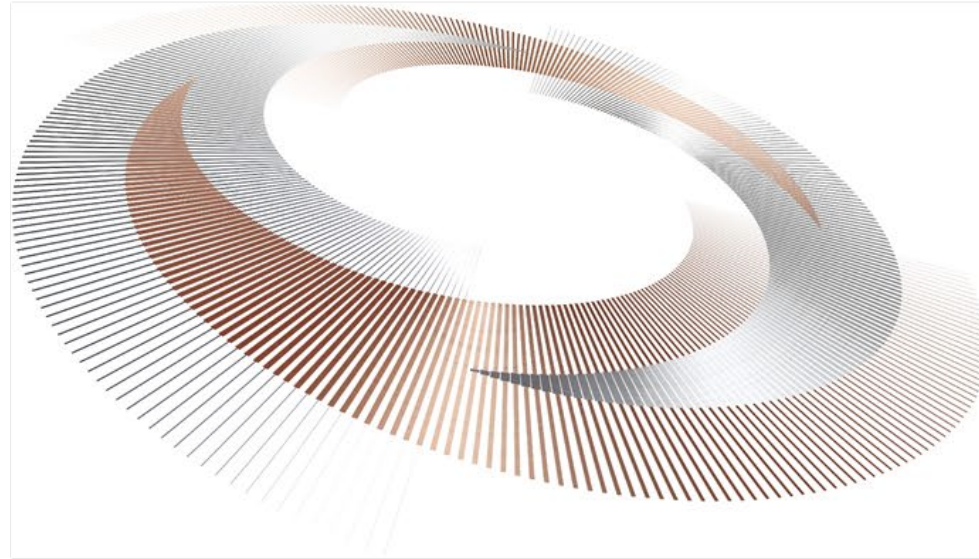


Session 5: E-Waste

Initiatives for E-Waste Recycling

January 15, 2025

Takashi WATANABE
Resource Circulation Division, Metals Company
MITSUBISHI MATERIALS CORPORATION



For people, society and the earth, circulating resources for a sustainable future

In order to make careful use of limited resources,
we will give new life to used products as new resources.

We will return these resources to society with new value added.

We will build a platform for this resource circulation and create value as an active player.

As we look to the future, we will make a strong contribution to the creation of a sustainable society,
and help to widen the scope of resource circulation.

MITSUBISHI MATERIALS

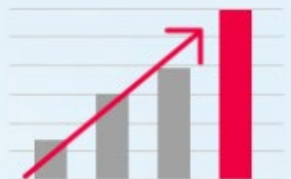
Consolidated
Number of Employees



18,323

(As of March 31, 2024)

Consolidated Net Sales



1,540.6
Billion yen

(As of March 31, 2024)

Breakdown of Sales
by Region



Japan **47%** Overseas **53%**

(As of March 31, 2024)

Number of Overseas
Countries and Regions
Where MMC



Operates **32**

(As of March 31, 2024)





METALS COMPANY

Processing Capacity of E-Scrap Recycling

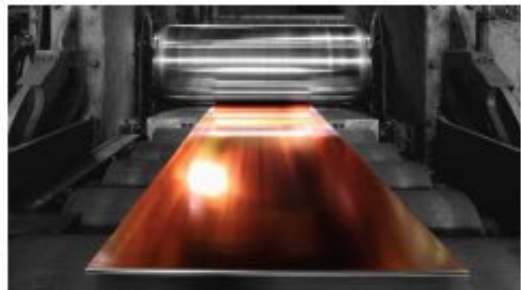
No.1 in the world



METALS COMPANY

Amount of home electronics that is recycled

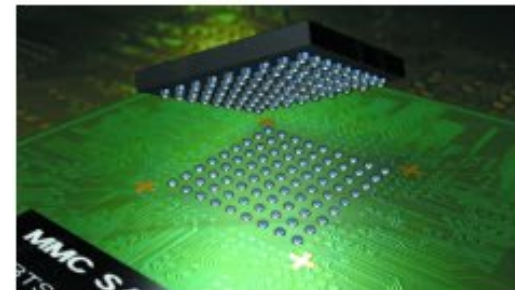
No.1 in Japan



ADVANCED PRODUCTS COMPANY
Copper and Copper Alloy Business

Market share of wrought copper products by sales

No.1 in Japan



ADVANCED PRODUCTS COMPANY
Electronic Materials and Components Business

Market share of low-alpha ray solder materials* by sales

No.1 in the world

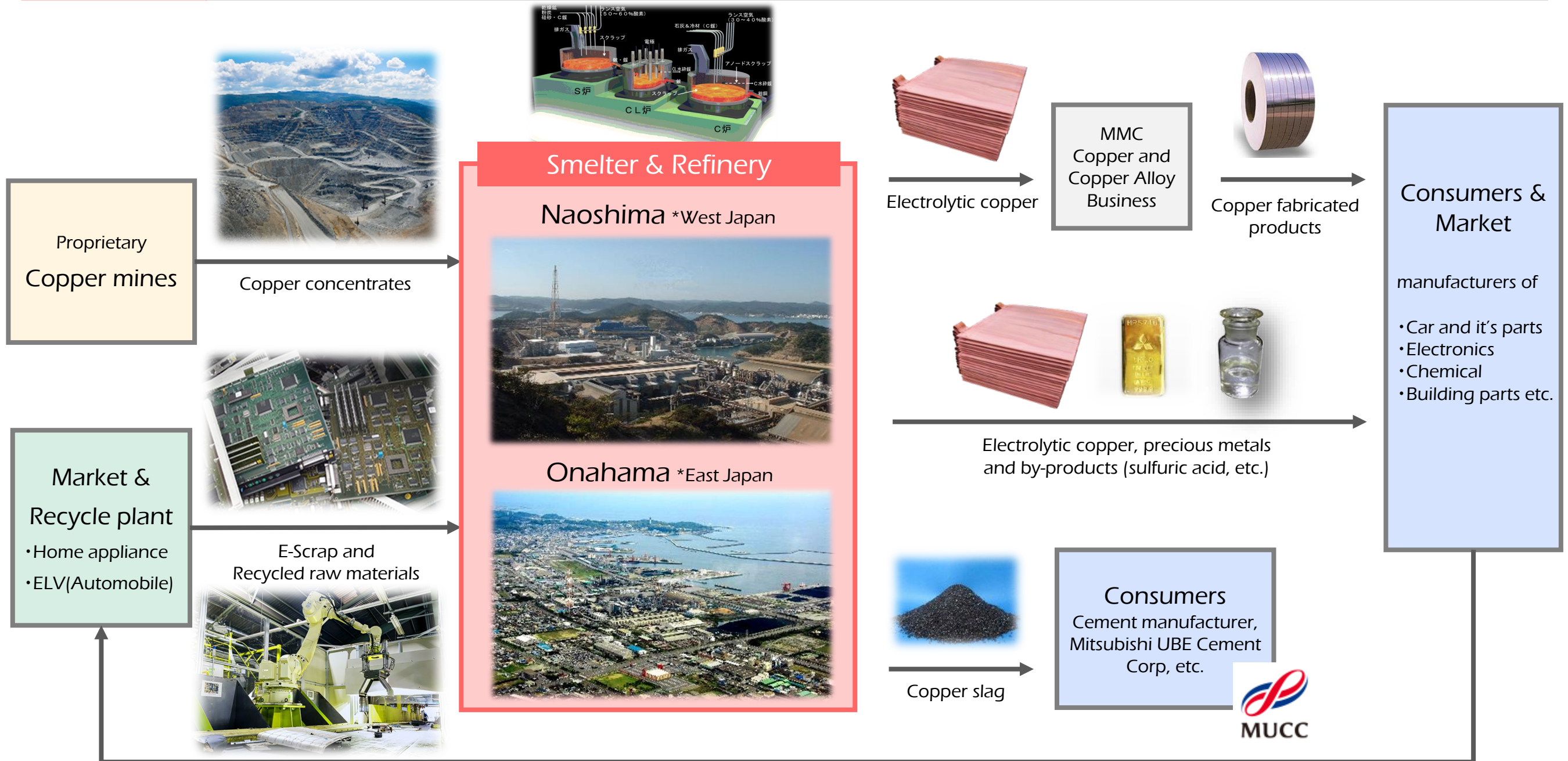


METALWORKING SOLUTIONS COMPANY

Sales of cemented carbide tools

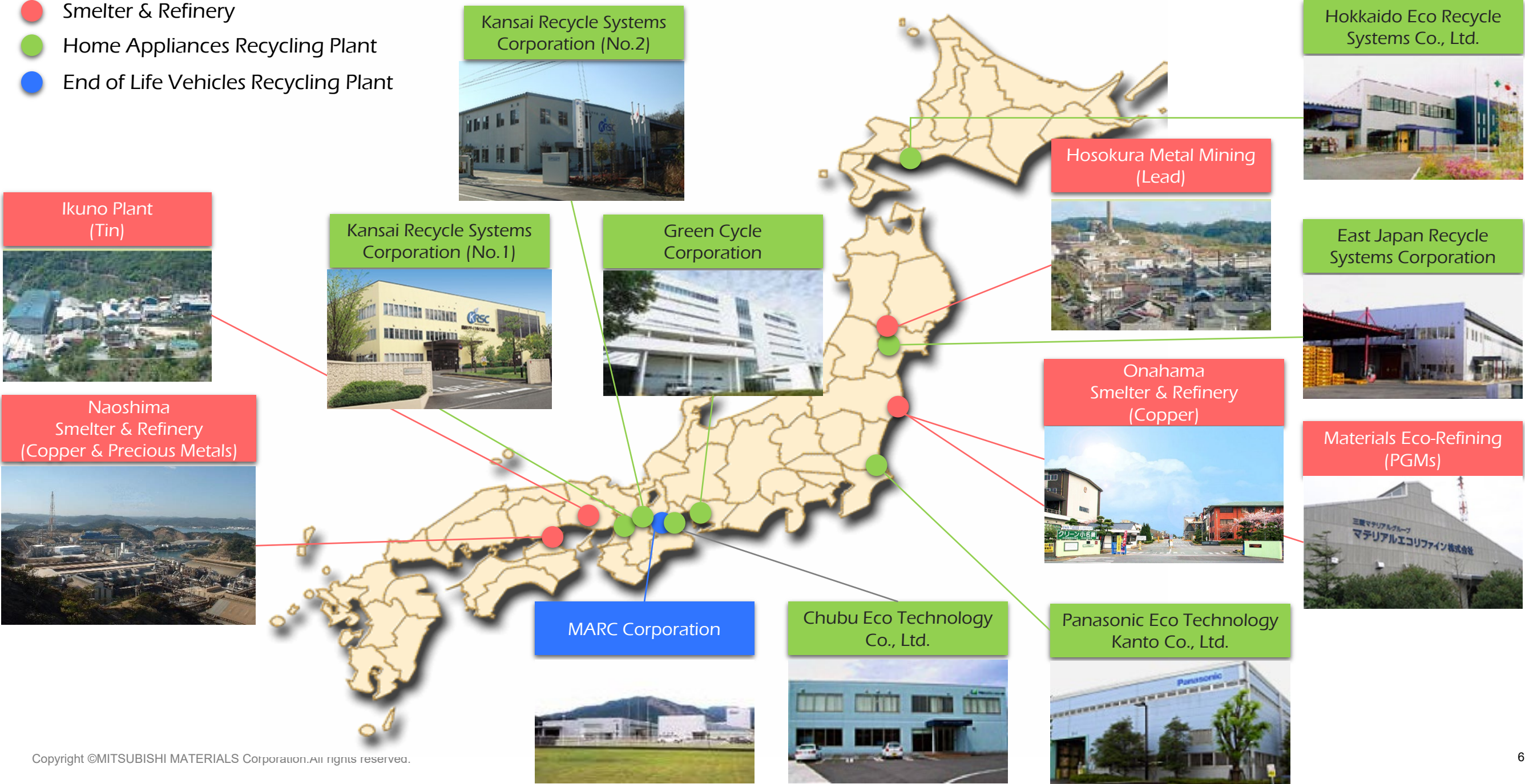
No.1 in Japan

Business Flow



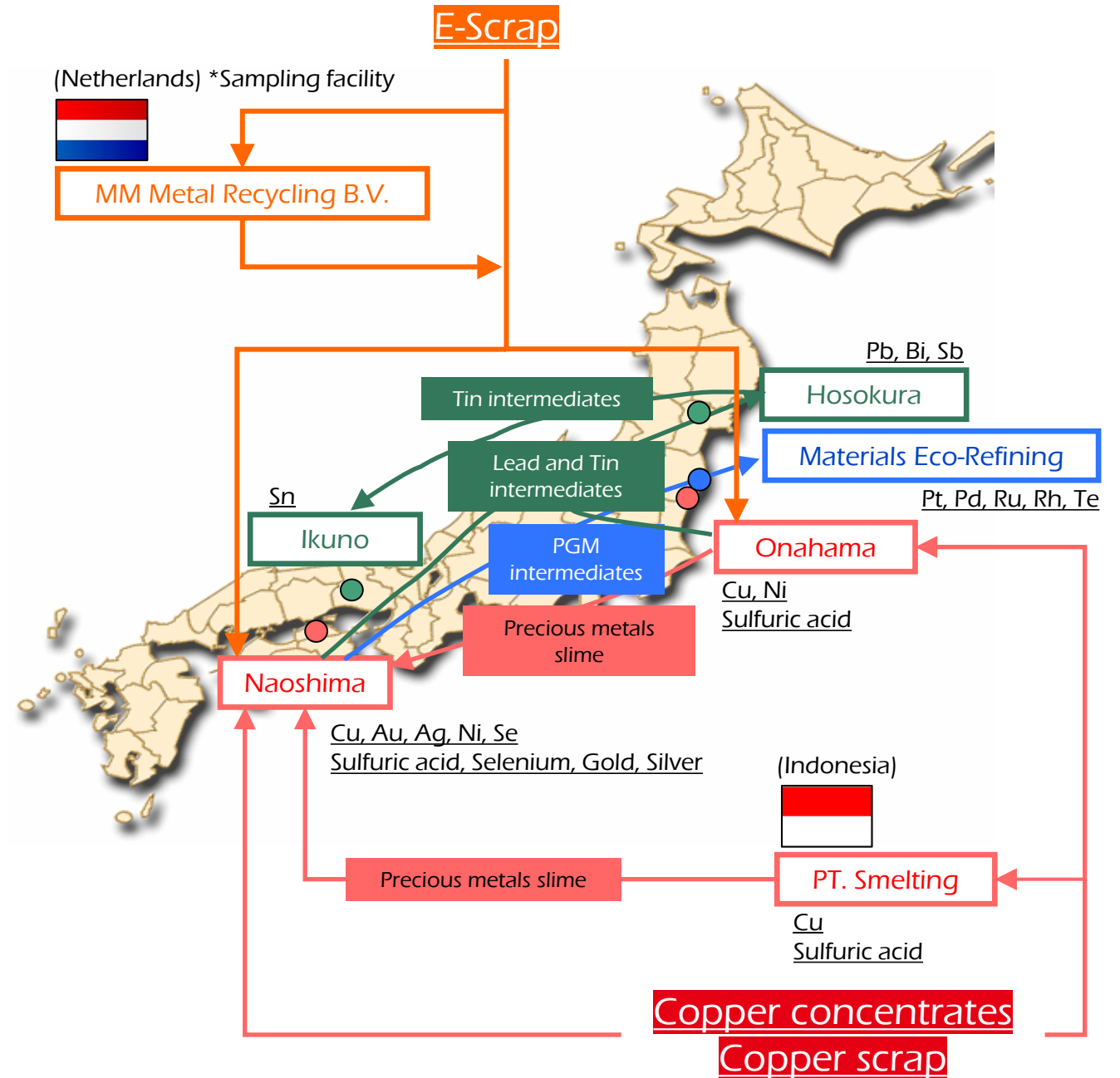
E-waste Recycling Facilities

- Smelter & Refinery
- Home Appliances Recycling Plant
- End of Life Vehicles Recycling Plant

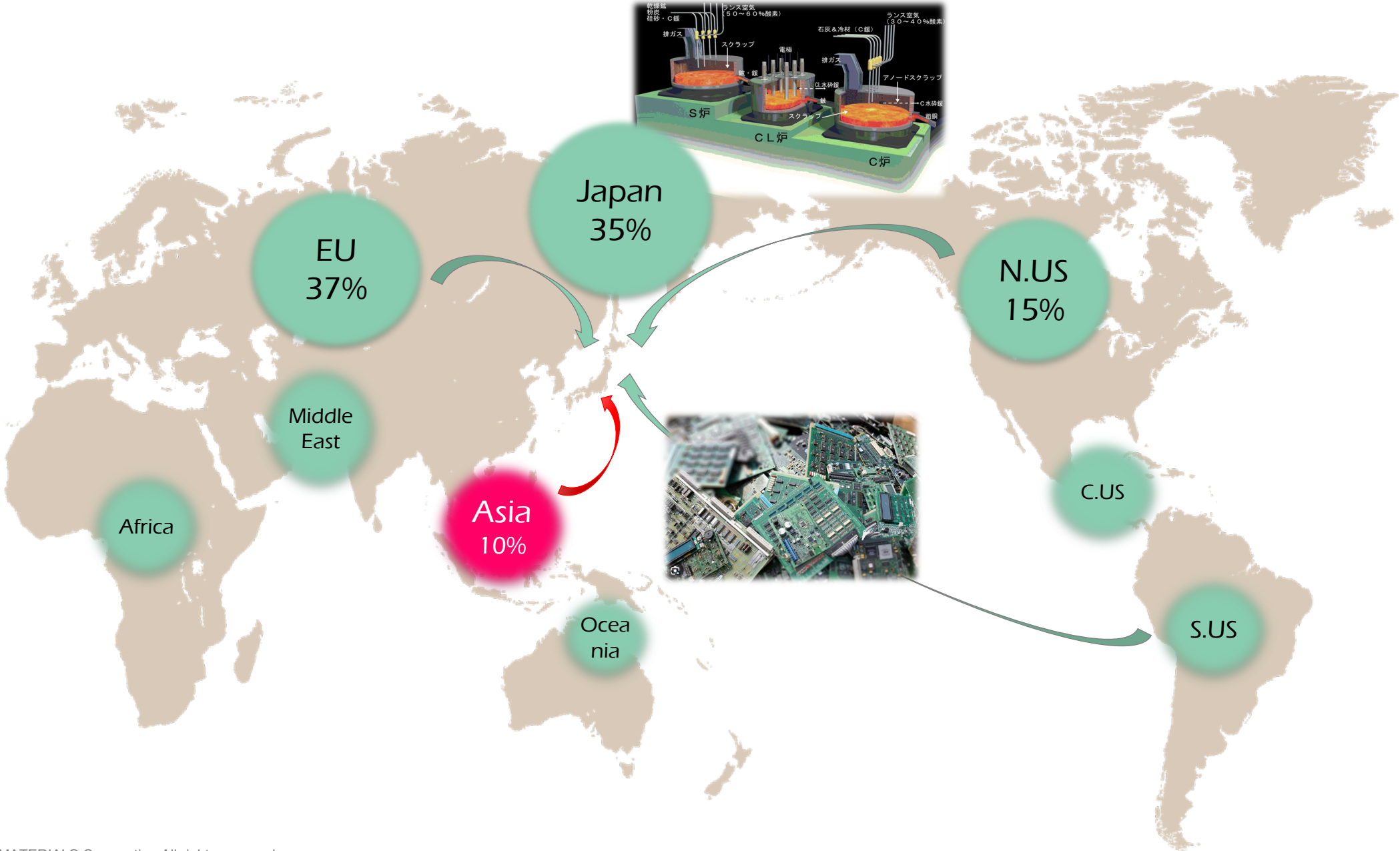


Material Grid

Smelter etc.	Raw Materials	Major Products
Naoshima Smelter & Refinery	<ul style="list-style-type: none"> Copper concentrates E-Scrap Copper scrap Other scrap Precious metals slime 	<ul style="list-style-type: none"> Copper cathode Sulfuric acid Selenium Gold Silver
Onahama Smelter & Refinery	<ul style="list-style-type: none"> Copper concentrates E-Scrap Copper scrap Other scrap 	<ul style="list-style-type: none"> Copper cathode Sulfuric acid
PT. Smelting (Indonesia)	<ul style="list-style-type: none"> Copper concentrates Copper scrap 	<ul style="list-style-type: none"> Copper cathode Sulfuric acid
Hosokura Metal Mining Co., Ltd	<ul style="list-style-type: none"> Waste lead battery Pb-Sn Intermediate 	<ul style="list-style-type: none"> Lead Bismuth
Ikuno Plant	<ul style="list-style-type: none"> Tin scrap Tin Intermediates 	<ul style="list-style-type: none"> Tin
Materials Eco-Refining Co., Ltd.	<ul style="list-style-type: none"> PGM Intermediates 	<ul style="list-style-type: none"> Platinum Palladium
MM Metal Recycling B.V. (Netherlands)	<ul style="list-style-type: none"> E-Scrap 	<ul style="list-style-type: none"> E-Scrap



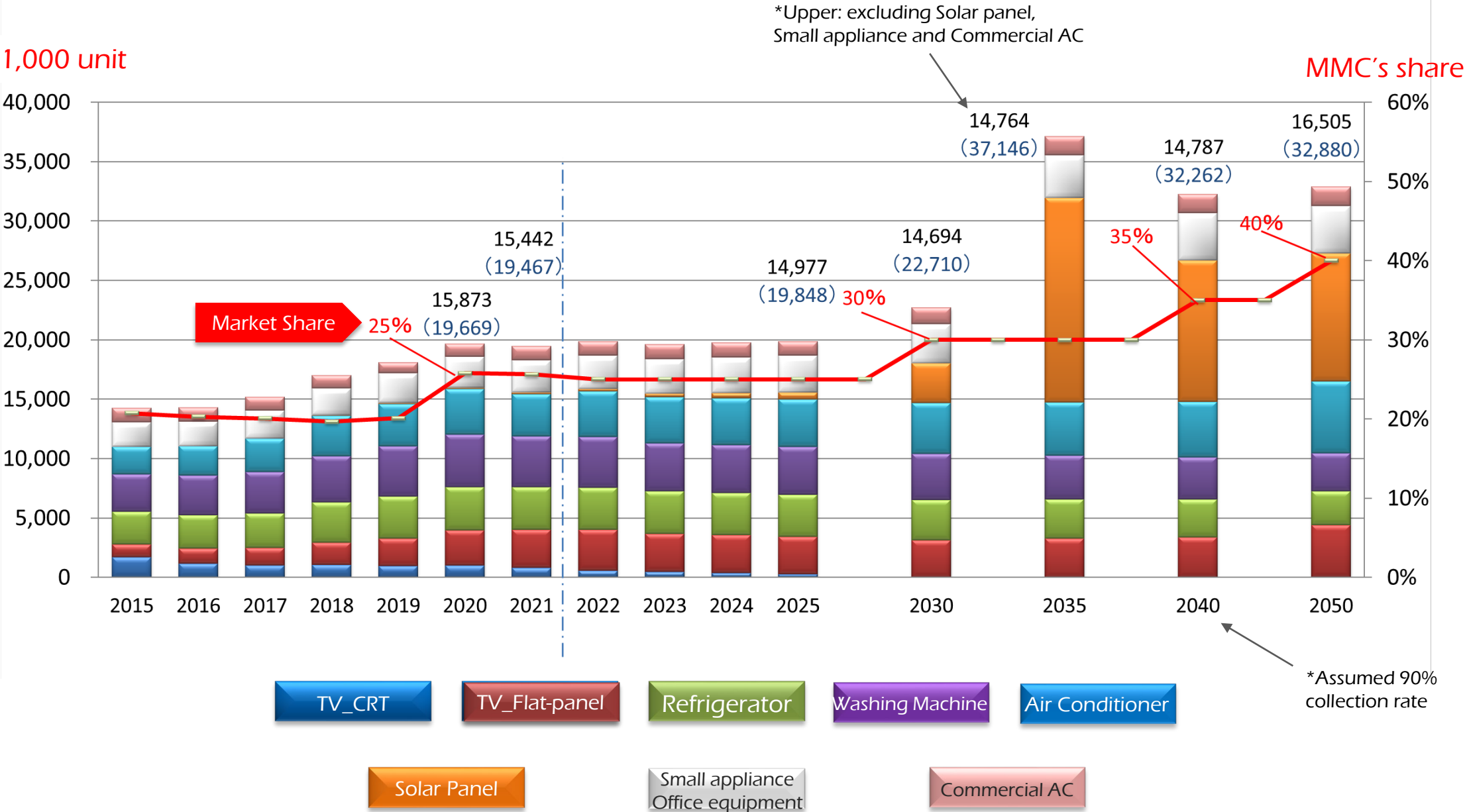
E-Scrap Collection



Home Appliance Recycling

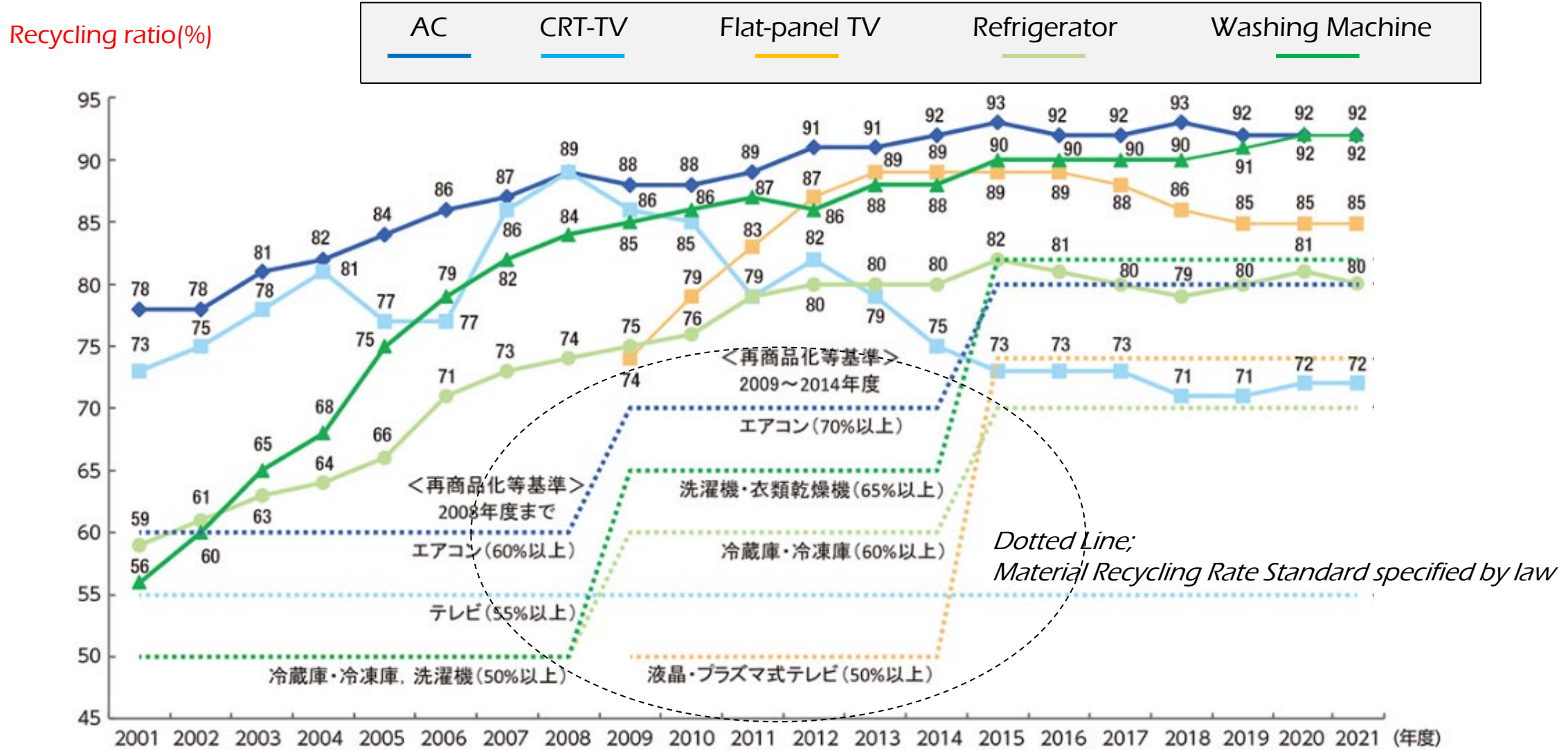


Business Scale in Japan



Material Recycling Rate* in Japan

*the ratio of the weight of recovered materials (whether free or paid for) to the weight of waste home appliances processed



Source: Home Appliance Association of Japan, Annual Report on Home Appliance Recycling in FY2021

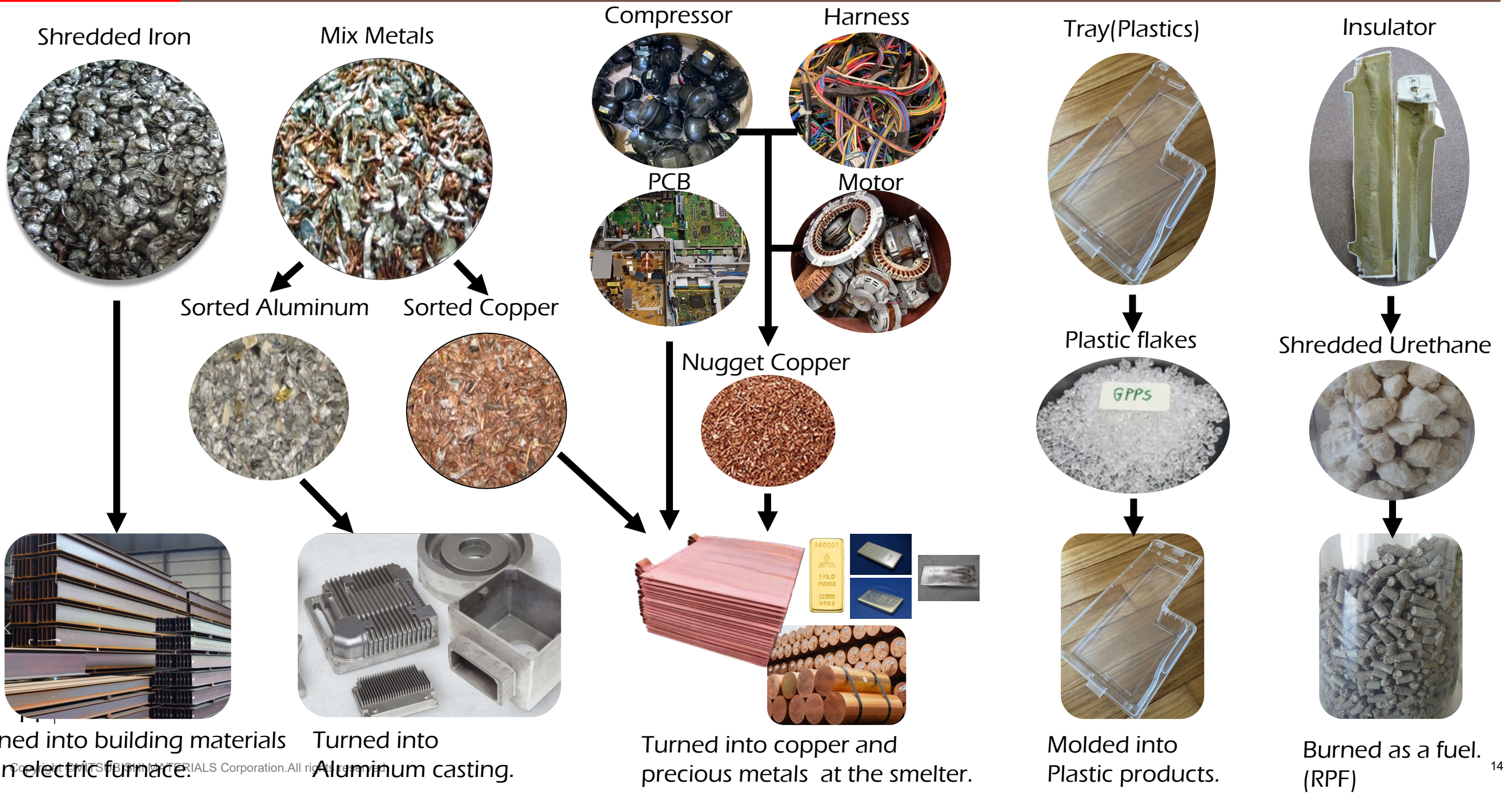
AI Picking Robot



Automatic Screw-removing Device for TV



Recoverable Resources



Recycled Metals Brand "REMINE"

Google

MMC REMINE



Recycled Metal "REMINE"



Corporate Site

Japanese

<p>Sn Tin</p> <p>Recycled content 100%</p> <p>Refined Tin (Ingot)</p> <p>Product information Contact Us</p> <p>環境主張 (Japanese)</p> <p>Environmental claims (English)</p> <p>SGSジャパン株式会社による検証意見書 (Japanese)</p> <p>Verification Statement by SGS Japan Inc. (English)</p>	<p>Pb Lead</p> <p>Recycled content Greater than 99.6%</p> <p>Refined Lead (Ingot)</p> <p>Product information Contact Us</p> <p>環境主張 (Japanese)</p> <p>Environmental claims (English)</p> <p>SGSジャパン株式会社による検証意見書 (Japanese)</p> <p>Verification Statement by SGS Japan Inc. (English)</p>	<p>Bi Bismuth</p> <p>Recycled content Greater than 92.2%</p> <p>Refined Bismuth (Ingot)</p> <p>Product information Contact Us</p> <p>環境主張 (Japanese)</p> <p>Environmental claims (English)</p> <p>SGSジャパン株式会社による検証意見書 (Japanese)</p> <p>Verification Statement by SGS Japan Inc. (English)</p>
<p>Pt Pt Sponge</p> <p>Recycled content 100%</p> <p>Pt Sponge</p> <p>Product information Contact Us</p> <p>環境主張 (Japanese)</p> <p>Environmental claims (English)</p> <p>SGSジャパン株式会社による検証意見書 (Japanese)</p> <p>Verification Statement by SGS Japan Inc. (English)</p>	<p>Pd Pd Powder</p> <p>Recycled content 100%</p> <p>Pd Powder</p> <p>Product information Contact Us</p> <p>環境主張 (Japanese)</p> <p>Environmental claims (English)</p> <p>SGSジャパン株式会社による検証意見書 (Japanese)</p> <p>Verification Statement by SGS Japan Inc. (English)</p>	<p>WO₃-5 Tungsten trioxide</p> <p>Recycled content 100%</p> <p>Tungsten trioxide (WO₃-5)</p> <p>Product information Contact Us</p> <p>環境主張 (Japanese)</p> <p>Environmental claims (English)</p> <p>SGSジャパン株式会社による検証意見書 (Japanese)</p> <p>Verification Statement by SGS Japan Inc. (English)</p>

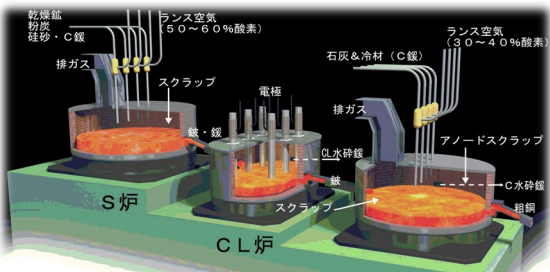
Mitsubishi Materials' Recycled Metals

Metals products with recycled content calculated in accordance with ISO14021 and verified by a third party

REMINE

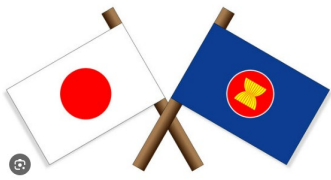
Initiatives for Appliance Recycling in ASEAN

5 Return resources as "Recycled metals or materials" to ASEAN again



4 Make it final resource at our smelter & refinery

1 Support for providing advanced e-waste recycling technology and equipment



3 Recovered resources are circulated locally but PCB should be transported to Japan

2 Expanding operation area

Resource Circulation System between ASEAN and Japan

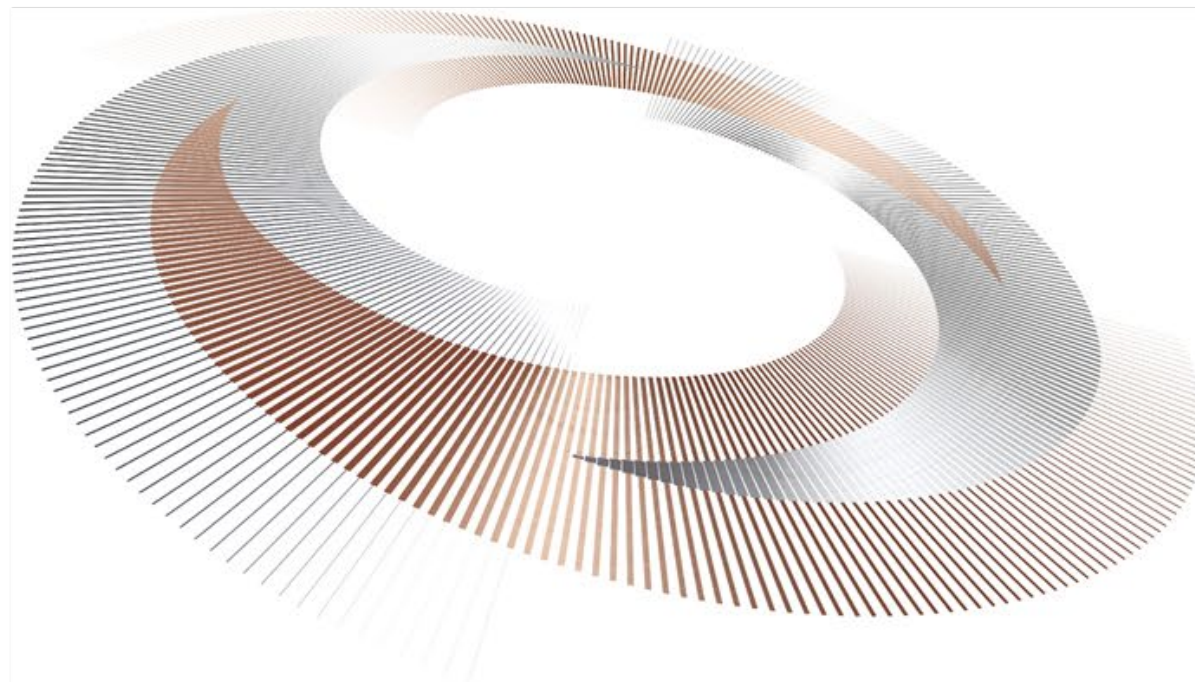
Requirements for Expanding E-Waste Recycling Business with the Philippines

■ Improvement of Business Environment

- ✓ Prompt **legislation** of E-Waste management.
 - Strict control **informal collection, dismantling and smelting** by license management
 - Establishment of **financing scheme** under EPR system
 - Strict control **illegal export**

■ Export Procedures

- ✓ No critical issue so far.
 - E-Scrap exports to Japan have been managed under Basel transfer documents in accordance with the Basel Convention until last year. Any change on procedures **from Jan 2025?**
- ✓ Expect procedures to be **simplified** as much as possible.



For people, society and the earth, circulating resources for a sustainable future



