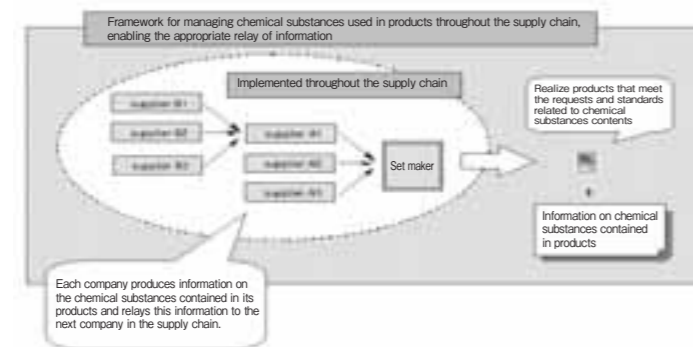
JGPSSI collaborated with the Electronics Industries Alliance (EIA) of the United States and the European Information & Communications Technology Industry Association (EICTA) to produce common guidelines and formulate global standards. This activity led to the May 2005 issuance of the Joint Industry Guide (JIG), which governs standards for chemical substances disclosure and helps integrate and streamline surveys between suppliers and their customers to mutual advantage.

JGPSSI is now revising the JIG to factor in the latest legislative and

other developments and make them easier to understand. It will publish Phase 1 of the JIG, which will incorporate minor changes.

It is important for companies in supply chains to properly manage chemical substances to ensure that information on these chemical substances is reliable. So, in September 2005 JGPSSI issued its Guidelines for the Management of Chemical Substances in Products. This publication shows how companies in supply chains, from materials makers to final product manufacturers, should construct management systems to ensure reliable information on chemical substances in their products.

JGPSSI will encourage the adoption of formats based on the JIG and the use of its Guidelines for the Management of Chemical Substances in Products.



Electronics Assembly Technology Activities

In 1998, the Jisso Technology Standardization Committee began surveys and research into the practical use of lead-free solders, as part of which it worked on three national projects. These initiatives helped propel Japan's electronics industries to world leadership in mounting techniques that use lead-free solders.

In 2004, this committee launched its Urgent Proposal Project for Lead-Free Electrical and Electronic Products and Systems to resolve related issues in preparation for the implementation of the European Union's Restriction of Hazardous Substances directive on July 1, 2006, and Japan's J-Moss (Marking for presence of the specific chemical substances for electrical and electronic equipment), which also came out at around that time. The project chair was Professor Tadatomu Suga (University of Tokyo). This initiative tackled four key roadblocks to swiftly eradicate the use of lead in solders. The first was the problem of solder tank corrosion. The second was the issue of whiskers forming on connections. The third was the practicable use of low-temperature lead-free solders. The fourth was the issue of managing materials with a lead content of 0.1%. These efforts led to meetings in February 2005 and April 2006 at which the project team declared that these issues needed swift resolutions.

These declarations prompted three projects to seek comprehensive solutions to these technical issues. One is the Study Committee for

Standardizing Flow Tank Damage Control Technologies to tackle corrosion, which METI commissioned in July 2007. The second is the Committee to Develop Whisker Prevention Techniques, which the Organization for Small & Medium Enterprises and Regional Innovation, JAPAN, launched in December 2006 to address connection whiskers. The third is the Committee for Researching Standardization Techniques for Low-Temperature Solder on Mounting Substrates. METI commissioned that body in 2004 to produce practical results within three years.

JEITA aims to assist companies in employing lead-free solders once these committees complete their missions. JEITA invites members to participate in the activities of the Jisso Technology Standardization Committee so it can resolve its challenges.



The JEITA-CECC Environment Conference

JEITA holds an annual environmental conference with the China Electronic Chamber of Commerce (CECC). The first was in Beijing in May 2002. The second was in Tokyo in October 2003, and the third in Xian, China, in October 2004. The fourth gathering was in September 2005 in Tokyo, the fifth in July 2006 in Qingdao, China. The sixth, held in September 2007 in Fukuoka, Japan, focused on sharing information about environmental issues affecting the electronics industries of both nations.

CECC was established in 1988 as a national corporate organization under the guidance of China's Ministry of Information Industry to cultivate the nation's electronics industry. The chairman is Qu Weizhi, a former Vice-Minister of the Ministry of Information Industry. CECC has 12 branch offices and around 4,000 members. Aggregate sales of its member companies in 2006 were around 1.2 trillion yuan (¥7.75 trillion). CECC's mission is to follow the national government's policy of reforming and opening its market, to cultivate the nation's electronics industry and to liaise between the government and CECC members by helping implement government policies covering the electronics industry while helping member companies become more profitable.

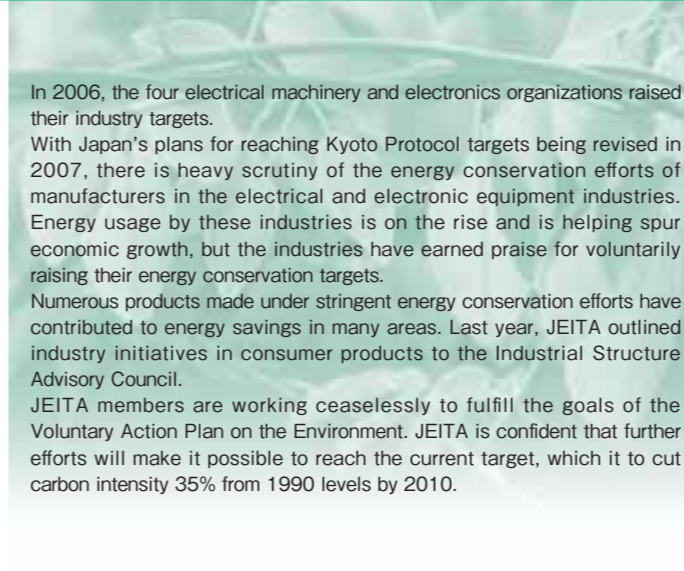
There were 54 attendees at the 2007 gathering between JEITA and CECC. There were 14 from China, including from the Ministry of



Tackling Global Warming

JEITA works closely with other organizations to which its members also belong to formulate measures to help production sites conserve energy and combat the causes of global warming. These organizations include the Japan Electrical Manufacturers' Association, the Japan Business Machine and Information System Industries Association, and the Communications and Information network Association of Japan. We work with four electrical machinery and electronics organizations to ensure compliance with Nippon Keidanren's Voluntary Action Plan on the Environment.

Japan's target period for beginning to fulfill its Kyoto Protocol pledges begins in 2008. METI's Industrial Structure Advisory Council and the Ministry of the Environment's Central Environmental Council began jointly reviewing the nation's plans for reaching its Kyoto targets. Following up from talks last year, the two started stringently checking energy conservation contributions in private-sector manufacturing and equipment, as well as in transportation and business divisions. It has thus become increasingly important for the electrical and electronic equipment industries to disseminate information on their energy conservation efforts.



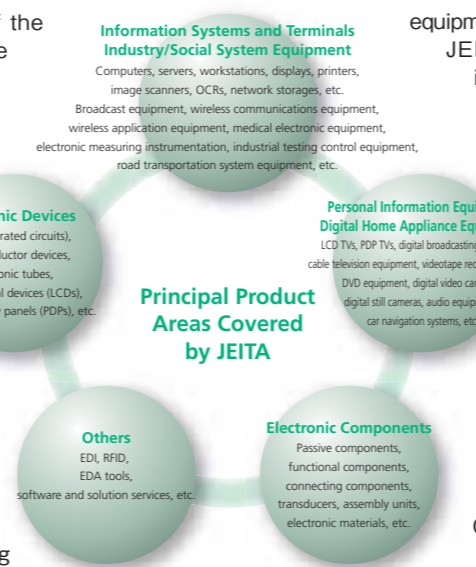
About JEITA

About Japan Electronics and Information Technology Industries Association (JEITA)

We contribute to the overall development of the electronics and IT industries by promoting the healthy manufacturing, international trade, and consumption of electronics products and components, thereby furthering Japan's economic development and cultural prosperity.

The Internet has connected the world. Electronics technologies and IT are everywhere, and advancements are driving convergence in information, communications, imaging and audio to create new systems and products that transform economies and societies.

JEITA is accordingly helping to combat global warming and otherwise safeguard the environment by making policy recommendations and assisting with technological development while promoting



equipment in new fields and supporting businesses.

JEITA represents Japanese electronics and information technology industries whose aggregate output is worth more than ¥20 trillion. JEITA assists these industries by making policy recommendations, pressing for taxation system and regulatory reforms, tackling environmental issues, formulating measures to protect intellectual property, and conducting statistical surveys.

JEITA also issues reports and other materials, helps establish international and industry standards, convenes international conferences, sends survey teams abroad, holds lectures and seminars on diverse themes, and sponsors CEATEC JAPAN and other exhibitions.

Japan Electronics and Information Technology Industries Association Policy and Strategy Department Communications Office
TEL: 03-5275-7254 FAX: 03-5212-8123 Address: Chiyoda First Bldg. South Wing, 3-2-1, Nishi-Kanda, Chiyoda-ku, Tokyo 101-0065, Japan



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Our Wisdom and Technology
Are Pivotal to Safeguarding the
Environment for Future Generations

2007

Activities for Environmental Measures

Environmental Initiatives in the Electronics and Information Technology Industries

Environmental Initiatives

The Japan Electronics and Information Technology Industries Association (JEITA) contributes to the overall development of the nation's electronics and information technology (IT) industries and thereby furthers Japan's economic development and cultural prosperity. These industries make everything from electronic materials, components and semiconductor devices, to personal computers, televisions, and commercial and industrial electronic equipment.

JEITA works with numerous related organizations, to which many of its members also belong, to foster environmental efforts in manufacturing. These bodies include the Japan Electrical Manufacturers' Association, the Japan Business Machine and Information System Industries Association, and the Communications and Information network Association of Japan. These four electrical machinery and electronics organizations work to ensure compliance with Nippon Keidanren's Voluntary Action Plan on the Environment.

All JEITA members strive to minimize the overall environmental impact of their businesses and create products that match regulatory requirements around the globe. These members thus work with related industry groups to address common product issues, present their stances to legislatures deliberating new regulations, and exchange opinions with regulatory authorities.

JEITA deployed its voluntary action plan to reduce the use of three of



Environmental booth at CEATEC JAPAN 2006

Environment Forum 2007

Five sessions over two days attracted 700 participants

JEITA joined hands with four other bodies to hold this forum on Thursday, May 31, and Friday, June 1, at Belle Salle Kanda in Chiyoda Ward, Tokyo. The other groups were the Association for Electric Home Appliances (AEHA), the Communications and Information network Association of Japan (CIAJ), The Japan Electrical Manufacturers' Association (JEMA), and the Japan Business Machine and Information System Industries Association (JBMA). More than 700 people attended five sessions. The themes were: Government Environmental Policies and Industry Initiatives; Mitigating Global Warming; International Standardization Trends and Environmentally Friendly Design; Chemical Substance Measures and Risk Management; and Overseas Trends in Chemical Substance Restrictions and Responses.

Session A on the morning of the first day featured a speech from Naoto Takahashi (Ministry of Economy, Trade and Industry (METI), Japan) on Japan's Home Appliance Recycling Law, Law for the Promotion of Utilization of Recyclable Resources and other government policy initiatives, as well as the issue of global warming. Mr. Takahashi (Director, Environmental Affairs and Recycling Office, Commerce and Information Policy Bureau, METI), Professor Ryoichi Yamamoto (Institute of Industrial Science, University of Tokyo) spoke about the importance of environmental innovations to combat global warming and the potential spread of such advances. Takeshi Koga (Fujitsu, Ltd.), representing the Environment Forum, outlined recent industry initiatives behalf of the five participating associations. He explained that Japan's electrical equipment and electronics industries need to drive international standardization and collaborate more to pursue global initiatives.

In Session B that afternoon, Nobukazu Sugano (Matsushita Electric Industrial Co., Ltd.), a member of the four electrical and electronics industry associations' Global Warming Steering Committee, explained global warming initiatives in the electrical equipment and electronics industries. Hisakazu Tsujimoto (Energy Conservation Center, Japan) highlighted recent corporate efforts to reduce the energy consumption of office buildings.

Session C comprised addresses from Koichi Mori (Fujitsu) and Takao Sato (Ricoh Company, Ltd.), who presented the latest developments in international

six greenhouse gases for which the Kyoto Protocol seeks emission reductions, notably perfluorocarbons, hydro fluoro compounds, and sulfur hexafluoride.

In the area of products, we are compliant with the international Energy Star program and the Top Runner program under Japan's Law Concerning the Rational Use of Energy. The industry is making every effort to deal with increasingly stringent regulations.

JEITA members collect and recycle computers under Japan's Law for the Promotion of Utilization of Recyclable Resources, and collect and recycle televisions in keeping with the Home Appliance Recycling Law. Controlling chemical substances is central to addressing environmental issues and fostering recycling. JEITA leads affiliated associations in dealing with domestic and overseas legislation on chemicals. We gather information, assess and analyze responses, solicit opinions, and issue position reports.

JEITA also interacts with affiliated organizations outside Japan. In 2007, for example, we held our sixth environmental conference with the China Electronics Chamber of Commerce. These meetings started in fiscal 2001. The gatherings were very useful, featuring information exchanges on environmental regulations in Japan and China and presentations from participating companies in both countries on their initiatives.

The environment has been a key theme at trilateral meetings between JEITA and the U.S. Consumer Electronics Association (CEA) and Information Technology Industry Council (ITI), and the European Information & Communications Technology Industry Association (EICTA). In 2007, all these bodies agreed to issue a declaration to their members of intent to pursue voluntary initiatives to improve product energy efficiencies.

It is increasingly important for JEITA, its members and affiliated organizations to position environmental issues associated with electrical and electronic products and these industries as important priorities for corporate management. JEITA will do more in this regard in the years ahead.

standardization trends and environmentally friendly design from the International Electrotechnical Commission's TC111 (Environmental Standardization for Electrical and Electronic Products and Systems) technical committee. They also talked about the European Commission's Eco-design Requirements for Energy Using Products directive. Mr. Mori chairs TC111 and Mr. Sato is Japan's representative on the International Electrotechnical Commission's Advisory Committee on Environmental Aspects.

In Session D on the morning of the second day, Dr. Junko Nakanishi (National Institute of Advanced Industrial Science and Technology) gave her advice on managing the risks of chemical substances and materials. Yuho Shishiyama (Chemical Management Policy Division, Manufacturing Industries Bureau, METI) talked about how the environmental impact of chemicals will shape chemical management policies.

In session E that afternoon, Nobuyuki Hiratsuka (Secretary General, Japan Business Council in Europe) reported on the local impacts of the European Union's Registration, Evaluation and Authorisation of Chemicals directive. Fumiaki Shono (Japan Chemical Association) presented an assessment of the nation's chemical industry. Isao Kataoka (Murata Manufacturing Co., Ltd.) and Tetsuji Kawakami (Matsushita Electric Industrial), both from the European Chemicals Legislation Working Group, spoke on behalf of the four electrical and electronics industry associations about industry responses to the Registration, Evaluation and Authorisation of Chemicals Directive. Hisashi Sekine (Beijing Office, JEITA) reported on the latest developments in China's version of the European Union's Restriction of Hazardous Substances directive.

The venue was packed that day, with numerous attendees asking questions and underscoring the great interest in the event.



Consumer Electronics Activities

The Steering Committee on Consumer Electronics addresses various environmental issues. It is currently focusing on responses to the Law Concerning the Rational Use of Energy for each product category.

For personal computers, this committee is deliberating on measures to comply with the above law and meet the requirements of the international Energy Star program that the U.S. Environmental Protection Agency is spearheading. The following highlights some of the committee's activities.



● Televisions

- (1) Trends in Law Concerning the Rational Use of Energy
 - 1994: This law included televisions with cathode ray tubes on its list of specified equipment
 - 1999: The law was revised, and new evaluation standards based on the Top Runner Program were launched
 - 2006: Another revision added liquid crystal device (LCD) televisions, plasma display panel (PDP) televisions and other equipment to the list

(2) Activity overview

- We assessed techniques to measure the annual power consumption of flat-panel and other new types of television
- We considered disclosure items for catalogs, operating manuals, and other documentation, and produced and issued guidelines
- In January 2001, we issued and promoted a voluntary industry declaration on standby time consumption of less than one watt (most televisions achieve standby time consumption below 0.5 watt)

● VTRs and DVD player/recorders

- (1) Trends in Law Concerning the Rational Use of Energy
 - 1994: This law included these products on the list of specified equipment, with standby times becoming subject to controls

1999: The law was revised, and equipment was specified under the new legislation based on the Top Runner Program
2006: Another revision to the law added DVD player/recorders, managed based on "annual electricity consumption volumes"

(2) Activity overview

- Assessments began ahead of the 2006 revision of the Law Concerning the Rational Use of Energy
 - For DVD player/recorders (only those incorporating analog tuners), we switched from a target standard measurement for standby consumption to annual power consumption, with the new benchmark slated to go into effect from fiscal 2008.
 - We produced and issued disclosure guidelines for catalogs, operating manuals and other documentation, and labeling

● Personal computers

- (1-1) Trends in Law Concerning the Rational Use of Energy
 - 1998: Special equipment specified under the law/ 1999: Target standards for 2005 released/ 2006: Target standards for 2007 released
- (1-2) International Energy Star program trends
 - 1998: V1 standards for computers implemented/ 1999: V2 standards for computers implemented/ 2000: V3 standards for computers implemented/ 2006: Logo modified and V4 standards for computers implemented

(2) Activity overview

- Produced guidelines on catalog descriptions (2006) in line with revisions to the Law Concerning the Rational Use of Energy (2007 standards implemented)
- International Energy Star program
 - Participated in V4 standards deliberations for computers (in 2005 and 2006)
 - International Energy Star program: Collaborated in domestic deployment (in 2007) in keeping with implementation of V4 standards for computers; also sharing information on international and national energy conservation standards

Information Technology and Industrial Systems Activities

Initiatives in this area focus on environmental and energy conservation issues for computers (servers) and related equipment and control systems.

● Energy conservation for computers and related equipment

(1) Addressing Law Concerning the Rational Use of Energy
This law established Top Runner standards to encourage energy performance improvements for all equipment that consumes significant power. We are encouraging efforts to improve product energy efficiency and thereby contribute to initiatives to combat global warming through strict target standards for servers and magnetic disk equipment based on the Top Runner system.

(2) Participating in the International Energy Star program

This program seeks to ensure efficient energy usage when the energy is needed. There are thus standards for equipment that frequently remains on for long periods. Products satisfying the standards can carry the International Energy Star logo. METI and the U.S. Environmental Protection Agency both recognize this program, which has become an international benchmark through the participation of the European Union, Canada, Australia, New Zealand, and Taiwan. The program covers displays, printers, scanners and PC servers, helping reduce power consumption around the world.

● Studying the collection, processing and recycling of IT equipment

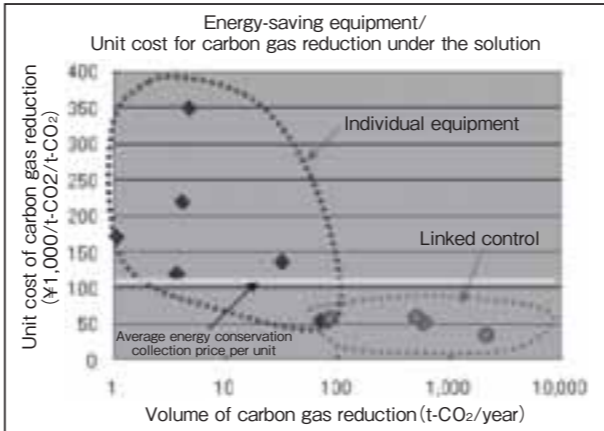
We are helping create a recycling-oriented economy and society by compiling basic data on the volumes, distribution, treatment and overseas shipment routes of used IT equipment and the volumes for each route. We project resource recycling trends and evaluate efforts to deploy advanced waste recycling, reuse and reduction. We also study IT equipment recycling trends from an international perspective so we can formulate industry activity guidelines. We are considering a global resource recycling system that would reflect the perspectives of such parties as manufacturers, recycling firms, and importers and exporters. Specific initiatives include ongoing studies to gather basic data needed

to build a recycling-oriented economy and society and our basic research into recycling rare metals and other resources.

● Optimal control technologies to conserve energy (integrated controls)

The Electric Measuring Instrumentation Committee and the Control Systems Committee are looking into energy-saving control technologies for industrial systems.

They have focused their research on integrated control technologies that can optimize overall energy usage and savings. This is because integration and coordination of facilities and systems that operate independently enable the control needed to optimize energy usage according to demand fluctuations. Integrating the operations of production and other facilities leads to rational operations that deliver the right performance according to the operational conditions and schedules of facilities. Optimal combinations minimize operating costs and carbon dioxide emissions, greatly saving energy. These committees also survey and research home energy management systems and aim to popularize energy-saving setups that harness control technologies to dramatically reduce costs. The committees plan to convene a forum at which they will present several proposals.



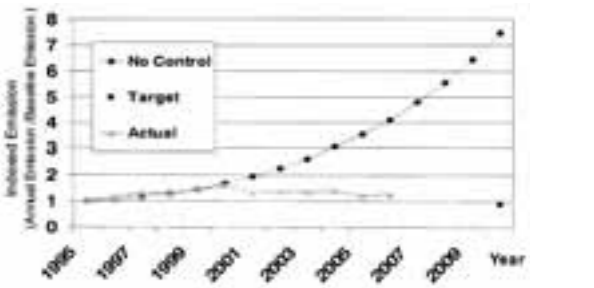
Semiconductor Activities

The Semiconductor Environment and Safety Committee liaises with related associations in and outside Japan. Attention quickly focused on the global environment in fiscal 2006. This was because the Kyoto Protocol went into force in February 2005, raising awareness of global warming issues and prompting governments to reinforce the structures they set up to reach their Kyoto targets. The Stockholm Convention on Persistent Organic Pollutants raised perfluorooctane sulfonate as a candidate for listing in its chemicals registry. This move triggered considerable concerns that regulation of this critical element in manufacturing processes would harm the semiconductor industry's progress.

The committee led responses to these developments through working groups on peroxide-forming chemicals (PFCs), energy conservation, chemicals, resource usage and life cycle assessments (LCAs) that have collaborated with industry groups worldwide in efforts to reduce the environmental impacts of semiconductor manufacturing. The PFC Working Group aims to combat global warming by cutting the semiconductor industry's PFC emissions 10% from 1995 levels by 2010. The Energy Conservation Working Group seeks to encourage energy efficiency initiatives among all semiconductor companies. It is deliberating on energy-saving guidelines and standardization, pursuing international activities and touring member plants to collect data on energy conservation efforts. The Chemicals Working Group surveys the use of specified chemical substances, studies domestic and international regulatory systems and responses, and liaises with semiconductor

industry associations. The Resources Usage Working Group surveys waste reductions, reuse and recycling to foster zero-emission efforts and assesses technologies to recycle hydrofluoric acid. The LCA Working Group is developing a life cycle assessment program to quantify the environmental loads of semiconductor manufacturing. It also publicizes the environmental contributions of semiconductor products to finished equipment. In April 2007, this working group developed the JEITA LCA system for Semiconductor, a revolutionary tool for calculating life cycle assessments. Details are available on JEITA's website.

The Semiconductor Environment and Safety Committee will step up its activities in the years ahead to reduce the semiconductor industry's environmental impact in response to more stringent demands while assisting the industry's progress.



Electronic Display Device Activities

The Display Devices Board oversees the Display Devices Environment and Safety Committee, whose work covers companies involved in flat panel display production, including of LCD and plasma display panels.

JEITA's Environment Committee and related semiconductor, digital appliances and other committees, and related industry associations collaborate to help reduce perfluorocarbon and other greenhouse gas emissions from flat panel displays, formulate energy conservation measures, and resolve chemical substance, recycling and other environmental issues. JEITA plays a leading role in international activities and cooperation. This approach led to the July 2001 establishment of the World LCD Industry Cooperation Committee (WLICC) with the Electronic Display Industrial Research Association of Korea and the Taiwan TFT-LCD Association. This private-sector body aims to resolve environmental issues associated with the global LCD industry.

All WLICC members recognize the issues that the global LCD display industry needs to tackle to safeguard the environment and cooperate in seeking solutions. JEITA participates extensively in the activities of the committee, which plans to attract involvement from China, where LCD production is set to expand.

WLICC members have agreed to ongoing efforts to reduce perfluorocarbon

Electronic Components Activities

The European Union's Restriction of Hazardous Substances and End-of-Life Vehicles directives exemplify increasingly stringent legislation worldwide for substances that affect the environment. It is thus essential to build a framework to quickly and efficiently share information on the chemical substances in electronic components and thereby shorten the lead times for component design and procurement procedures and cut manufacturing costs.

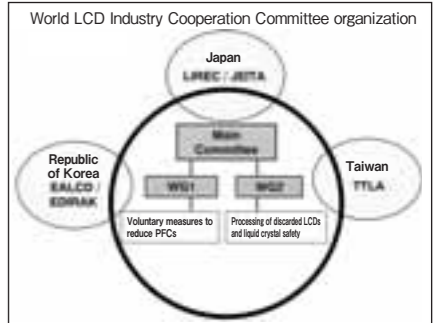
METI commissioned JEITA to undertake a project from 2005 through 2006 to integrate and share downstream through upstream information on electronic components. This project aimed to produce environmental and other data on standard components to identify information on chemicals used in electronic and electrical equipment from the design and procurement stages, and encourage companies to share environmental information with their supply chains. One fruit of the project was JEITA-Green, a system to distribute environmental information on electronic components through the Web that began operating on April 1, 2007.

One goal was to have a private operator run a full-fledged JEITA-Green public system to ensure its efficiency and sustainability. ELISNET Co., Ltd., currently provides JEITA-Green services.

The JEITA-Green system enables makers to register environmental information on components they develop in a database. The registered information conforms to the Joint Industry Guidelines recommended under

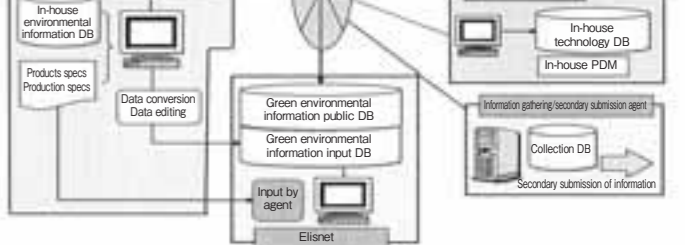
and other greenhouse gas emissions from thin-film-transistor LCD production processes in their three nations. JEITA is additionally collaborating with its Korean and Taiwanese counterparts in continuing efforts to reduce or prevent greenhouse gas emissions without impeding the growth of the world LCD industry.

Numerous products that consumers use daily incorporate LCDs and plasma displays. Peripherals for these and new types of display should emerge in the years ahead. Given this backdrop, display device makers will further pursue the sustainable growth of their industry while undertaking ongoing efforts to alleviate global warming, ensure recycling and otherwise resolve environmental issues.



the Japan Green Procurement Survey Standardization Initiative format. Equipment makers can download environmental information on required components through the retrieval and public system and put it in their own technical information databases.

Use of the JEITA-Green system should expand in the years ahead, empowering equipment and components makers to share chemicals information far more efficiently and quickly.



JEITA-GREEN scheme