

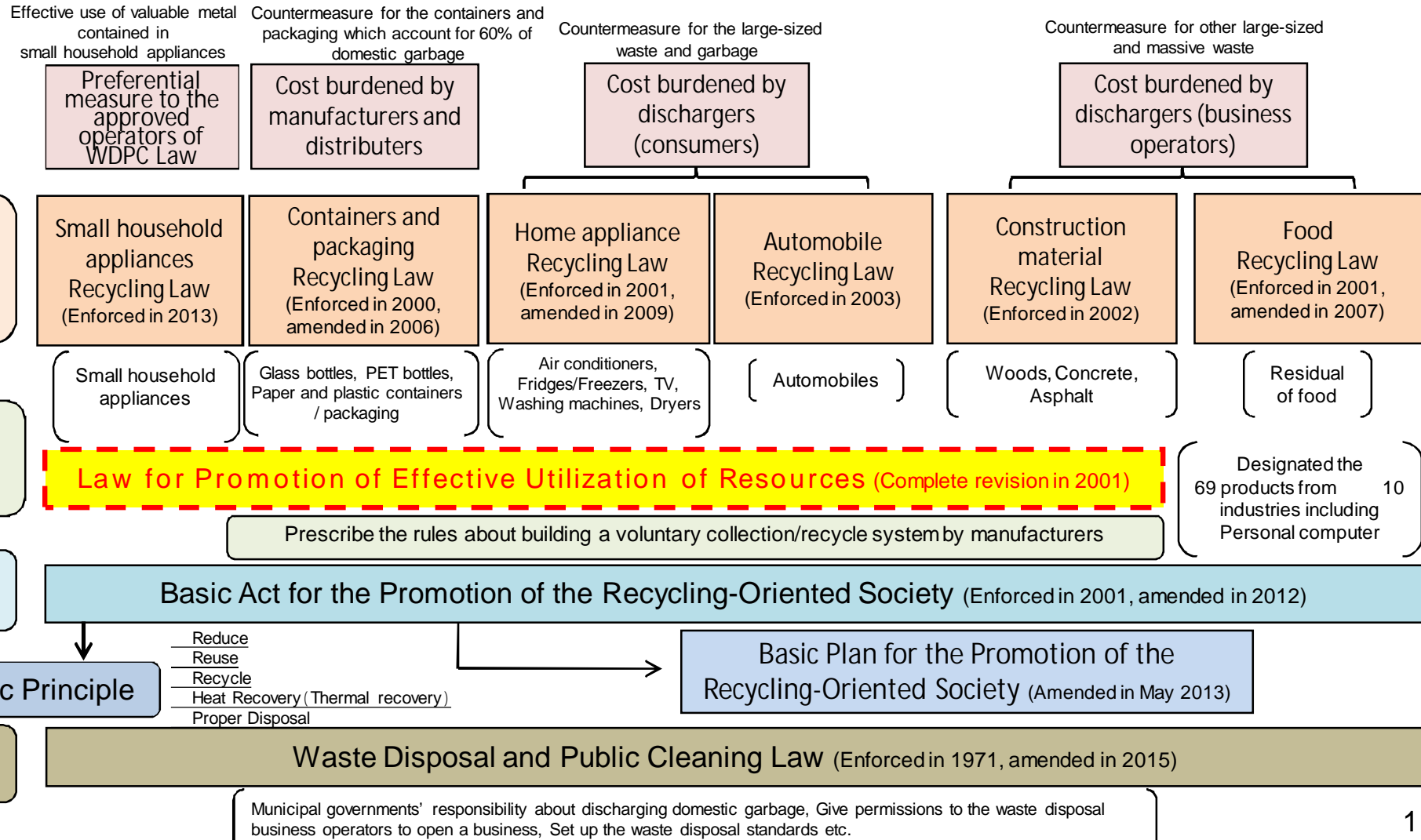
# Law for the Promotion of Effective Utilization of Resources

November 12, 2015

Recycling Promotion Division  
Ministry of Economy, Trade and Industry(METI)

# Legislative System to Promote the Creation of a Recycling-Oriented Society

- Prepare respective laws for the individual products whose treatment after discharge are becoming problems. Also prepared the Basic Act for the Promotion of the Recycling-Oriented Society as a basic framework, and the Law for Promotion of Effective Utilization of Resources which promotes all-around 3R activities.
- Aim to build a "Recycle-Oriented Society" by promoting 3R ( Reduce, Reuse, Recycle) where environment and economy is integrated, leaving behind the mass production/mass consumption/mass disposal type of economic society. C



# Outline of the Law - 1

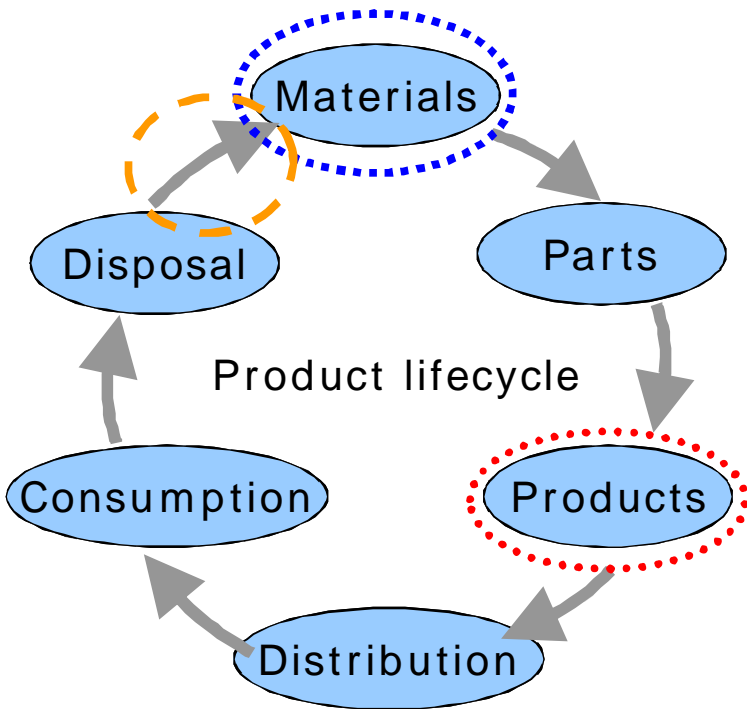
- **The seven systems** below designate the industries and products regulated by the law and prescribes “standards of judgment for business operators (standards of judgment)” for each industry and product. If the compliance efforts of businesses of a certain size are significantly insufficient in light of the standards of judgment, official recommendations, proclamations, or orders will be issued and penalties apply if an order is violated.

|  |  |
|--|--|
| Designated resources-saving industries | <b>5 industries in total</b> , including pulp and paper, inorganic chemical manufacturing, iron making and steel making/rolling  |
| Designated resource-reusing industries | <b>5 industries in total</b> : paper manufacturing, glass container manufacturing, construction, rigid PVC pipes and pipe fitting manufacturing, copier manufacturing                    |
| Specified resource-saved products      | <b>19 commodities</b> ; including automobiles, home appliances, personal computers, pachinko machines, metal furniture, and gas and oil appliances                                       |
| Specified reuse-promoted products      | <b>50 commodities</b> ; including automobiles, home appliances, personal computers, pachinko machines, metal furniture, gas and oil appliances, and bathroom units                       |
| Specified labeled products             | <b>7 commodities</b> ; steel cans, aluminum cans, PET bottles, paper containers and packaging, plastic containers and packaging, compact secondary batteries, PCV construction materials |
| Specified resource-recycled products   | <b>2 commodities</b> ; compact secondary batteries and personal computers  |
| Specified by-products                  | 2 commodities: Coal ash generated by the electric industry. Soil and sand, slabs of concrete, and lumber generated by the construction industry  |

# Outline of the Law - 2

- For the industries and products regulated by this law (10 industries and 69 commodities), manufacturing business operators are required to

Reduce or recycle the by-products generated in the manufacturing  
Adopt environmentally considered product design  
Collect and recycle end-of-life products



Designated resources-saving industries

Specified by-products

Specified resource-saved products

Specified reuse-promoted products

Designated resources-saving industries (again)

Designated resource-reusing industries

Specified resource-recycled products

Specified labeled products

# Systems in detail - 1

## Designated resources-saving industries

### <5 industries>

- Pulp and paper manufacturing (sludge)
- Inorganic and organic chemical manufacturing (sludge)
- Iron making and steel making/rolling (slag)
- Primary copper smelting and refining (slag)
- Automobile manufacturing (metal scrap, molding sand)

## Industries that should reduce and recycle by-products

National government

### Standards of judgment (ministerial ordinance)

Establish "standards of judgment" for measures undertaken by business operators for the purpose of promoting the reduction of generation of by-products and utilization of recyclable resources. (For each industry)

### <Standards of judgment overview (example)>

- Set by-product reduction targets
- Systematic maintenance of equipment
- Technology improvement
- Consolidated manager of operations
- Processing according to regulations or specifications
- Systematic public disclosure

Submit plan to the national government

Business operator

### Reflect in operations

Take the standards of judgment in to consideration and work to promote the reduction of generation of by-products and utilization of recyclable resources in their business.

Operations based on plan

### Establish plans

Establish a plan to promote reduction of generation of by-products and utilization of recyclable resources, and submit it to the competent minister.

# Systems in detail - 2

## Designated resource-reusing industries

### <Utilization of recyclable resources: 4 industries>

- Paper manufacturing (used paper)
  - Rigid PVC pipes and pipe fitting manufacturing (pipe fittings, etc.)
  - Glass container manufacturing (cullets)
  - Construction industry (sand, pieces of concrete, etc.)
- <Utilization of recyclable parts: 1 industry>
- Copier manufacturing (drive mechanisms, exposure units, etc.)

## Industries that should reuse raw materials, and industries that should reuse parts

National  
government

### Standards of judgment (ministerial ordinance)

Establish "standards of judgment" relating to utilization of recyclable resources and parts by business operators in their plants and workplaces. (For each industry)

### <Standards of judgment overview (example)>

- Set targets
- Equipment maintenance
- Technology improvement
- Establishment of plan for utilization of recycled raw materials, and implementation status log
- Provision of quality information

Business  
operator

### Reflect in operations

Take the standards of judgment in to consideration and work to promote the utilization of recyclable resources and parts in their business.



# Systems in detail - 3

## Specified resource-saved products

### <19 commodities>

Automobiles, personal computers, home appliances (air conditioners, televisions, microwave ovens, clothes dryers, refrigerators, washing machines), pachinko machines (including rotary type), metal furniture, shelves, office desks, swivel chairs), and gas and oil appliances

Products that should be designed to save resources and have longer service life

National government

Standards of judgment (ministerial ordinance)

Establish "standards of judgment" relating to the reduction of the generation of end-of-life parts, etc. in manufacturing and other industries. (For each commodity)

<Standards of judgment overview (example)>

- Rational use of raw materials
- Promotion of using products a long time
- Ensure opportunities for repair
- Technology improvement
- Assessment in advance
- Efforts relating to packaging materials
- Provision of information relating to product structure and repair

Reflect in operations

Business operator

Take the standards of judgment into consideration and work to reduce the generation of end-of-life parts in their businesses.

# Systems in detail - 4

## Specified reuse-promoted products

### <50 commodities>

Bathroom units, automobiles, home appliances, (self-contained air conditioners, televisions, microwave ovens, clothes dryers, refrigerators, washing machines), pachinko machines, slot machines, copiers, metal furniture (cupboards, shelves, office desks, swivel chairs), kitchen systems, gas and oil appliances (oil heaters, gas cookers with grills, gas instantaneous water heater, bath heaters with gas burners, oil-fired water heaters), personal computers, compact secondary batteries

## Products that should be designed to be easily recycled

National government

### Standards of judgment (ministerial ordinance)

Establish "standards of judgment" relating to designing products that can be easily recycled, such as the ease with which parts can be removed from used products. (For each product)

### <Standards of judgment overview (example)>

- Efforts relating to raw materials
- Making products easier to disassemble due to efforts relating to structure
- Efforts relating to separation (labeling, etc.)
- Technology improvement
- Assessment in advance
- Provision of information
- Efforts relating to packaging materials

### Reflect in operations

Business operator

Take the standards of judgment in to consideration and design their products so that they can be easily recycled.



# Introducing a measure to provide information about the substances contained in the products (J-Moss System)

Amendment was carried out for the standards of judgements (ministerial ordinance) regarding the specified reuse-promoted products on July 1<sup>st</sup>, 2006.

- Standards of judgement (Summary)

(Provision of Information)

The manufacturers etc. are required to provide the information regarding the type and rates of substances contained in the products in order to encourage the use of recyclable resources or recyclable parts of these products. The information will be provided in accordance with JIS C0950.

→Mandate the manufacturers/importers of the products to provide the information about contained substances

## Marking method by JIS C0950

- Present the contain mark on the body of product and the packing boxes
- In the product brochures, instruction manuals and the website of the product, indicate places where the substances are contained and their amounts along with a contain mark.

Contain Mark



Presented on the body of the product, packing boxes, brochures etc..

### Products to be marked

- Personal computer
- Unit type air conditioner
- Television receiver
- Electric refrigerator
- Electric washing machine
- Microwave
- Clothes dryer

### Substances to be marked

- Lead and its compounds
- Mercury and its compounds
- Hexavalent chromium compound
- Cadmium and its compounds
- Polybrominated biphenyl (PBB)
- Polybrominated diphenyl ether (PBDE)

# Systems in detail - 5

## Specified labeled products

### <7 commodities>

- Steel cans (for beverages), aluminum cans (for beverages)
- PET bottles (for beverages, liquors, soy sauce, designated condiments)
- Paper containers and packaging, plastic containers and packaging
- Compact secondary batteries (sealed batteries, sealed alkaline batteries, lithium batteries)
- PCV construction materials (rigid PVC pipes, spouting and window frames, PVC flooring and wallpaper)

Products that require special labeling to promote selected collection by consumers and municipalities

National government

Standard labels (ministerial ordinance)

Establish "standards for labeling" that prescribes information that should be displayed and points of compliance.

<Standard labels (examples)>

- Information that should be displayed
  - Material
  - Plate material for sealed batteries
- Points of compliance
  - Design of the identification mark
  - Size of the identification mark
  - Prominence of the identification mark

Business operator

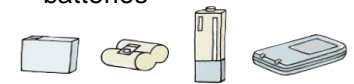
Reflect in operations

Display the prescribed labels on their products.

(1) Containers and packaging



(2) Compact secondary batteries



(3) Rigid PVC products



# Systems in detail - 6

## Specified resource-recycled products

### < 2 commodities >

- Personal computers
  - Desktops
  - Laptops
  - CRT displays
  - Liquid crystal displays
- Sealed batteries
  - Sealed lead batteries
  - Sealed nickel-cadmium batteries
  - Sealed nickel-metal-hydride batteries
  - Lithium batteries

## Products that require business operators to undertake self-collection and recycling

National government

Standards of judgment (ministerial ordinance)

Establish "standards of judgment" relating to self-collection and recycling targets and coordination between municipalities.

<Standard of judgment (examples)>

- Self-collection implementation method (recycling compensation, etc.)
- Recycling targets
- Recycling implementation method
- Condition where businesses take back specified used resource-recycled products from municipalities
- Matters relating to heat recovery



Business operator

Reflect in operations

Take the "standards of judgment" into consideration and collect and recycle their products.

Recycling targets

| Personal computers      |     | Sealed batteries                      |     |
|-------------------------|-----|---------------------------------------|-----|
| Desktops                | 50% | Sealed lead batteries                 | 50% |
| Laptops                 | 20% | Sealed nickel-cadmium batteries       | 60% |
| CRT displays            | 55% | Sealed nickel-metal-hydride batteries | 55% |
| Liquid crystal displays | 55% | Lithium batteries                     | 30% |

# Systems in detail - 7

## Specified by-products

### < 2 commodities >

- Coal ash generated by the electricity industry
- Soil and sand, concrete pieces, asphalt, lumber, and other waste generated by the construction industry

## By-products that should be reused as raw materials

### Standards of judgment (ministerial ordinance)

National government

Establish "standards of judgment" relating to the promotion of utilization of recycled resources by business operators.  
(For each specified by-product)

### <Standard of judgment (examples)>

- Maintenance of equipment
- Technology improvement
- Creation of by-product utilization plan
- Provision of information to parties that utilize by-products

### Reflect in operations

Business operator



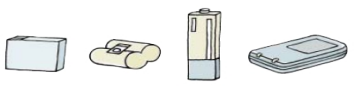
Take the standards of judgment in to consideration and promote the utilization of specified by-products as resources (such as construction materials).

# State of initiatives by businesses based on the Law for the Promotion of Effective Utilization of Resources - 1

- Based on the Law for the Promotion of Effective Utilization of Resources, initiatives for the 3Rs are promoted across 10 industries and 69 product categories. Each year a survey is conducted to assess the state of initiative implementation by businesses and, if necessary, to encourage improvements.
- The overall state of initiatives is shown in the following table. As a whole, initiatives are progressing significantly since 1991, when the law was introduced.

| Type and industry product   | Outline of the Standards of judgment   | State of initiatives  |
|---|--|---|
| Specified resource-saved products (19 in total): Products that should be designed to save resources and have longer service life        |  |   |
| Automobiles   | <ul style="list-style-type: none"> <li>· Use of lightweight chassis and engine components</li> <li>· Use of high-durability components etc.</li> </ul>   | <ul style="list-style-type: none"> <li>· Developed a resin material for the parts that realizes to lighten the vehicle weight while keeping the equivalent rigidity. Used for the front and rear bumpers. (2014)</li> </ul>           |
| Air conditioners  | <ul style="list-style-type: none"> <li>· Use of high-durability components</li> <li>· Provide repair opportunities to consumers etc.</li> </ul>  | <ul style="list-style-type: none"> <li>· Introduced thinner and lighter design by using CAE (simulation analysis by computer) (2013)</li> </ul>   |
| Storage furniture, office desks, swivel chairs  | <ul style="list-style-type: none"> <li>· Rationalization of material use</li> <li>· Use for a longer time etc.</li> </ul>  | <ul style="list-style-type: none"> <li>· Reduced the thickness of steel plate by devising the shape of leg assistance (2013)</li> </ul>   |
| Specified reuse-promoted products (59 in total): Products that should be designed to be easily recycled                                 |  |   |
| Televisions   | <ul style="list-style-type: none"> <li>· Reduce number of screws to make removal of parts easier</li> <li>· Display the names of synthetic resin materials etc.</li> </ul>                       | <ul style="list-style-type: none"> <li>· Display the fire-retarding and other materials used, and display the number of screws used (Since 1996)</li> </ul>   |
| Kerosene heaters  | <ul style="list-style-type: none"> <li>· Make parts easier to remove through inventive construction</li> <li>· Use packaging materials that are easy to utilize as recycled resources</li> </ul> | <ul style="list-style-type: none"> <li>· Materials of resin parts need to be displayed if it is 100g or over. The parts less than 100g will also be displayed to the extent possible.</li> </ul>                                      |
| Designated resource-reusing industries (5 in total): Industries that should reuse raw materials, and industries that should reuse parts |  |   |
| Paper manufacturing   | <ul style="list-style-type: none"> <li>· <b>Used paper recycling rate of 64% by the FY 2015</b></li> <li>· Create used paper utilization plans every fiscal year</li> </ul>                      | <ul style="list-style-type: none"> <li>· Used paper recycling rate: 52.3% (1991) → <b>63.9% (2014)</b></li> <li>· Promote used collection in offices, expand collection of mixed paper form homes and offices</li> </ul>              |
| Glass container manufacturing   | <ul style="list-style-type: none"> <li>· <b>Cullet utilization rate of 97% by the FY 2015</b></li> <li>· Create cullet utilization plans every fiscal year</li> </ul>                            | <ul style="list-style-type: none"> <li>· Cullet utilization rate: 51.8% (1991) → <b>99.2% (2013)</b></li> <li>· Develop new, and expand and improve existing uses for cullets; Develop and popularize lightweight bottles</li> </ul>  |
| Copier manufacturing  | <ul style="list-style-type: none"> <li>· Increase amount of recycled parts used</li> <li>· Create recycled components utilization plans every fiscal year</li> </ul>                             | <ul style="list-style-type: none"> <li>· Amount of recycled parts utilized: 129 ton (2001) → 1,782 tons (2009)</li> <li>· Trade in of other manufacturers' models and using exchange centers to return them to their maker</li> </ul> |

# State of initiatives by businesses based on the Law for the Promotion of Effective Utilization of Resources - 2

| Type and industry/product   | Outline of the Standards of judgment  | State of initiatives  |
|---|---|---|
| Specified labeled products (7 in total): Products that require special labeling to promote selected collection by consumers and municipalities                                  |   |   |
| PET bottles   | · Manufacturers and importers must comply with identification labeling  | Labeling rate 100% (2012)   |
| Compact secondary batteries   | · Manufacturers and importers must comply with identification labeling  | Labeling rate 100% (2012)    |
| Specified resource-recycled products (2 in total): Products that require business operators to undertake self-collection and recycling  |   |   |
| Personal computers  | · Self-collection of used products by manufacturers and importers<br>· Target recycling rates; 50% (Desktops) 20% (Laptops)<br>55% (CRT displays) 55% (Liquid crystal displays)   | <Recycling Rates><br>· Desktop PCs : 38.8% (2001) → 78.4% (2013)<br>· Laptops: 38.8% (2001) → 59.3% (2013)<br>· CRT displays: 66.2% (2001) → 70.9% (2013)<br>· Liquid crystal displays: 71.0% (2001) → 74.3% (2013)       |
| Compact secondary batteries   | · Self-collection of used products by manufacturers and importers<br>· Target recycling rates; 50% (Sealed lead batteries), 60% (Sealed nickel-cadmium batteries), 55% (Sealed nickel-metal-hydride batteries)<br>30% (Lithium batteries) | <Recycling Rates><br>· Sealed lead batteries: 50% (2001) → 50% (2013)<br>· Sealed nickel-cadmium batteries: 70.9% (2001) → 72.2% (2013)<br>· Sealed nickel-metal-hydride batteries: 69.0% (2001) → 76.6% (2013)           |
| Designated resources-saving industries (5 in total): Industries that should reduce and recycle by-products  |   |   |
| Automobile manufacturing  | · Business operators setting targets for the reduction of scrap metal generation<br>· Systematic facilities, such as equipment for collecting scrap metal and magnetic separators   | · Prepared melting furnaces to re-use scraps as raw material (2013)<br>· Final amount processed: 20,000 tons (2002) → 400 tons (2013)   |
| Pulp/paper manufacturing  | · Business operators setting targets for the reduction of paper sludge generation<br>· Systematic facilities, such as fiber recovery equipment and combustion equipment   | · As a facility to collect tiny fibers, paper-materials-collecting equipment such as pressurized flotation unit and filters were introduced (2013)<br>· Final amount processed: 486,000 tons (2002) → 419,000 tons (2008) |
| Iron making and steel making/rolling  | · Business operators setting targets for the reduction of iron and steel slag generation<br>· Systematic facilities, such as dehydrators, storage tanks, and dust collectors  | · Introduced facilities to re-use in the iron manufacture processes (2014)<br>· Final amount processed: 720,000 tons (2002) → 730,000 tons (2008)   |
| Specified by-products (2 industries in total): By-products that should be reused as raw materials   |   |   |
| Coal ash generated by the electricity industry  | · Business operators creating plans to promote utilization of coal ash<br>· Processing coal ash into things such as admixture for mortar  | · Expanded applications for coal ash (Providing samples) (2013)<br>· By-product recycling rate: 67.7% (1999) → 95.9% (2008)   |



# Reference

# The Process to Establish the Law

1991- Law for Promotion of Utilization of Recycled Resources

1 R

Recycle

- ✓ Utilization of collected products as raw materials
- ✓ Selecting materials easy to recycle and designing products easy to disassemble
- ✓ Labeling for selective collection
- ✓ Promotion to recycle the by-products generated in plants

1999- Vision for a Recycling-Oriented Economy

Law amendment  
Considerably more  
measures were added

- ✓ As well as strengthening the existing recycling measures, a formal introduction of the following measures were proposed in order to form a recycling-oriented economy.
  - Reduce : Prevent the waste to be generated with resource-saving and longer-lasting products
  - Reuse : Re-use of products, parts, etc.

2001- Law for the Promotion of Effective Utilization of Resources

3 R

Reduce  
Reuse  
Recycle

## Aim of the law

To ensure the effective utilization of resources and to take necessary measures to reduce the generation of used products, etc. and by-products and promote the utilization of recyclable resources and reusable parts in order to contribute to waste reduction and environmental preservation.

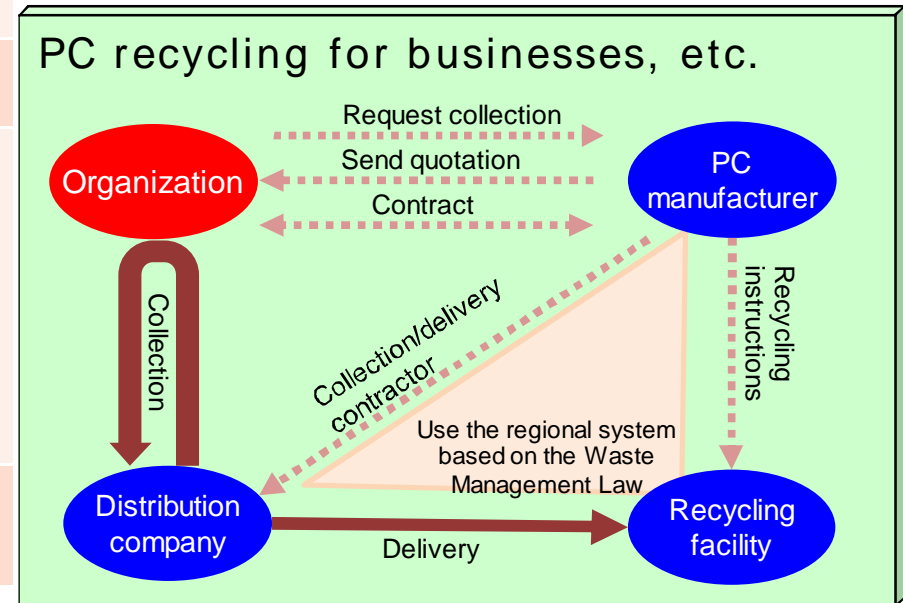
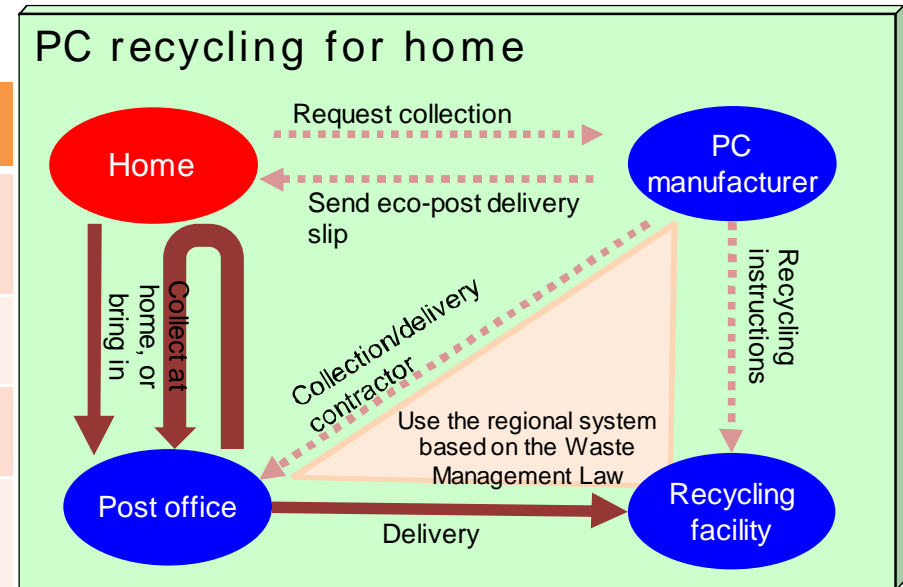
# Personal computer recycling

(Specified resource-recycled products)

○ Standards of judgment from the Law for the Promotion of Effective Utilization of Resources (ministerial ordinance)

| Main points of the ministerial ordinance                                 |                             | Standards of judgment   |
|--|-----------------------------|---|
| Ensuring implementation of self-collection, other implementation methods | Target business operator    | ○ Personal computer manufacturers, etc.   |
|  | Target products             | ○ Personal computers and peripherals  |
|  | Self-collection method      | ○ Self-collect from predetermined collection points   |
|  | Compensation                | ○ No compensation shall be gained when performing self-collection (excluding items generated in business activities or items sold by retailers on or before September 30, 2003).  |
|  | Public disclosure           | ○ The implementation status of self-collection shall be disclosed publicly.   |
| Recycling targets  | Setting recycling rates     | ○ The target gross weight of materials utilized as “recycled parts or recycled resources (excluding chemical transformation)” shall not be set less than the following ratios of the gross weight of applicable used personal computers. <ul style="list-style-type: none"> <li>· Desktops 50%</li> <li>· Laptops 20%</li> <li>· CRT displays 55%</li> <li>· Liquid crystal displays 55%</li> </ul> |
| Coordination with municipalities   | Take-back by municipalities | ○ Shall be taken back when requested by municipalities.<br>○ Take-back conditions shall be publicly disclosed.  |

Personal computer (PC) collection schematic



# Sealed (compact secondary) battery recycling

(Specified resource-recycled products)

- Standards of judgment from the Law for the Promotion of Effective Utilization of Resources (ministerial ordinance)

| Main points of the ministerial ordinance                                 |                             | Standards of judgment  |                         |     |                                   |     |   |     |                     |     |
|--|-----------------------------|--|-------------------------|-----|-----------------------------------|-----|---|-----|---------------------|-----|
| Ensuring implementation of self-collection, other implementation methods | Target business operator    | <ul style="list-style-type: none"> <li>○ Battery manufacturers, etc.</li> <li>○ Manufacturers of products that use batteries ,etc.</li> </ul>  |                         |     |                                   |     |   |     |                     |     |
|  | Target products             | <ul style="list-style-type: none"> <li>○ Sealed (compact secondary) batteries</li> </ul>   |                         |     |                                   |     |   |     |                     |     |
|  | Self-collection method      | <ul style="list-style-type: none"> <li>○ Establish the necessary methods for self-collection, such as designating self-collection points, or providing collection boxes.</li> <li>○ When self-collected the batteries, the business operators such as manufacturers of products that use batteries shall hand them over to the battery manufacturers without delay. (However, there is nothing to prevent them recycling the batteries themselves.)</li> </ul>   |                         |     |                                   |     |   |     |                     |     |
|  | Compensation                | <ul style="list-style-type: none"> <li>○ No compensation shall be gained when performing self-collection.</li> </ul>   |                         |     |                                   |     |   |     |                     |     |
|  | Public disclosure           | <ul style="list-style-type: none"> <li>○ The implementation status of self-collection shall be disclosed publicly.</li> </ul>  |                         |     |                                   |     |   |     |                     |     |
|  | Compensation provision      | <ul style="list-style-type: none"> <li>○ Battery manufacturers shall adopt necessary measures for ensuring self-collection is implemented, such as providing compensation.</li> </ul>  |                         |     |                                   |     |   |     |                     |     |
| Recycling targets  | Setting recycling rates     | <ul style="list-style-type: none"> <li>○ The target gross weight of iron, lead, nickel, cobalt, cadmium, and other materials able to be utilized as recycled resources shall not be set less than the following ratios of the gross weight of applicable used sealed (compact secondary) batteries.</li> </ul> <table border="0"> <tr> <td>· Sealed lead batteries</td> <td>50%</td> </tr> <tr> <td>· Sealed nickel-cadmium batteries</td> <td>60%</td> </tr> <tr> <td>· Sealed nickel-metal-hydride batteries</td> <td>55%</td> </tr> <tr> <td>· Lithium batteries</td> <td>30%</td> </tr> </table> | · Sealed lead batteries | 50% | · Sealed nickel-cadmium batteries | 60% | · Sealed nickel-metal-hydride batteries | 55% | · Lithium batteries | 30% |
| · Sealed lead batteries  | 50%                         |  |                         |     |                                   |     |   |     |                     |     |
| · Sealed nickel-cadmium batteries  | 60%                         |  |                         |     |                                   |     |   |     |                     |     |
| · Sealed nickel-metal-hydride batteries                                  | 55%                         |  |                         |     |                                   |     |   |     |                     |     |
| · Lithium batteries  | 30%                         |  |                         |     |                                   |     |   |     |                     |     |
| Coordination with municipalities   | Take-back by municipalities | <ul style="list-style-type: none"> <li>○ Shall be taken back when requested by municipalities.</li> <li>○ Take-back conditions shall be publicly disclosed.</li> </ul>   |                         |     |                                   |     |   |     |                     |     |

- Sealed (compact secondary) battery collection schematic

