

Non-Ferrous metals smelting/refining and recycling industry, which are responsible for the Circular Economy

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Overview of DOWA Group

Net Sales
USD 5.2 bill.
(2020)

Founded in 1884

The Japanese government sold the nonferrous mine (KOSAKA Mine) to DOWA

1970's

Focus on the environmental management & recycling business as one of the core businesses

2000~ Developing local processing bases in China and Southeast Asia

Our Five Main Business Segments

**Environmental
Management
& Recycling**



**Smelting
Nonferrous
Metals**



**Electronic
Materials**



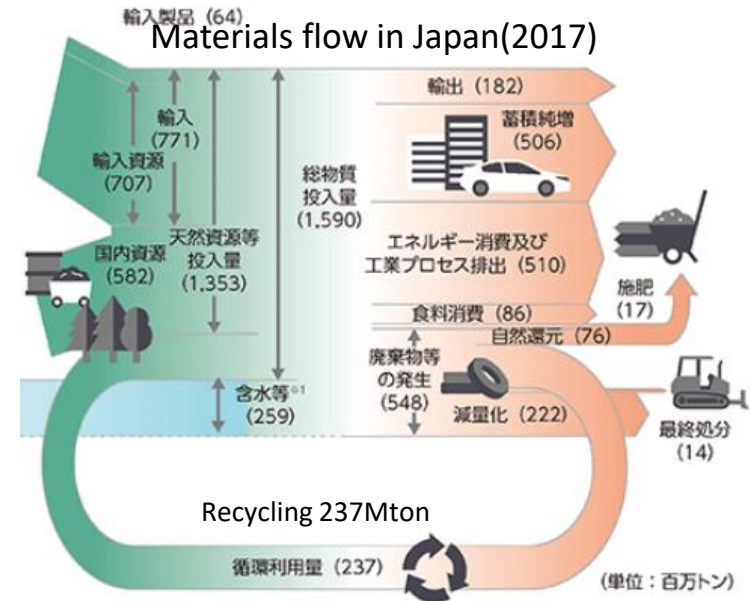
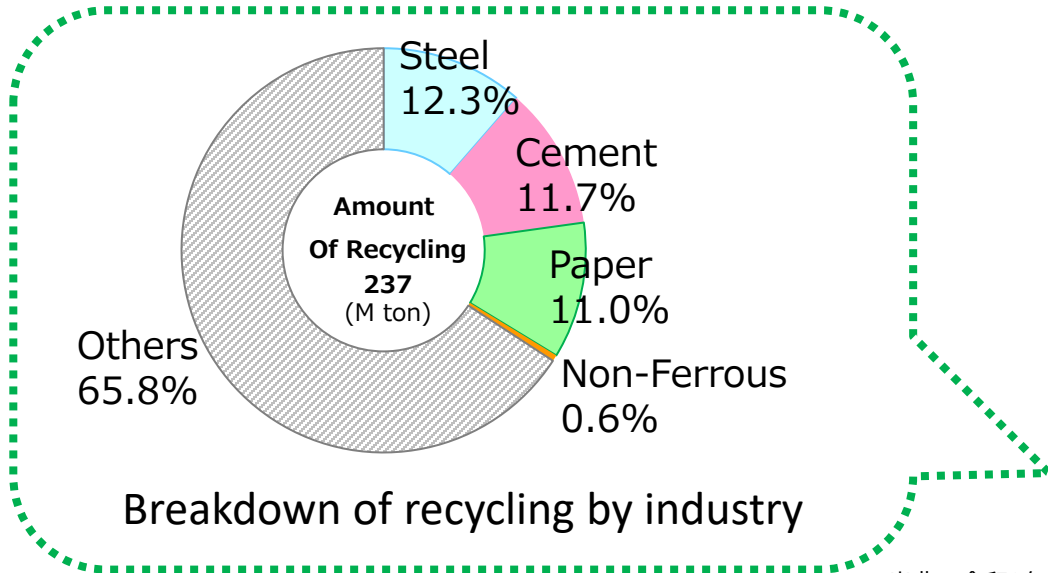
**Nonferrous
Metal
Products**



**Heat
Treatment**



Non-ferrous metals smelting and refining industry plays an important role in the recycling of resources



※出典：令和2年版 環境・循環型社会・生物多様性白書
廃棄物の広域移動対策検討調査及び廃棄物等循環利用量実態調査報告書（令和元年度）

● Characteristics of non-ferrous metals smelting industry

Our industry have the technology and infrastructure to separate and refine target metals from ores containing a wide variety of elements.

We can accept a variety of materials generated from urban mines as recycled raw materials, then manages the stabilization of hazardous elements.



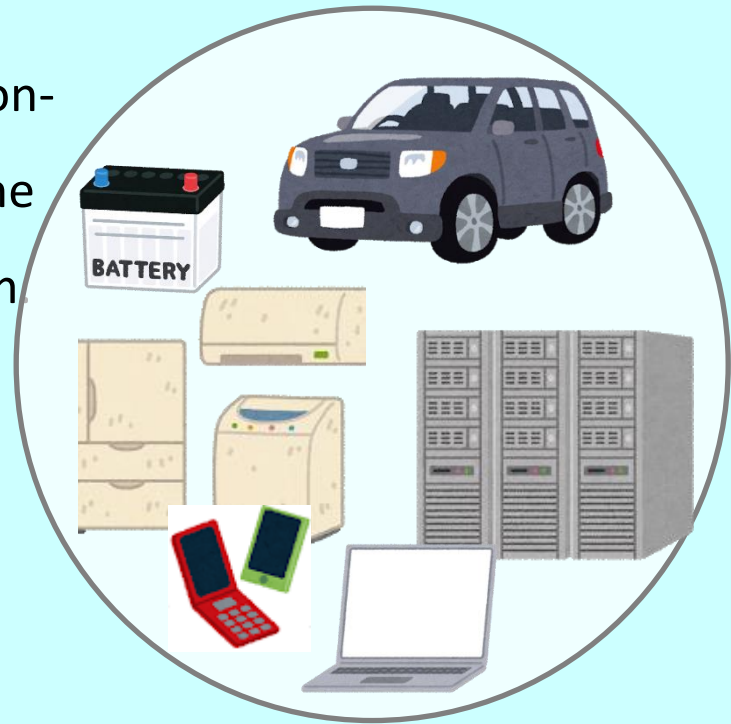
Metal Resource Recycling in Japan

“Urban mining” a concept proposed in 1988

While the Home Appliance Recycling Law (1998) ,
the Automobile Recycling Law (2002) and the Small
Home Appliance Recycling Law (2013) are being
developed, Japan's materials industries, such as non-
ferrous metals smelting, are also contributing to the
establishment of a comprehensive recycling system.

→Changes to the new recycling system will be
necessary as society changes in the future.

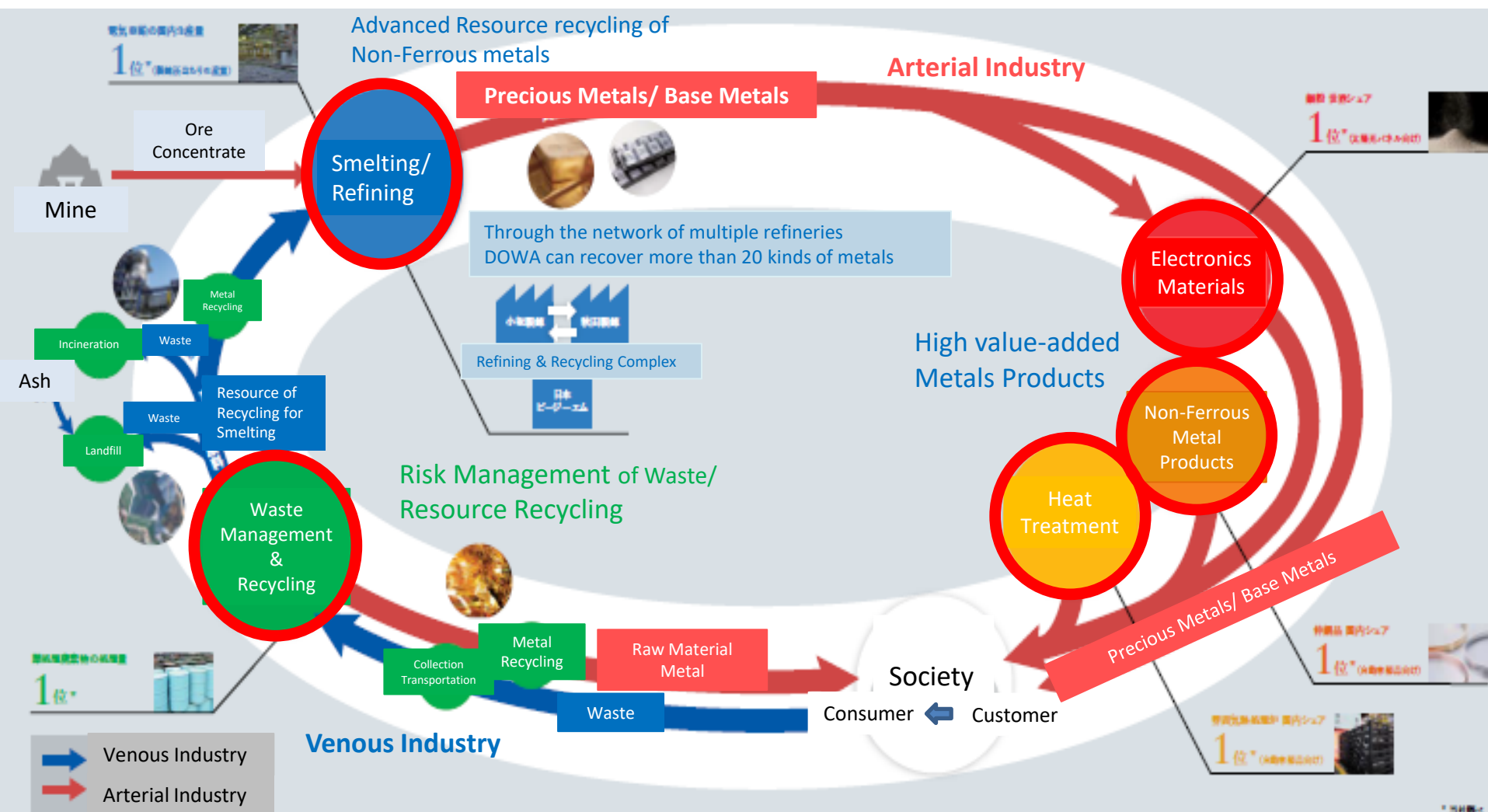
(Lithium-Ion Batteries etc.)



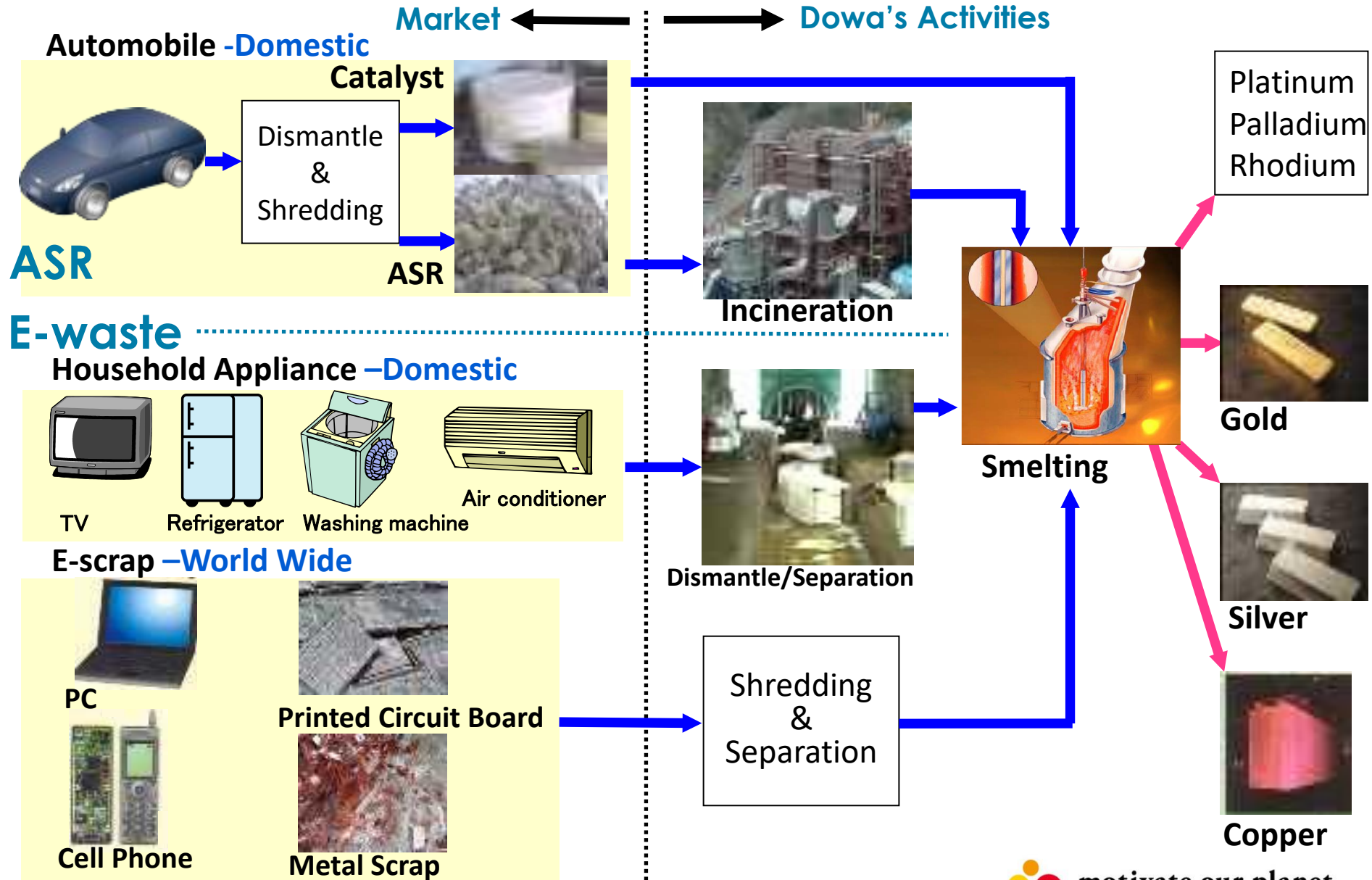
Circular Business Model of DOWA Group

DOWA group formed the refining and recycling complex by integrating the environmental / recycling business and the metal smelting business.

International resource recycling ; Collecting secondary raw materials from various countries and recovering metal resources through recycling and smelting in Japan.



Overview – Focus Metal Recycling of DOWA



Extract Various Metals – Recycling Smelter complex



Zinc Concentrate



Metal Scrap



E-scrap



Auto Spent Catalyst



Kosaka、
Nippon PGM

Akita Zinc

Steel Dust



Akita Zinc

**Zn, In, Ge, Ga,
Cd, etc**

Pb/Ag Residue



Zn Residue



Kosaka

**Au, Ag, Cu, Pb, Bi, Sn, Sb,
Ni, Se, Te, etc**

PGM Residue



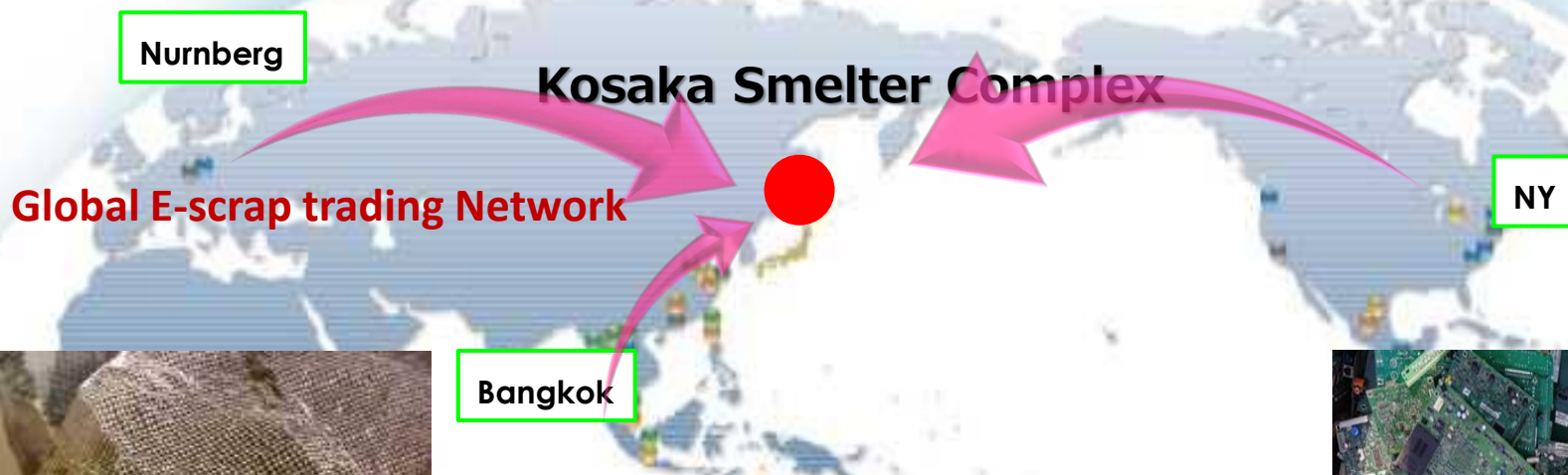
Nippon PGM

Pt, Pd, Rh, etc

International Metal Resource Recycling and Proper Waste Treatment

E-scrap is efficiently recovered in Japan, which has excellent separation, refining and waste management technologies.

Waste management services are tailored to meet the regulations and circumstances of each country.



Auto Spent Catalyst



**Proper Waste Treatment Plant
(China/Indonesia/Thailand/Singapore/
Myanmar)**



Printed Circuit Board

Thank you for your attention!