



Round Table Discussion on Japan Plastics Industry Overview

Strategic Development and Solutions for Single-Use Plastics
and Pollution Control

2024.10.31

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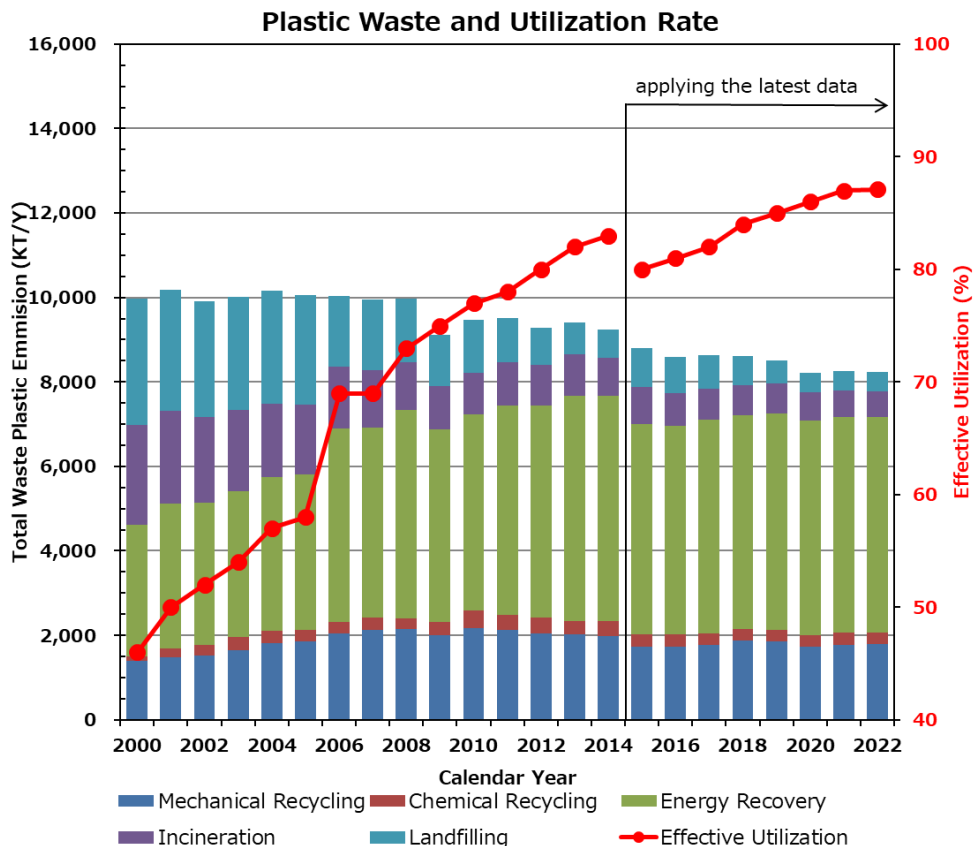
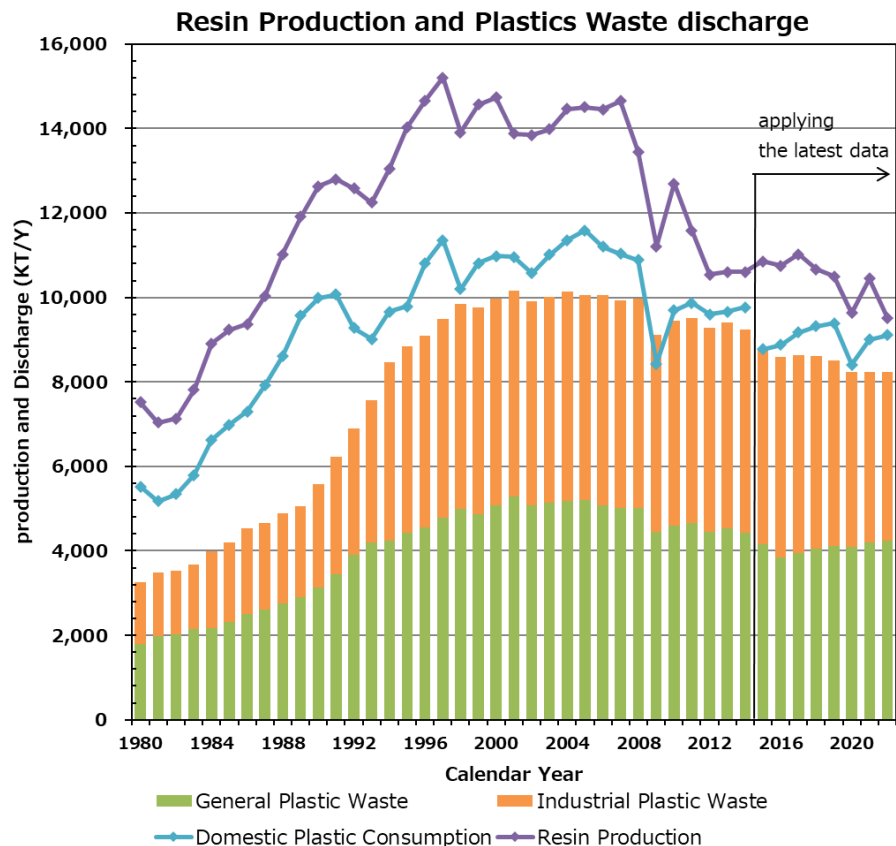
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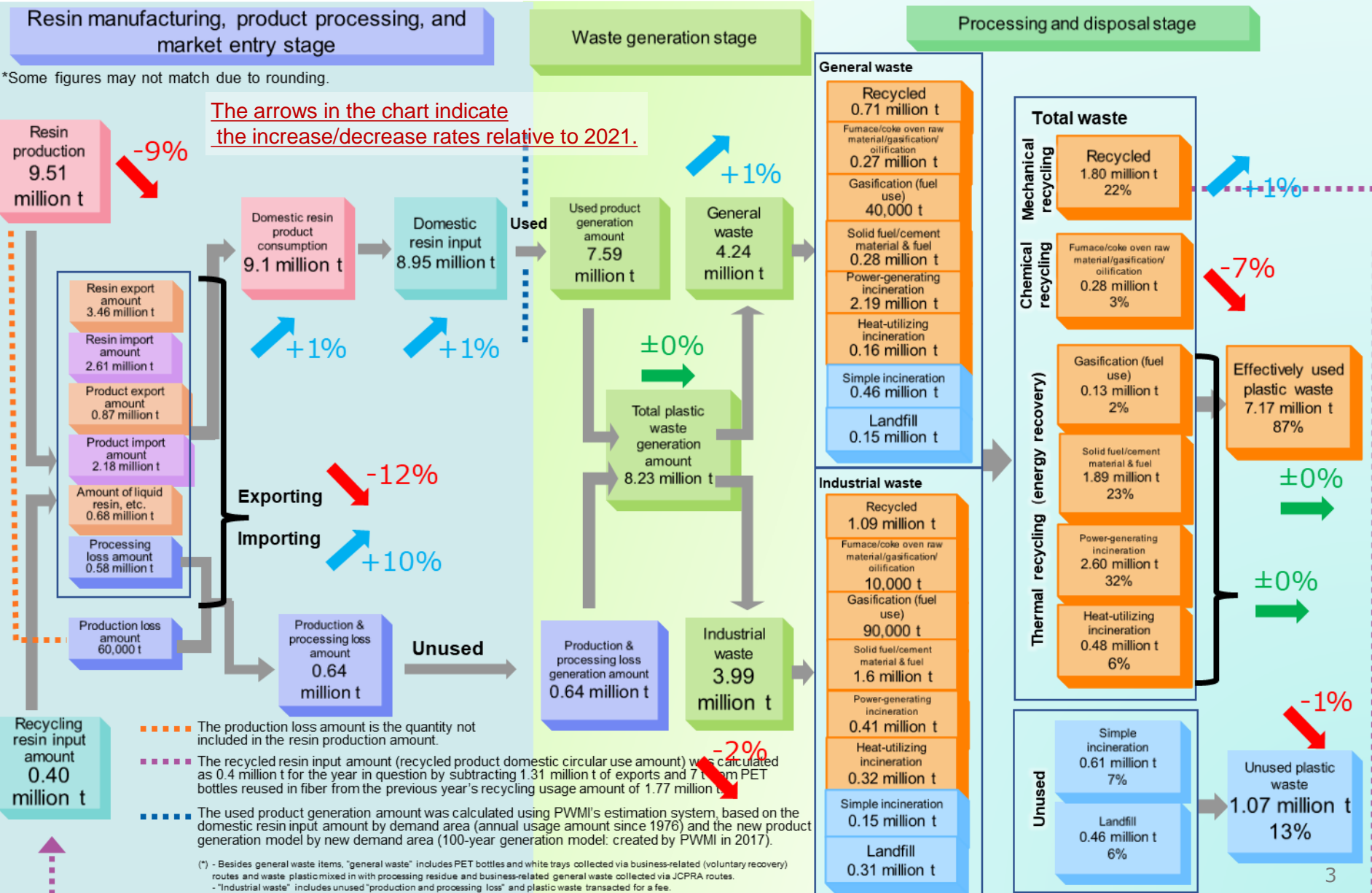
Resin production, Post-use products discharge and Effective plastic utilization rate in Japan

-Resin production is decreasing, Discharge remains flat
Effective plastic utilization rate is increasing





Latest Plastic Material Flow in Japan (2022)





Establishment of a legal system to promote creation of a recycling-oriented society towards solutions to issues

Basic Act on Establishing a Sound Material-Cycle Society:
 ● Fundamental principles, ● Responsibility of each entity ● State policies
 Ensuring substance circulation in society, conserving natural resources consumption, and reducing the environmental load (Entered into effect in January 2001)

<Proper waste management>

<Promotion of recycling>

Waste Management Law

<Under jurisdiction of the Ministry of the Environment>

Law for the Promotion of Effective Utilization of Resources (Entered into effect in April 2001)

Generation reduction and recycling promotion, utilization of recycled resources and parts, 3R-oriented designing and manufacturing, and labeling for sorted collection

<Under jurisdiction of the Ministry of Economy, Trade and Industry>

The containers and packaging recycling law

Regulations that fit with product characteristics

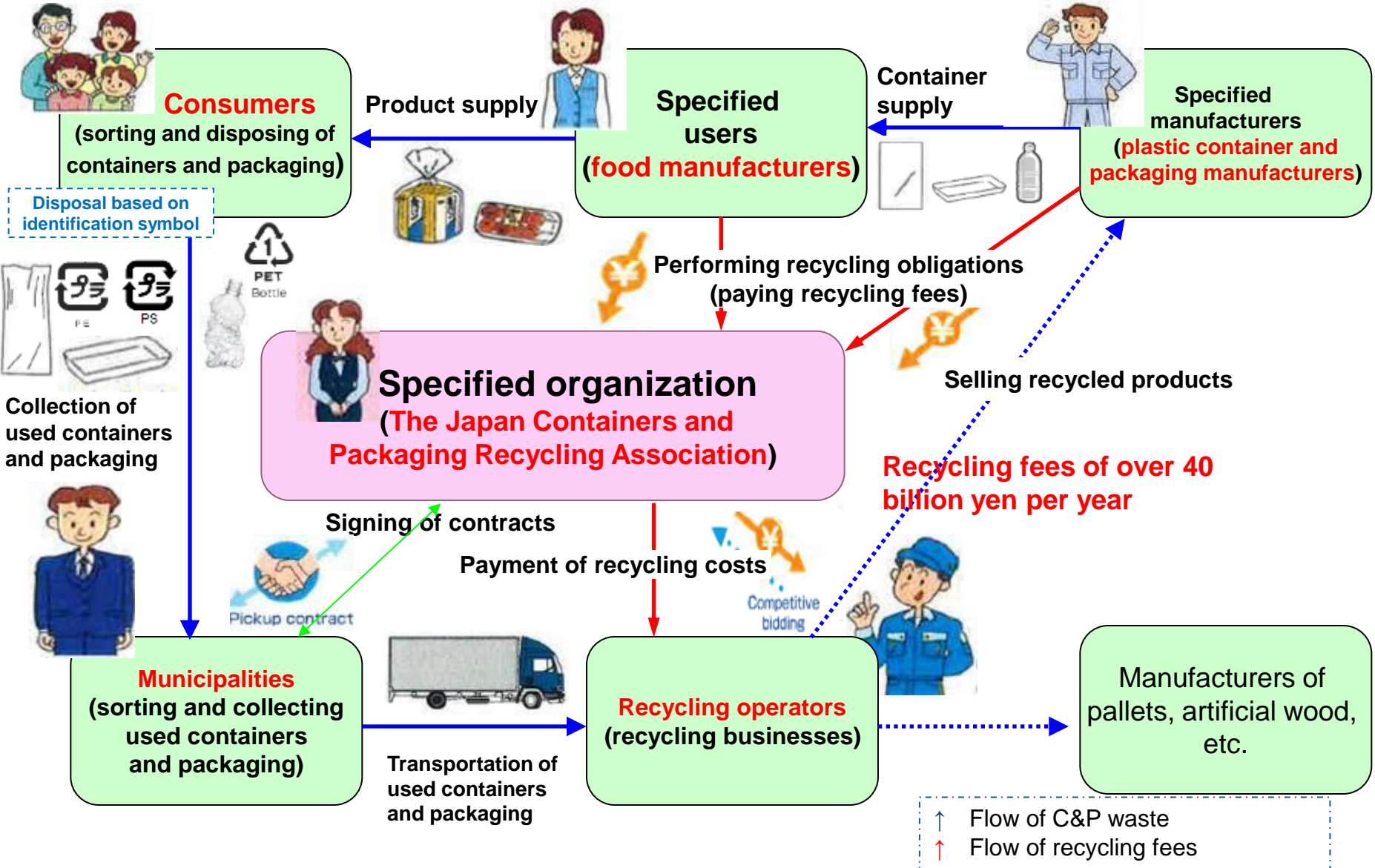
<p>The Law for Promotion of Sorted Collection and Recycling of Containers and Packaging</p>	<p>Home Appliance Recycling Law</p>	<p>Food Recycling Law</p>	<p>Construction mechanical recycling Law</p>	<p>End-of-Life Vehicles Recycling Law</p>	<p>Act on Promotion of Recycling of Small Waste Electrical and Electronic Equipment</p>
<p>(8 containers and packaging items) Full enforcement in Apr. 2000 Partial amendment in Apr. 2008 Revision from Sept. 2013</p>	<p>(Air conditioner, refrigerator, etc.) Full enforcement in Apr. 2001 Partial amendment in Apr. 2009</p>	<p>(Food residues) Full enforcement in May 2001 Partial amendment in Jun. 2007</p>	<p>(Waste construction materials, etc.) Full enforcement in May 2002</p>	<p>(Automobiles) Partial enforcement in Jan. 2003 Full enforcement in Jan. 2005 Partial amendment in Aug. 2014</p>	<p>(Small electrical devices, etc.) Full enforcement in Apr. 2013</p>

Apr. 2022 The Plastic Resource Circulation Act

Enactment of Containers and Packaging Recycling Law



In 1995, EPR was introduced based on an act for manufacturers and users of plastic containers. Recycling fees of over 40 billion per year are collected and plastic waste recycling is implemented.



Products Subject to Containers and Packaging Recycling Law



It also applies to container lids, caps, and inner plugs.

Container/Packaging	Examples of Applicable Products
1. Glass bottles	<ul style="list-style-type: none"> • Milk bottles • Beer bottles • Liquor bottles • Cosmetics bottles 
2. PET bottles	<ul style="list-style-type: none"> • Soft drink bottles • Soy sauce bottles • Noodle soup base bottles • Milk beverage bottles • Cooking vinegar and seasoned vinegar bottles 
3. Paper containers and packaging	<ul style="list-style-type: none"> • Medical product boxes • Candy boxes • Paper shopping bags • Detergent boxes • Gift boxes and trays/partitions inside them • Paper support inside dress shirts E.g.: Wrapping paper for products at department stores, etc., stick gum wrappers
4. Plastic containers and packaging	<ul style="list-style-type: none"> • Thin plastic bags for sweets, bread, other foods, and seasonings (plastic bags) • Trays for fresh food products • Bento boxes and side dish containers at supermarkets, convenience stores, etc. • Plastic bags at supermarkets, convenience stores, etc. • Plastic PET bottle caps • Shampoo bottles and caps (including pump section for pump-type bottles) • Egg cartons e.g.: Plastic wrap used together with trays for fresh food products, PET bottle labels (if detachable), Plastic film with twisted ends used as individual wrapping for candies, etc.



The Plastic Resource Circulation Act

-Enforced: April. 1st 2022

Tentative Translation

The Plastic Resource Circulation Act

Promulgated: June 11th 2021
Enforced: April. 1st 2022

This Act addresses whole lifecycle of plastics (i.e., from designing products to disposing plastic waste) and involves all stakeholders in promoting “3R+Renewable” and increasing circularity.

■ Background

- In response to marine plastic pollution, climate change, and foreign waste import regulations, domestic **circulation of plastic resources** is increasingly important.
- Since plastics are used in many varieties of products, **circulation system for plastics** needs to be **enhanced comprehensively**.

■ Main contents

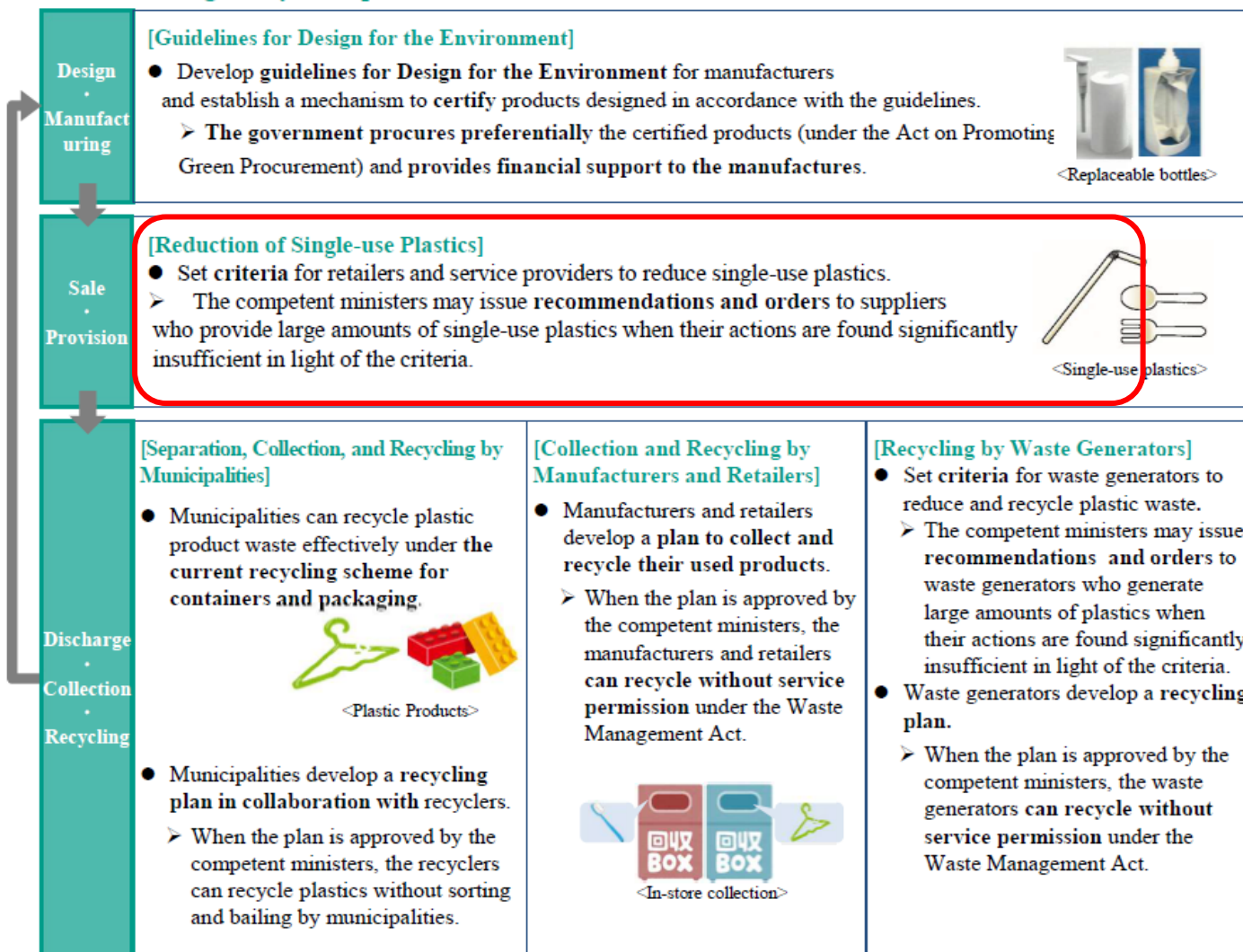
1. Basic Policy

- To promote circulation of plastics in a comprehensive and planned way, basic policy includes:
 - Design for the Environment by manufacturers
 - **Reduction of single-use plastics by retailers and service providers**
 - Separation, collection and recycling of plastic waste by municipalities and private sectors



The Plastic Resource Circulation Act

2. Measures along life cycle of plastics






Transition to circular economy through advancing circulation of resources

Reduction of Single-use Plastics

-Specified plastic products and providers of specified plastic products

- a) Rationalize Use(Waste reduction), b) Devising ways of providing(for a fee),
c) Product ingenuity(3R)

Target Products	Target Industry*
<p>(1)Fork (2)Spoon (3)Table knife (4)Muddler (5)Drinking straw</p> 	<ul style="list-style-type: none"> ● Retailers of various goods (including non-store retailers) ● Food and beverage retailers (excluding vegetable and fruit retailers, meat retailers, fresh fish retailers, and liquor retailers, including non-store retailers) ● lodging business ● restaurant ● Take-out and delivery food service business
<p>(6)Hairbrush (7)Comb (8)Razor (9)Shower cap (10)Toothbrush</p> 	<ul style="list-style-type: none"> ● lodging business
<p>(11) Clothes hangers (12) Clothes covers</p> 	<ul style="list-style-type: none"> ● Retailers of various goods (including non-store retailers) ● laundry service

*Ministry of Internal Affairs and Communications Japan Standard Industrial Classification
https://www.soumu.go.jp/toukei_toukatsu/index/seido/sangyo/H25index.htm

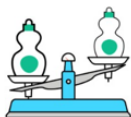
Design guidelines for the Environment

-Develop guidelines for Design for the Environment for manufacturers and establish a mechanism to certify products designed in accordance with the guidelines.

(1) structure

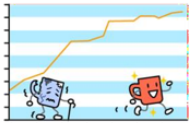
(1) Weight reduction

- Use as few materials as possible.



(3) Longer use and longer service life

- To increase the overall durability of the product.
- The product shall be able to withstand repeated use.
- The structure shall be such that parts can be easily replaced.
- The repair shall be easily accessible.



(5) Single material, etc.

- The use of a single material for the entire product or each part, or the use of fewer types of materials, etc. shall be reduced.



(7) Easier collection and transportation

- The weight, size, shape, and structure shall be such as to facilitate collection and transportation as much as possible.



(2) Simplification of packaging

- Excessive packaging should be discouraged.



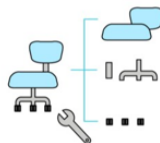
(4) Use of easily reusable parts or reuse of parts

- Use parts that are easily reusable.
- Reuse of parts.



(6) Easier disassembly and separation

- (It is desirable to be able to easily disassemble and separate lithium-ion batteries from other parts, etc.)
- The number of processes required to remove parts, etc. shall be minimized as much as possible.
- The type of material used shall be indicated.



(8) Facilitate crushing and incineration

- For parts that are difficult to reuse or recycle, consideration shall be given to facilitating crushing or incineration.



(2) material

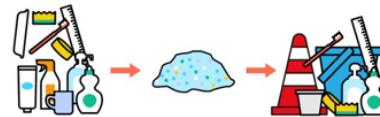
(1) Substitution of materials other than plastic

- Substitution of materials other than plastic.



(3) Use of recycled plastic

- Use of recycled plastic.



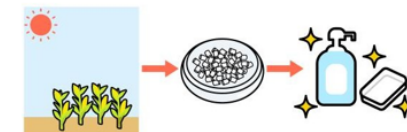
(2) Use of easily recyclable materials

- Use materials that are easily recyclable.
- Reduce the variety of materials.
- Avoid the use of additives that inhibit recycling.

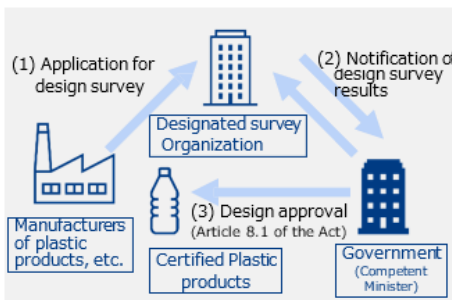


(4) Use of Bioplastics

- Based on the "Roadmap for the Introduction of Bioplastics,"
- The use of biomass plastics.
 - Use of biodegradable plastics.



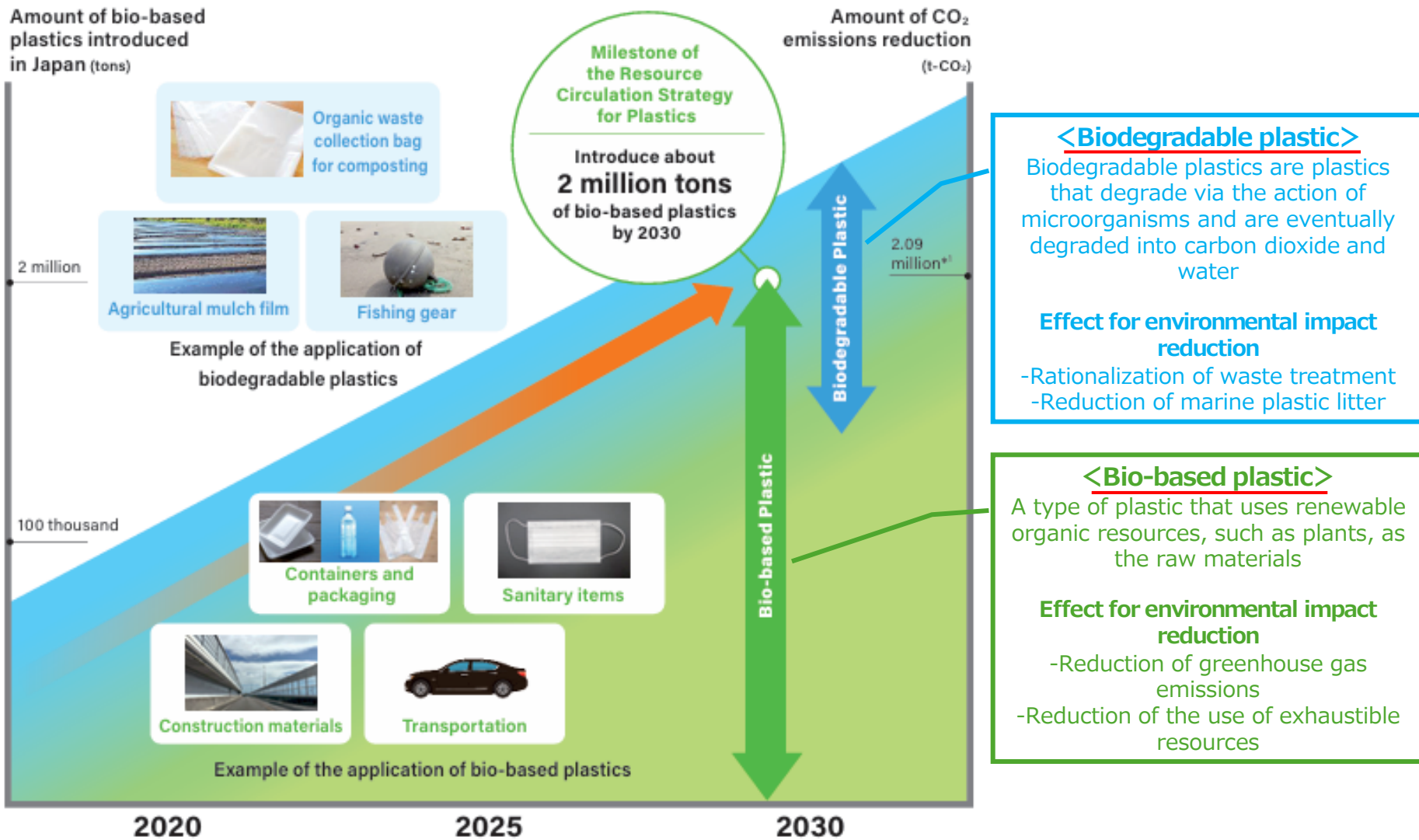
Design certification system for designs that conform to the design guidelines (design certification)



- (1) Manufacturers of products using plastics apply for a design survey to the designated survey agency.
- (2) The designated survey agency will conduct a design survey to determine whether the design conforms to the design guidelines and notify the results of the design survey to the government (competent minister).
- (3) The government (competent minister) will approve the design based on the results of the design study.

Roadmap for Bioplastics Introduction in Japan

Figure 3-1 Schematic of the timeline for introducing bioplastic products



*1 Target in the Plan for Global Warming Countermeasure: Reduce emissions of non-energy originated carbon dioxide by 2.09 million tons in 2030 through the introduction of bio-based plastics (including bio-based alternative materials other than bio-based plastics).



Summary

In accordance with the government's strategy for plastic resource recycling, various activities will continue to be carried out with the cooperation of each industry and organization

Purpose of PWMI

- 1) To conduct surveys and research on the circular use of plastic waste
- 2) To contribute to reducing the environmental footprint of plastic across the entire lifecycle
- 3) To pursue the healthy development of plastic-related industries
- 4) To support the establishment of a society that enables sustainable development

Main activities of PWMI

- 1) Providing LCI data on plastic CFP, etc. and LCA assessments of recycling technology, etc.
- 2) Creating plastic material flow charts and improving accuracy
- 3) Supporting environmental education
- 4) Promoting recycling and international exchange/collaboration

Thank you for your attention !

Ref.) Environmental measures, including measures to deal with waste plastic



Plastic Resource Recycling (Summary)

background

May 31, 2019

- Low effective utilization rate of waste plastics, environmental pollution by marine plastics, etc. are global issues
- Japan has taken the lead in proper disposal and 3R domestically and has also made international contributions.
- On the other hand, Japan has the world's second largest per capita waste of containers and packaging, import restrictions in Asian countries, and other issues

Strategy

Basic Principle: "3Rs + Renewable"

Milestone

reduce	-Reduce use of one-way plastic ("value-added" such as mandatory plastic bag fee) -Promote development and use of alternatives to petroleum-derived plastics	<Reduce> 1) Reduce one-way plastic emissions by a cumulative 25% by 2030 <Reuse and Recycle> 2) Reusable and recyclable design by 2025 3) Reuse and recycle 60% of containers and packaging by 2030 4) By 2035, 100% of used plastics will be effectively utilized through reuse, recycling, etc. <Recycled and Biomass Plastics> 5) Double the use of recycled materials by 2030 6) Introduce about 2 million tons of biomass plastic by 2030
recycle	-Ensure easy-to-understand and effective separate collection of plastic resource -Land-based collection of recycled fishing gear, etc. -Minimize costs and maximize effective resource utilization through collaboration and overall optimization -Establishment of a domestic resource recycling system in response to the Asian embargo -Fair and optimal recycling system that promotes innovation	
Recycled material	-Improve utilization potential (technological innovation and infrastructure development support) -Measures to stimulate demand (Government Initiated Procurement (Green Purchasing), usage incentive measures, etc.)	
bioplastic	-Handling of information on chemical substance content for recycling and utilization -Use of biomass plastic for designated bags for combustible waste, etc. -Roadmap for introduction of Bioplastics and integrated introduction with venous system management	
Marine Plastics	No pollution of the oceans due to the discharge of plastic waste (zero emissions of marine plastic) -Eradication of littering and illegal dumping, proper treatment -Collection and disposal of beach debris, etc. -Understanding the actual condition of marine debris (upgrading of monitoring methods) -Measures to control microplastic runoff (e.g., thorough reduction of microbeads in scrubbing products by 2020) -Promotion of alternative innovations	
International expansion	-Support for effective countermeasures in developing countries (international cooperation and business development through the export of tailor-made packages of Japanese soft and hard infrastructure, technologies, etc.) -Establishment of a global monitoring and research network (research on ocean plastic distribution, ecological effects, etc., standardization of monitoring methods, etc.)	
Infrastructure improvement	-Establishment of social systems (development of recycling infrastructure and supply chains for software and hardware) -Technology development (substitution of plastics with renewable resources, innovative recycling technologies, consumer lifestyle innovations) -Research and surveys (actual conditions of microplastics use, impacts, status of outflow, measures to control outflow) -Coordination and collaboration (development of "Plastic Smart," in which each entity promotes initiatives under one banner) -Promotion of resource-recycling related industries -Information infrastructure (ESG investment, ethical consumption) -Overseas development infrastructure	

-Not only solving resource and environmental problems in the Asia-Pacific region and around the world, but also promoting economic growth and job creation -> Contributing to sustainable development
 -By aiming to achieve milestones through collaboration and cooperation with various sectors of Citizens, various fields, various levels, we will promote the necessary investment and innovation (technology and consumer lifestyles).