

Proposal for Implementation of a Circular Economy that Will Contribute to Resource Security

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In recent years, increasing geopolitical risk affecting minerals, metals, and related resources has intensified international competition for acquiring such resources. Critical minerals such as rare metals in particular are indispensable for manufacturing the equipment required for digital transformation and green transformation. However, such minerals are concentrated in certain countries and are increasingly scarce. A primary example is the rare earths found in abundance in China, which has strategically reinforced its export controls since 2023.

At the end of January 2026, Keidanren dispatched its second Circular Economy Mission to Europe—around two years since the last such mission—to Finland and Germany. The mission’s objectives were to understand the situation regarding circular economy policymaking in the EU and the latest trends among private-sector companies. Through discussions with government officials and others, the mission members learned that the EU had taken account of the geopolitical threats posed by countries such as China and the US and redefined circular economy policy beyond purely environmental aims as policy for ensuring resource security and strengthening industrial competitiveness. Mission members clearly confirmed that the EU’s guiding principle was to build circular value chains to minimize outflow of mineral resources from its territory and retain mineral resources including base metals such as iron, aluminum, and copper within the territory.

Japan is an island country with few resources of its own that has developed based on manufacturing industry, and as such, it has an even greater need than the countries of the EU to pull together as a nation to improve its resource security measures based on a circular economy.

Japan has for some time pursued measures to ensure its autonomy in procuring primary mineral resources, mainly through the Japan Organization for Metals and Energy Security (JOGMEC). Recently, Japan has strengthened its measures in this regard by means of the Economic Security Promotion Act. However—given that initiatives such as digital transformation and green transformation are changing demand, while geopolitical risk is increasing—it now needs to further intensify its efforts to minimize the risk of disrupted

procurement by improving its acquisition of primary resources. Such efforts include (1) building up national stockpiles¹, (2) diversifying procurement sources through collaboration between the public and private sectors², and (3) providing support at the extraction and smelting stages³.

Alongside such acquisition of primary resources, it is also essential to make strategic use of secondary (i.e., recycled) resources. Japan already has a long history of proactive engagement in recycling based on the belief that a wealth of resources lie dormant in “urban mines.” Now is the time to reconsider urban mines from a strategic perspective focused on future supply-and-demand trends, and place an urban mine strategy at the heart of the transition to a circular economy through collaboration among industry, government, and academia.

In specific terms, the Japanese government should draw up a strategic action plan for urban mines to accelerate the achievement of a circular economy. It needs to implement short-term, medium-term, and long-term measures based on the supply-demand balance and outlook for various minerals and other resources that will become increasingly essential. At the same time, compatibility with green transformation should be ensured in terms of economic security, growth strategy, and environmental conservation.

When devising such measures, it is essential for the government to listen carefully to the opinions of people in the relevant industries and companies, then formulate policies based on the characteristics of each industry, including the supply-demand balance, and recycling situation, for each material and product. Moreover, to provide the funds necessary for these policies, the government should avoid relying solely on green transformation (GX) financing through GX Economy Transition Bonds, and should also consider funding from the general budget and other sources.

According to Keidanren’s perception of the issues as outlined above, we present the recommendations below for consideration during the formulation of Japan’s Growth Strategy, which is currently undergoing intensive discussion. These recommendations are

¹ This includes clarifying the supply chain risk for each type of mineral and flexibly reconsidering the types of minerals stockpiled and their stockpile levels.

² This includes supporting the acquisition of upstream mining concessions in the Global South and elsewhere, providing support for upstream development projects and other initiatives in collaboration with like-minded countries, making use of economic partnership agreements, and pursuing resource diplomacy with foreign heads of state.

³ This includes support for investment in smelters in Japan including those that are aging, support for development and real-world implementation of technologies that improve smelting efficiency and reduce its costs, and more widespread use of slag. It also includes pursuing commercial extraction of Japanese marine minerals found in Japan’s territorial waters, exclusive economic zones, and other offshore locations by understanding the volume of such resources available and developing the necessary technologies, while improving the support provided by JOGMEC throughout projects.

based on the Fifth Fundamental Plan for Establishing a Sound Material-Cycle Society (approved by the Japanese Cabinet in August 2024), which positioned the transition to a circular economy as a national strategy.

1. Improve environmentally conscious design for products, etc. at the manufacturing stage

To implement a circular economy, and in particular to ensure that an urban mine strategy would be effective, it is essential to adopt an approach that assumes the future recovery of resources from the product design stage. Greater efforts should be made from the upstream stages, based on recognition that today's product design determines the quality of tomorrow's urban mines.

When manufacturing products, companies need to reduce their use of minerals, metals, and related resources, while stepping up their efforts to implement environmentally conscious design that will help make dismantling, separation, and recycling easier, based on the assumption of future resource recovery and reuse. At the same time, companies need to tackle other initiatives such as developing alternative materials, extending product lifespans, and switching plastics derived from fossil resources to mono-materials.

In doing so, their efforts should take into account the characteristics of the materials and products themselves, and the progression of the product lifecycle from supply of materials, production, and provision to consumers, to end-of-life collection or recovery. It is, moreover, extremely important that they work in collaboration not only with other relevant industries, but also with consumers. Meanwhile, the government should provide policy-based support for companies' investments in R&D.

2. Improve the recycled resource supply system to facilitate stable supply of resources and a more resilient supply chain

(1) Enhance recycling sites in Japan and turn them into a network

To ensure a stable supply of base metals, rare metals, and other mineral resources, and to improve the resilience of Japan's supply chain for recycled materials so that it can reliably supply secondary materials of the quality and volume that Japan's essential industries require, Japan should develop its resource recycling industry as a growth industry that can play a key role in resource recycling internationally. This requires the Japanese government to provide financial support that could ensure investment

predictability. One effective way to develop the industry would be to enhance recycling sites in Japan including non-ferrous smelters and turn them into a network. A key feature of non-ferrous smelters is that they can recover the rare metal components of mineral ores in the form of by-products.⁴ The government needs to provide financial support for capital investment, as well as development of recycling technologies such as smelting, separation, and refinement of rare metals and other resources from urban mines, and the dismantling and segregation technologies used for pre-processing and sorting. This should also include technologies for low-cost, energy-efficient recovery of valuable resources. In addition, given that the costs of secondary resources are higher than those of primary resources, policy-based measures are required for particularly critical minerals.

With regard to the lithium-ion batteries used in electric vehicles (automotive LiBs), and solar panels—which are expected to be discarded in large volumes going forward—it is necessary to urgently improve the recycling of these resources within Japan by creating an ecosystem based on collaboration with multiple related industries.

(2) Improve Japan’s system for collection or recovery of end-of-life products and parts

To reduce recycling costs by achieving economies of scale and making maximum use of secondary (i.e., recycled) resources including those minerals, metals, and related resources that will become increasingly essential, the key will be to collect or recover more e-scrap (scrap from electronic components) and other end-of-life products and parts both in Japan and overseas. As expressed in the maxim “Sorting produces resources, but discarding produces garbage,” Japan should undertake efficient collection or recovery of recyclable materials.

Since the 2000s, Japan has recycled end-of-life products, containers and packaging, and other waste according to various recycling laws, the Act on the Promotion of Effective Utilization of Resources (the “3Rs Act”), and the Keidanren Voluntary Action Plan for Establishing a Sound Material-Cycle Society, and has steadily achieved results. However, particularly with regard to end-of-life products and garbage discarded by households, there are some items that present challenges when it comes to raising recovery rates and developing effective collection and sorting systems. In light of current circumstances including the aging of Japanese society and the depopulation of rural municipalities, a

⁴ As raw materials contain a variety of elements, focusing on specific rare metals to enhance only certain facilities would offer limited potential for effective utilization of resources and reduction of environmental impacts. It is therefore necessary to build up the entire smelting system comprising facilities suitable for recovery of multiple substances and elements.

potential medium- to long-term challenge could be to conduct more thorough discussions to determine how collection or recovery should best be conducted in future for each individual resource and product type from the perspectives of quality, quantity, and cost.

The Japanese government should also utilize the Act Concerning Sophistication of Recycling Business, etc. and other means to make it easier for outstanding industrial waste disposal companies to handle disposal across multiple municipalities and to simplify the procedures such companies are required to undertake. Facilitating disposal across multiple municipalities is particularly important to reduce costs through economies of scale.

To enhance resource recycling going forward, another challenge will be to identify new resource-based value in items that have until now been treated as waste and take positive action to recover the resources in question. To achieve this, it will be essential to take society-wide action including creation of a cooperative framework spanning multiple industries, advancement of recycling technologies, and sharing of information such as details of elements contained in products and parts.

(3) Create and retain demand for secondary resources

To ensure resource security, it will be essential to facilitate stable, proactive use of secondary resources by strengthening collaboration between the “arterial” companies (manufacturers and retailers) that utilize secondary resources and the “venous” companies (waste management and recycling businesses) that create such resources. Potential means of doing this include promoting the use of long-term sales agreements or investment agreements between arterial and venous companies that take into account factors such as the extent to which each material or commodity is recycled.

Ultimately, however, what is needed is for consumers to take a positive approach to buying products that include recycled materials. This requires active campaigns to raise awareness among consumers, including efforts to create more widespread acceptance of products that include recycled materials and to promote understanding regarding recovery of resources from end-of-life products. At the same time, consideration should be given to incentives that would increase consumers’ willingness to purchase products that include recycled materials. Furthermore, public procurement should be undertaken, particularly for products that include recycled materials derived from items for which recycling has been slow to advance.

In addition, if the quality standards required of recycled materials are too stringent, the

costs of recycling will be excessive, resulting not only in increased financial burdens on society as a whole, but also in potential difficulty with ensuring stable supplies. Another challenge, therefore, is for arterial and venous companies, the government, and other interested parties to more thoroughly discuss the quality standards for recycled materials in light of the characteristics of recycled materials and other factors.

(4) Strengthen measures to prevent the outflow of resources from Japan

It has been noted that materials containing recyclable resources such as critical minerals, base metals, and plastics are flowing out of Japan. For example, items such as discarded circuit boards, end-of-life lead-acid batteries, automotive LiBs, scrapped vehicles, and solar panels may be exported using misleading descriptions or illegitimate methods. To curb the outflow of resources from Japan, the Japanese government should reinforce its measures to prevent their illicit export by, for instance, strengthening collaboration among the relevant ministries' regional organizations. It is also necessary to tighten regulations targeting illegitimate scrap yards and improve measures in collaboration with local governments and the police, while taking due care to ensure that resource recycling by companies in good standing is not hindered.

In addition, it is essential to enhance traceability by promoting data linkage that will help to prevent end-of-life products containing critical minerals and similar resources from flowing overseas (i.e., through development and real-world implementation of a resource recycling database, etc.). In doing so, care should be taken to safeguard corporate confidentiality.

3. Strengthen Japan's role as a hub within an international resource recycling network

To implement an international circular economy, thereby bolstering Japan's resource security and reducing recycling costs by leveraging economies of scale, it is essential to recover resources proactively not only from urban mines within Japan, but also from those overseas. Japan should function as a hub to help develop an international resource recycling network through such means as leveraging its technologies, funds, and facilities to undertake recycling at sites both in Japan and overseas.

Japan's non-ferrous smelters are already importing e-scrap from the United States, Europe, and elsewhere and recycling mineral resources within Japan. The public and private sectors can collaborate effectively to bolster Japan's efforts to create a recycling

network for resources including critical minerals.

Specifically, given that the EU is already in the process of tightening its export restrictions to retain more end-of-life products including e-scrap, the Japanese government should simplify e-scrap importing procedures and facilitate import-export procedures between Japan and the EU, among other measures. This would help avoid excessive burdens on companies that are importing and processing e-scrap and other recyclable resources appropriately.

In the countries of ASEAN and elsewhere, it is important to leverage Japan's recycling technologies to recycle resources from their urban mines. The government needs to draw on the knowledge and experience accumulated within Japan to contribute to supporting those countries with the development and implementation of laws to promote the proper disposal of waste and encourage recycling. As competition to acquire resources intensifies, Japan should create a framework to promote international recovery and recycling of e-scrap and other resources. For instance, the Japanese government could start by collaborating more closely with Japanese companies operating businesses in ASEAN countries, and then extend that collaboration to local companies in those countries.

If Japan is to function as a hub within an international resource recycling network, it will also be important to ensure stable distribution channels linking Japan to other countries for both primary resources and secondary resources. From that point of view, another challenge will be to develop and maintain port facilities and the like.

Furthermore, during the Keidanren Circular Economy Mission to Europe, Germany and Finland expressed the expectation that Japan and Europe would collaborate more closely to implement a circular economy. We consider it important to collaborate with the EU and like-minded countries for that purpose by sharing experience and expertise accumulated to date. This would allow Japan's outstanding technologies and knowledge to be incorporated into the formulation of international standards, and would also enable Japan to play a leading role in implementing a circular economy globally.

4. Strengthen collaboration and raise awareness among consumers

A circular economy cannot be achieved through the efforts of one company alone. It is essential to not only strengthen collaboration among different industries and among arterial and venous companies, but also to promote collaboration among industry, government, and academia including start-ups and local governments. Japan's Ministry of the Environment and Ministry of Economy, Trade and Industry collaborated with

Keidanren to set up the Japan Partnership for Circular Economy (J4CE), and the same two ministries also jointly launched the Circular Partners (CPs; a collaborative organization involving industry, government, and academia) with Keidanren's assistance. In addition to these two organizations, it is important to leverage the initiatives of the Resource Circulation for Municipalities Forum and other institutions to implement a circular economy. What is needed is to start by implementing circular economies in individual communities, taking advantage of each community's characteristics, then to link these efforts to regional revitalization.

Meanwhile, to bring a circular economy into being and increase resource security, it is essential to recruit and train the personnel who will be responsible for resource recycling and invest in solutions to reduce workloads and the number of personnel required. Industry, government, and academia need to work in collaboration, including providing support for universities, other educational institutions, and research institutes.

Furthermore, consumer understanding and action is indispensable to achieving a circular economy. The government should make maximum use of GREEN×EXPO 2027 (the International Horticultural Expo 2027 in Yokohama, Japan) as a forum for raising awareness among consumers to foster momentum throughout society by widely communicating the importance of resource recycling.

The transition to a circular economy is not simply a matter of environmental policy; it relates directly to economic security. The implementation of a circular economy will be key to generating recycling of strategic resources within Japan and ensuring Japan's autonomy, as well as being indispensable to the international community. Keidanren will continue working with its member companies and organizations to achieve a circular economy that will contribute to Japan's resource security.