

# Business Portfolio

We believe the social mission of the Group is to provide a stable supply of nonferrous metal resources and materials to society, as well as to promote zero-emission recycling.

To fulfill this mission, we treat CSR activities as part and parcel of our business activities, constantly pursuing innovation in the productivity of resources and materials in each of our business areas.

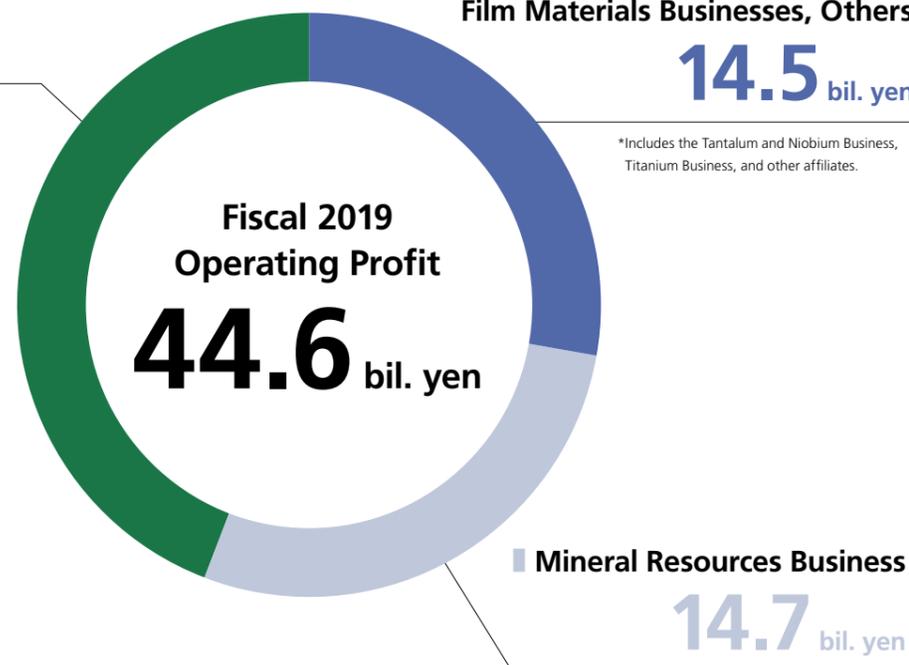
## Profit Structure

### Metals & Recycling Business

**22.9** bil. yen

### Functional Materials and Thin Film Materials Businesses, Others

**14.5** bil. yen



### Mineral Resources Business

**14.7** bil. yen

\* Includes inventory valuation impact of -3.3 billion yen and other business and shared expenses of -4.2 billion.

\* Data from fiscal 2019 is divided into the Mineral Resources Business, Metals Business, Recycling and Environmental Services Business, Functional Materials Business, Thin Film Materials Business, Tantalum and Niobium Business, and Titanium Business.

## The Competitive Superiority of Our Businesses (Fiscal 2019)

### Treated rolled copper foil

Approx. **80%** of global market share

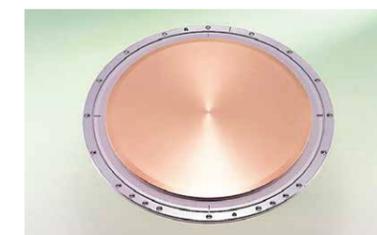
Our outstanding production and quality control systems, as well as our advantageous integrated production capabilities, mean our treated rolled copper foil products boast superior flexibility, thermal resistance, strength, conductivity, and more.



### Sputtering targets for semiconductors

Approx. **60%** of global market share

The key factor for sputtering targets for semiconductors is a high degree of purity; JX leverages its highly stable processes to provide these targets, whether in mass production or special development.



### Equity entitled copper mine production

Approx. **200,000** tons

The Mineral Resources Business is actively involved in promising mine development projects as early as planning stages, contributing greatly to the stable supply of copper resources to Japan.



### Refined copper production (by Pan Pacific Copper Co., Ltd.)

Approx. **600,000** tons per year

We use a large-scale copper smelting process to efficiently refine and reclaim gold, copper, and other nonferrous metal components from copper concentrate and recycled raw materials. By providing a stable supply of high-quality metals and creating a recycling-oriented system worldwide, we are contributing to the creation of a sustainable society.



### Reclaimed gold

Approx. **7** tons per year

### High-purity tantalum powder for electronic materials

**No.1** in global market share

TANIOBIS GmbH is a core supplier of high-purity tantalum powder, used in applications such as high-capacity miniaturized tantalum capacitors. In this way, we contribute to the miniaturization of smartphones, computers, and other electronic products.



### Titanium sponge production capacity

Approx. **25,000** tons per year

Toho Titanium Co., Ltd. manufactures titanium sponge by adding its own unique technology to the Kroll process, a method for reducing titanium tetrachloride with metal magnesium.



## Business Overview

### Functional Materials Business

We produce copper foil, an essential product in leading-edge electronics industries, as well as precision rolled products such as those made from copper alloys and special steels. We are also engaged in the plating and stamping of precious metals.

### Thin Film Materials Business

We supply various types of sputtering targets and other products for use in advanced electronics devices, leading-edge IT equipment, medical instruments, and electric vehicles.

### Mineral Resources Business

We identify mineral deposit potential in our exploration activities, and then develop mines at promising sites. We grind up extracted ores with a copper grade of around 1%, filtering usable minerals to produce copper concentrate with a copper grade of about 30%.

### Metals & Recycling Business

Through the copper smelting process, we take copper concentrate and recycled raw materials reclaimed and sorted from end-of-life appliances and electronic devices, producing high-purity copper, precious metals, and rare metals. We also use incineration and melting technologies cultivated in copper smelting in zero-emissions treatment of industrial waste materials, eliminating secondary waste.

### Tantalum and Niobium Business

Primarily driven by TANIOBIS GmbH, we contribute to the evolution of the IoT/AI society through stable provision of such products as metal powders used in capacitors and semiconductor materials, high-purity oxides for SAW devices and optical lenses, chlorides for semiconductors, and advanced powder materials.

### Titanium Business

The Toho Titanium Group produces and supplies a variety of titanium materials made from titanium concentrate, used in aircraft, general industry, and electronic materials. In addition, the Group is engaged in the catalyst and chemicals business based on titanium smelting technology and the raw materials obtained from that process.