

Country Report

Japan

2024.11.2

Ichiro Tsuchimoto
Executive Director

Plastic Waste Management Institute (PWMI)

Introduction of Our Organization

Overview of the Plastic Waste Management Institute(PWMI)



◆ **Founded: November 1971 (50-year history published in 2021)**

◆ **Officers:**

Chairman: Koshiro Kudo, Chairman, Japan Petrochemical Industry Association (President & Representative Director, Asahi Kasei Corporation)

Vice-chairman: Kazuhiko Fujii, Chairman, Vinyl Environmental Council (President, Kaneka Corporation)

Executive Director: Ichiro Tsuchimoto

◆ **Mission:**

To promote recycling and carbon neutrality of plastics

◆ **Specific activities:**

the following are our 4 core businesses

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

◆ **Members**

Regular Members

Asahi Kasei Corp.

Ube-Maruzen Polyethylene Co., Ltd.

ENEOS NUC Corporation

Kaneka Corporation

SunAllomer Ltd.

JNC Corporation

Shin-Etsu Chemical Co., Ltd.

Shin Dai-Ichi Vinyl Corporation

Sumitomo Chemical Co., Ltd.

Taiyo Vinyl Corporation

Tosoh Corp.

Tokuyama Sekisui Co., Ltd.

Japan Polyethylene Corporation

Japan Polypropylene Corporation

Prime Polymer Co., Ltd.

Maruzen Petrochemical Co., Ltd.

Dow-Mitsui Polychemicals Co., Ltd.

(Organizations)

Japan Petrochemical Industry Association

Vinyl Environmental Council

The Japan Plastics Industry Federation

Supporting Members

Sekisui Kasei Co., Ltd.

Japan PET Bottle Association

Japan Expanded Polystyrene Association

Japan PVC Environmental Affairs Council

Agenda

- 1. Extended Producer Responsibility (EPR)**
- 2. New measures and issues being considered by Japan**
- 3. Environmental Education by PWMI**

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- 1. Extended Producer Responsibility (EPR)**
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Legal System for a Circular Economy

- Under the Basic Law, there are seven recycling regulatory laws by sector.
- The Containers and Packaging Recycling Law introduces an EPR system.

Basic Act on Establishing a Sound Material-Cycle Society

(Entered into effect in January 2001)

<Proper waste management>

Waste Management Law

<Under jurisdiction of the
Ministry of the Environment>

<Promotion of recycling>

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>

Regulations that fit with product characteristics

The Law for Promotion of Sorted Collection and Recycling of Containers and Packaging

(8 containers and packaging items)
Full enforcement in Apr. 2000
Partial amendment in Apr. 2008
Revision from Sept. 2013

Home Appliance Recycling Law

(Air conditioner, refrigerator, etc.)
Full enforcement in Apr. 2001
Partial amendment in Apr. 2009

Food Recycling Law

(Food residues)
Full enforcement in May 2001
Partial amendment in Jun. 2007

Construction mechanical recycling Law

(Waste construction materials, etc.)
Full enforcement in May 2002

End-of-Life Vehicles Recycling Law

(Automobiles)
Partial enforcement in Jan. 2003
Full enforcement in Jan. 2005
Partial amendment in Aug. 2014

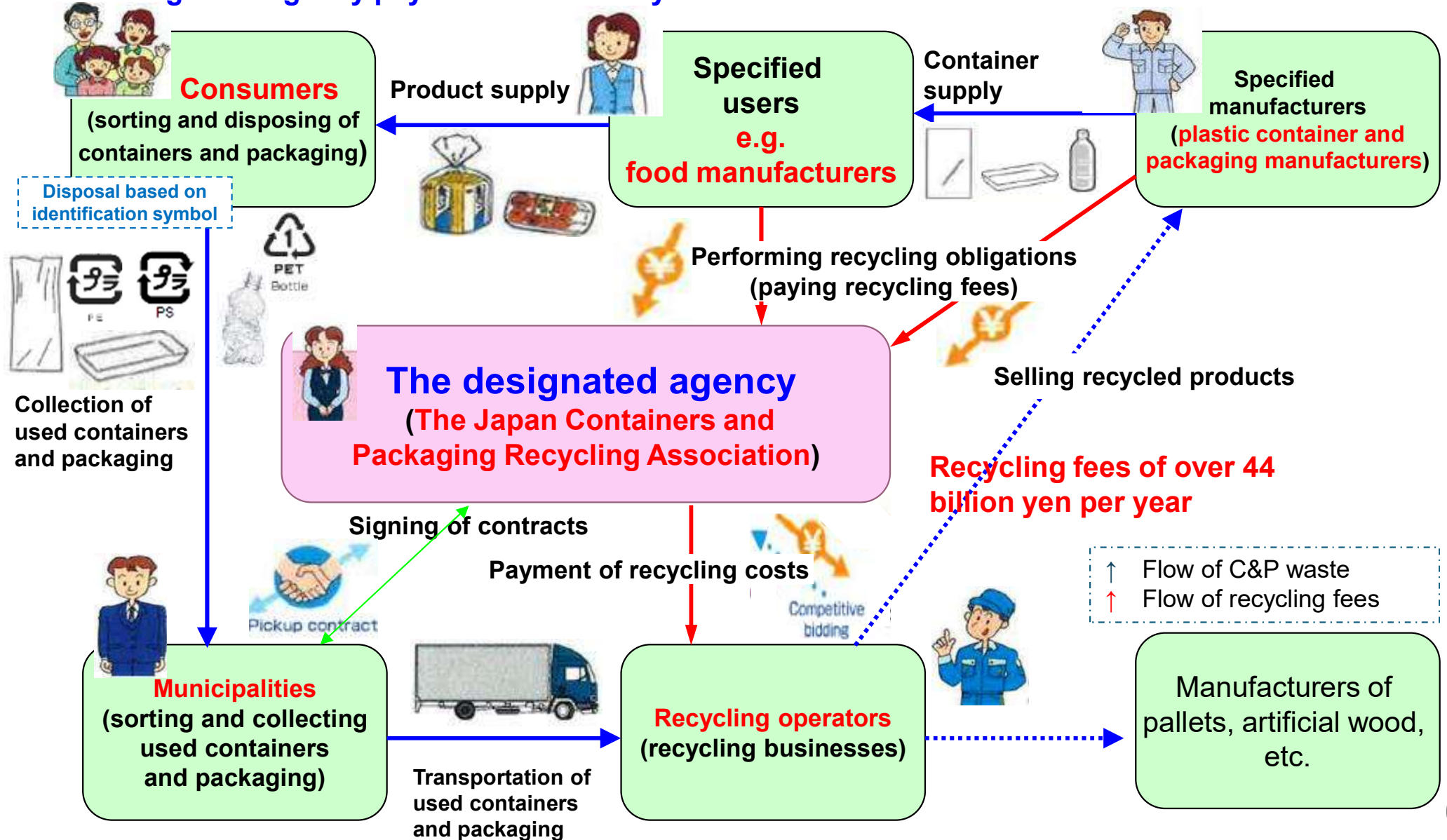
Act on Promotion of Recycling of Small Waste Electrical and Electronic Equipment

(Small electrical devices, etc.)
Full enforcement in Apr. 2013

EPR in the Containers and Packaging Recycling Law



- Require manufacturers and users of plastic containers and packaging to pay recycling fees to the designated agency.
- Waste plastics sorted and discharged by consumers are collected by municipalities and transported to the designated agency.
- The designated agency pays a fee to the recycler.





Products Subject to Containers and Packaging Recycling Law



-Four categories are regulated.

-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.

Examples of regulated plastic containers and packaging



← To help consumers discharge waste separately, the government requires regulated products to display the mark.



detergent



seasoning



sweets



tea



foodstuff



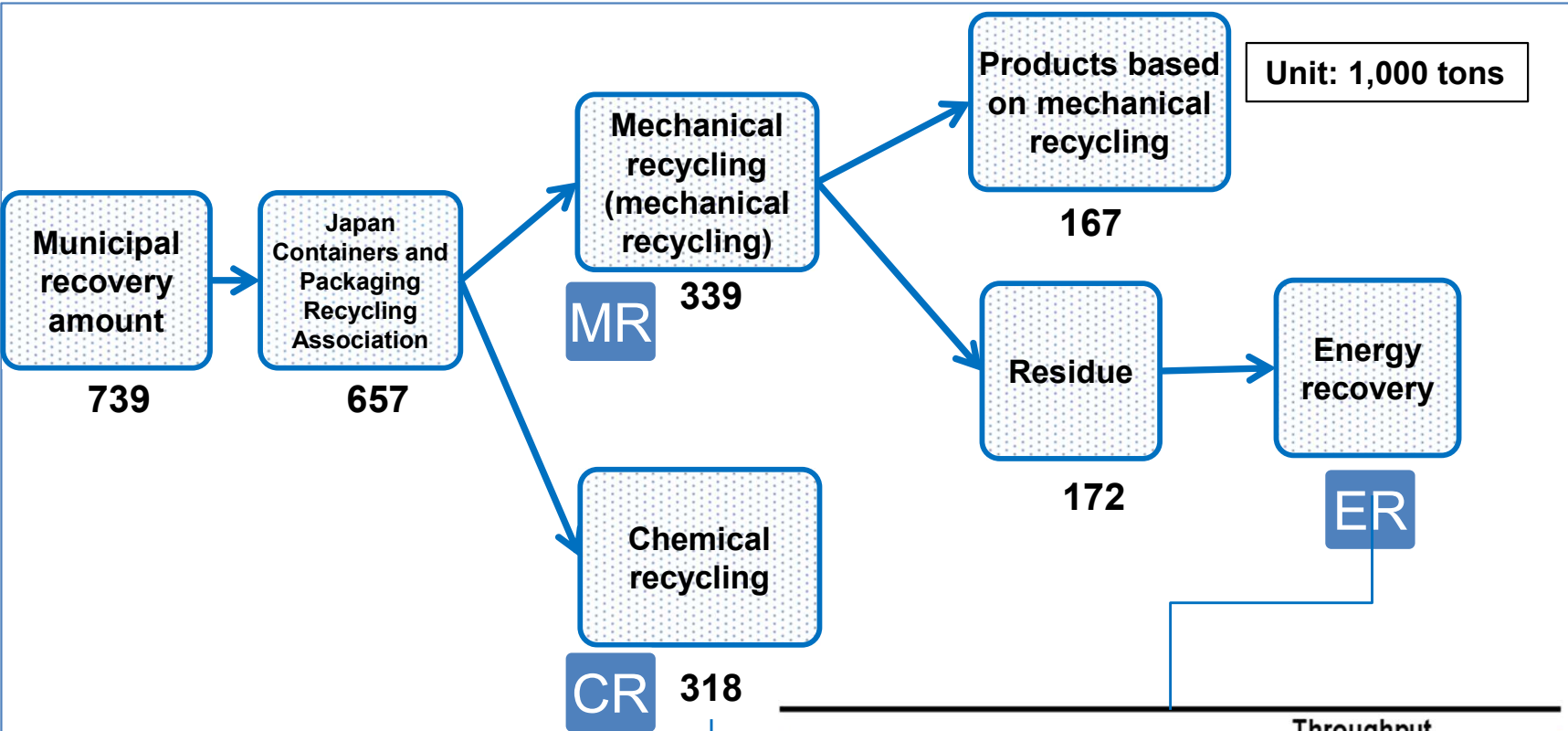
beverage



Amount of plastic containers and packaging recycled



- Nearly 700,000 tons of waste plastic is collected annually by municipalities and recycled.
- Mechanical recycling is 340,000 tons and chemical recycling is 320,000 tons. Gasification is 76,000 tons.



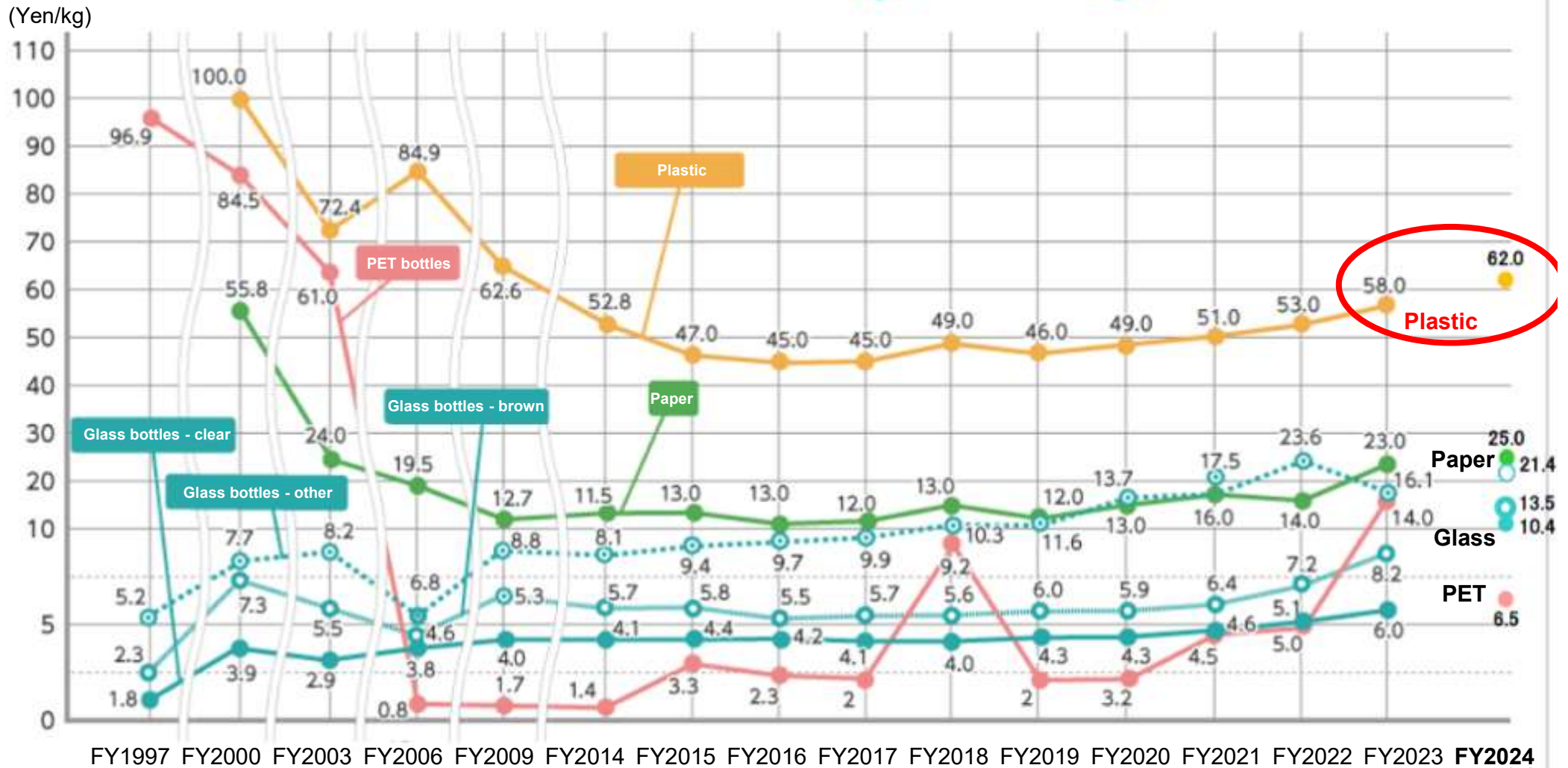
	Throughput (1,000 tons)	%
Simple incineration	0	0
Incineration energy recovery (including incineration power generation)	35	20.8
RPF conversion	88	51.5
Industrial fuel (cement, lime, etc.)	43	25.3
Other	4	2.5
Total	170	100

Blast furnace reducing agent	36
Chemical raw material for coke oven	216
Gasification	76

Unit cost of recycling

- The cost of recycling is high, exceeding 60,000 yen per Kg.
- The reason : the principle of competition does not work sufficiently among recyclers.

Changes in Recycling Implementation Commission Unit Rate (Excluding Tax)



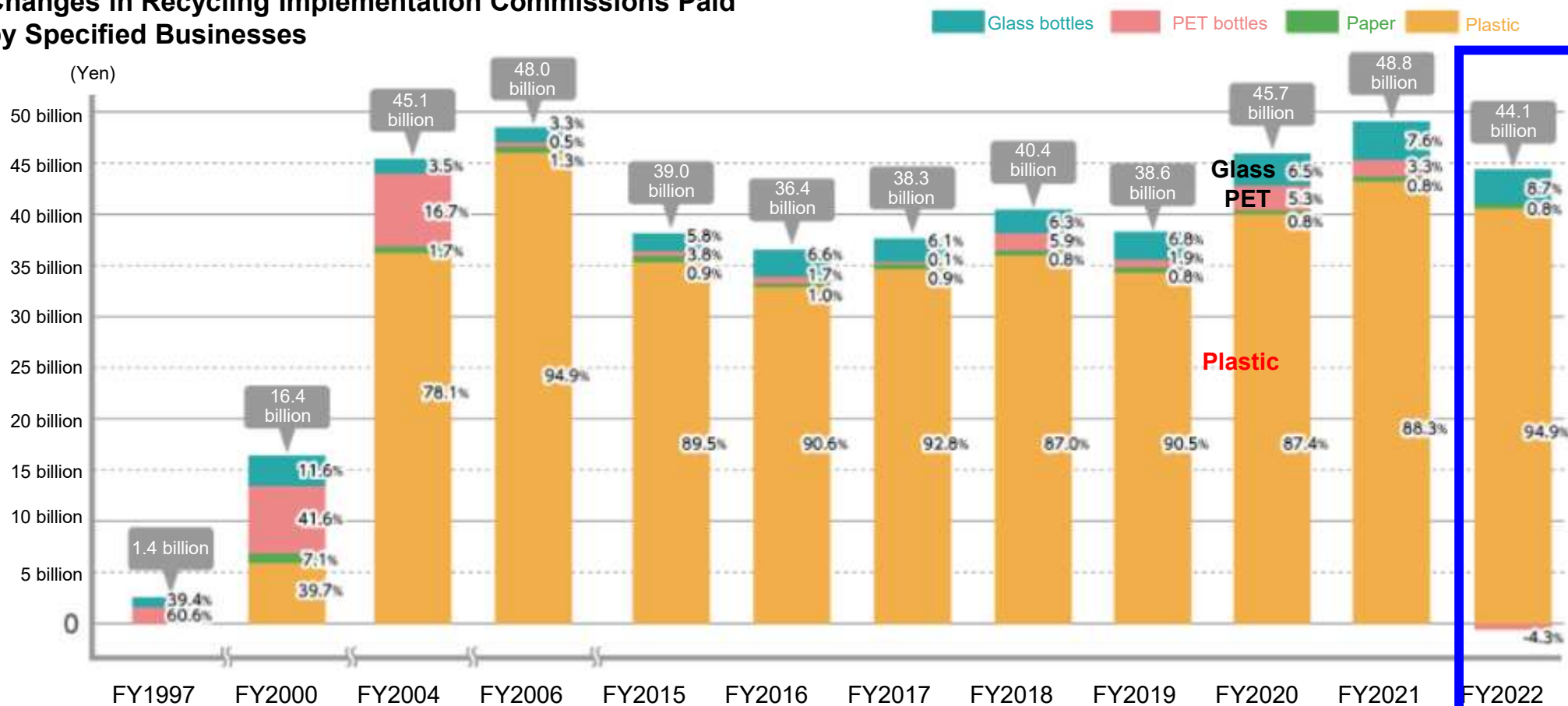
Total cost for recycling

- Because of high unit price, the annual cost of plastic alone is as much as 44 billion yen.
- This is a major challenge.

Recycling implementation commissions were 44.1 billion yen in FY2022, and around 94.9% of the total was expenses for plastic.

(41.8 billion yen)

Changes in Recycling Implementation Commissions Paid by Specified Businesses



Number of Businesses Fulfilling Recycling Obligation



- As much as 80,000 businesses pay recycling fees for plastics.
- Collecting recycling fees from such large number is a big task.
- The challenge is that it is difficult to identify internet importers these days.

Year	Total No. of Applications	Breakdown by Material						
		Glass Bottles - Total	Clear	Brown	Other	PET bottles	Paper	Plastic
2023	79,483	2,915	2,470	1,240	1,018	1,158	66,484	78,184
2022	80,517	2,993	2,533	1,279	1,045	1,192	67,089	79,155
2021	81,034	3,043	2,592	1,303	1,069	1,226	67,091	79,621
2020	81,619	3,113	2,665	1,343	1,105	1,269	67,604	80,160
2019	82,594	3,177	2,715	1,359	1,121	1,274	68,226	81,066
2018	82,159	3,230	2,770	1,385	1,139	1,287	66,397	80,082

Businesses obligated to pay recycling fees

-Manufacturers and users of containers and packaging are required to pay recycling fees.

-However, small-scale operators are exempted from paying, considering the impact on their business.

1. Specified container users

⇒ Businesses that use specified containers for the products they sell
(including cases where they import products contained in specified containers)

2. Specified container manufacturers, etc.

⇒ Businesses that manufacture specified containers
(including cases of importing products contained in specified containers and importing specified containers)

Exempted small businesses

(if they meet the criteria for both sales and number of employees).

Industry	Manufacturing industry, etc., associations, incorporated foundations, incorporated educational institutions, etc.	Retail industry, service industry, wholesale industry
Annual sales	240 million yen or less	70 million yen or less
No. of permanent employees	20 people or less	5 people or less

Penalties for businesses that do not pay recycling fees



- Businesses that do not pay recycling fees are subject to penalties such as publication of the company name, orders, fines, on-site inspections, and collection of reports.
- Penalties increase depending on the degree of violation.
- The maximum fine is 1 million yen.

Provisions based on Articles 39 and 40 of Containers and Packaging Recycling Law

1. **Collection of report** by the competent minister
2. **On-site inspection** by employee under orders from the competent minister

Provisions based on Articles 19, 20, and 46 of Containers and Packaging Recycling Law

1. **Guidance and advice** from the competent minister
2. **Recommendation** from the competent minister
3. **Publication of the company name** by the competent minister
4. **Order** from the competent minister
5. **Fine** of 1 million yen or less

* The fine amount was raised from 500,000 yen to 1 million yen based on amendments to the law in 2006.

* There is no statute of limitations on non-paying businesses' execution of their obligation.

Number of penalties applied

-91 company names have been published and 36 orders issued against businesses that do not fulfill their obligation to pay recycling fees.

○ Publishing company name

- April 20, 2005: 11 cases
- January 18, 2006: 8 cases
- July 21, 2011: 3 cases
- July 4, 2017: 1 case
- September 9, 2005: 58 cases
- December 19, 2008: 2 cases
- March 27, 2015: 7 cases
- July 30, 2018: 1 case

○ Order

- January 18, 2006: 36

If companies do not meet their legally stipulated obligation, their name will be published.

In addition, the following fines will be imposed.

Conduct of Specified Business	Penalty
Did not fulfill recycling obligation (Fine is imposed after following actions: guidance and advice → recommendation → publication → order.)	Fine of 1 million yen or less
Did not keep record book, recorded false information, or did not keep record book	Fine of 200,000 yen or less
When a report was required, did not provide a report or reported false information	Fine of 200,000 yen or less
When an on-site inspection was required, refused, obstructed, or avoided it	Fine of 200,000 yen or less

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2. **New measures and issues being considered by Japan**
3. **Environmental Education by PWMI**

New recycling measures being considered by the Japanese government

- The Ministry of Economy, Trade and Industry (METI) is considering drastic measures to promote recycling.
- The Ministry intends to revise the law next year.

(To ensure the amount of recycling)

-Mandate that plastic user companies disclose voluntary targets for recycled material utilization rates.

Example: Automobiles, electrical equipment, food, beverages, textiles, etc.

-Mandatory reporting of progress against voluntary targets to the government

-Regulation of user companies in case their efforts are insufficient

(To ensure quality of recycling)

-Publication of standards for design for recycling and making it mandatory

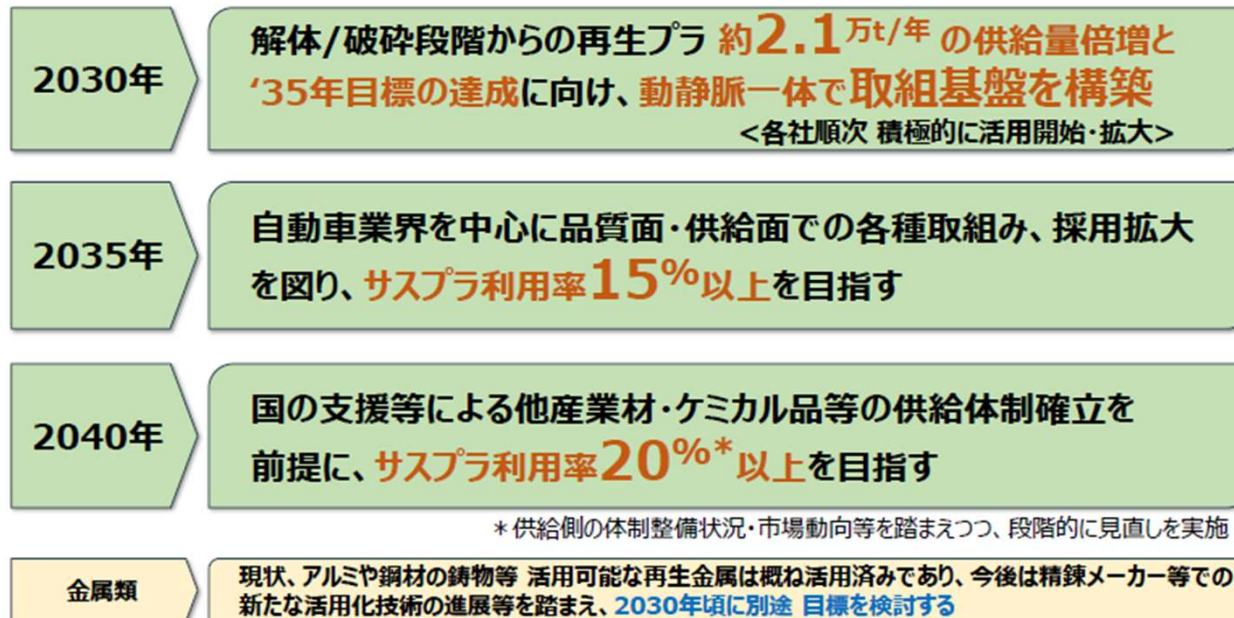
Publication of numerical targets by the Japan Automobile Manufacturers Association



- Prior to the government's new regulations, the Japan Automobile Manufacturers Association (JAMA) announced its goal for the use of recycled materials in September this year.
- In 2040, 20% of plastics used in automobiles will be replaced with recycled materials and bioplastic materials.
- All new passenger cars produced and sold in Japan are subject to the target, not only those exported to the EU.



5. 自主目標値について ① -まとめ-



September 2024 On the website of the Japan Automobile Manufacturers Association, Inc. JAMA's Approach to Promoting the Use of Recycled Materials - 2050 Long-term Vision and Medium- to Long-term Roadmap Including Voluntary Target Values

Projected future demand for recycled materials by the Japan Automobile Manufacturers Association

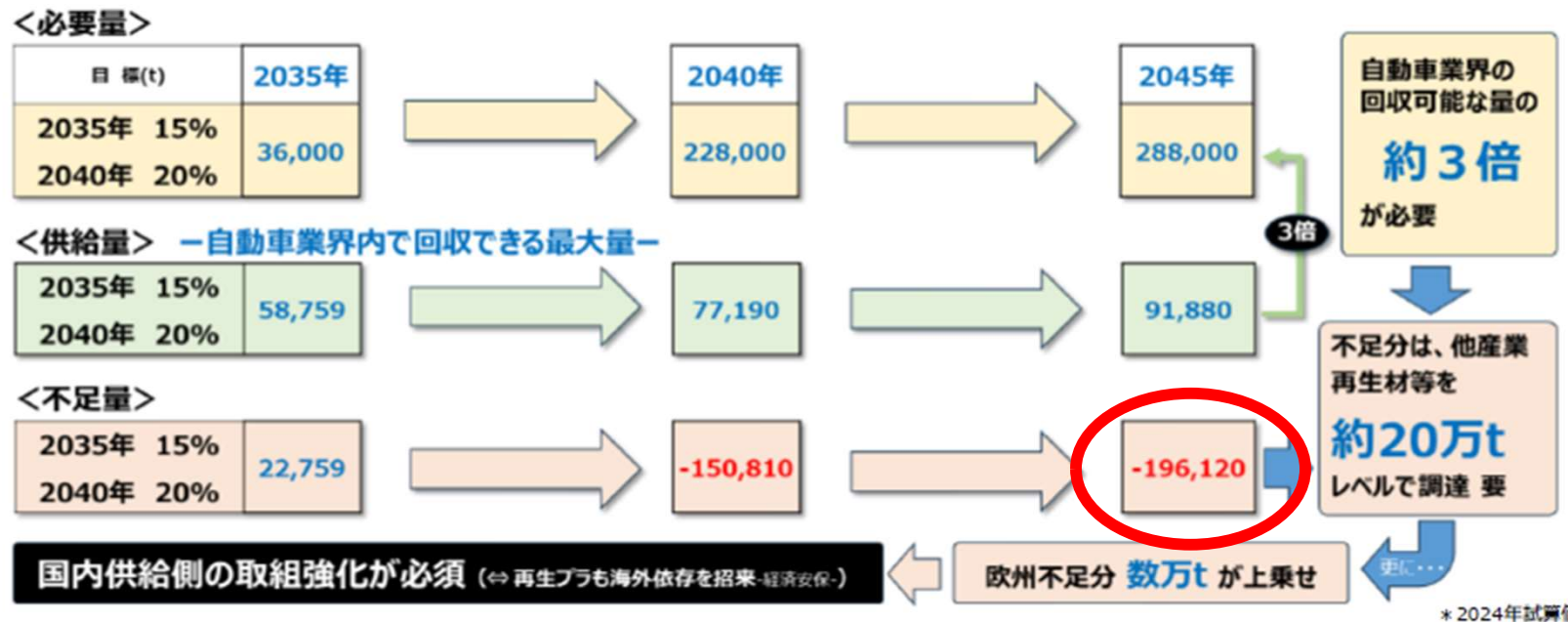


- In order for automakers to achieve this goal, waste plastic from end-of-life vehicles alone is not enough.
- JAMA has stated that 200,000 tons of recycled raw materials will be insufficient in Japan.



5. 自主目標値について ④ - '35年・'40年目標 -

- ◆ '35年・'40年の目標値検討にあたり、必要量/供給量と不足量を試算、目標達成は自動車業界のみでは極めて困難であり、他産業材等も含め**国内供給側の取組み大幅強化と国の支援が必須**



September 2024 On the website of the Japan Automobile Manufacturers Association, Inc. JAMA's Approach to Promoting the Use of Recycled Materials - 2050 Long-term Vision and Medium- to Long-term Roadmap Including Voluntary Target Values

Shortage problem of recycled materials

- Interest in and need for recycled materials on the demand side has been growing rapidly recently due to new regulatory moves by the Japanese government and ELV regulations in the EU.
- A major issue for both mechanical recycling and chemical recycling is how to collect waste plastics as raw materials.
- This is an on-going challenge in Japan.

Room for improving the supply of recycled materials



(1) Return of exports to domestic market

✓ Currently, 70% of recycled materials: 1.2 million tons are exported to China and other countries.

✓ Caused by Japanese user companies' high quality requirements for recycled materials. Overseas user companies prioritize low price over quality.

(2) Reinforcement of waste plastic separation and discharge by factories and offices

✓ It has been pointed out that waste plastic dischargers : factories and offices tend to spare the time and effort of sorting and discharging waste plastic rather than earning income from the sale of waste plastic as valuable resources. This is the reason why high quality waste plastic materials are not supplied.

(3) Upgrading the quantity and quality of plastic containers and packaging, etc.

✓ There are expectations for high-quality applications, etc. in the future, but the quantity is limited and there are issues with quality.

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PWMI's environmental education (delivery classes)

- Consumer cooperation is essential to promote recycling of plastics.

- Environmental education, especially from childhood, is particularly effective.

- PWMI visits elementary schools, junior high schools, and other schools to give classes to more than 3,000 children a year.

 - Understand that plastic is an environmentally friendly material if used and disposed of properly, and learn the importance of not littering, proper separation and disposal rules, the need for recycling, and the use of recycled materials.

 - Introduce plastic products around us and understand that our daily life and society around children are supported by various kinds of plastics.

 - Through the delivery experiment, experience the wonders of plastics and develop an interest in plastics.



delivery classes

Examples of delivery experiments (1)

- In the delivery class, the students color the plastic cups and heat them in a toaster oven to melt and soften them.
- When the cup is flattened between two books, it becomes a key ring or coaster with a beautiful pattern.
- The students can learn the characteristics of plastic, which loses its softness when heated. Students are very pleased.

実験
④



ポリスチレンカップでキーホルダーづくり(加熱加工体験)

ポリスチレン原料を加熱・整形し、組み立てるとビデオカセット、文具などの製品ができます。この実験では、ポリスチレンカップ(プラスチック製の使い捨てカップ。デパートなどで飲料の試飲に使用するカップを使用)を家庭用のオーブントースターを用いて加熱成型し、キーホルダーを作ることにより、リサイクル製品の加熱加工を体験します。



●ポリスチレンカップの底・胴の部分に油性マジックで絵を描く。



●カップを離型紙(クッキングシート)が敷かれたオーブントースターに入れる。



●加熱すると、30秒ほどでみるみるうちに形を変えていく。写真のようになったらふたを開け、ピンセットなどで取り出す。



●取り出したものを厚手の本(電話帳など)の間に挟み5秒ほどして取り出すと、写真のようになる。これに金具を付けるとキーホルダー。

注意事項

- ◆オーブントースターに子供たちが触れるとやけどをする可能性があります。観察は一人ずつ静かにさせてください。
- ◆オーブントースターを操作する際は、軍手を着用してください。

ポイントなど

- ★ポリスチレンカップは、デパートやスーパーなどで使う試飲用のものが最適。
手に入らなければ、普通のポリスチレンカップの上部を切って使う。
- ★オーブントースターで加熱するときの様子をしっかりと観察させ、プラスチックが熱で形を変えていくことを確認させる
(プラスチックの種類によっては加熱すると固くなるものもある)。

材料・器具

- ポリスチレンカップ(スーパーやデパートなどに頼んで、使用済みのものを持ってきてもらう) 一人1個
- オーブントースター
- 離型紙(クッキングシート)
- ピンセット
- 厚手の本(電話帳など)
- キーホルダー用金具 一人1個

Examples of delivery experiments (2)

- The Styrofoam changes shape one after another.
- The students rejoice when they see the final expanded Styrofoam.

実験 ①-1 化学薬品(リモネン)を使って発泡スチロール(ポリスチレン)を溶かす実験

魚箱や電化製品などの容器などに使われる発泡スチロールは、原料のポリスチレンがわずか2% (残りの98%は空気) の製品です。このため、そのまま運ぶと空気を運搬するようなもので大変非効率であり、その分環境負荷も増えます。そこで、魚市場などではいらなくなった発泡スチロールの集積場所で減容化 (溶かして容積を小さくする) を行っています。この実験では、化学薬品 (リモネン・柑橘類の皮に含まれるオイル、別名オレンジオイル) を使った減容化を体験させます。



Put a piece of styrofoam in limonene, and observe how it dissolves while producing bubbles.

実験 ①-2 リモネンに溶けたポリスチレンを薬品(エタノール)で分離する実験

リモネンを使って減容化したポリスチレン (発泡スチロールの原料) は、リサイクル工場ではリモネンとポリスチレンに分離します。工場では減容液を加熱し、揮発性の高いリモネンを回収します (回収したリモネンは冷却・液化し、再利用)。

学校の実験では加熱分離が難しいことから、エタノール (エチルアルコール) で分離し、リサイクル原料製造工程を体験させます。



Ethanol, raw material for styrene foam (polystyrene) will come out.

実験 ①-3 ポリスチレンを再発泡し発泡スチロールを作る実験

発泡スチロールから作ったポリスチレン原料は、ビデオカセットや文具、合成木材などに再生されるとともに、同じ発泡スチロールにも再生されています。工場では、発泡剤 (ブタン: カセットコンロの燃料などにも使われている) を入れたビーズ状の原料を作り、それを型に入れて加熱して発泡・成型します。この実験では、使用済みの発泡スチロールにアセトン (有機溶剤、マニキュア除光液の主原料) を混ぜて発泡させ、再生発泡スチロールを作る体験をします。



Soak polystyrene pellets in boiling water and observe foaming

PWMI's Learning Support Home Page

- The number of students that can be taught in a delivery class is limited.
- In order to educate more children about the environment, PWMI has built a learning support website where children can study on their own.
- The site can be viewed on smartphones, tablets, and PCs.
- 1.5 million visitors and 5 million pages viewed per year.



Learn by Video

-Japanese children like Youtube, so we created more than a dozen videos and posted them on our learning support website.



プラスチックのリサイクル

発泡スチロールのリサイクル

1. 発泡スチロールの3つの種類
2. 90%が有効利用されている
EPSの再生利用と処理・処分 (2019年)
3. 発泡スチロールのリサイクルの流れ
 - ① 発泡スチロールを使う
 - ② 再生原料にする
4. 発泡スチロールのリサイクル製品
5. ムービーを見てみよう
発泡スチロールのリサイクル実験
6. 関係の深いページはこちら



12分03秒

小4以上対象

プラスチックの活用・性質

プラスチックとグルメ

「グルメなおれは知っている。プラスチックが食べもののおいしさを支えていることを」。

そう語る主人公が訪れたのは、とある家庭料理の店。そこで男が見たものは…。

食べ物とプラスチックの、切っても切れない関係が次々と飛び出します。なるほどがいっぱいです！



02分58秒

小4以上対象

プラスチックのリサイクル

その使い捨て、NG?OK?プラスチックのリサイクル
プラスチックの「3R」や廃プラスチックの有効利用（マテリアルリサイクル、ケミカルリサイクル、エネルギーリカバリー）を解説します。また、プラスチックが衛生や健康の分野を支えていたり、温室効果ガスの排出削減に貢献しているという意外な事実も紹介しています。



11分56秒

小4以上対象

プラスチックの活用・性質

プラスチック、分類チャレンジ!

いろいろな素材のプラスチック製品を分類のプロ・プラスチック分類隊が、さまざまな手法を使って、分類していきます。密度のちがいによる分類実験や燃え方のちがいによる分類実験など中学3年の「プラスチックの性質」の勉強にぴったりの動画です。

-Maintain a database with photos to answer school homework questions.



プラスチックのこと 押出成形

発泡スチロールの作り方

プラスチック循環利用協会

1. 発泡スチロールには3つの種類がある
2. ビーズ発泡ポリスチレンの作り方
3. ポリスチレンペーパーのつくり方
4. 関係の深いページはこちら



プラスチック製品のリサイクル プラスチックのリサイクル

発泡スチロールのリサイクル

プラスチック循環利用協会

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② 再生原料にする
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5. ムービーをしてみよう
発泡スチロールのリサイクル実験



プラスチックのこと マテリアルリサイクル

ポリスチレンってどんなプラスチック？やさしく解説！

プラスチック循環利用協会

1. ポリスチレンってどんなプラスチック？
ポリスチレンの補遺
国内生産のプラスチック原材料の1割がポリスチレン
2. ポリスチレンの原料や作り方
プラスチックの原料は「ナフサ」
ポリスチレンの作り方
3. ポリスチレンにはどんな特徴があるの？
4. ポリスチレンにはどんな製品に使われている？
5. ポリスチレンのリサイクル
プラスチックのリサイクルの現状
6. 廃プラスチックは3つの方法(ほうほう)でリサイクル
リサイクルで私たちにできること

Free research and craft themes for long vacation

- In Japanese schools, children are assigned homework for free research and crafts during long vacations.
- Propose themes for free research and crafts so that children can become familiar with plastic on this occasion.



実験&工作

プラスチックを熱くすると柔らかくなる、形を変えられるプラスチックの性質を利用して、コースターを作ってみよう【動画つき】

熱するとやわらかくなって、形を変えられるプラスチックの性質を利用して、コースターを作ってみよう。

対象学年      



実験

プラスチックを溶かそう、くっつけよう【動画つき】

みかんの皮に見える点々の模様には、「リモネン」というオイルがあり、プラスチックを溶かす性質があるといわれます。

対象学年      



実験

プラスチックで静電気を起こしてみよう【動画つき】

電気を通さないプラスチックは、静電気を起こしやすい性質を持っています。いろいろなプラスチックをこすって静電気を起こしてみよう。

対象学年      

Information for Teachers

- School teachers do not know how to teach because they were not educated in plastics when they were children.
- We provide worksheets and teaching materials for teachers and advice on how to teach.

(Worksheet Example)



1. 家から出るごみを調べよう



2. 自分の地域のごみの分別を調べよう



3. スーパーで回収しているものを調べよう



4. 集められたごみはどうなるのだろう

(Examples of classroom experiments)

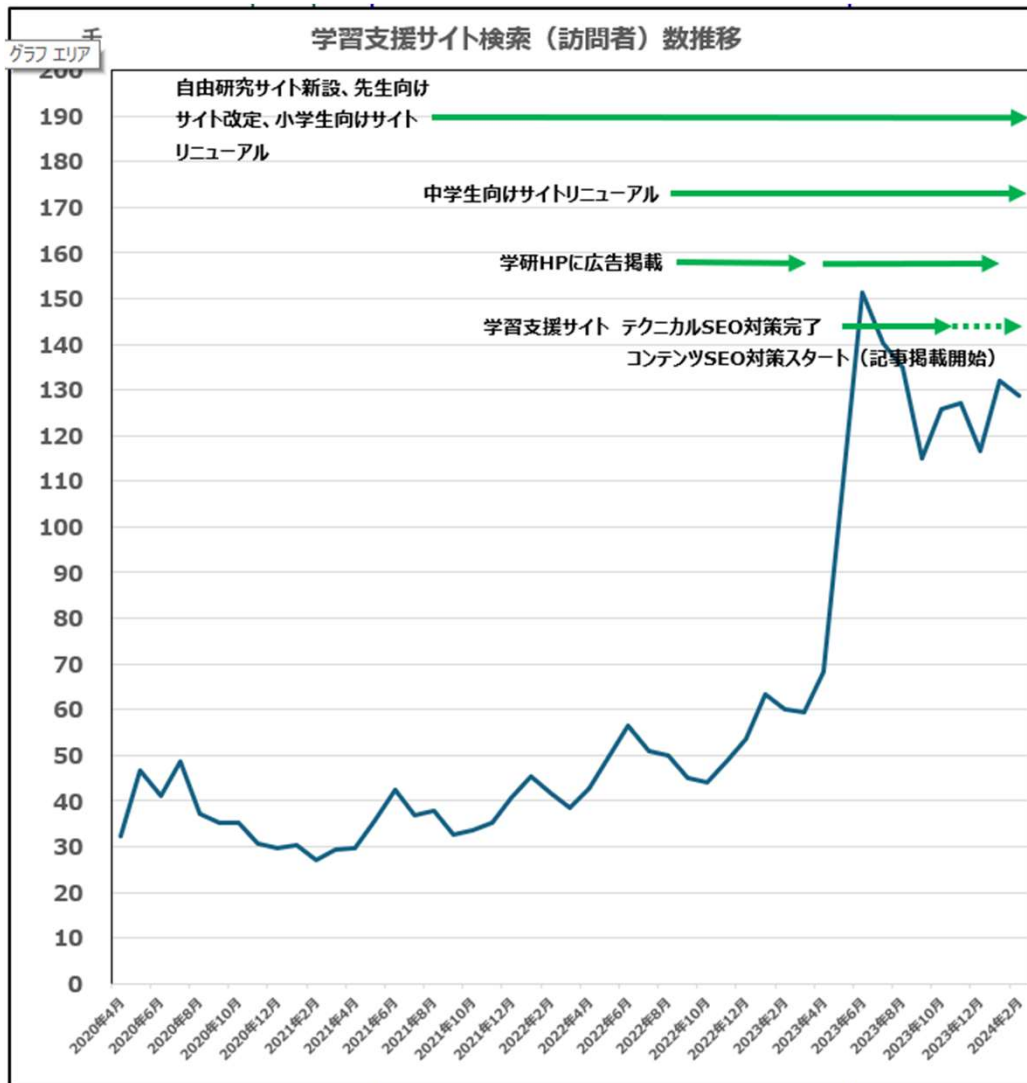


魚箱や電気製品の緩衝材に使われた発泡スチロールは、集積場所で容積を小さくして回収されます。この実験では、化学薬品（リモネン）を使って発泡スチロールの減容化を体験します。

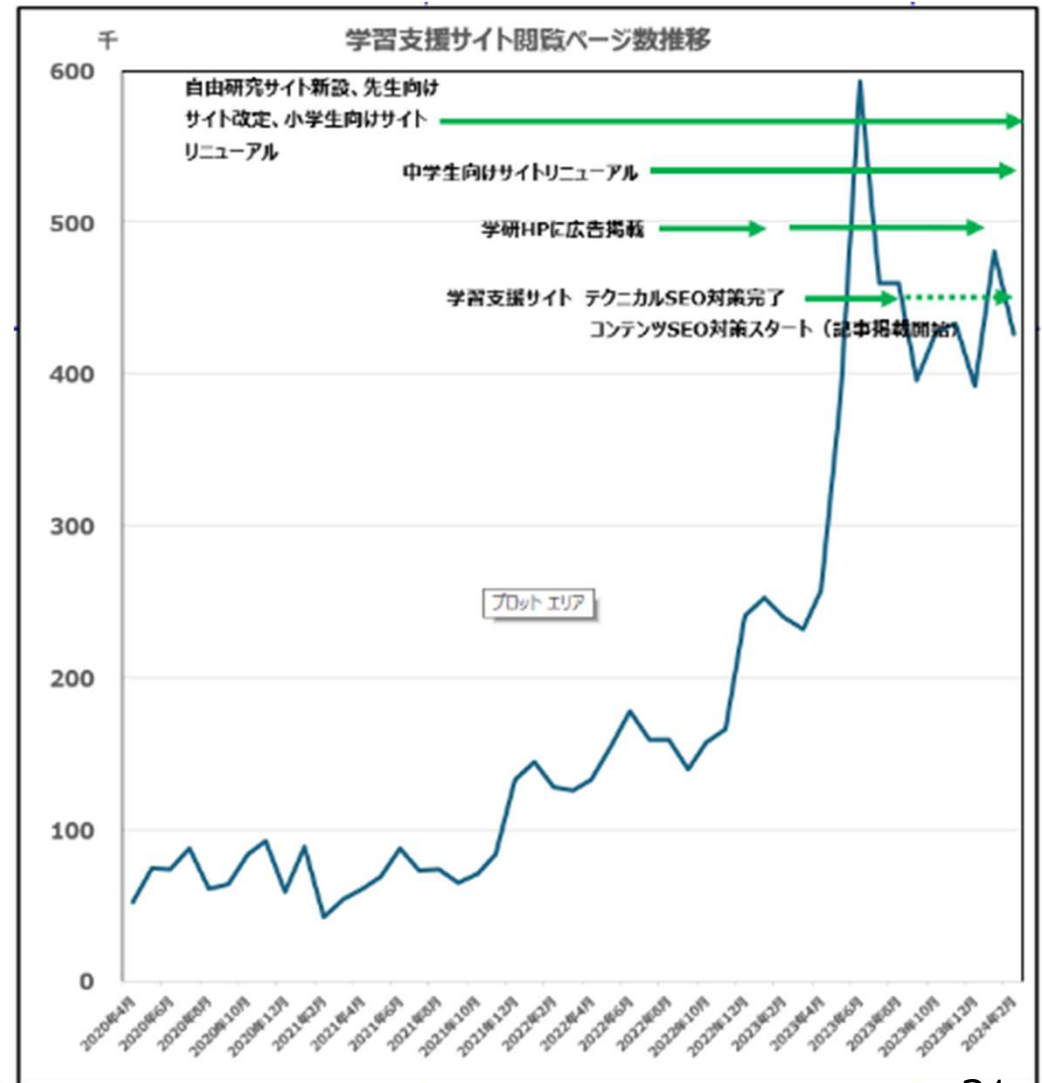
Usage of Learning Support Website

-Number of users and pages viewed increased rapidly

Number of visitors by month



Number of pages viewed by month



Thank You

2024.11.2

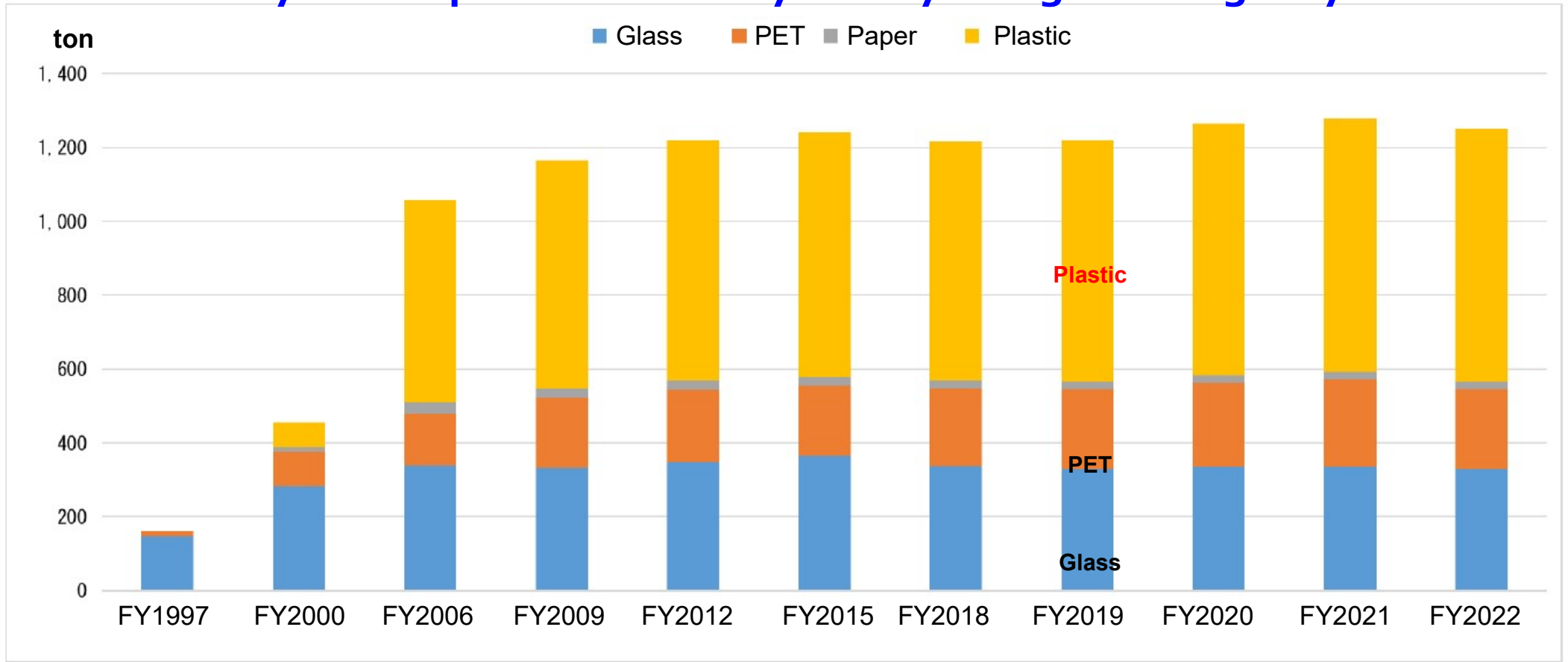
**Ichiro Tsuchimoto
Executive Director**

Plastic Waste Management Institute (PWMI)

Amount of waste plastic collected by municipalities



-Nearly 700,000 tons of waste plastic is collected annually by municipalities and recycled by designated agency



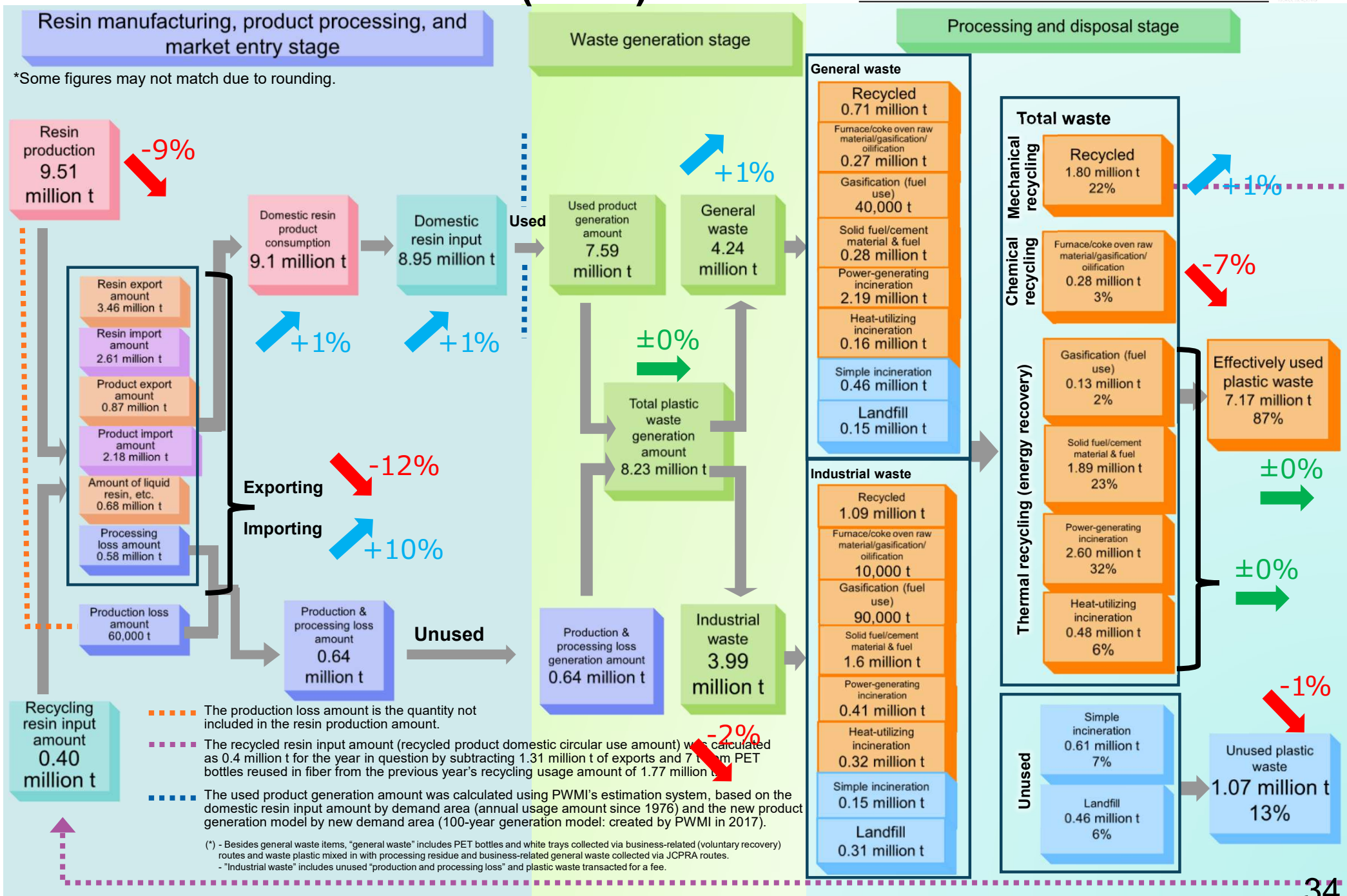
	FY1997	FY2000	FY2006	FY2009	FY2012	FY2015	FY2018	FY2019	FY2020	FY2021	FY2022
Glass	148,363	280,878	339,106	333,462	349,443	364,180	336,716	328,625	335,107	335,045	327,416
PET	14,014	96,652	140,416	188,783	194,777	192,169	211,480	217,065	227,338	236,512	219,676
Paper	-	11,243	28,618	25,554	25,581	22,660	20,897	20,729	20,274	20,131	20,146
Plastic	-	67,080	548,839	617,151	651,351	663,014	646,914	654,538	681,436	686,467	682,286
Total	162,377	455,853	1,056,979	1,164,950	1,221,152	1,242,023	1,216,006	1,220,958	1,264,155	1,278,154	1,249,524

Unit: tons

Plastic Products, Waste, and Recycling Flow Chart (2022)



The arrows in the chart indicate the increase/decrease rates relative to 2021.



2)-C) 散乱廃プラ量（海ゴミ）のフロー図への反映の検討処理処分区分の整理

<https://www.env.go.jp/content/000234958.pdf>

出典	専門家会議	Jambeck et al.(2015)	Nihei et al.(2020)
概要	ペットボトル及びPE・PP・PETに関する使用量の統計データと、それらの流出量の実測データを用いて流出率を算出し、ペットボトルと同じように流出しうる日本全体のプラスチック使用量に乗じて、日本からの「河川を經由して海洋へ流出するプラスチックごみ総量」を算出。	一人当たりの年間ごみ発生量、不適正管理されたごみの割合、投げ捨てごみの割合、プラごみの割合、海洋への流出率より、海岸から50km以内の陸域から海洋へのMacPの流出量を算出。	平常時のモニタリング結果と、水収支解析結果(降雨量と蒸発散量)を用いて海洋へのMacPとMicPの流出量を算出。
特徴	<ul style="list-style-type: none"> 河川を經由して海洋へ流出するプラスチックごみ総量。 国単位、一部のポリマー・品目単位の流出量の把握が可能。 特に対策すべきポリマーを特定しやすい。 	<ul style="list-style-type: none"> 国別のマクロプラの海洋流出量を世界で初めて公表。 推計に必要な国別のデータが少なく済む(比較的簡単な推計)。 	<ul style="list-style-type: none"> 1kmメッシュ単位でプラごみ発生量をマッピングしているため、対象エリアを絞り込むことが可能。
結果の精度・課題	<ul style="list-style-type: none"> ペットボトルの流出率は0.108%、ペットボトルと同じように流出しうるものとして「容器包装・日用雑貨・食卓用品等」と仮定し、それらの日本全体のプラスチック使用量を算出し、この流出率を乗じた結果、4,900tとなった(ポリマー別の流出率は0.050～0.533%)。 海洋に流出しないと考えられるプラスチックも含めたプラスチック使用量全体を対象として上記の流出率を乗じると、4,500～48,000 t。 3河川の観測結果を用いて日本全体に拡大推計した結果の幅が大きい。 ペットボトルを含め、ポリマー毎の生産量・流出量のデータの入手が容易ではない。 ポリマー毎の流出量の算定に当たって出水時が未考慮。 	<ul style="list-style-type: none"> 内陸から河川を通じた海洋への流出量が未考慮。 散乱ごみの割合(環境中流出率)が全世界共通で2%と設定。 海洋に流出する割合を全世界共通で15%～40%と設定。 	<ul style="list-style-type: none"> 河川を通じた海洋流出量のみを考慮 観測値は平常時のみで、出水時が未考慮。
流出量(t/年)	2,300 ～ 24,000	21,000 ～ 57,000	210 ～ 4,776

今後も精緻化・更新を継続する

依頼

11:45 - 1:30 PM Country Reports

You are required to prepare a 15-minute presentation (not more than 15 slides) covering the following topics relevant to your respective country:

- Communication, Education, and Public Awareness (CEPA)
- Achieving Net Zero
- Extended Producer Responsibility (EPR)
- Strategies for Utilising Plastics Waste
- Implementation of Operation Clean Sweep