

Metals & Recycling Segment

Metals & Recycling Business

We are able to efficiently use our smelting processes to take copper concentrate and recycled raw materials and supply high-quality metal products such as copper and precious and minor metals. These products are then offered through a stable supply in Japan and parts of Asia. We will work to build a sustainable, recycling-oriented society under the concept of the Green Hybrid Smelting process, which maximizes the use of reaction heat from copper concentrate. With this concept, we aim to increase the ratio of recycled raw materials (either in raw material input or in product content) to at least 50% by 2040.

Key Strategies

- Promote various measures to realize Green Hybrid Smelting
- Pursue our total best and improve productivity from a bird's-eye view of the supply chain
- Encourage measures to evolve and establish an industry-wide Sustainable Copper Vision

Review of FY2022

In fiscal 2022, we worked to optimize the composition of raw materials, focusing on increased processing of recycled raw materials. We also pursued our total best from a bird's-eye view of the supply chain, and strengthened our competitiveness by streamlining logistics between locations and increasing the operational efficiency at each manufacturing site.

In the Recycling Business, the volume of recycled materials collected overseas decreased due to higher transportation and processing costs resulting from soaring energy prices. However, this decrease was compensated for by strengthening the collection of materials from Japan. In addition, we acquired all shares of eCycle Solutions Inc., a Canadian E-waste (waste home appliances and electronic devices) collection and processing company, as part of our efforts to strengthen our Recycling Business initiatives.

Copper prices declined in the Metals Business in the first half of the year due to concerns of the global recession. However, prices rose in the second half of the year due to expectations of a recovery in demand in China. Purchase margins copper concentrates increased from the previous year against the backdrop of factors such as production ramp-ups at new mines. In the sulfuric acid market, market prices remained high in the first half of the year due to the ongoing tight environment from

the previous year. From the second half of the year, market prices fell sharply and remained at low levels due to a sharp drop in sulfur prices and a deteriorating supply-demand environment.

Outlook for FY2023

The current environment is expected to face further challenges in the procurement of copper concentrates and the collection of recycled raw materials. In response, we will strive to maximize earnings and improve capital efficiency by addressing materialities.

We expect demand for copper will continue to grow, with supply falling short of demand. Therefore, we must expand the use of recycled raw materials, in addition to copper concentrates, to meet this growing demand. We formulated our Sustainable Copper Vision in August, 2022, to fulfill our missions to (1) Establish a stable supply system to support growing demand and (2) Achieve ESG-oriented production and supply (decarbonized, circular economy, etc.). In fiscal 2023, we will pursue the following four measures to evolve and spread sustainable copper:

- (1) Reduce carbon footprint
- (2) Increase recycling ratio
- (3) Promote responsible procurement and ESG initiatives
- (4) Form Green Enabling Partnerships

TOPICS

Promoting Responsible Procurement

On December 15, 2022, JX Metals Smelting Co., Ltd. obtained The Copper Mark certification at the Saganoseki Smelter & Refinery and Hitachi Works. The Copper Mark, founded in 2019, is a highly reliable guarantee framework that encourages responsible production practices and demonstrates a commitment to green transition in the copper industry.

JX Metals Smelting Co., Ltd. became the first copper smelter in Japan to obtain certification after undergoing an audit by an independent third-party organization. The Copper Mark recognizes our compliance with a wide range of criteria, such as environmental, human rights, community, and governance standards across 32 categories. This certification will strengthen the competitiveness of our sustainable businesses in the face of growing international demand for ESG initiatives.



The Copper Mark logo

Metals & Recycling Segment

Mineral Resources Business

The Mineral Resources Business supports the long-term, stable procurement of raw materials for use in advanced materials handled by our Group. To do so, we participate in overseas copper and minor metal mines, and operate domestic auriferous silica ore mines. Not only do we operate and manage mines, we also actively engage in the investigation and development of new projects, such as future exploration activities.

Key Strategies

- Increase the business value of the Caserones Copper Mine through synergies with Lundin Mining Corporation
- Further discover and pursue new projects (exploration, development, operational) that also take into account supplying raw materials to midstream and downstream businesses

Review of FY2022

As announced in our news release issued on March 28, 2023, we decided to transfer our 51% stake in SCM Minera Lumina Copper Chile to Lundin Mining Corporation of Canada. SCM Minera Lumina Copper Chile is now the operating subsidiary of our Caserones Copper Mine. The participation of Lundin Mining Corporation as a management partner of Caserones Copper Mine is expected to generate many synergies, including productivity improvements and enhanced cost competitiveness. In terms of operations, the Caserones Copper Mine reached a cumulative production of 1 million tons of copper to date, despite production declines resulting from heavy snowfall and water restrictions. Production at the Los Pelambres Mine was reduced due to delays in expansion plan progress.

In new mine development projects, we established a cross-divisional project team to ensure stable supply of raw materials for downstream operations. This team evaluated and studied specific projects focused on tantalum and titanium. As a result, we launched a joint venture (JV) with AMG Brasil SA ("AMG") and began production of tantalum concentrate in January 2023. This concentrate is produced from ore at the Mibra Mine operated by AMG.

Outlook for FY2023

Caserones Copper Mine works to improve productivity and strengthen cost competitiveness through their partnership with Lundin Mining Corporation, a company which has an excellent mine operating capacity. The mine will also participate in integrated development in a Lundin Group exploration project nearby, which will enable extended mine life and other long-term business operations. Going forward, the Caserones Copper Mine will continue to support the Copper Smelting Business as an important raw material supplier. The Los Pelambres Mine will focus on increasing production during fiscal 2023 through the completion of the expansion plan.

In addition to our participation in the Mibra Mine (tantalum business), we will move forward with the investigation and survey of various minerals around the world, including minor metals, copper, and silica ore. Here, we aim to achieve stable supplies of raw materials based on future needs in our midstream and downstream businesses, as well as commercialize our business.

TOPICS

Participation in Tantalum Concentrate Production Processes at Mibra Mine

At JX Metals, we decided to participate in the production of raw tantalum materials as our first step toward expanding our resource business into the Minor Metal Business. Since January 2023, we have produced tantalum concentrate at the Mibra Mine, operated by AMG, under a joint venture (JV) between JX Metals and AMG. Tantalum and many other minor metals are expected to become increasingly important as raw materials for use in advanced materials. Securing long-term, stable supplies of these raw materials will be vital, as companies will be required to take proactive steps toward ethical and sustainable responsible procurement that takes safety and human rights into consideration. JX metals will further pursue long-term, stable supply of raw materials and responsible procurement through our part participation in this project.



Overhead view of Mibra Mine and operating plant