

# **Japan's Interest in Critical Minerals in Africa for Green Transformation**

**February 7, 2023**

**SATOMI Ryuji**

**Parliamentary Vice-Minister of  
Economy, Trade and Industry**

# 1. Green Transformation (GX)

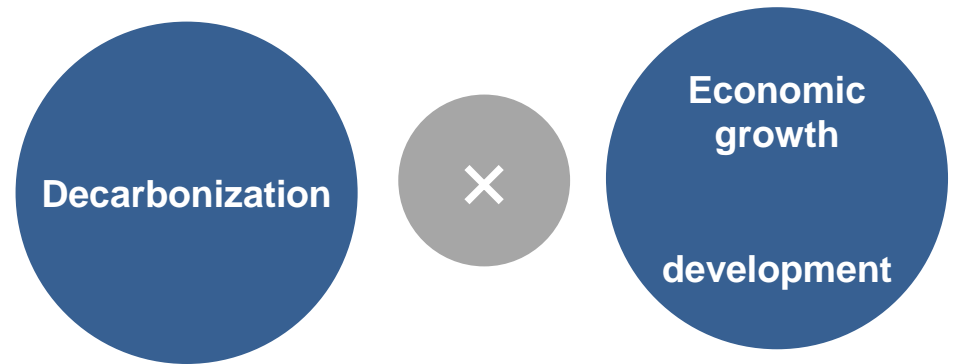
- In his policy speech to the National Diet on January 23, Prime Minister Kishida declared that Japan would pursue Green Transformation (GX) to simultaneously achieve three goals: decarbonization, stable energy supply, and economic growth.

## Policy Speech on GX by PM KISHIDA



“Japan's GX is designed to achieve the goals of decarbonization, energy security, and economic growth. It will establish a new framework for upfront investment of 20 trillion yen by the government. We will support thorough energy conservation, public implementation of hydrogen and ammonia, and research and development of decarbonizing technologies such as renewable energy and nuclear power.” (Jan. 23, 2023 )

## Green Transformation (GX)



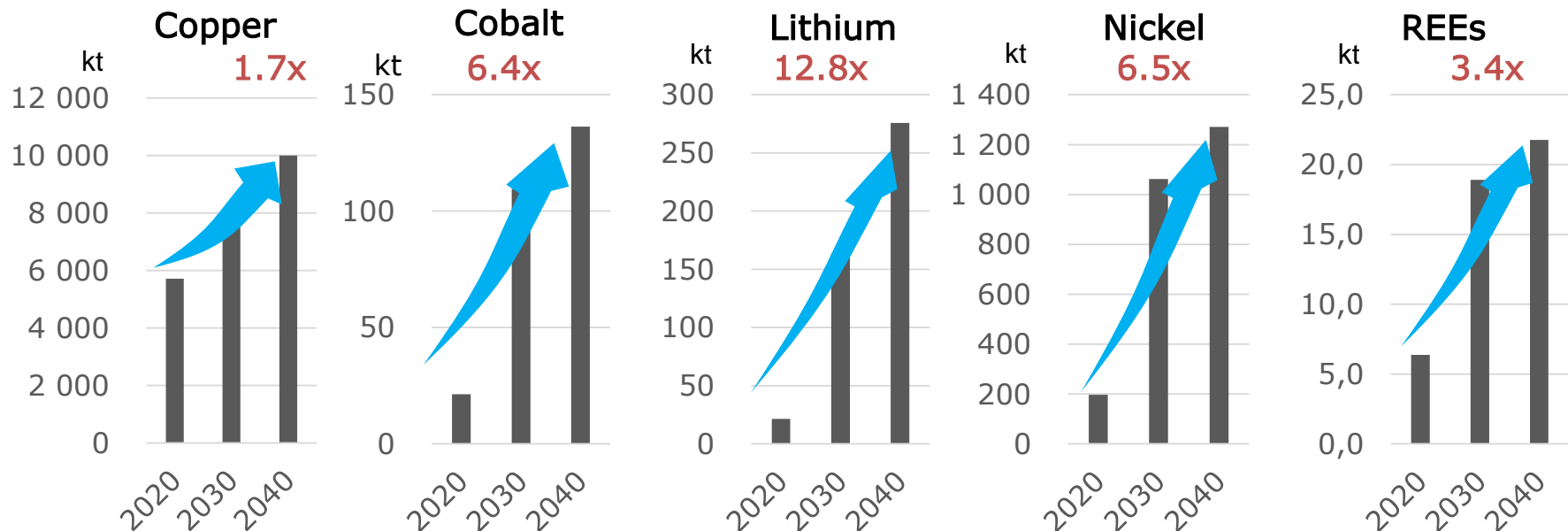
The term "Green Transformation (GX)" means a transformation of the entire economic and social system, shifting the fossil fuel-centered economy, society, and industrial structure since the Industrial Revolution to a clean-energy-centered one.

## 2. Growing Demand for Critical Minerals

- Critical minerals such as REEs, lithium, cobalt, and nickel are required for the manufacture of renewable energy generation equipment and electric vehicles, which are expected to be widely used to realize Green Transformation (GX).
- In the future, demand for several critical minerals is expected to grow rapidly and will likely exceed supply capacity.

### ◆ Demand Outlook

According to the STEPS scenario in the IEA report, demand for clean energy technologies in 2040 is expected to be 1.7 times higher than in 2020 for copper, 6.4 times for cobalt, about 13 times for lithium, 6.5 times for nickel, and 3.4 times for rare-earths.



### 3. The Battery Industry Strategy of Japan (Released on August 31, 2022)



1st Target → **Establish a domestic manufacturing capacity of 150GWh for batteries and materials by 2030 at the latest**

2nd Target → **Japanese companies secure a global manufacturing capacity of 600GWh in 2030**

Technology and business

#### 1. Policy package for further expansion of domestic base

- Establishment of a domestic manufacturing base for batteries and materials

#### 2. Strategic formation of global alliances and global standards

- Strategic formation of global alliances
- Securing financing for the global supply of batteries

#### 3. Securing upstream resources

- Strengthening support schemes
- Strengthening cooperation with relevant countries

#### 4. Development of next-generation technologies

- Support for development of next-generation battery technology

Market

#### 5. Expansion of a domestic market

- Promoting an environment for the expansion of electric vehicles market

Environmental

#### 6. Strengthening human resources development

- Launch of “The Consortium for Human Resource Development of Batteries in Kansai”

#### 7. Improving the domestic business environment

- Efforts to ensure sustainability

## 4. Initiatives for Securing Sufficient Critical Minerals for the Battery Industry

- **Required amount\* of critical minerals to achieve targets:**
  - ✓ **1<sup>st</sup> Target: Establish a domestic manufacturing capacity of 150 GWh/year by 2030 at least**

About 100 kt of lithium, 90 kt of nickel, 20 kt of cobalt, 150 kt of graphite, and 20 kt of manganese are needed annually.
  - ✓ **2<sup>nd</sup> Target: Japanese companies secure a manufacturing capacity of 600GWh in the global market in 2030**

About 380 kt of lithium, 310 kt of nickel, 60 kt of cobalt, 600 kt of graphite, and 50 kt of manganese are needed annually.

\* Estimated by Battery Association for Supply Chain, Japan

### ○ **Strengthening Support Schemes**

- JOGMEC has raised the upper limit of its equity stake in battery metal to 75% (50% in the past).
- Japan aims to develop midstream smelting processes in Japan or within like-minded countries in addition to securing mining interests.
- Japanese government to provide subsidies for activities which are useful in securing stable supply chains of critical minerals in accordance with Economic Security Promotion Act .

### ○ **Strengthening Cooperation with Relevant Countries**

- Secure upstream interests through investment seminars and joint public-private sector meetings with resource-rich countries.
- Promote international cooperation with like-minded countries to secure critical minerals.

## 5. Economic Security Promotion Act (ESPA)

- The Economic Security Promotion Act (ESPA) was enacted to comprehensively and effectively promote economic measures related to ensuring security in the context of changing socioeconomic structures due to increasingly complex international situations.
- ESPA was passed by the National Diet in May 2022.

### ◆Four Pillars of ESPA

#### Supply Chain

Goal: Securing a stable supply of goods which have an enormous impact on lives of people or economic activities

#### Core Infrastructure

Goal: Ensuring the security of critical facilities so that the services provided by critical infrastructure are not affected

#### Critical Advanced Tech

Goal: Promoting R&D of critical advanced technologies and appropriate use of the results of such R&D

#### Non-Disclosure Patent

Goal: Preventing the publication or outflow of patent applications for security-sensitive inventions

## 6. Framework related to ensuring stable supply chains

- To ensure the stable supply of key products that are vital in maintaining living conditions and economic activities, ESPA introduces the designation of specified key products, plan approval and support for the private sector, and supplementary government initiatives.

1. Formulate **basic guidelines** for securing stable supply of specified key products

2. Designate **specified key products** (designated by Cabinet Order)

- **Ex: Semiconductors, Batteries, Critical Minerals, ....**

3. Formulate concrete plans to secure supply for the private-sector

- **The competent minister can approve plans applied by private-sector companies** for securing supply of specified key products and their raw materials.
- **Approved companies may receive government support such as subsidies.**

4. Government Initiatives

- When it is difficult to ensure stable supply of certain products through support measures as above(3) for private-sector companies, the competent minister will designate specified key products for which special measures are necessary. **The competent minister may take necessary measures** such as stockpiling.

## 7. Support Measures to Secure Critical Minerals

- Support through grants based on the ESPA has become available in addition to existing Risk Capital Support (Loans, Equity, Debt Guarantee).
- Financial Assistance Measures (216 billion JPY, roughly 1.7 billion USD)
  - ✓ Equity financing to secure stable supply of minerals through JOGMEC Act (110 billion JPY)
  - ✓ Grants for critical minerals supply chain resilience through ESPA (106 billion JPY)

### ⊖Exploration and Feasibility Study (FS):

Support for exploration with the aim of acquiring mining interests. FSs for project feasibility assessments will also be supported.

### ⊖Mine Development :

Support for mine development to ensure a stable supply of critical minerals.

### ⊗Refining:

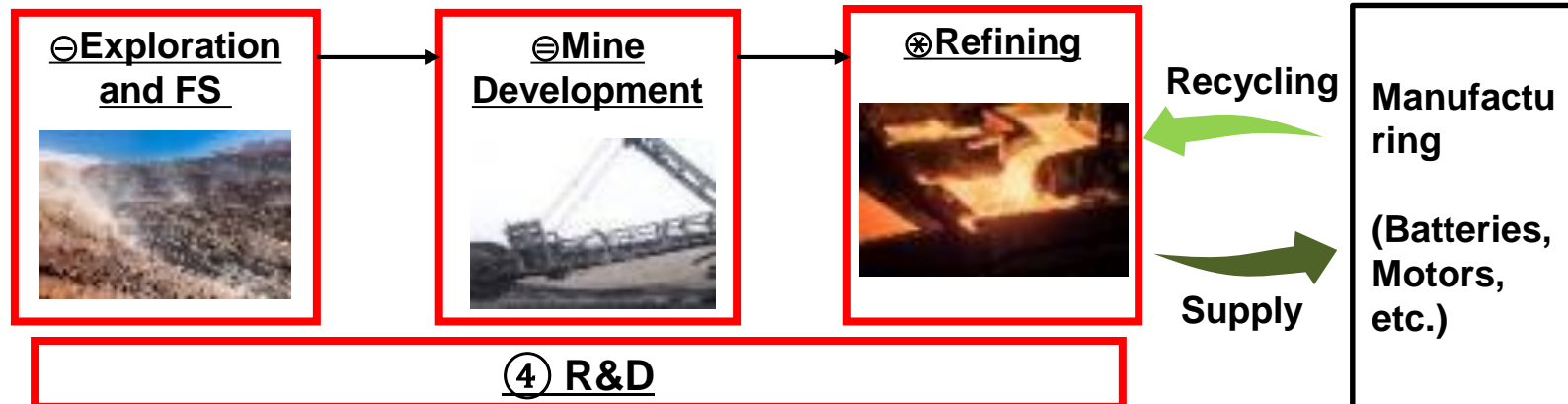
Support for beneficiation, smelting and related operations

### 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  
⊖~⊗

ESPA  
⊖~④





## 8. Japanese companies' activities in African mining

- Several Japanese companies are investing and participating in mineral resource development projects such as exploration, production, and smelting in African countries.
- JOGMEC and other Japanese public financial institutes including JBIC and NEXI support Japanese companies' activities in Africa.

### 【●South Africa】

Assore Limited (Iron ore, Manganese & Chromium)⇒Ore Production  
(SUMITOMO Corp.)

Assmang/Cato Ridge Alloys(Ferro Manganese)⇒Alloy Production  
(JFE Mineral & Alloy Co., Ltd./ SUMITOMO Corp.)

Platreef (PGM)  
⇒Development  
(ITOCHU Corp./JGC JAPAN Corp.)

Samancor (Chromium)  
⇒Ore Production  
(HANWA Co., Ltd.)

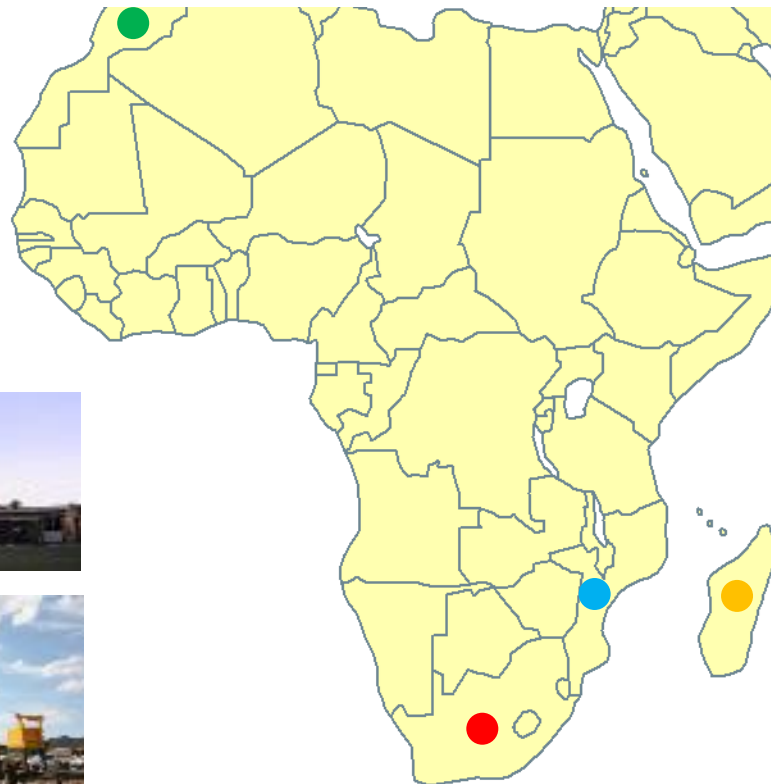


Waterberg (PGM)  
⇒Exploration  
(HANWA Co., Ltd.)



### 【●Morocco】

Achmmach(Tin)  
⇒Exploration  
(TOYOTA TSUSHO Corp./Nittetsu Mining Co., Ltd.)



### 【●Mozambique】

Mozaal (Aluminum)  
⇒Smelting  
(MITSUBISHI Corp.)

### 【●Madagascar】

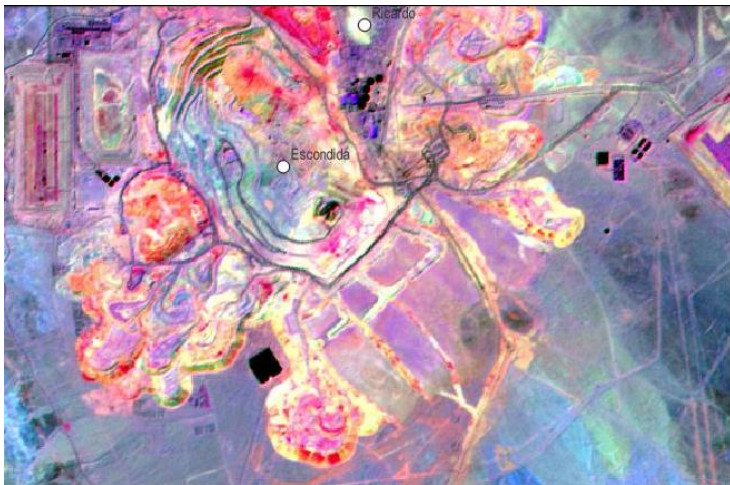
Ambatovy (Nickel & Cobalt)  
⇒Ore Production  
(SUMITOMO Corp.)



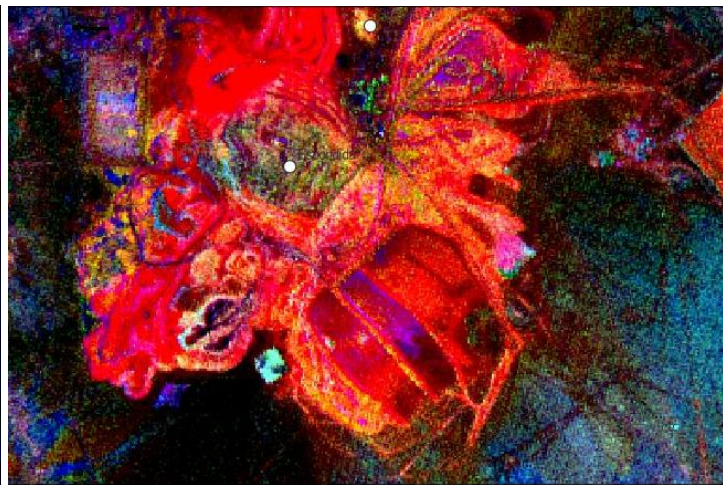
## 9. New Remote Sensing Technology for Resource Exploration

- Operation and development of a leading-edge satellite sensor "HISUI" for earth observation is underway for use in resource exploration.
- Based on the observation data in Botswana collected from HISUI, JOGMEC will conduct data analysis in 2023, and a field demonstration survey in 2024.
- JOGMEC will expand the usage of the HISUI data in their mineral resource potential evaluation activity in the African region.

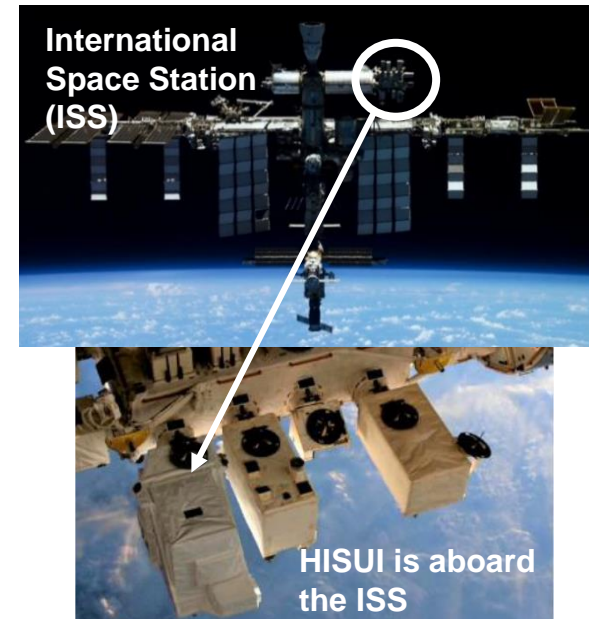
**HISUI**



**ASTER (conventional sensor)**



HISUI has higher wavelength resolution than conventional sensors, enabling acquisition of more detailed information.



Thank you  
for your kind  
attention