The Ministry of Economy, Trade and Industry (METI) of Japan has promulgated the Law for the Promotion of Effective Utilization of Resources on November 12, 2015. This law aims to encourage the efficient use of resources and minimize waste. It is administered by the Recycling Promotion Division of METI.
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.

Legal system for the individual products that are becoming problematic

- Small household appliances Recycling Law (Enforced in 2013)
- Containers and packaging Recycling Law (Enforced in 2000, amended in 2006)
- Automobile Recycling Law (Enforced in 2003)
- Construction material Recycling Law (Enforced in 2002)
- Food Recycling Law (Enforced in 2001, amended in 2007)
- Small household appliances
- Glass bottles, PET bottles, Paper and plastic containers / packaging
- Air conditioners, Fridges/Freezers, TV, Washing machines, Dryers
- Automobiles
- Woods, Concrete, Asphalt
- Residual of food
- Designated the 69 products from industries including Personal computer

Countermeasure for the containers and packaging which account for 60% of domestic garbage
Countermeasure for the large-sized waste and garbage
Countermeasure for other large-sized and massive waste

Cost burdened by manufacturers and distributors
Cost burdened by dischargers (consumers)
Cost burdened by dischargers (business operators)

Prescribe the rules about building a voluntary collection/recycle system by manufacturers

Basic Act for the Promotion of the Recycling-Oriented Society (Enforced in 2001, amended in 2012)

Basic Principle

Reduce
Reuse
Recycle
Heat Recovery (thermal recovery)
Proper Disposal

Basic Plan for the Promotion of the Recycling-Oriented Society (Amended in May 2013)


Municipal governments’ responsibility about discharging domestic garbage, Give permissions to the waste disposal business operators to open a business, Set up the waste disposal standards etc.

Proper disposal of waste

Promote the well-planned actions that covers all 3R

Basic Framework Law
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.

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

...
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 process.
- Adopt environmentally considered product design.
- Collect and recycle end-of-life products.
- Specified resource-reusing industries.
- Specified resource-recycled products.
- Specified reuse-promoted products.
- Designated resources-saving industries.
- Specified products-saved products.
- Specified labeled products.
Industries that should reduce and recycle by-products include Pulp and paper manufacturing (sludge), Inorganic and organic chemical manufacturing (sludge), Iron making and steel making/rolling (slag), Primary copper smelting and refining (slag), and Automobile manufacturing (metal scrap, molding sand).

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 (ministerial ordinance)
- 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

Establish plans

Operations based on plan

Standards of judgment overview (example)

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

National government

Business operator

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

Reflect in operations
Industries that should reuse raw materials, and industries that should reuse parts:

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.)

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

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

Reflect in operations

National government

Business operator
Products that should be designed to save resources and have a longer service life include 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.

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)

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

Standards of judgment (ministerial ordinance)

- 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

National government

Business operator

Reflect in operations
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)

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

<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
• 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

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

- 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.

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

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

Display the prescribed labels on their products.

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

Standards 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

Recycling targets:

<table>
<thead>
<tr>
<th></th>
<th>Sealed batteries</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal computers</td>
<td>Sealed lead batteries 50%</td>
</tr>
<tr>
<td>Laptops</td>
<td>Sealed nickel-cadmium batteries 60%</td>
</tr>
<tr>
<td>CRT displays</td>
<td>Sealed nickel-metal-hydride batteries 55%</td>
</tr>
<tr>
<td>Liquid crystal displays</td>
<td>Lithium batteries 30%</td>
</tr>
</tbody>
</table>
Establish “standards of judgment” relating to the promotion of utilization of recycled resources by business operators.
(For each specified by-product)

National government

Standards of judgment (ministerial ordinance)

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

Business operator

Reflect in operations

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

<Standard of judgment (examples)>
- Maintenance of equipment
- Technology improvement
- Creation of by-product utilization plan
- Provision of information to parties that utilize by-products

1. National government
2. Business operator
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.

<table>
<thead>
<tr>
<th>Type and industry product</th>
<th>Outline of the Standards of judgment</th>
<th>State of initiatives</th>
</tr>
</thead>
</table>
| **Automobiles**          | • Use of lightweight chassis and engine components  
                          • Use of high-durability components etc. | • 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) |
| **Air conditioners**     | • Use of high-durability components  
                          • Provide repair opportunities to consumers etc. | • Introduced thinner and lighter design by using CAE (simulation analysis by computer) (2013) |
| **Storage furniture, office desks, swivel chairs** | • Rationalization of material use  
                          • Use for a longer time etc. | • Reduced the thickness of steel plate by devising the shape of leg assistance (2013) |
| **Televisions**          | • Reduce number of screws to make removal of parts easier  
                          • Display the names of synthetic resin materials etc. | • Display the fire-retarding and other materials used, and display the number of screws used (Since 1996) |
| **Kerosene heaters**     | • Make parts easier to remove through inventive construction  
                          • Use packaging materials that are easy to utilize as recycled resources | • 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. |
| **Paper manufacturing**  | • Used paper recycling rate of 64% by the FY 2015  
                          • Create used paper utilization plans every fiscal year | • Used paper recycling rate: 52.3% (1991) → 63.9% (2014)  
                          • Promote used collection in offices, expand collection of mixed paper form homes and offices |
| **Glass container manufacturing** | • Cullet utilization rate of 97% by the FY 2015  
                          • Create cullet utilization plans every fiscal year | • Cullet utilization rate: 51.8% (1991) → 99.2% (2013)  
                          • Develop new, and expand and improve existing uses for cullets; Develop and popularize lightweight bottles |
| **Copier manufacturing** | • Increase amount of recycled parts used  
                          • Create recycled components utilization plans every fiscal year | • Amount of recycled parts utilized: 129 ton (2001) → 1,782 tons (2009)  
                          • Trade in of other manufacturers’ models and using exchange centers to return them to their maker |
<table>
<thead>
<tr>
<th>Type and industry/product</th>
<th>Outline of the Standards of judgment</th>
<th>State of initiatives</th>
</tr>
</thead>
<tbody>
<tr>
<td>PET bottles</td>
<td>Manufacturers and importers must comply with identification labeling</td>
<td>Labeling rate 100% (2012)</td>
</tr>
<tr>
<td>Compact secondary batteries</td>
<td>Manufacturers and importers must comply with identification labeling</td>
<td>Labeling rate 100% (2012)</td>
</tr>
</tbody>
</table>
| Personal computers       | Self-collection of used products by manufacturers and importers  
                          | - Target recycling rates: 50% (Desktops) 20% (Laptops)  
                          | 55% (CRT displays) 55% (Liquid crystal displays) | <Recycling Rates>  
                          | - Desktop PCs: 38.8% (2001) → 78.4% (2013)  
                          | - Laptops: 38.8% (2001) → 59.3% (2013)  
                          | - CRT displays: 66.2% (2001) → 70.9% (2013)  
                          | - Liquid crystal displays: 71.0% (2001) → 74.3% (2013) |
| Compact secondary batteries | Self-collection of used products by manufacturers and importers  
                          | - Target recycling rates: 50% (Sealed lead batteries), 60% (Sealed nickel-cadmium batteries), 55% (Sealed nickel-metal-hydride batteries)  
                          | 30% (Lithium batteries) | <Recycling Rates>  
                          | - Sealed lead batteries: 50% (2001) → 50% (2013)  
                          | - Sealed nickel-cadmium batteries: 70.9% (2001) → 72.2% (2013)  
                          | - Sealed nickel-metal-hydride batteries: 69.0% (2001) → 76.6% (2013) |
| Automobile manufacturing | Business operators setting targets for the reduction of scrap metal generation  
                          | - Systematic facilities, such as equipment for collecting scrap metal and magnetic separators | Prepared melting furnaces to re-use scraps as raw material (2013)  
                          | - Final amount processed: 20,000 tons (2002) → 400 tons (2013) |
| Pulp/paper manufacturing | Business operators setting targets for the reduction of paper sludge generation  
                          | - 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)  
                          | - Final amount processed: 486,000 tons (2002) → 419,000 tons (2008) |
| Iron making and steel rolling | Business operators setting targets for the reduction of iron and steel slag generation  
                          | - Systematic facilities, such as dehydrators, storage tanks, and dust collectors | Introduced facilities to re-use in the iron manufacture processes (2014)  
                          | - Final amount processed: 720,000 tons (2002) → 730,000 tons (2008) |
| Coal ash generated by the electricity industry | Business operators creating plans to promote utilization of coal ash  
                          | - Processing coal ash into things such as admixture for mortar | Expanded applications for coal ash (Providing samples) (2013)  
                          | - By-product recycling rate: 67.7% (1999) → 95.9% (2008) |
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
  - Reuse of products, parts, etc.

- Recycle
  - Labeling for selective collection
  - Promotion to recycle the by-products generated in plants

Law 1991 - Law for Promotion of Utilization of Recycled Resources
- Utilization of collected products as raw materials
- Selecting materials easy to recycle and designing products easy to disassemble
- Promotion to recycle the by-products generated in plants

Law 1999 - Vision for a Recycling-Oriented Economy

Law 2001 - Law for the Promotion of Effective Utilization of Resources

Law amendment

The aim of the law is 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.
Main points of the ministerial ordinance

<table>
<thead>
<tr>
<th>Standards of judgment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Target business operator</td>
</tr>
<tr>
<td>Target products</td>
</tr>
<tr>
<td>Self-collection method</td>
</tr>
<tr>
<td>Compensation</td>
</tr>
<tr>
<td>Public disclosure</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Recycling targets</th>
<th>Setting recycling rates</th>
</tr>
</thead>
<tbody>
<tr>
<td>○ 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.</td>
<td></td>
</tr>
<tr>
<td>Desktops</td>
<td>50%</td>
</tr>
<tr>
<td>Laptops</td>
<td>20%</td>
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<td>CRT displays</td>
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<tr>
<th>Coordination with municipalities</th>
<th>Take-back by municipalities</th>
</tr>
</thead>
<tbody>
<tr>
<td>○ Shall be taken back when requested by municipalities.</td>
<td></td>
</tr>
<tr>
<td>○ Take-back conditions shall be publicly disclosed.</td>
<td></td>
</tr>
</tbody>
</table>
Main points of the ministerial ordinance | Standards of judgment
---|---
### Ensuring implementation of self-collection, other implementation methods
| Target business operator | ○ Battery manufacturers, etc.  
○ Manufacturers of products that use batteries, etc. |
| Target products | ○ Sealed (compact secondary) batteries |
| Self-collection method | ○ Establish the necessary methods for self-collection, such as designating self-collection points, or providing collection boxes.  
○ 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.) |
| Compensation | ○ No compensation shall be gained when performing self-collection. |
| Public disclosure | ○ The implementation status of self-collection shall be disclosed publicly. |
| Compensation provision | ○ Battery manufacturers shall adopt necessary measures for ensuring self-collection is implemented, such as providing compensation. |
### Recyling targets
| Setting recycling rates | ○ 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.  
  - 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 | ○ Shall be taken back when requested by municipalities.  
○ Take-back conditions shall be publicly disclosed. |