

SHARP's Efforts for Improving Recyclability



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I. Outline of Sharp

Outline of Sharp(1)

Corporate overview



Founding:	15 th September 1912
Business activity:	Manufacture and sales of audio-visual, communication, health, environmental and information equipment, LCDs, solar cells, and other electronic devices
Capital stock:	204,675 million yen Note: Any fractional sum of less than a million yen has been rounded off. (as of March 31, 2009)
Sales [Fiscal 2009]:	2,755,948 million yen (consolidated) 2,147,682 million yen (unconsolidated)
Production sites:	Overseas: 23 companies in 14 countries/regions
Employees:	Sharp Corporation: 22,700 Consolidated: 54,800 Entire Sharp Group: 62,600 (32,300 in Japan and 30,300 overseas) (as of April 1, 2010)

Outline of Sharp (2)

Business activities

Consumer / Information Products

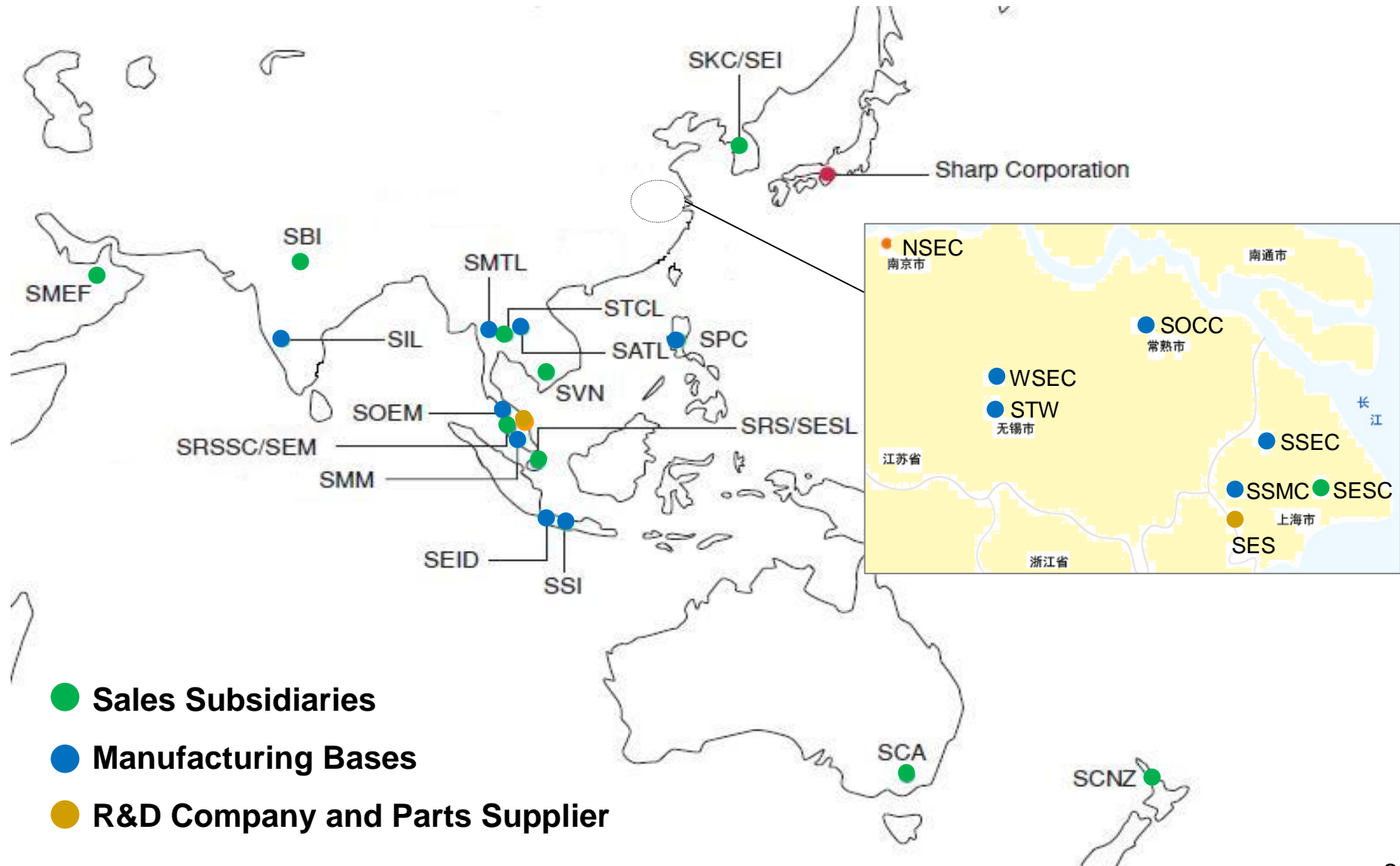
Audio-Visual and Communication Equipment	LCD color televisions, color televisions, projectors, DVD recorders, DVD players, Blu-ray Disc recorders, Blu-ray Disc players, mobile communications handsets, mobile phones, PHS (personal handy-phone system) terminals
Health and Environment Equipment	Refrigerators, superheated steam ovens, microwave ovens, air conditioners, washing machines, vacuum cleaners, air purifiers, dehumidifiers, humidifiers, electric heaters, small cooking appliances, Plasmacluster Ion generators, LED lights, solar-powered LED lights
Information Equipment	Personal computers, electronic dictionaries, calculators, facsimiles, telephones, POS systems, handy data terminals, electronic cash registers, LCD color monitors, information displays, digital MFPs (multifunction printers), options and consumables, software, FA equipment, ultrasonic cleaners



Electronic Components

LCDs	TFT LCD modules, Duty LCD modules, System LCD modules
Solar Cells	Crystalline solar cells, thin-film solar cells
Other Electronic Devices	CCD/CMOS imagers, LSIs for LCDs, microprocessors, flash memory, combination memory, analog ICs, components for satellite broadcasting, terrestrial digital tuners, RF modules, network components, laser diodes, LEDs, optical pickups, optical sensors, components for optical communications, regulators, switching power supplies

Business in Asia



II. Sharp's Corporate Vision

Corporate Vision as “Eco-Positive Company”

An “Eco-Positive Company” is;
a company that aims to create solutions, in cooperation with all stakeholders, that have significantly more positive impact on the environment than any negative impact caused by the company's operations

Environmental burden
through company's
operations
<Negative Impact>

<<

Environmental contribution
through products and
services such as GHG
emission reductions
<Positive Impact>

Efforts to Realize Corporate Vision

Deepen environmental activities in 4 domains of “Eco-Positive Strategy”.

4 domains of “Eco-Positive Strategy”

➤ **Eco-Positive Technologies**

- > Generate new business through one-of-a-kind environmental technologies.

➤ **Eco-Positive Products**

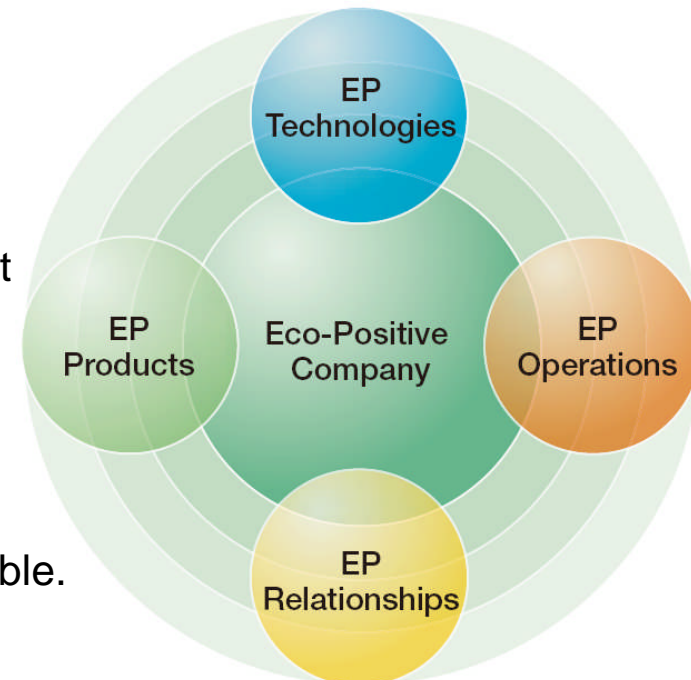
- > Expand contribution to protecting the environment through creating energy-saving /-creating products and services.

➤ **Eco-Positive Operations**

- > Reduce environmental impacts in product engineering and manufacturing as much as possible.

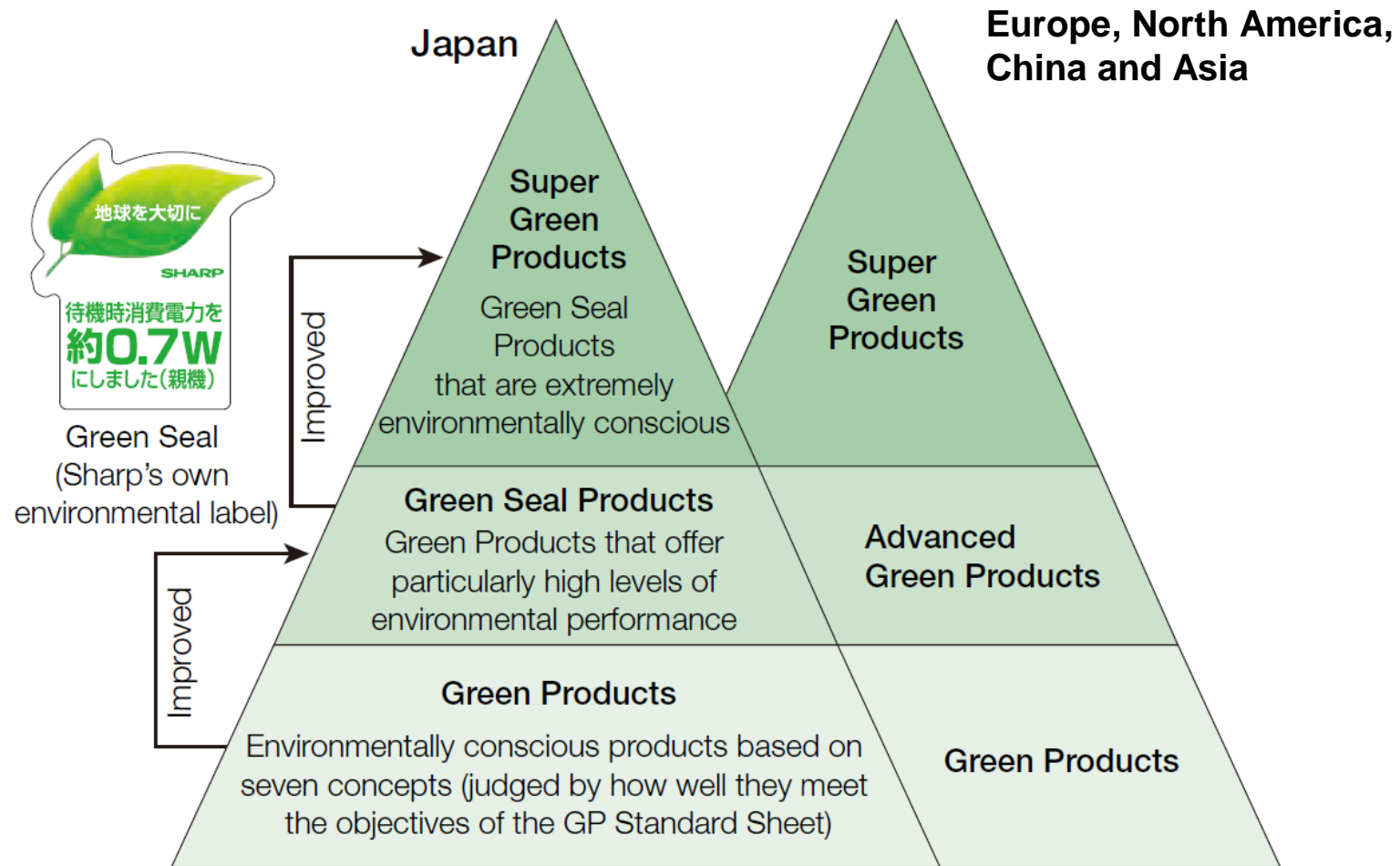
➤ **Eco-Positive Relationships**

- > Enhance corporate value through involvement with the community.



Sharp's Environmentally Conscious Products

The structure of Sharp's Environmentally Conscious Products

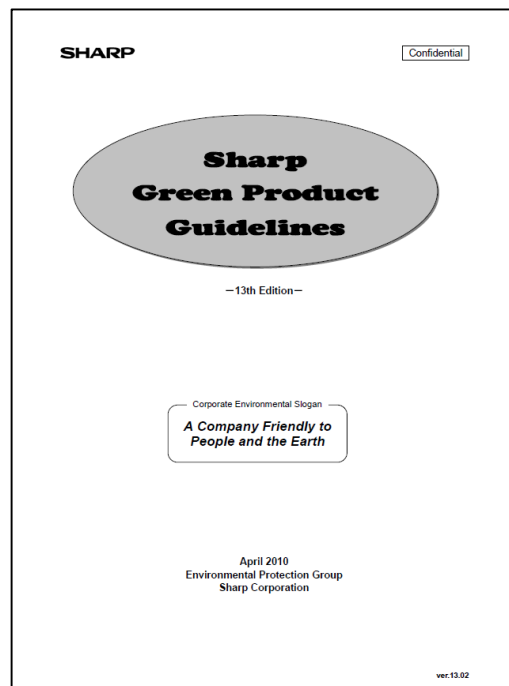


Sharp's Green Product Concepts

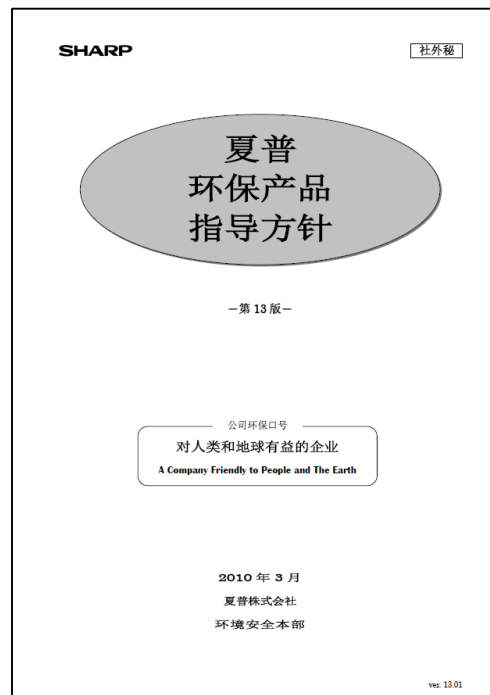
- Products with Superb Energy-Saving / Energy-Creating Performance
 - Improve the energy efficiency and reduce the energy consumption of products
- Products Designed to Conserve Resources
 - Reduce the amount of materials used in products
 - Design products that conserve resources during use
 - Extend the life span of products
- **Products Designed for Recycling**
 - Design products that are easy to disassemble
 - Use easy-to-recycle materials
- Products That Can Be Used and Disposed of Safely
 - Implement C-PA survey of chemical substances contained in parts and materials
 - Do not use substances that negatively affect people's health or the environment
- Products That Use Green Materials / Devices
 - Use of recycled plastics / plant-based plastics
- Products That Use Batteries, Packaging, and Manuals with Enhanced Environmental Consciousness
 - Reduce product packaging
 - Design products that allow easy removal of batteries
- Products That Show Their Environmental Performance and Information
 - Acquire environmental labels (eco labels)
 - Implement LCA

Sharp's Green Product Guidelines

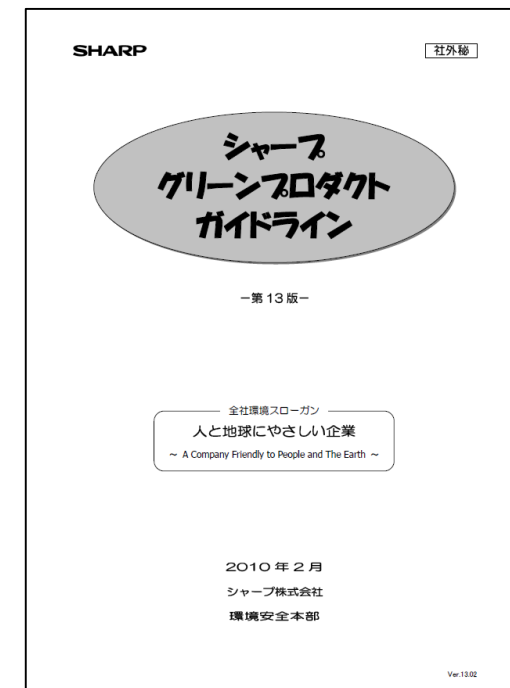
The Green Product Guidelines, which define development and design guidelines in line with seven concepts, have been established for the creation of Green Products.



English



Chinese



Japanese

III. Measures for the Recycling of E-waste

Measures for Recycling-conscious Design (1)

- In Product Development Process

Applying the Sharp Green Product Guidelines and Green Product Standards (check list) for all products

<Examples of criteria for recycling-conscious matters>

- Using standardized plastic in each product category
- Weight or ratio of difficult-to-recycle materials is reduced compared with the previous model
- Performance of easy disassembly is improved compared with previous model

	Target (at product planning stage)	Evaluation (at design review stage)
Using standardized plastic in each product category	Yes	Yes
Weight or ratio of difficult-to-recycle materials is reduced compared with the previous model	Yes	Yes
Performance of easy disassembly is improved compared with previous model	Yes	Yes



Measures for Recycling-conscious Design (2)

- Holding In-house Training

Educating engineers and product planners on how important it is to design recycling-friendly products, with not only text books, but by having an opportunity to disassemble the products.



Tour of a recycling plant



Lecture



Disassembly practice

One-day program

Example of Contents (1/4)

- Rusting of Screws (Air conditioners) "Before"

Point

Difficult to disassemble due to a rusted screw whose screw hole has lost its shape.



Example of Contents (2/4)

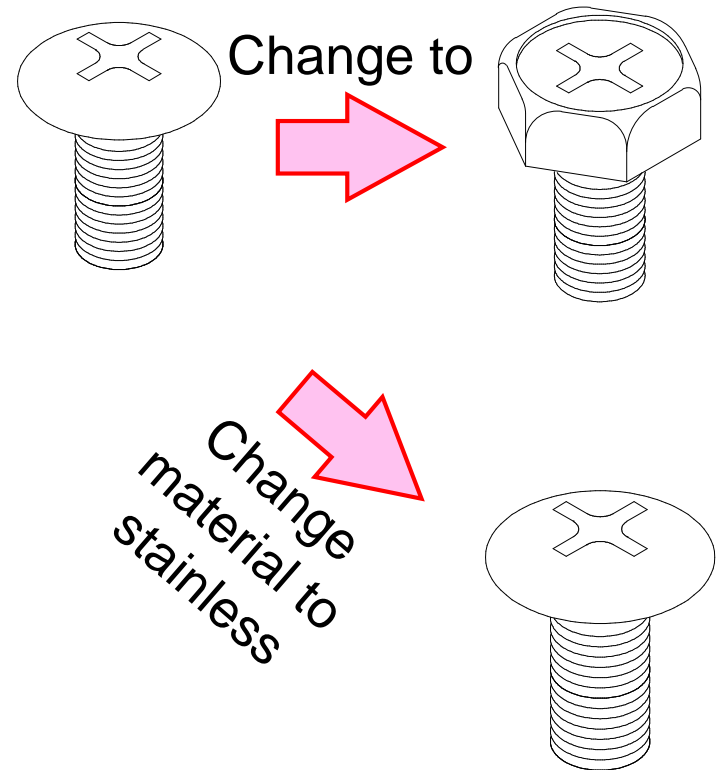
● Rusting of Screws (Air conditioners) "After"

Measure

- Change the shape of screw head to hexagon nut type which is resistant to rusting.
- Change the material of the screw to stainless.

Effect

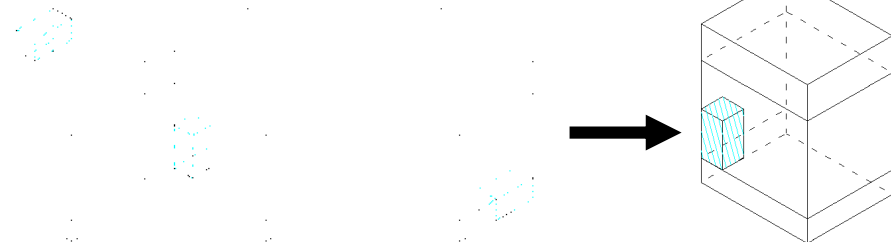
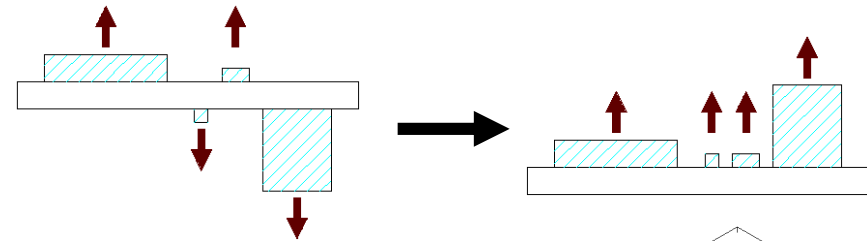
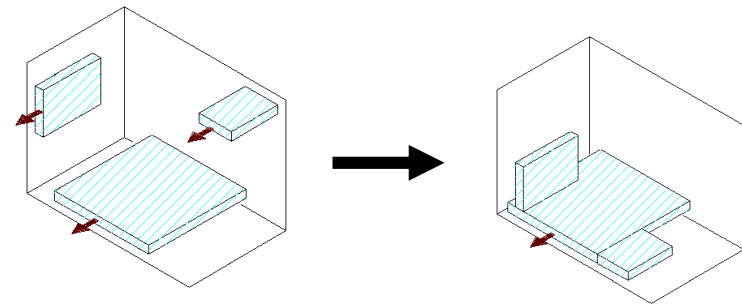
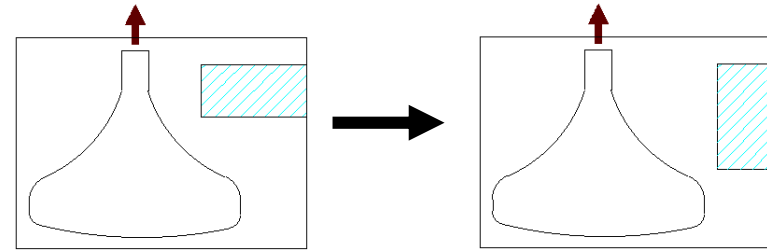
Shortens the time of disassembly.



Example of Contents (3/4)

● Ideas for easy-to-remove components

- Place the component without obstacles, so that it can be easily taken out.
- Put together components that will be disposed of in the same manner.
- Place components so they can be taken out in the same direction.
- Standardize mounting positions.



Example of Contents (4/4)

- Marking for Plastic Materials (Plastic parts weighting 100g or more)

Symbols and Abbreviations

Referring to the following ISO.

- ISO1043-1

“Plastics – Symbols and abbreviated terms

-- Part 1: Basic polymers and their special characteristics”

- ISO1043-2

“Plastics – Symbols and abbreviated terms

-- Part 2: Fillers and reinforcing materials”

- ISO1043-3

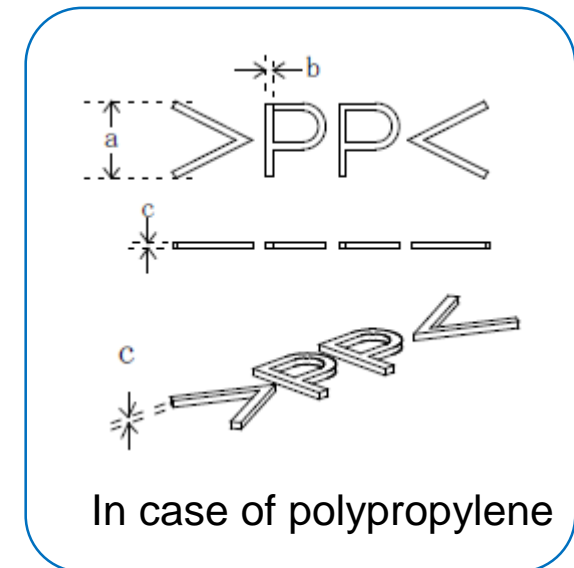
“Plastics – Symbols and abbreviated terms

-- Part 3: Plasticizers”

- ISO1043-4

“Plastics – Symbols and abbreviated terms

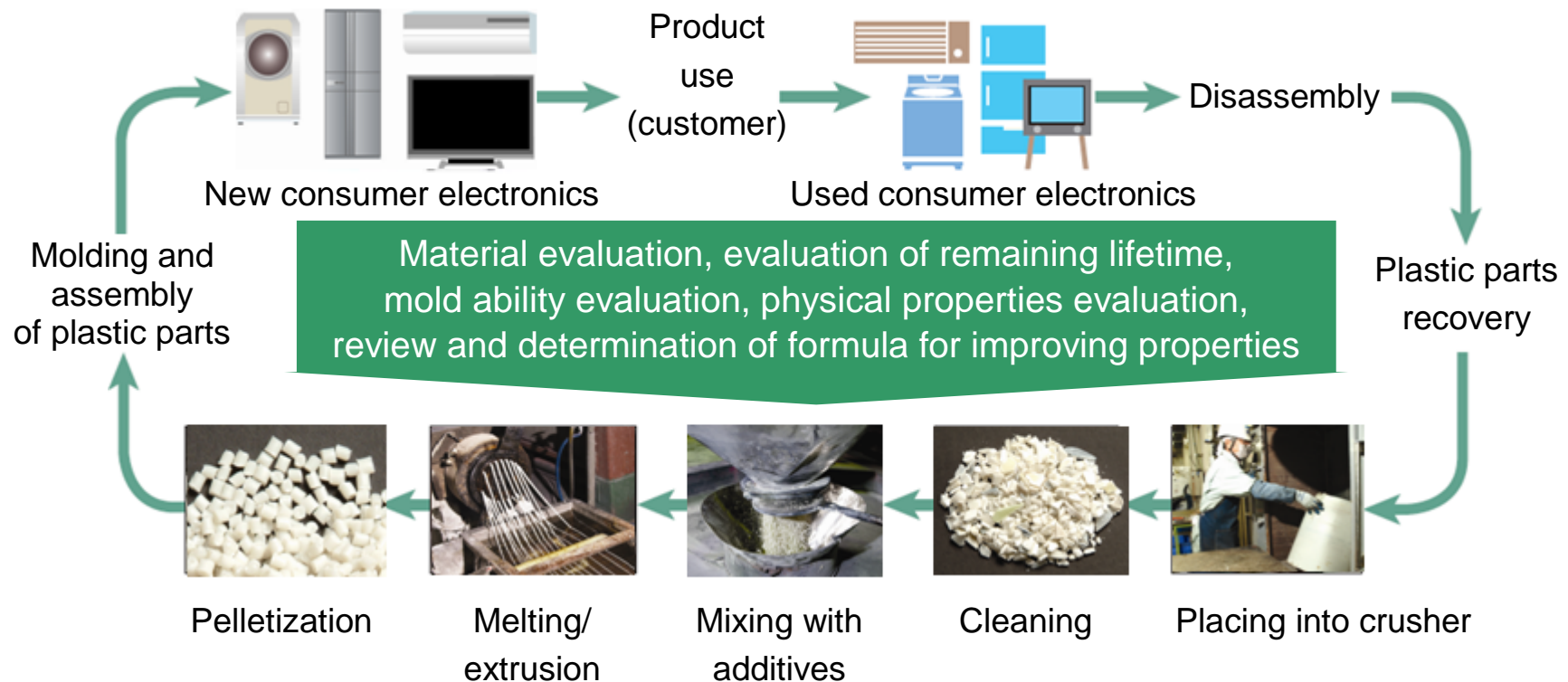
-- Part 4: Flame retardants”



Development of Environmental Technology

“Closed-Loop Plastic Material Recycling”

Technology to recover plastic repeatedly from used consumer electronics and to reuse it in parts of new consumer electronics.



SHARP

Thank you very much for your attention.