



Canon's Environmental Management Strategies and Green Procurement Activities in Japanese Electronics Industry

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Why a Company Needs to be Environmentally Conscious



Trend of Environmental Issues Concerning Companies

Deterioration of earth's environment

Priority investment in environmentally conscious companies

Companies

- Economic aspect
- Environmental aspect
- Social aspect

Strengthening international environmental regulations

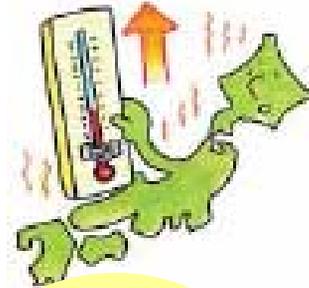
Priority purchasing of environmentally conscious products



World of one second (changes on the earth)



0.00000000167°C
increase in temperature
increase of 0.43°C in 50 years



0.002 kinds of living organism
become extinct. (1 kind in
7minutes.)

**In One
Second**



5100m² of forest disappears
(equals 20 tennis courts)



1620m³ of glacier melts in
Greenland.
51 million m³ in a year



Legislation to Reduce Environmental Burden (1)

1. Strengthening of regulations to reduce global warming

(1) Influence on products

- ◆ Japan, U.S., Europe : Incorporating the Energy Star standard into bids for public projects.
- ◆ Japan : Regulation which restricts sales of products that do not meet energy conservation standards
- ◆ U.S. : Priority purchasing of products with a standby power requirement of 1W or less (Executive order)

(2) Influence on operational site activities

- ◆ Respond to the Kyoto Protocol mechanisms



Legislation to Reduce Environmental Burden (2)

2. Enactment of legislation requiring product recycling

- ◆ Japan: Enactment of the law for Promotion of Effective Utilization of Resources and the Law for Recycling of Specified Kinds of Home Appliances
- ◆ Europe: WEEE Directive (Directive on Waste Electrical and Electronic Equipment)
- ◆ U.S.: Recycling related bills introduced (22 states)

Other countries including China, Taiwan, South Korea and etc. are also studying environment-related legislation

3. Enactment of regulations on product hazardous substances

- ◆ EU: RoHS Directive (Directive on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment)(Obligatory beginning July 2006)The directive bans the use of the six substances (cadmium, lead, hexavalent chromium, mercury, PBB and PBDE).

Other countries including China and South Korea are also studying establishment of legislation on such substances.



The motivation behind environmental management

1. Priority purchasing of environmentally conscious products

(1) Green Purchasing Law

In Japan and Taiwan, purchase of environmentally conscious products has been enacted into law as a condition for public bids.

(2) Green purchasing by leading customers

Promotion of response to environmental concerns through companies' own green purchasing standards.

2. Priority investment in environmentally conscious firms

(1) SRI (Socially responsible investment) and ecology funds: Global investment totals 300 trillion yen.

(2) Revision of European pension laws (Requires pension funds to disclose their SRI investment policies to investors)

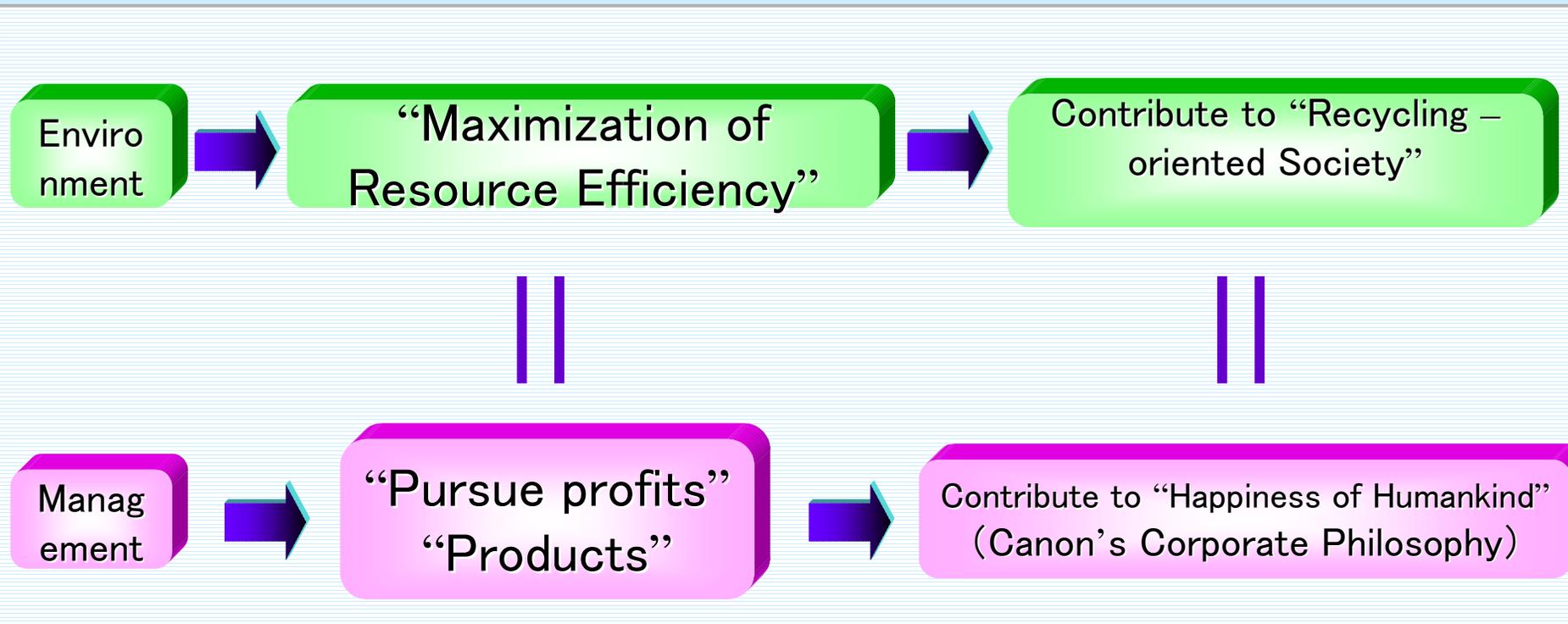


Environmental Charter and Environmentally Conscious Management System



Canon's Basic Attitude Towards Environmental Problems

Corporate Philosophy "Kyosei" = "Environmentally Conscious Management"



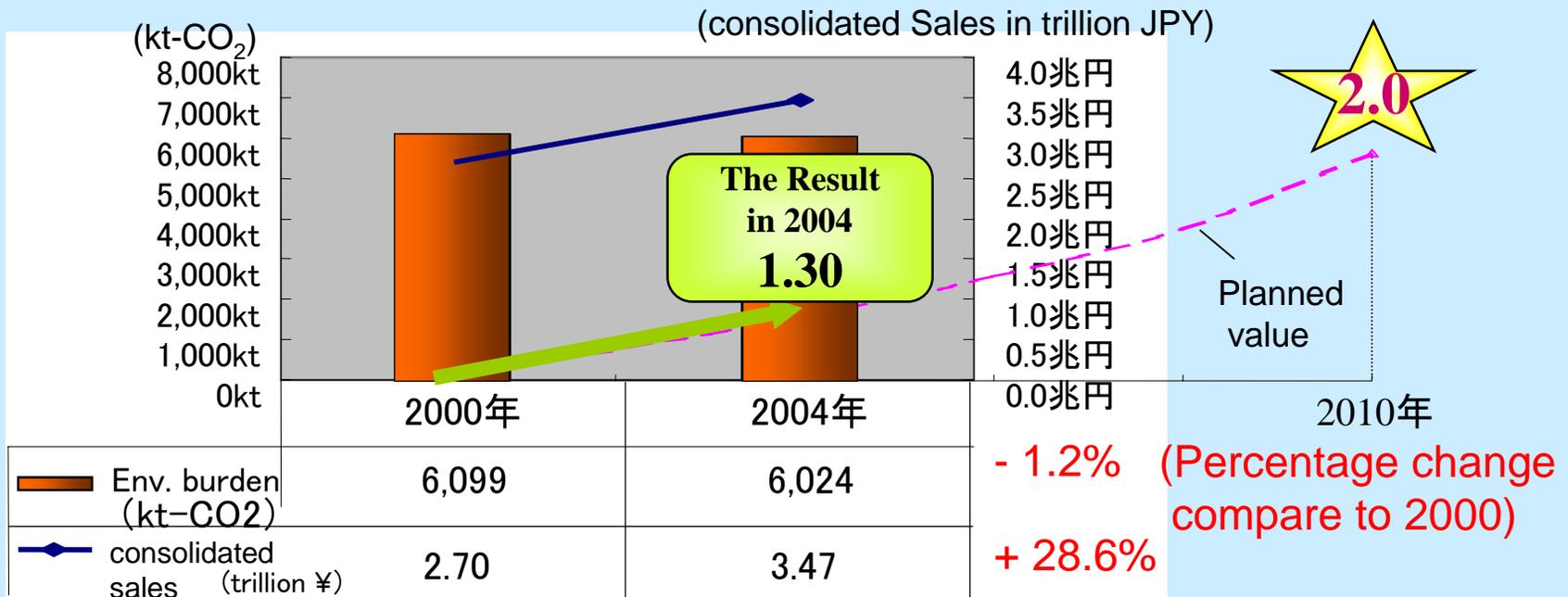
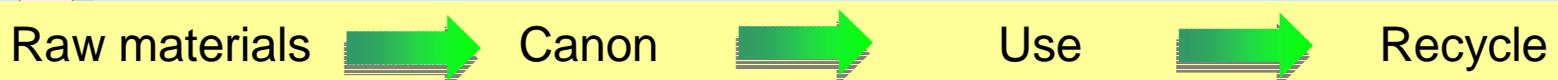
Kyosei: Living and working together for the common good (1988)



Vision for 2010

Overriding indicator: Factor 2

$\frac{\text{Sales amount}}{\text{CO}_2 \text{ emissions in product life cycle}}$ → more than double of the 2000 level



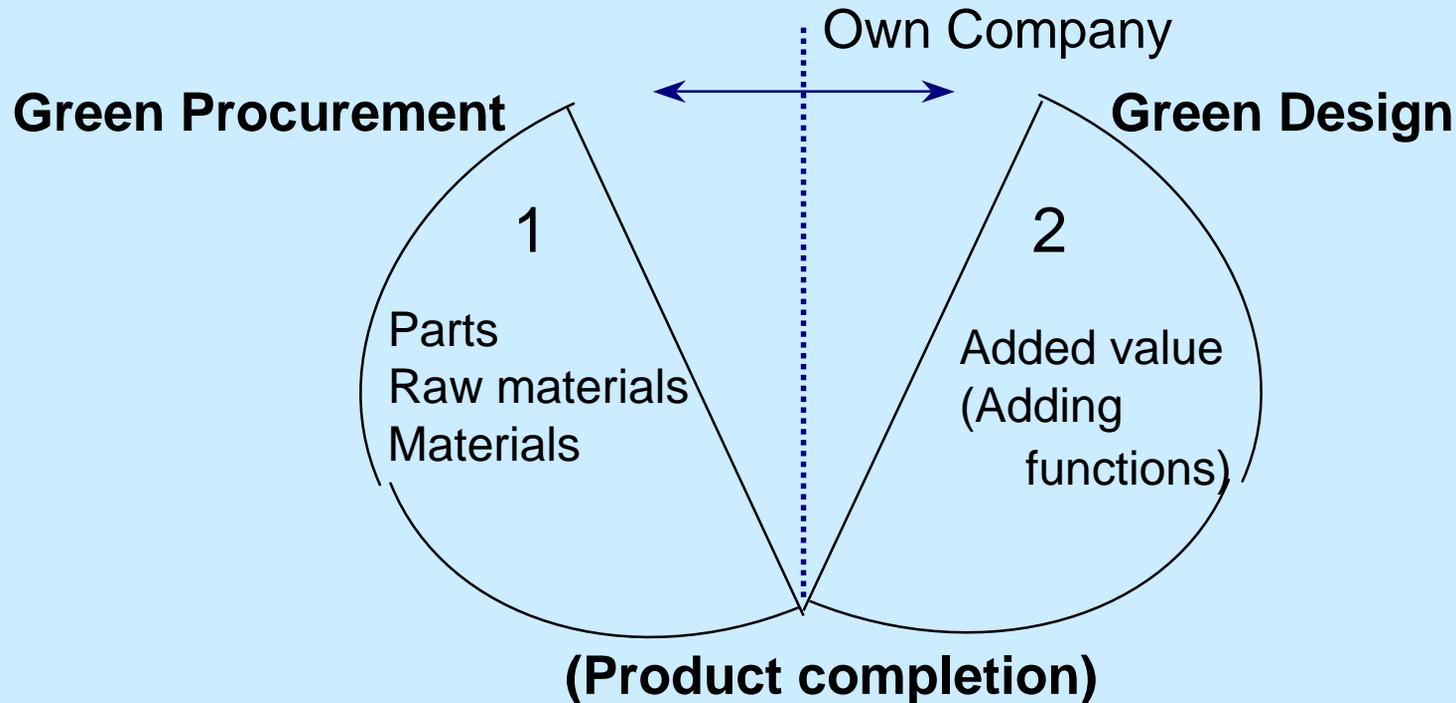


Activities of Green Procurement of Japanese Electronics Industry

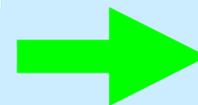


Background for Standardizing Green Procurement Surveys

In order to make our products green, we need to employ green designs along with green procurement using green parts and materials



In order to carry out green procurement, ascertaining the environmental performance of parts and materials is necessary



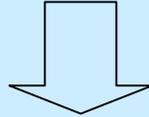
Green Procurement Survey



Background for Standardizing Green Procurement Surveys

There are many regulations restricting the use of certain chemical substances.

Waste management, water discharge, recycling etc.



Unless companies comply with such regulations,
products cannot be placed on the market!!

Ex)

Lead

Mercury

Cadmium

Chromium VI

PBB

PBDEs

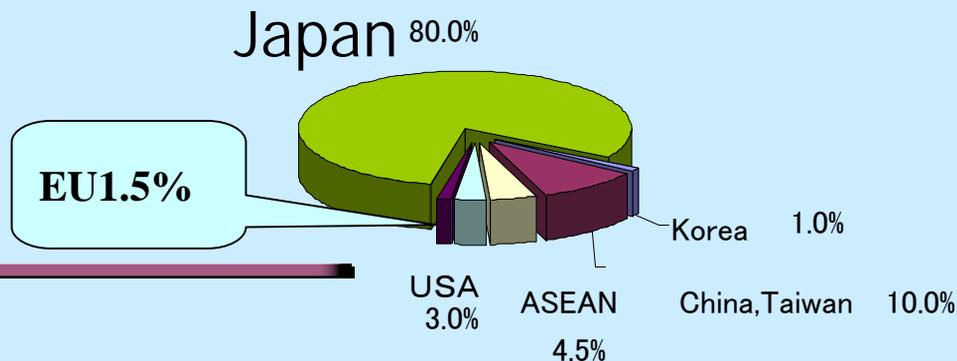
To be banned **From 1st July 2006**
by RoHS Directive in EU



The data of green procurement survey

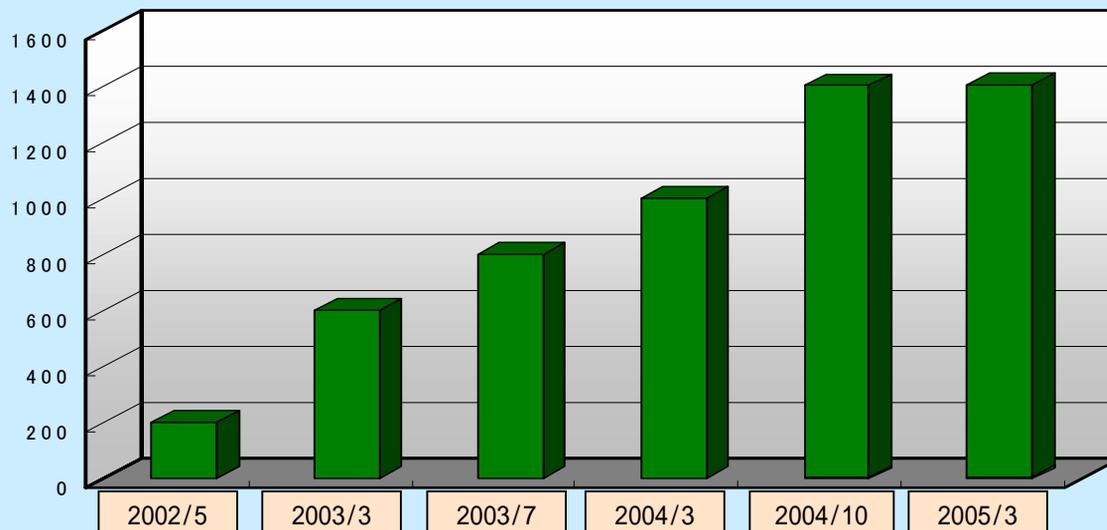
(Data from the Major Japanese Electric Parts Manufacturers)

● The rate by the country of green procurement survey



● The number of the request

Number of request (company/ month)





The need for Material Declaration
(Green Procurement Survey)
Standardization



Problems in Conducting Green Procurement Survey

To comply with regulations, manufacturers need to ask parts and materials suppliers.

→ **Green Procurement Survey**

Green procurement surveys started around from 1997 in Japan.

HOWEVER,

Chemical substances to be surveyed vary with companies.

(Number of chemical substances to be surveyed amounts to about 2500 among 10 Japanese IT manufacturers)

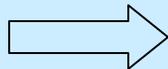


Heavy burden placed on suppliers

THEREFORE,

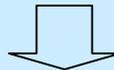
It takes much time to get responses, and they are often inaccurate as a result.
(problem of accuracy becomes even bigger with overseas procurement)

Solution



Standardize Green Procurement Survey

- Systems which enable suppliers to prepare responses beforehand
- Systems which can develop into worldwide use



Improve accuracy and time needed for responses



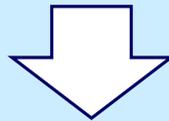
Brief Profile of Japan Green Procurement Survey Standardization Initiative (JGPSSI)

1) Establishment: January 2001 by 8 companies
(voluntary activities)

2) Purpose

Standardize green procurement survey in supply-chain

purpose: Establish systems which enable suppliers to prepare responses beforehand
(better accuracy, increase speed, increase efficiency)



Increased to 88 companies and 5 associations as of September, 2005
Developed to cover material, parts and set manufacturers

Chair: Canon Vice Chair: Sony, NEC

April 2002: Delegated Secretariat to JEITA

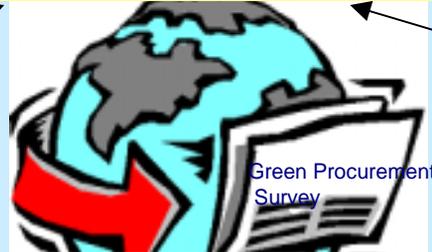
<http://home.jeita.or.jp/eps/>



Moving in step with overseas industry associations

Japan Green Procurement Survey Standardization Initiative

EICTA



EIA

Discussions with a view to global standardization

History of Tripolar Conference

- 1) November 2001 (Oslo): Agreed to prepare a common guideline
- 2) August 2002 (Washington D.C.): Prepared the first chemical substances list to be surveyed
- 3) January 2003 (Tokyo): Reviewed revisions to the chemical substances list to be surveyed
- 4) September 2003 (Stockholm): Principle agreement on guideline
- 5) May 2004 (Arizona): Elaborate on the guideline
- 6) March 2005 (Odawara): Direction after the guideline is issued

EICTA : European Information and
Communication Technology Association
(Association of Europe)

EIA: Electronic Industries Alliance
(Association of America)



Joint Industry Guide for Material Composition Declaration for Electronic product (JIG)

**The JIG has been worked on for more than three years
by JGPSSI, EIA and EICTA.**



**The JIG has been published by EIA, after approval within
JGPSSI & EIA in May 2005**

**Joint Industry Guide (JIG) for Material Composition Declaration
for Electronic products**

- * Target chemical substances groups: 24**
- * Additional chemical substance is not allowed**
- * Threshold level for each chemical substances group established**



JIG Annex A (level A) <subject to legislation>

Material/Substance Category	Threshold level
Certain Azocolourants and Azodyes	Intentionally added
Certain Azocolourants and Azodyes	Intentionally added (see Directive 76/769/EEC for applicability)
Cadmium /Cadmium Compounds	75 ppm or Intentionally added
Hexavalent Chromium/Hexavalent Chromium Compounds	1000 ppm or Intentionally added
Lead/Lead Compounds	1000 ppm or Intentionally added 300 ppm (PVC cables only)
Mercury/Mercury Compounds	1000 ppm or Intentionally added
Ozone Depleting Substances (CFCs, HCFCs, HBFCs, carbon tetrachloride, etc.)	Class I: Intentionally added Class II . HCFCs: 1000 ppm
Polybrominated Biphenyls (PBBs)	1000 ppm or Intentionally added
Polybrominated Diphenylethers (PBDEs)	1000 ppm or Intentionally added
Polychlorinated Biphenyls (PCBs)	Intentionally added
Polychlorinated Naphthalenes (more than 3 chlorine atoms)	Intentionally added
Radioactive Substances	Intentionally added
Certain Shortchain Chlorinated Paraffins (See Annex F)	Intentionally added
Tributyl Tin (TBT) and Triphenyl Tin (TPT)	Intentionally added
Tributyl Tin Oxide (TBTO)	Intentionally added



JIG Annex B (Level B)

Material/Substance Category	Threshold level
Antimony/Antimony Compounds	1000ppm
Arsenic/Arsenic Compounds	1000ppm
Beryllium/Beryllium Compounds	1000ppm
Bismuth/ Bismuth Compounds	1000ppm
Brominated Flame Retardants (other than PBBs or PBDEs)	1000ppm
Nickel (external applications only)	1000ppm
Certain Phthalates (see Annex F)	1000ppm
Selenium/Selenium Compounds	1000ppm
Polyvinyl Chloride (PVC)	1000ppm

(Content rate against the mass of the surveyed item)



JIG Data Format

- Required & optional data fields defined for materials reporting
- Required fields represent minimum reporting requirements
- Guideline allows flexibility
 - Software solutions
 - “Paper” systems



Actions to be Taken by the JGPSSI

- * **JGPSSI adopts the JIG as the JGPSSI guidelines**
- * **JGPSSI will not develop its own guidelines**
- * **JGPSSI intends to make a shift to the JIG from Jan. 2006**
- * **JGPSSI proposes a “recommended format” in accordance with the JIG**
- * **JGPSSI will place the new tools and survey manual on the JGPSSI website that conform to the recommended format in Feb. 2006.** (http://210.254.215.73/jeita_eps/green/green11-2eg.htm)



Outline of the JGPSSI Format corresponding to the JIG (1)

1). Content Flag by threshold level (Y/N)

- * If intentionally added, select Y regardless of content value.
- * Due to other reasons, select Y when content exceeds threshold level which is set in a numerical value. Otherwise, select N.

2). To provide the information so that requester could make a judgment on compliance with regulations

- * Respondent to select the code which represent the exemptions for RoHS/ELV. (coded intended use classification)

3). Content rate

- * Content rate (ppm) in homogeneous material found in the area containing chemical substances.

4). Detailed chemical substances are not meant to be surveyed



Outline of the JGPSSI Format corresponding to the JIG (2)

Differences depending on the response method:

Format 1 (standard type)

- * Can be used for material, subparts, units and products
- * The content should be reported as total amount (mg)

Format 2 (detailed type)

- * Should be used for material and subparts only.
- * Content needs to be reported for each application area.
(Application area could be added up to 50 lines per part)

The JGPSSI recommends Format 1 (standard type)

Documents regarding format (draft) are now on JGPSSI Website.

http://210.254.215.73/jeita_eps/green/009.html



Activity of Japanese Industry

- JGPSSI Phase2 Activity

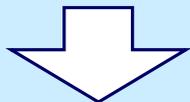


Approach to JGPSSI Phase 2

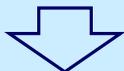
- Chemical Substance List
- Standardization of Formats



Rational Survey System



Need for a System to
Ensure a Reliability of
Survey Results



The Concept: Reliability of Survey Results Will Be Increased If Each Company Operates Rational Management System.

JGPSSI Phase 1

Survey and Analysis of
Parts and Materials

<Management of Content of
24 Surveyed Substances>

Survey of Each Part and
Each Material

JGPSSI Phase 2

Standardization of
Environment
Management System



Progress of “Guidelines for The Management of Chemical Substances in Products”

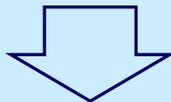
Issues among Supply chain:

- * No unified standard regarding the management of chemical substances.
- * Various requests regarding management of chemical substances. (such as audit)



The purpose of “Guidelines for The Management of Chemical Substances in Products (Draft)”

- * To standardize the requirement for the management system.
- * To increase the reliability of the information regarding chemical substances



The actions taken by the JGPSSI:

Achieved result by CP-WG

After receiving this draft, in order to further specify action items, the JGPSSI analyzed specific cases to add standards by which to evaluate conformance, arriving at the “Guidelines for The Management of Chemical Substances in Products ” published by the JGPSSI.

This guideline is now on JGPSSI website

http://210.254.215.73/jeita_eps/green/009.html



Outline of these guidelines

Specifying operational method to manage chemical substances in products

- * Apply to all industries in the supply chains of electrical and electronics industries, from materials manufactures through to set manufactures.**
- * Concrete Action Items required for managing chemical substances in products (corresponding to ISO Guide 72)**
- * The management system may either be built into existing systems within the firms, such as ISO9001 or ISO14001, or may set up a new system.**
- * Building the management system corresponding to these guidelines, a self-declaration may be issued based on validations by a first party. (validations by a second party in option)**

The management of chemical substances in products can be described as

- 1) acquiring content information for purchased materials (Incoming information),**
- 2) manufacturing of products using those materials in a manufacturing process,**
- 3) providing content information of the products sold (Outgoing information).**



Action Items List

Action items : Summarizes what is actually to be performed. (ISO Guide 72)
(Action items breakdown into Action Details and 31 Required level)

1. Policy

2. Planning

2-1 Definition of Needs and Requirement & Analysis of Key Issues

2-2 Establishment of Targets and Planning of Operational Processes

2-3 Definition of Organizational Systems, Roles, & Responsibility

3. Implementation & Management

3-1 Operational Management

3-1-1 Design/Development, 3-1-2 Obtain and Confirm Information, 3-1-3 Purchasing,
3-1-4 Manufacturing Processes, 3-1-5 Revision Management, 3-1-6 shipping Confirmation,
3-1-7 Handling Non-Conformances

3-2 Human Resources Management

3-3 Documentation and Documentation Management

3-4 Communication (Sharing & Provision of Information)

4. Performance Evaluation and Improvement (Checking and Improving the State of Implementation)

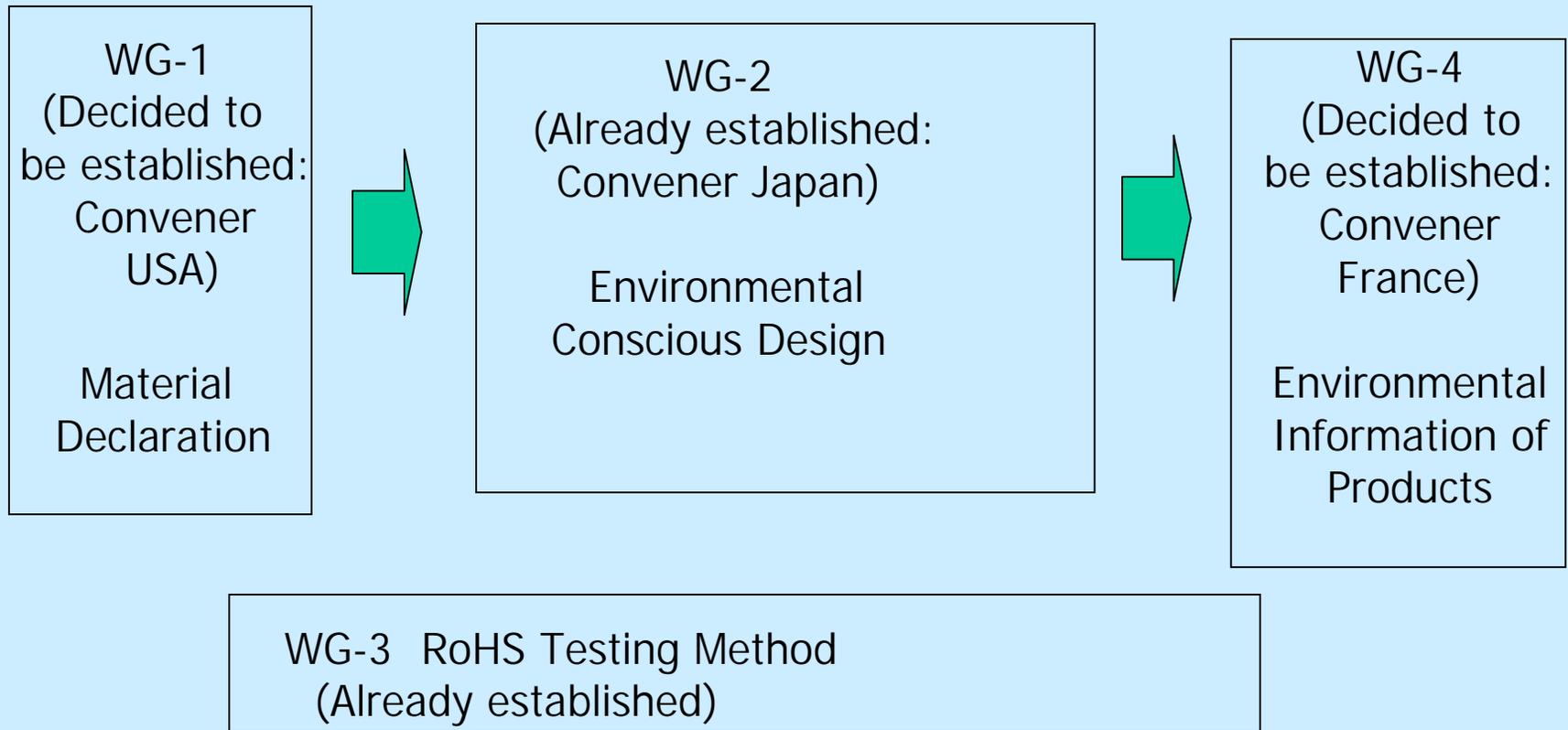
5. Management Review (Correction by Management)



Standardization in IEC TC111 for Material Declaration



Framework of discussion in IEC TC111





Material Declaration

1. Standardization of survey and response system

There are major standardization activities in the world

- IEC PAS 61906
- JIG (EIA,EICTA,JGPSSI)
- IPC 1752 (Format)
- JGPSSI (Format)

• In IEC TC111, MD-WG will be established and start the discussion to make a international standard.



Management of Chemical Substance in Products

2. Improving reliability of disclosed information to comply with legislations



JGPSSI established :“Guidelines for the Management of Chemical
Substances in Products” Sep. 2005

*** Standardization of required items to
build a proper management system of
chemical substances in products**



Self-Declaration of conformity

*** To spread these guidelines among supply chain**

**• Under this consideration, JGPSSI will propose these
guidelines as an international standard in TC111**



Conclusion



Conclusion

Essential Element for Electrical Manufacturer

Development of Environmentally-Friendly Products and Adaptation to Regulations

Survey of Chemical Substances in Products and Parts



Green Procurement Survey

- Need for International Standards to Conduct the Survey Effectively

Proposal of JIG by JGPSSI, EIA and EICTA

Working Group will be set up in IEC TC111 and will start to discuss.

- Necessity of Increasing Reliability of Survey Results

Suppliers' Management of Chemical Substances in Their Products and Parts is a Must.
Eco-Audit and Analysis are Effective as Complementary Measures.

Need for the International Standardization of Management of Chemicals Content
Promotion of the Management Guideline as JGPSSI Phase 2 from now on
Expected to Propose JGPSSI Guideline to the World



Canon's Environmentally Conscious Management

1. Raise corporate value
2. Differentiate products based on environmentally conscious design
3. Reduce costs through energy-and resource-efficient production
4. Avoid risk through elimination of hazardous substances



Aim for compatibility between contribution to management and protection of global environment.



Thank you for your attention.

