Base Metal Flows and Securing Mineral Resources in Japan

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Japan Organization for Metals and Energy Security

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1. Introduction to JOGMEC

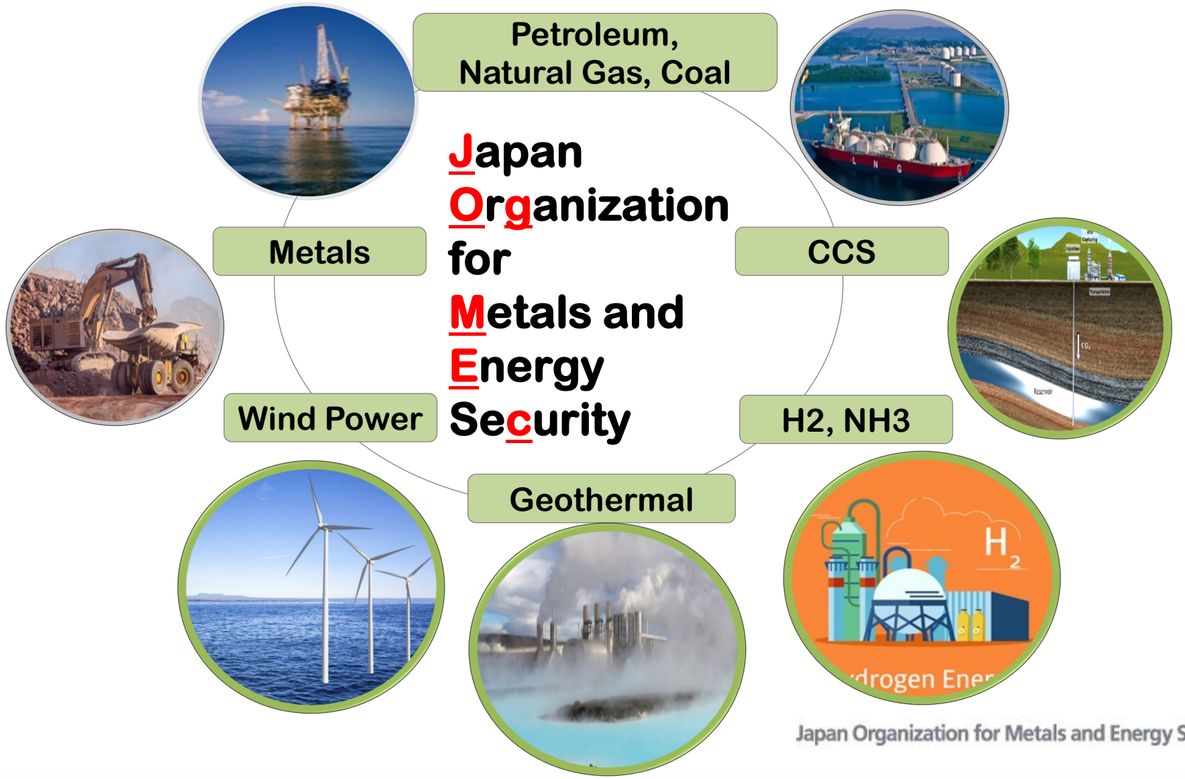
2. Base Metal Flows in Japan

3. JOGMEC's Activities

JOGMEC, Who are we?

- JOGMEC promotes a wide range of projects to secure a stable supply of mineral and energy resources to Japan and to achieve carbon neutrality.
- JOGMEC conducts geological surveys to acquire resources in Japan and overseas, provides financial support such as risk money, develops and supports technology, provides information on resources, and engages in resource diplomacy and international cooperation.

Established	29 February 2004 (integrated the functions of the former JNOC and MMAJ)
Capital	1,472 Billion Yen (May 2024) approx. 9.7 Billion USD
Numbers of Employees	666 (as of 1 July 2024)
Expenditure Budget	2,377 Billion Yen (2024FY) approx. 15.6 Billion USD
Overseas Offices	13 (2 in Africa, Johannesburg, South Africa and Botswana Geologic Remote Sensing Centre)



JOGMEC's Global offices

Japan Organization for Metals and Energy Security

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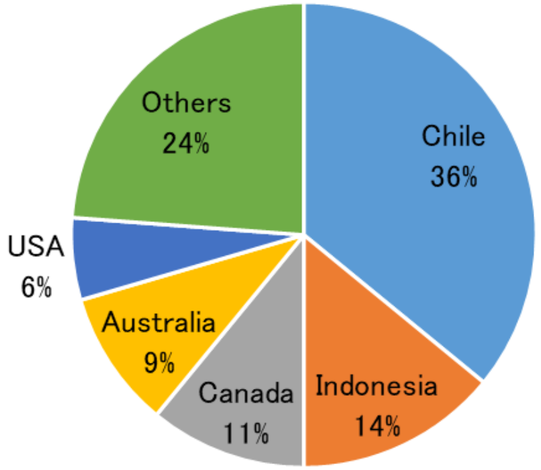
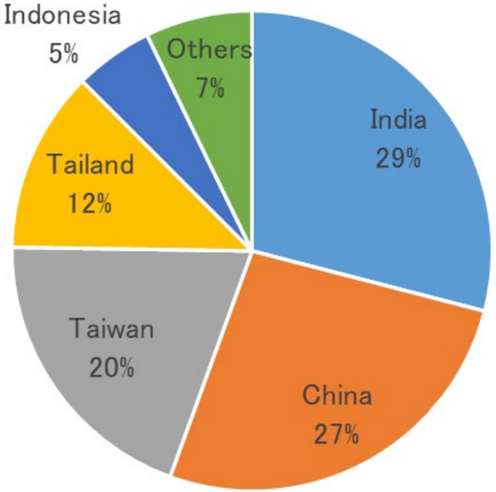
Copper Flow in Japan 2023

Concentrate import to Japan



Electric copper exports from Japan



Raw Material

Ore ※1
Import 1,127kt

Materials

Crude copper ※1,2
Stocks –
Production 1,537kt
Import 3.0kt
Export 0.1kt

Electric copper ※1,2
Stocks 98kt
Production 1,494kt
Import 9kt
Export 709kt

Matte ※2
Production –
Import 3.1kt
Export 8.7kt

Waste and scrap ※2
Stocks –
Consumption –
Import 115kt
Expor 375kt

Electric wire ※3
Demand 535kt
(Export) 10kt

Rolled copper products ※3
Demand 273kt
(Export) 99kt

Others (casting, etc.) ※1
Demand 11kt

Product・Main Application

Electric and Electronic equipment ※3
Electric wire demand 124 kt
Rolled copper demand 151 kt

Automotive・Transportation ※3
Electric wire demand 94 kt
Rolled copperdemand 60 Kt

Communications・Electricity ※3
Electric wire demand 8 kt
Rolled copperdemand –

Precision machinery ※3,※4
Electric wire demand –
Rolled copperdemand 63 Kt

Construction ※3
Electric wire demand 300 kt
Rolled copperdemand 3 kt

Metal products ※3
Electric wire demand –
Rolled copper demand 51 kt

Others ※3
Electric wire demand 38 kt
Rolled copper demand 105 kt

Net conversion rate：Crude copper 99%, matte 78%, electric copper 100%, waste and scrap 100%, alloy waste and scrap 70%

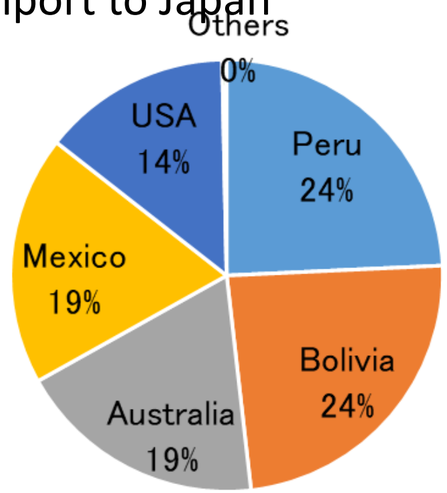
* Demand for products = imports of materials produced or imported domestically, and does not take into account imports and exports of products.

Note) "–": Production / demand is unknown. There is no description of import / export of products.
"0 (zero)": Rounded off and less than the minimum unit in the table

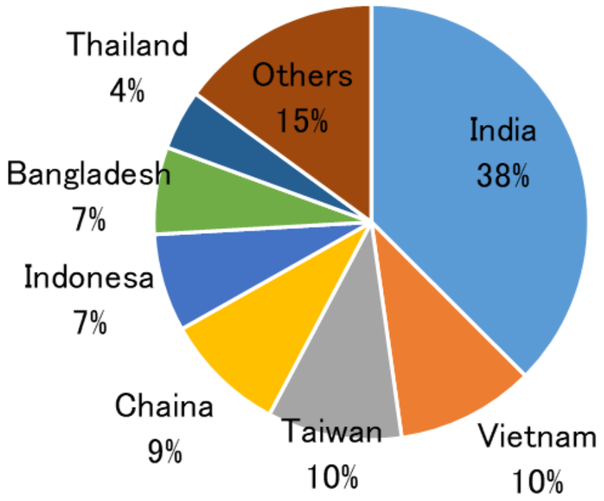
Source
※1 Japan Mining Industry Association (Bulletin "Kozan")
※2 Trade Statistics of Japan
※3 The Japanese Electric Wire & Cable Maker's Association(Shipping record), Japan Copper and Brass Association「Rolled copper products shipment trends」
※4 In the usage classification of The Japanese Electric Wire & Cable Maker's Association, (Machinery) is included in (Electric and Electronic equipment).

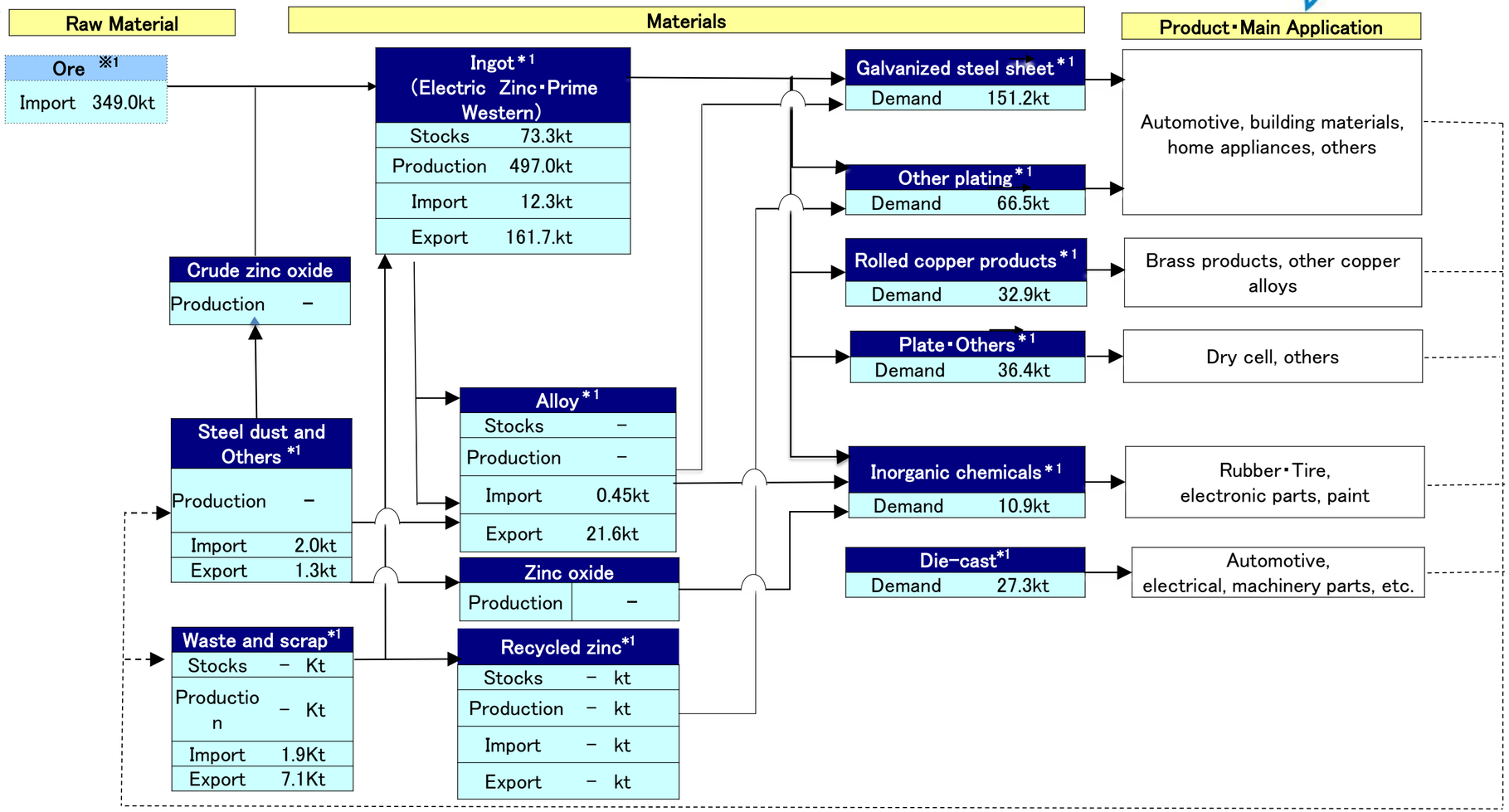
Zinc Flow in Japan 2023

Ore import to Japan



Zinc ingot export from Japan





Net conversion rate：Ingot 100%, waste and scrap 100%, recycled lead 100%, alloy ・others 96%, waste battery 53%

＊ Demand for products = imports of materials produced or imported domestically, and does not take into account imports and exports of products.

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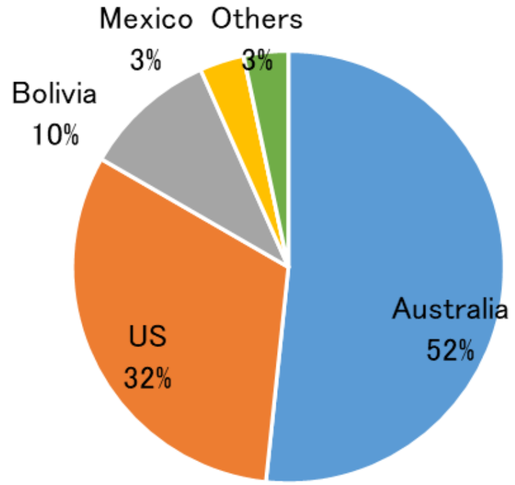
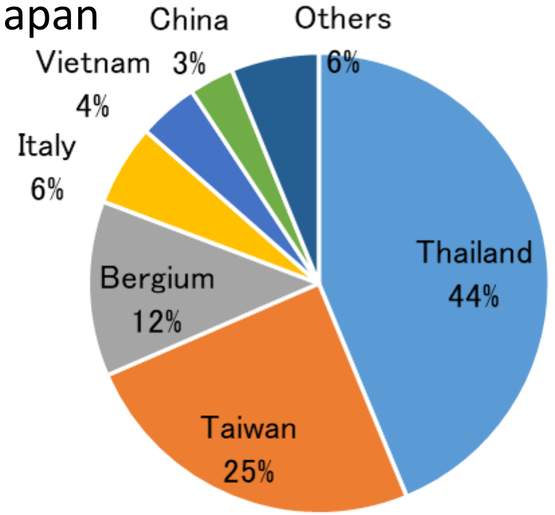
Source ※1 Japan Mining Industry Association (Bulletin "Kozan")

Lead Flow in Japan 2023

Ore import to Japan



Electrical lead export from Japan



Raw Material	Materials				Product・Main Application
Ore ※1 Import 60kt	Electrical Lead*1,2 Stocks 19kt Domestic 178kt Import 23kt Export 5kt	Alloy*2 Stocks – Production – Import 3Kt Export 40Kt	Secondary batteries *1 Demand 165kt		Automotive secondary batteries, industrial storage batteries
Copper,Zinc Smelting residue –	Waste and scrap*1,2 Stocks - Domestic - Import - Export 19kt	Recycled Lead*1,2 Stocks - Domestic - Import - Export -	Others*2 Stocks – Production – Import 5kt Export 10Kt	Inorganic chemicals*1 Demand 4kt	Glass products, PVC stabilizer・paint, etc.
				Lead pipe・Plate*1,3 Demand 4kt	Piping・sheet metal・shielding plate・sound insulation board, etc.
				Solder*1 Demand 1kt	Electrical and electronic parts
				Others*1 Demand 10kt	Weight, free machining steel, others

No direct exportation & importation | Domestic production available | Only exportation & importation | Production flow (Domestic prod. available) | Production flow (Domestic Prod. not available) | Recycling flow

Net conversion rate：Lead ingot 100%, waste and scrap 100%, recycled lead 100%, alloy lump・others lump96%, waste battery 53%

＊ Demand for products = imports of materials produced or imported domestically, and does not take into account imports and exports of products.

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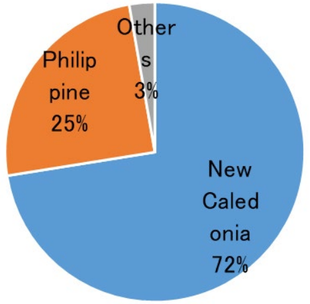
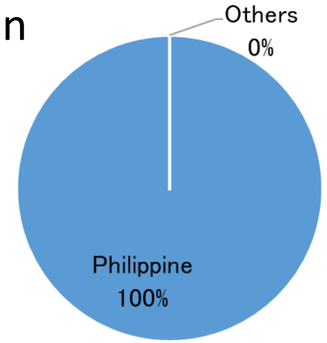
Source ※1 Japan Mining Industry Association (Bulletin "Kozan")
※2 Trade Statistics of Japan

Nickel Flow in Japan 2023

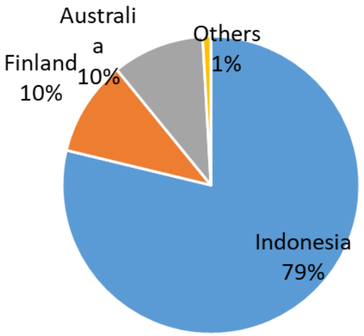
Ore import to Japan

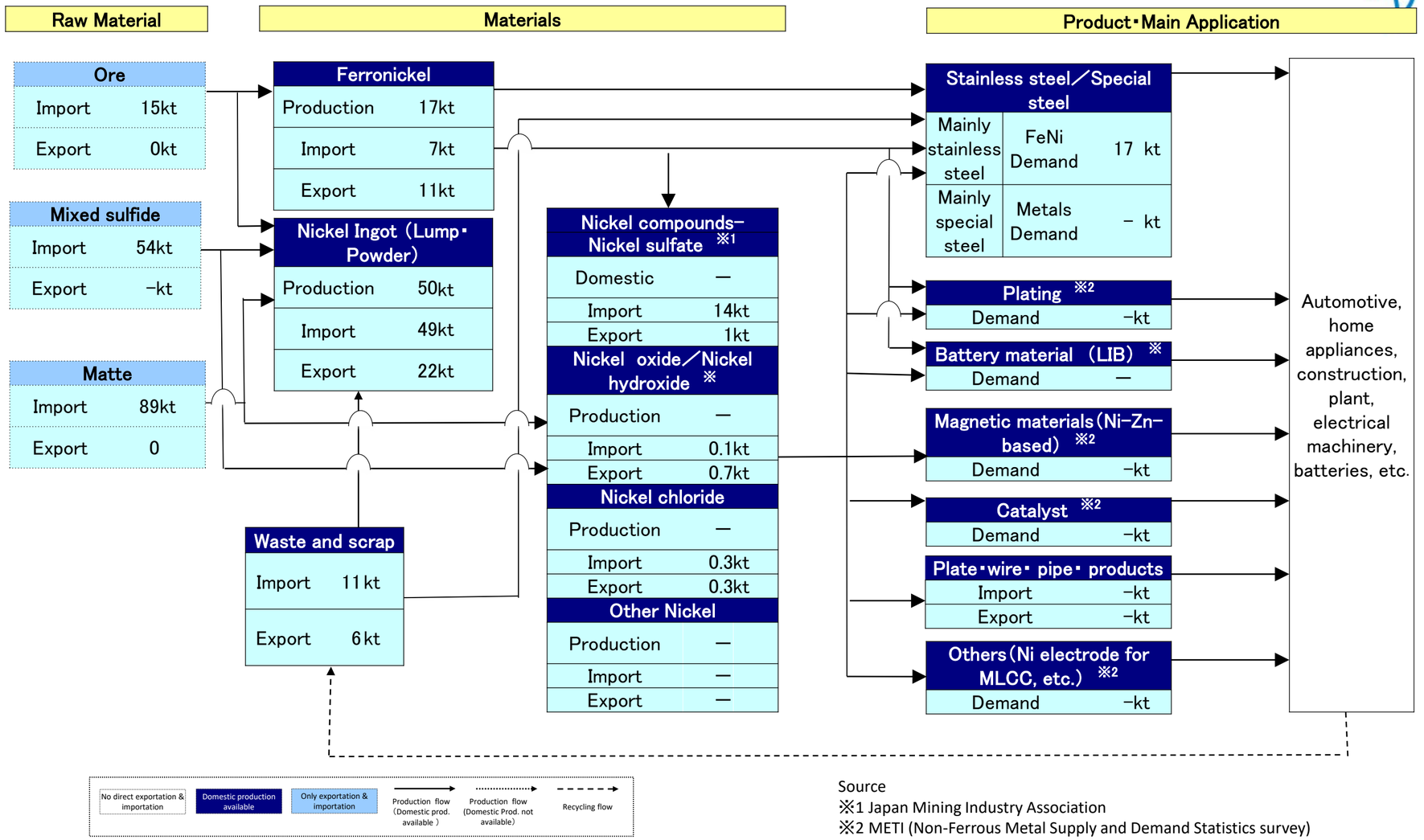


Mixed sulfide import to Japan



Matte import to Japan





Source
※1 Japan Mining Industry Association
※2 METI (Non-Ferrous Metal Supply and Demand Statistics survey)

Net conversion rate：Ore（Indonesia 2%, Philippines 1.8%, North Caledonia 2%）, mixed sulfide 59.8%, alloy lump plate 50%, nickel oxide 77.75%, hydroxides 55%, chlorides Ni45.29%,nickel sulfate 22%, FeNi（North Caledonia 23%・Colombia 35%・Macedonia 28%・Dominican Republic 35%・others 18%・Japan 16%）

＊ Demand for products = imports of materials produced or imported domestically, and does not take into account imports and exports of products.

Note) "-": Production / demand is unknown. There is no description of import / export of products.
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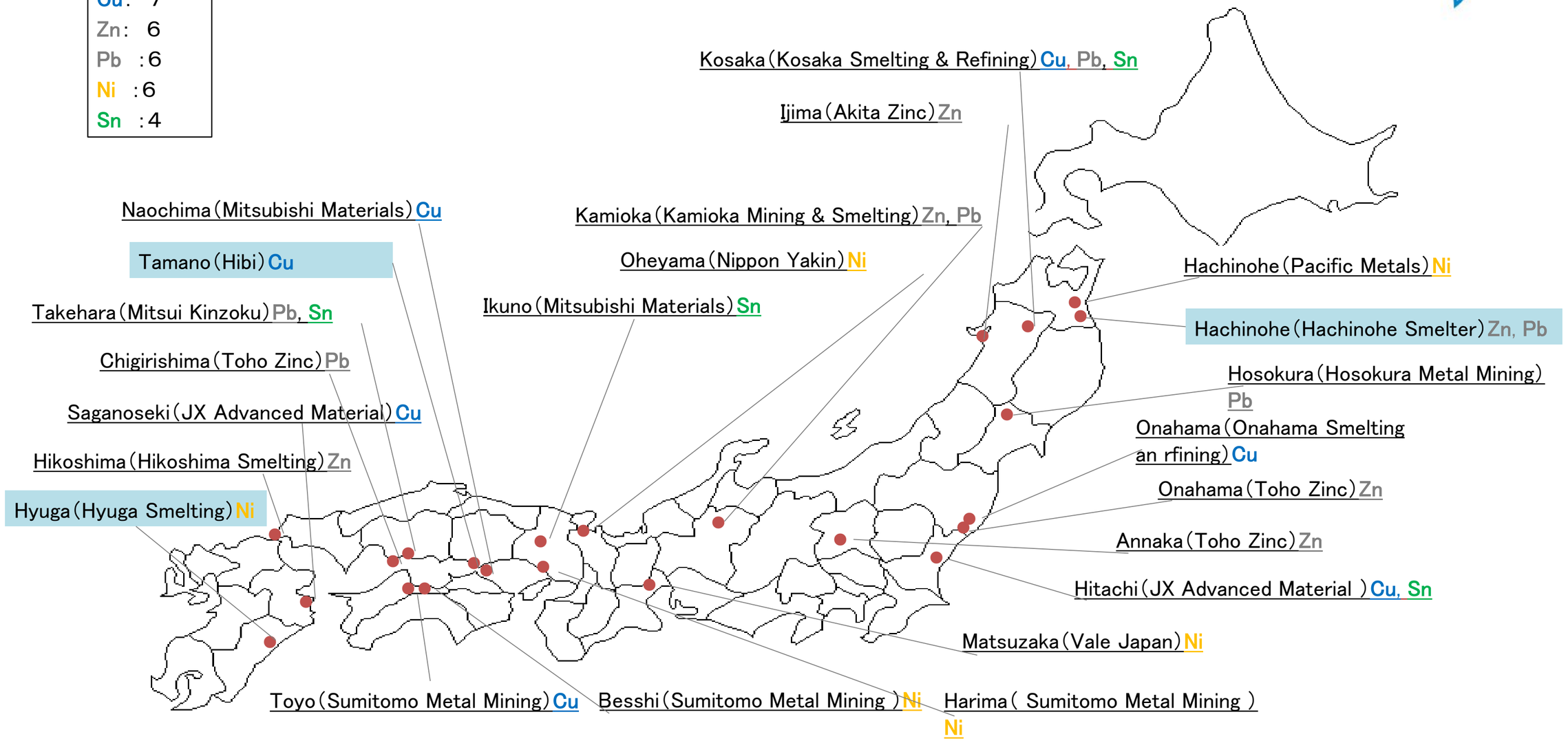
Major non-ferrous smelters in Japan

Cu: 7
Zn: 6
Pb: 6
Ni: 6
Sn: 4



Ni Hachinohe、Oheyama、Hyuga：Ferro Nickel、Matsuzaka：Oxide Nickel、 Harima： Nickel Sulfate

(Source：Japan Mining Industry Association)

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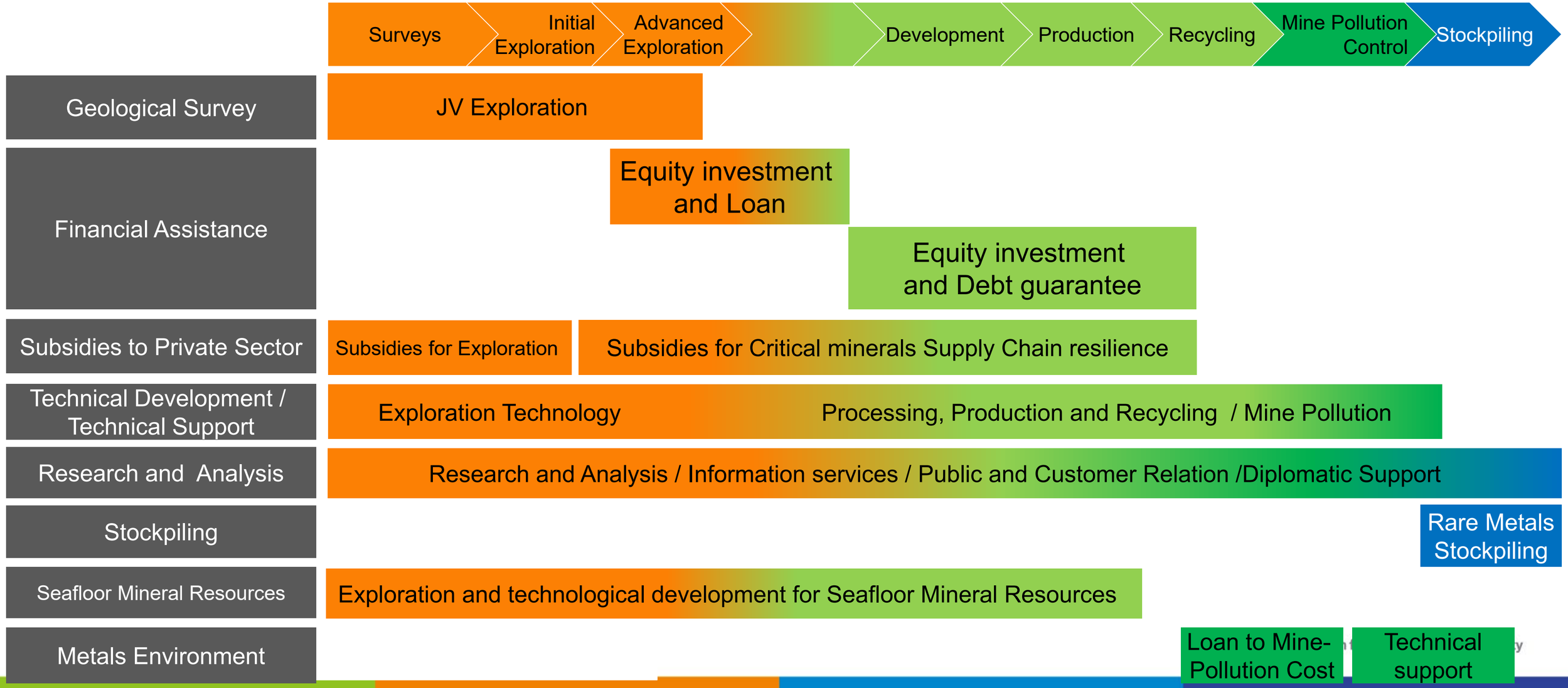
Support Scheme in Metals Sector of JOGMEC

■JOGMEC provides a wide range of support to help Japanese companies for mitigating risks.



As a support measure by the Japanese government

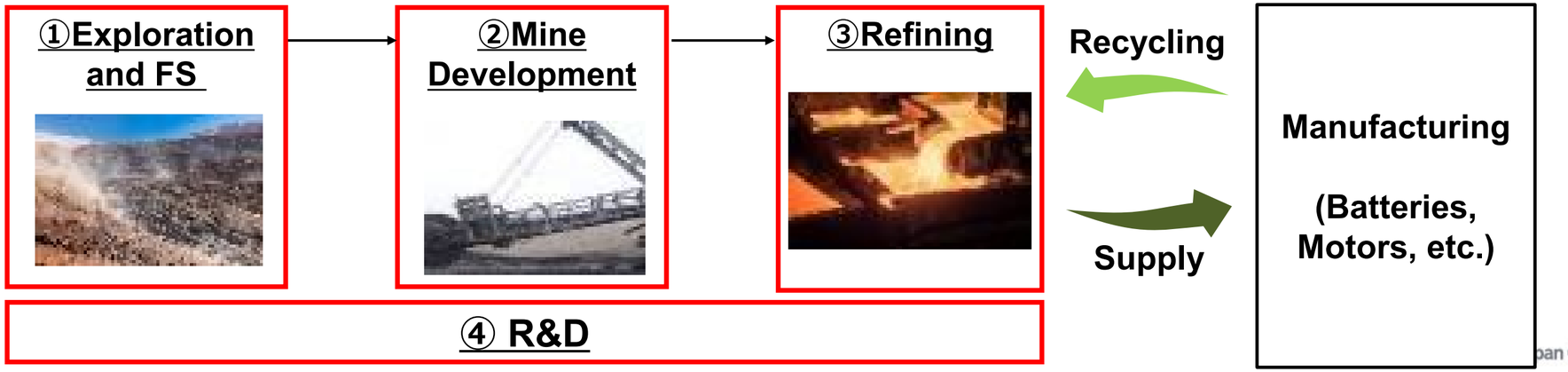
Financial Assistance Measures（2.5 billion USD）through JOGMEC (Japan Organization for Metals and Energy Security)

- ✓Grants for critical minerals supply chain resilience through ESPA (Economic Security Promotion Act) (740 million USD)
- ✓Equity financing to secure stable supply of minor metals through JOGMEC Act (770 million USD)
- ✓Equity financing to secure stable supply of copper through JOGMEC Act (1.0 billion USD)

①Exploration and Feasibility Study (FS):
Support for exploration with the aim of acquiring mining interests. FSs for project feasibility assessments will also be supported.
②Mine Development :
Support for mine development to ensure a stable supply of critical minerals.
③Refining:
Support for beneficiation, smelting and related operations
④ R&D:
Support the development of technologies such as those for higher efficiency and lower cost in the production of metallic minerals.

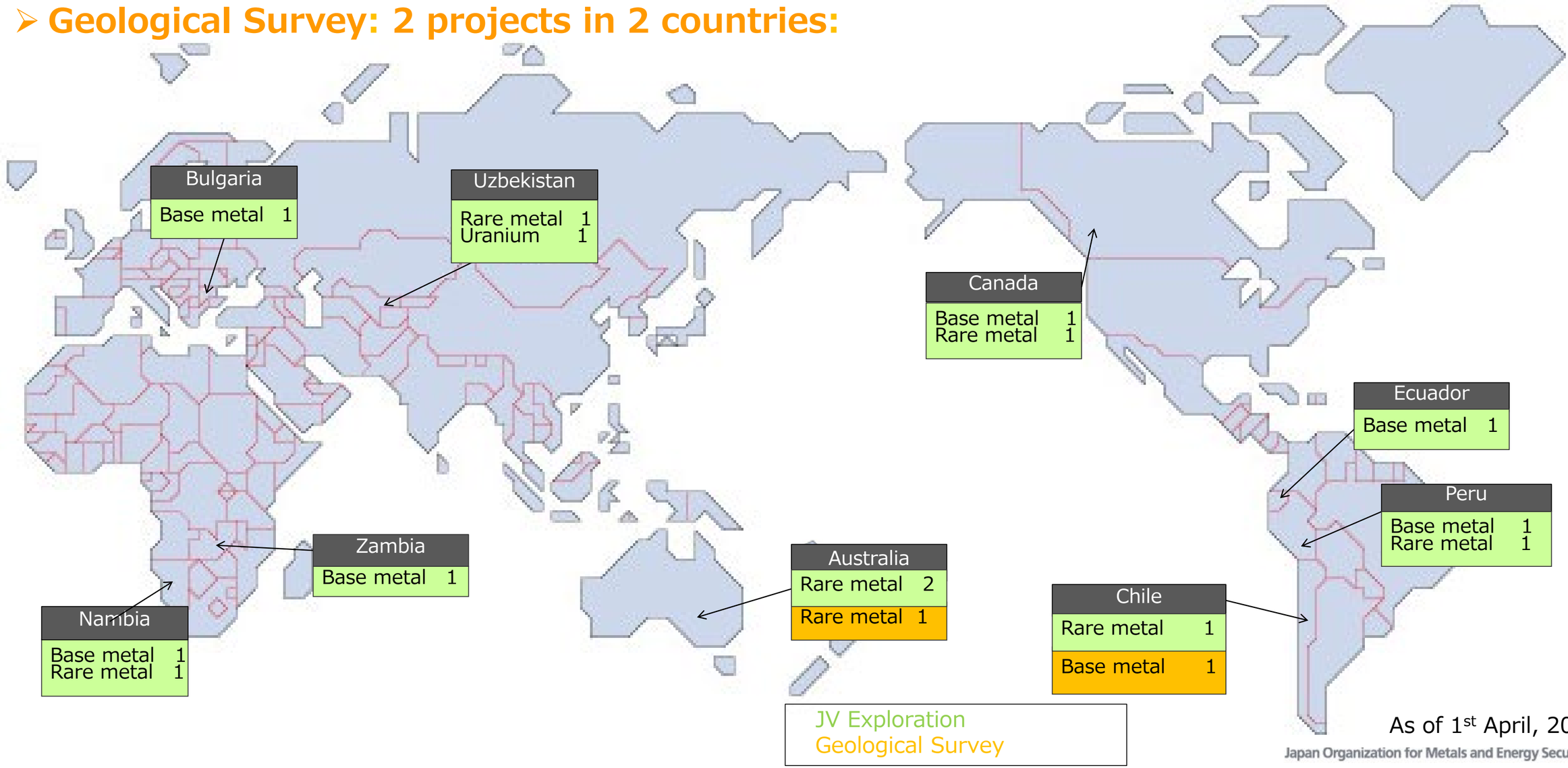
JOGMEC Act ①～③

ESPA ①～④



JOGMEC Metals Sector's Current Geological Survey

- **JV Exploration : 14 projects in 8 countries**
- **Geological Survey: 2 projects in 2 countries:**



As of 1st April, 2025

Japan Organization for Metals and Energy Security

Major Achievements through Financial Assistance

Lynas Rare Earths Project
(Australia: Rare earth)

Company Name: Sojitz Corporation

Support Scheme: Equity support

Objective: To diversify the REE supply sources, especially HRE

Salar de Olaroz salt lake Project
(Argentina: Lithium)

Company Name: Toyota Tsusho Corporation

Support Scheme: Debt guarantee

Objective : To secure Lithium for electric vehicle manufacturing

Waterberg Project
(South Africa: PGM, Nickel, Copper)

Company Name: Hanwa Co., Ltd.

Support Scheme: Equity support

Achievement: To import high-quality PGM into Japan stably

JOGMEC's Activities in African Countries

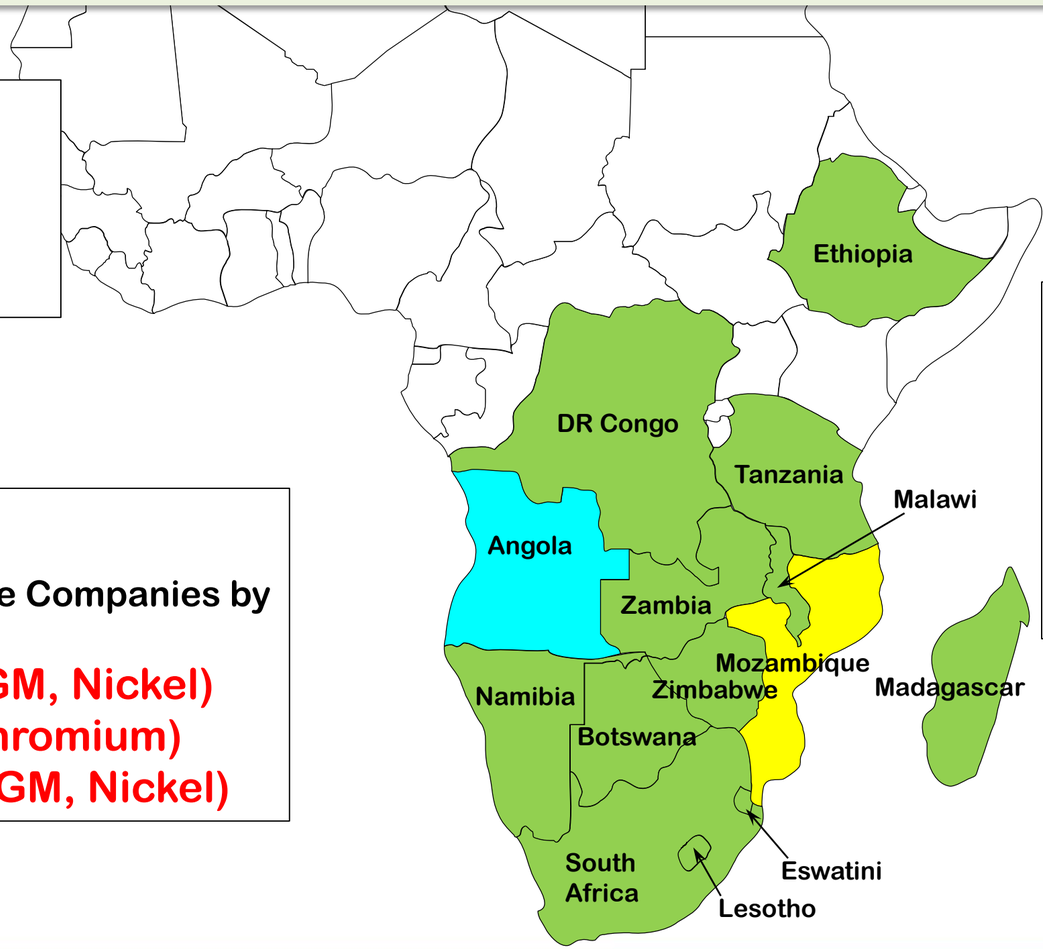
- 3 joint exploration projects with private companies in high mineral potential countries
- Equity participation and debt guarantees for 4 projects (3 in metals and 1 in oil & natural gas)
- Technical support for 1 project for effective utilization of coal resources

■ Namibia

(JV Exploration)
- Damara Belt (Copper)
- Lofdal (Rare Earth)

■ South Africa

(Financial Support for Japanese Companies by Equity Investment)
- Platreef development (PGM, Nickel)
- Samancor production (Chromium)
- Waterberg exploration (PGM, Nickel)



■ Zambia

(JV Exploration)
- Pangeni (Cobalt, Copper)

■ Mozambique

(Financial Support for Japanese Companies by Equity Investment and Liability Guarantee)
- Mozambique LNG (LNG)

(Technical Support)
- Bio Coal Briquette project (Coal)

MOU on Metals

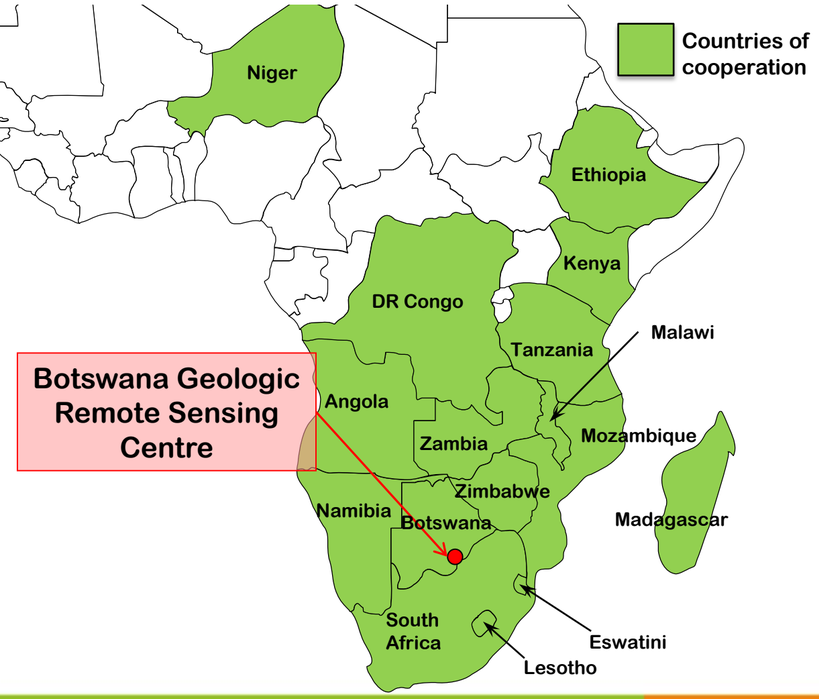
MOU on Metals and Oil & Gas

MOU on Metals, Oil & Gas, and Coal

Human Resource Development
- Botswana Geologic Remote Sensing Centre -

- Established in July 2008. Currently cooperates with 16 countries, mainly SADC countries
- HR development related to remote sensing technology, which uses satellite images to analyze geology and topography, as well as joint image analysis and geological surveys
- More than 100 people participate in annual seminar every year, training a total of 2,529 people
- Support for ESG and sustainable growth, including environmental monitoring using remote sensing technology

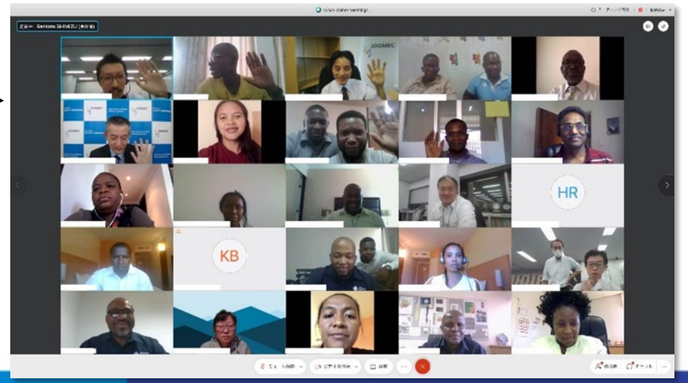
Countries of Technical Cooperation and HR Development by the Centre



HR Development Achievements (as of Dec 2024)	
South Africa (144)	Botswana (455)
Zambia (175)	Mozambique (181)
Namibia (212)	Malawi (224)
Angola (124)	Tanzania (173)
Lesotho (151)	DR Congo (127)
Eswatini (149)	Madagascar (197)
Zimbabwe (169)	Others (46) Niger, Ethiopia, Kenya
TOTAL: 2,529	

← Seminars with local experts

Online seminar under COVID-19 →



Strengthening Supply Chain Resilience

- **Responding to global imperatives such as decarbonization and energy security, by enhancing engagement with resource-rich and like-minded countries.**

Key initiatives in 2023fy
Strengthening ties
Support for securing interests, etc.

DG GROW–JOGMEC Cooperation (Jul,)

Round table with Saudi Arabia (May)

JV and MOU with PPES and FPX (Sep)

Discussions with IEA on Critical Minerals

MOC with Saudi MIM（Jan, 2024）

Roundtable in Saudi（Dec）

MOC with Manara（Dec）

Extension of the MOU with BC （May）


Japan-DRC Mining Conference(Oct, 2024)

Minas Gerais Mining Investment Seminar（Nov, 2024）

SW with Madagascar （Dec）

ASOMM+3（Nov）

Lithium WS with Chile（July,）

MOU with Gecamines （Nov）


MOU with Zambia （Aug）


SW with Namibia（Aug）

Remote sensing WS

WG with Australia for Critical Minerals（Jun）

Lithium Seminar with Argentina（Aug）

Mining Indaba （Feb）

and Energy Security

Summary

- Copper, zinc, lead, and nickel are essential to Japan's industrial base. However, Japan currently has no domestic mines producing these base metals. As a result, the country relies heavily on imports for its raw material needs.
- Given this situation, securing stable and long-term sources of mineral resources is an important issue for Japan.
- JOGMEC offers a wide range of support tools to help Japanese companies ensure a stable supply of mineral resources. Our support covers all stages of the supply chain. we also are actively advancing strategic partnerships with resource-rich and like-minded countries.


JOGMEC
Japan Organization for Metals and Energy Security