Waste Management & Recycling Services of DOWA

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DOWA ECO-SYSTEM CO., LTD.
Overview of DOWA Group

- Foundation: 1884
- Capital: *32 m USD
- Net sales: *4.0 b USD
  * At a rate of 112 JPY per USD
- Employee: 6,700
- Global activity: … Over 100 networks

DOWA contributes to the manufacturing of a wide range of products.

Subsidiaries:
- Japan: 70
- Asia: 30
- Europe, America: 10

DOWA Group Operations:
- Waste Management & Recycling
- Nonferrous Metals
- Resource Recycling Loop
- Heat Treatment
- Metal Processing
- Electronic Materials

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DOWA’s Waste Management & Recycling Services

Various inputs
- Printed circuit board
- Used home appliance
- Shredder residue
- Hazardous waste

Various outputs
- Nonferrous Metals
- Secondary Materials (Fe, Al, Plastics, etc.)
- Energy
- Landfill

Intermediate Treatment (Incineration/ WtE)

Dismantling, Separation

Smelting
- Pyrometallurgy
- Hydrometallurgy
DOWA’s Characteristics of Smelting

Collaboration of 3 smelters enables efficient recovery of various metals

Zinc concentrate, Steel dust

Metal scrap

Printed circuit board

Auto spent catalyst

Residue

PGM residue

Akita Zinc

Kosaka Smelting & Refining

Nippon PGM

Zn, In, Ge, Ga, Cd, etc.

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

Pt, Pd, Rh, etc.
Recycling of Incineration Ash

- MSW
- Industrial Waste
- Incinerator
- Bottom Ash
- Fly Ash
- Molten Slag/Metal
- Molten Slag
- Molten Metal
- Non-ferrous Smelting
- Roadbed Material

- 2 plants in Japan
- Harmony between Waste management and Recycling
- Zero landfill

DOWA

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Global Activities

- **Recycling:**
  Global trade of E-scrap, intensive recovery in Japan

- **Waste management:**
  Various services, following each country’s regulations and needs; Indonesia, Thailand, Singapore and Myanmar