

Circular Economy for Strategic Metals in Japan – Cases by Japanese Companies



Toru Nishiyama

J4CE Secretariat, Japan Partnership for Circular Economy
Institute for Global Environmental Strategies (IGES), Japan

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IGES
Institute for Global
Environmental Strategies

Introduction of J4CE

Japan partnership for Circular Economy (J4CE)

- Founded in March 2021 by **Ministry of the Environment (MOEJ)**, **Ministry of Economy, Trade and Industry (METI)**, and **Japan business Federation (Keidanren)** to foster a better understanding of the circular economy among a wide range of stakeholders, including Japanese companies, and promoting initiatives in response to the accelerating global trend towards the circular economy.



- Secretariat: **Institute for Global Environmental Strategies (IGES)**
- 146 companies and industrial association participate the partnership.
- 140 case studies are introduced on the website. “Noteworthy cases” brochure is available on the website.



COP26 Nov.2021 in Glasgow

<https://j4ce.env.go.jp/>

J4CE Website and “Noteworthy Cases” brochure

J4CE introduces good practices of the circular economy by Japanese companies. (140 cases on the website, 28 noteworthy cases in the brochure)

The screenshot shows the J4CE website interface. At the top, there is a navigation bar with the J4CE logo and the text "Japan Partnership for Circular Economy". The menu includes: HOME, ABOUT, NEWS, CASES, MEMBER, PUBLICATIONS, and a language selector for Japanese and English. Below the navigation bar, there is a "Download: J4CE Noteworthy Cases/Initiatives 2021" link. A "Featured tag" section contains buttons for "Plastics", "Battery", "Information platform", "Company in same business category", and "Company in different category". The main content area displays a grid of case study cards. The first card is titled "Used Diaper Recycling Project" by ZUIKO CORPORATION, dated 2022.03.22, with tags for "Recycle", "Utilization", "Plastics", and "Paper/Wood". The second card is "Initiatives to Reduce Packaging Materials" by TOTO, LTD, dated 2022.02.16, with tags for "Case/initiative by individual company", "Recycle", "Production", "Plastics", and "Individual company". The third card is "Regarding the Utilization of Recycled Materials" by TOTO, LTD, dated 2022.02.16, with tags for "Case/initiative by individual company", "Recycle", "Production", "Plastics", and "Individual company". The fourth card is "Yokosuka recycle plant project" by TBM Co., Ltd. The fifth card is "Circular Economy by TBM" with a diagram showing the flow from LIMEX to CIRCLOX. The sixth card is "Resource Recycling Project" by NEION Film Coatings Corp. and TOYOBO CO., LTD. / Mitsui Bussan. A "TOP" button is located at the bottom right of the grid.

The brochure cover features the title "Japan Partnership for Circular Economy" in a large, stylized font. Below the title, it reads "Initiatives on the Circular Economy by Japanese Companies". At the bottom, the J4CE logo is displayed next to the text "Noteworthy Cases · 2021 Edition ·".

<https://j4ce.env.go.jp/>

JX Nippon Mining & Metals Corporation

The JX Nippon Mining & Metals Group aims to achieve resource circulation throughout the supply chain, by using finite resources efficiently and without waste to develop and produce an array of products and by promoting recycling and reducing environmental impact.

<https://j4ce.env.go.jp/en/member/026>



DOWA Holdings/DOWA ECO-SYSTEM

DOWA Group's mission is to "Contribute to creating an affluent, recycling-oriented society through our business activities worldwide."

DOWA ECO-SYSTEM is implementing this mission through its environmental management and recycling business, which focuses on services such as metal-based recycling, waste management, and soil remediation.

<https://j4ce.env.go.jp/en/member/024>

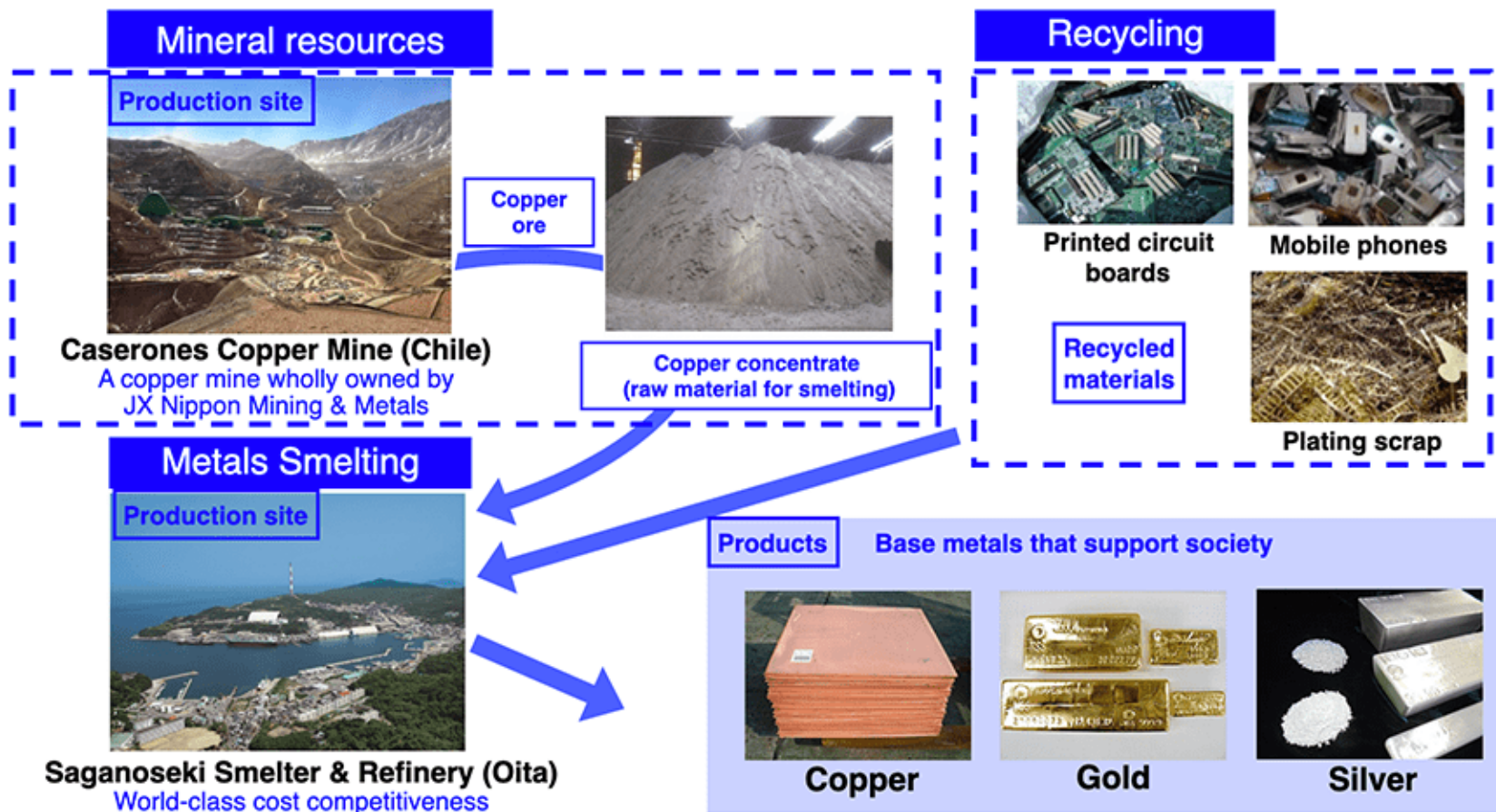
<https://j4ce.env.go.jp/en/member/039>

DOWA

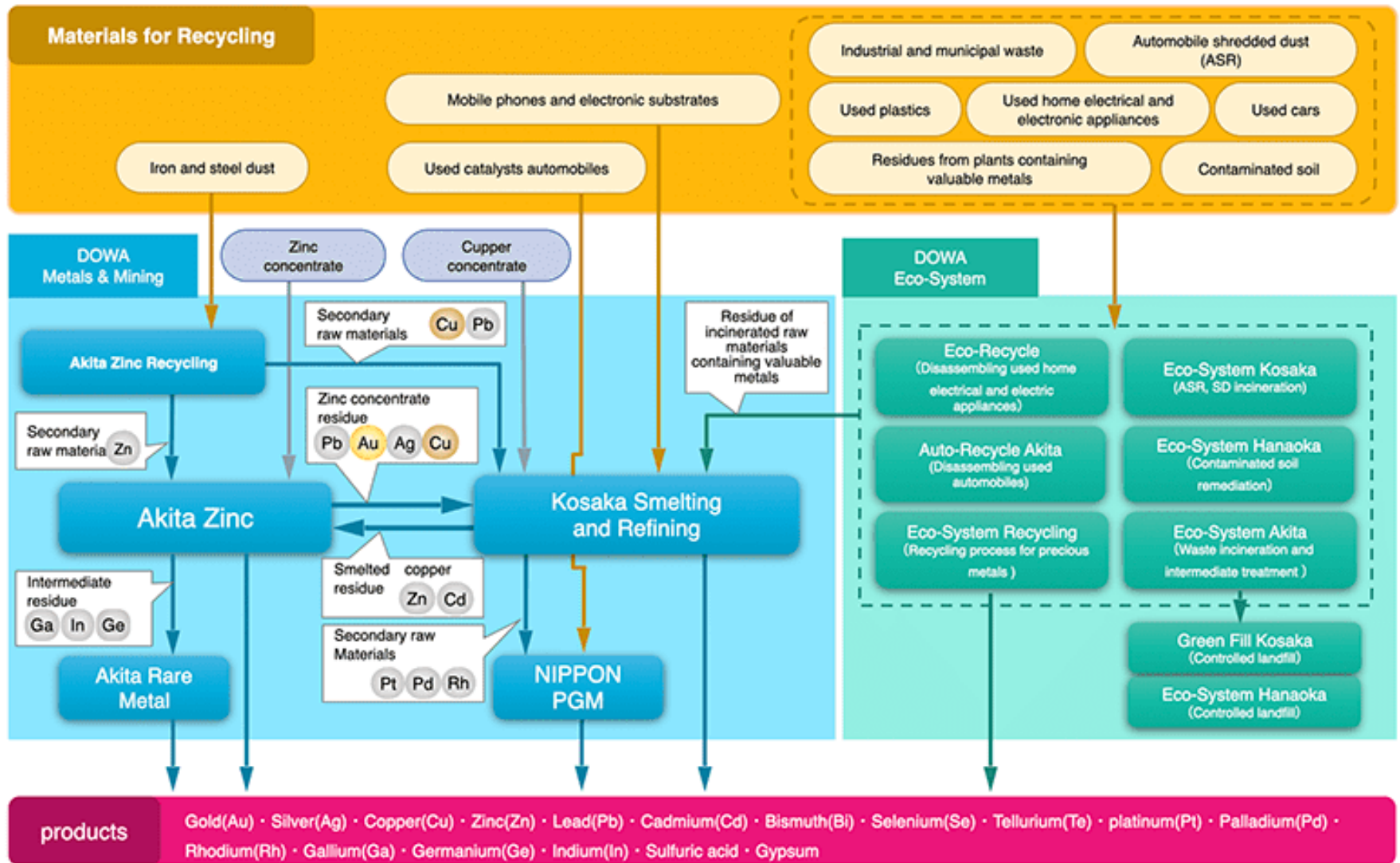


motivate our planet
DOWA ECO-SYSTEM

JX Nippon Mining & Metals' Business Segments and their relations

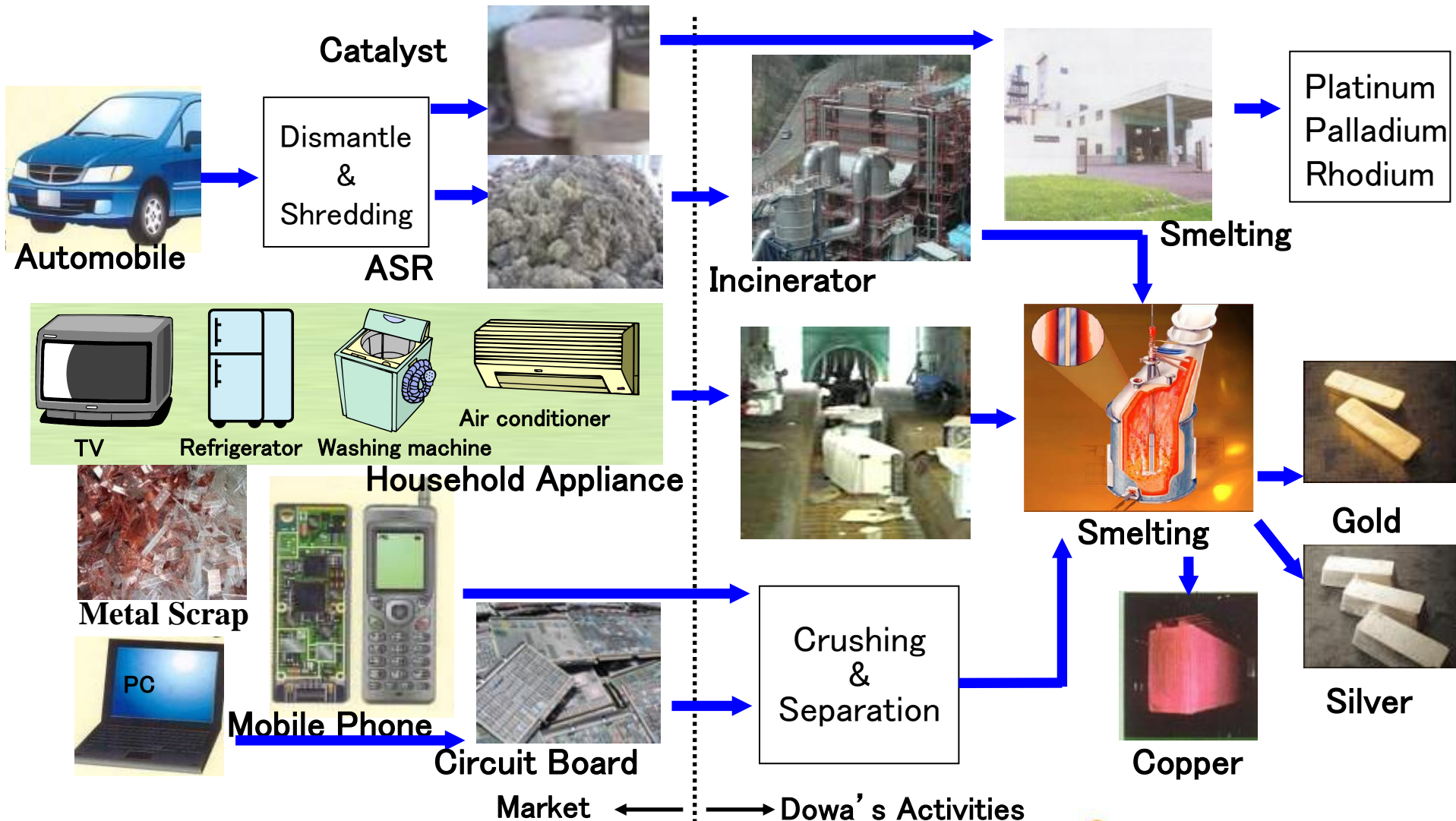


DOWA Recycling Complex



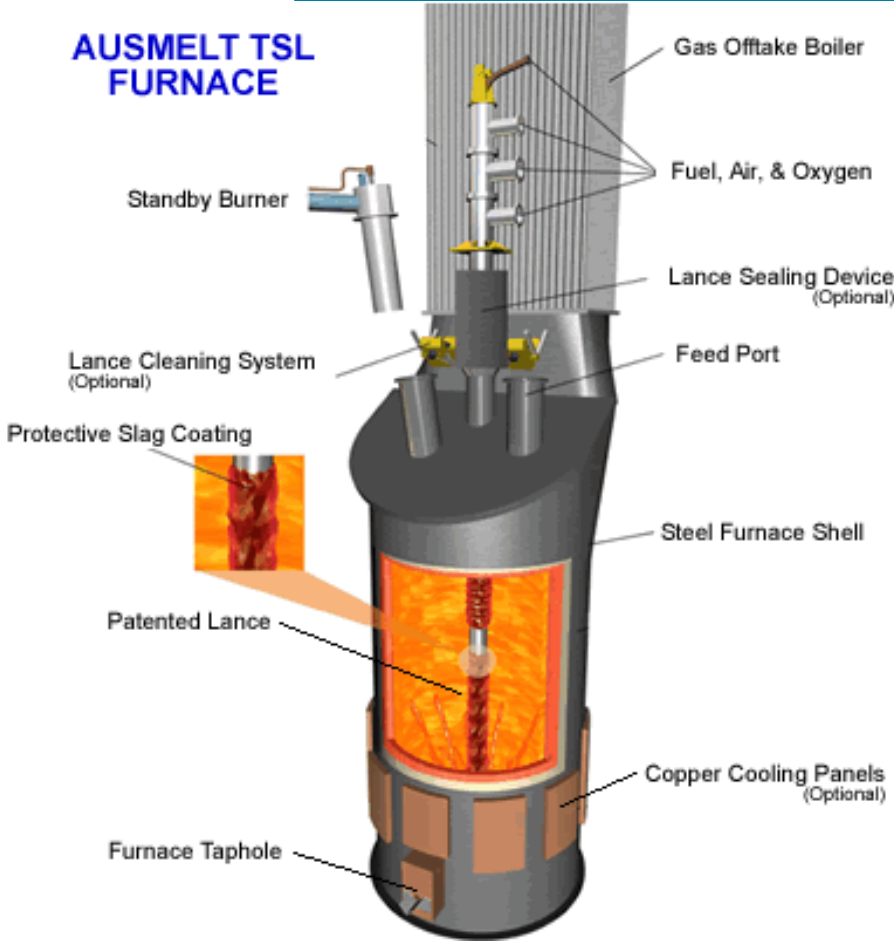
<https://j4ce.env.go.jp/en/casestudy/042>

Metal Recycling Technologies



Metal Recycle Technology of DOWA

Introduce New Type Furnace
for Secondary Materials



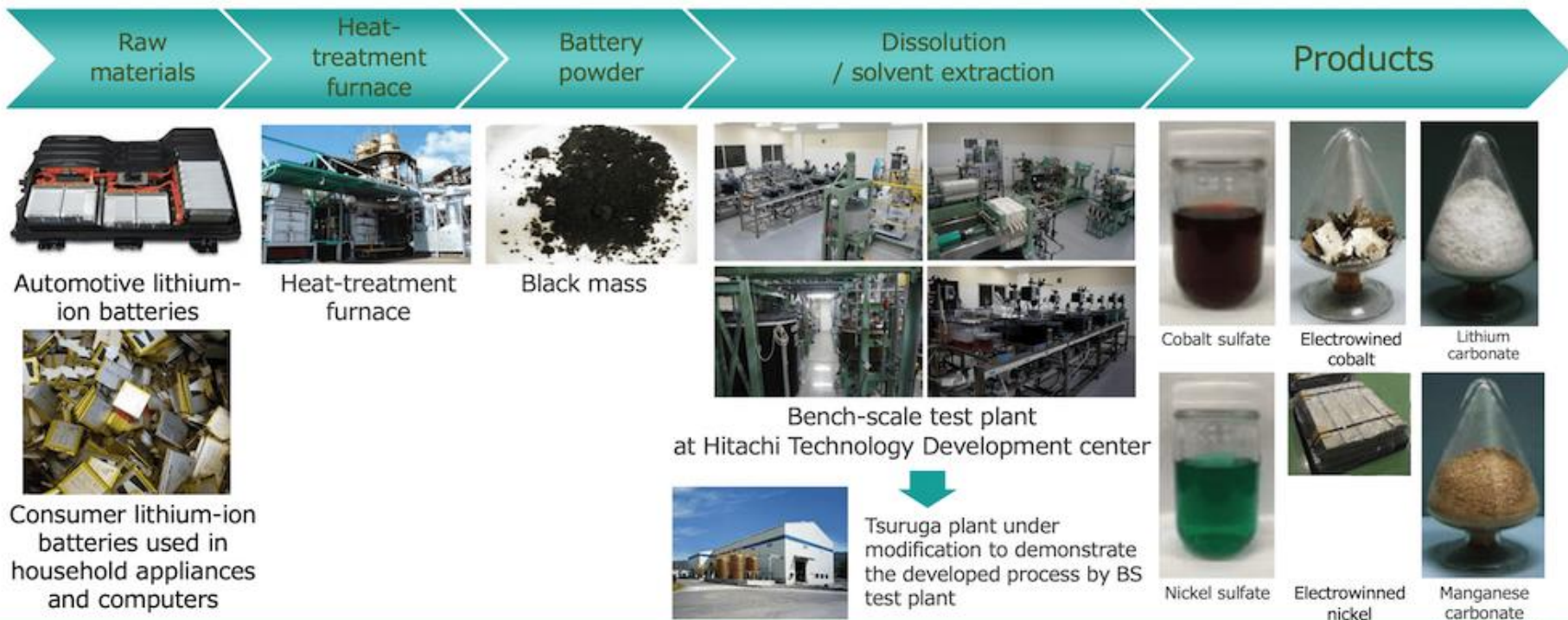
Au	Ag	Zn	Ga	Bi	Pt	Pd	Rh	Sb	Ru	Sn
Cu	Cd	Pb	Ge	In	Se	Te	S	Co	Li	Ni

Recycling of Lithium-ion Batteries (LiB)



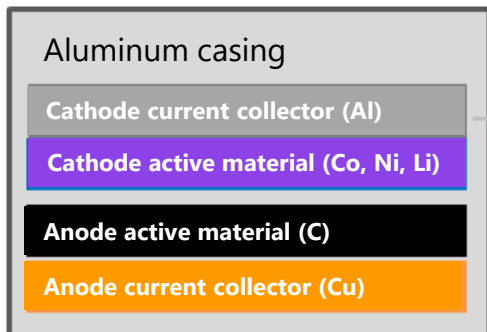
Current Approach to realize the LiB closed loop recycling system

In this process, we separate and recover nickel, cobalt, and lithium as metal salts, using our unique solvent extraction technology from the black mass obtained with pre-treatment from lithium-ion batteries.



Recycling of Lithium-ion Batteries (LiB)

Composition of LiB



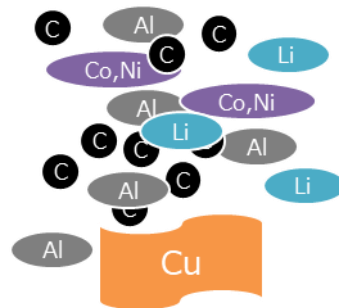
LiB



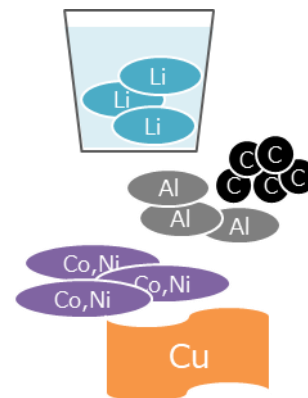
Al



Thermal treatment



Crashing



Separation & extraction



The furnaces to inactivate batteries of ECO-SYSTEM AKITA CO., LTD.



Crashing & separation plant

Cu



Co, Ni



Li₂CO₃



(Process under development)

Commercial plant of LiB treatment (> 100t/month)

Thank you!

For any inquiries, please contact @:
J4CE_Secretariat@iges.or.jp