



**SOJITZ IR DAY 2018**  
**Metals & Mineral Resources Division**

September 3, 2018  
**Sojitz Corporation**

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### Caution regarding Forward-looking Statements

This document contains forward-looking statements based on information available to the company at the time of disclosure and certain assumptions that management believes to be reasonable. Sojitz makes no assurances as to the actual results and/or other outcomes, which may differ substantially from those expressed or implied by such forward-looking statements due to various factors including changes in economic conditions in key markets, both in and outside of Japan, and exchange rate movements.

The company will provide timely disclosure of any material changes, events, or other relevant issues.



# Metals & Mineral Resources Division

## Metals & Mineral Resources Division

### Coal & Iron Ore Dept.



◇ Coal and iron ore trading and related businesses

- No. 1 share of exports to Japan for Russian coal, a traditional area of strength
- High share of offshore coal trades and exports of high-grade iron ore to Japan

### Mineral Resources Development Dept.



◇ Coal and mineral resource interest investment and development

- Only trading company with coal mine operation functions
- Expansion into new business areas by leveraging operation functions

### Ferroalloys, Non-Ferrous & Precious Metals Dept.



◇ Trading of rare metals, nonferrous metals, and precious metals and investment in mining interests

- Share of approximately 80% of niobium imports to Japan
- Development of systems for stable supply of high-grade steel auxiliary feedstock

### Industrial Minerals Dept.



◇ Trading of steel auxiliary feedstock and auxiliary materials and industrial minerals

- Top trading company for fluorite and vermiculite
- Development of supply chain spanning upstream and downstream areas for such articles as bentonite and electrode

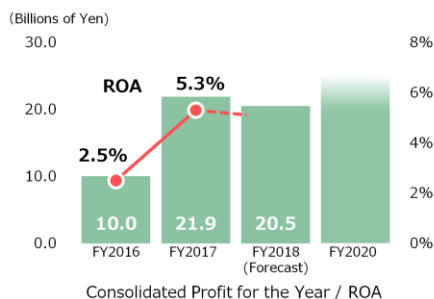
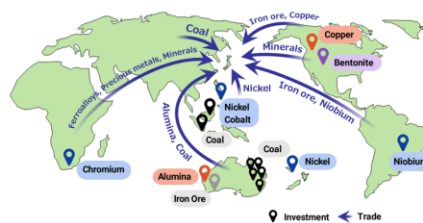
### Metal Products Office



◇ Businesses overseen by Metal One and exploration of new businesses

- Steel product distribution and processing business through Metal One
- Japan's first 3D metal printer business to perform everything from metal powder production to product manufacturing and mass production

(Stable supply of resources to a wide range of areas centered on Japan and Asia through trading and upstream interest operations)



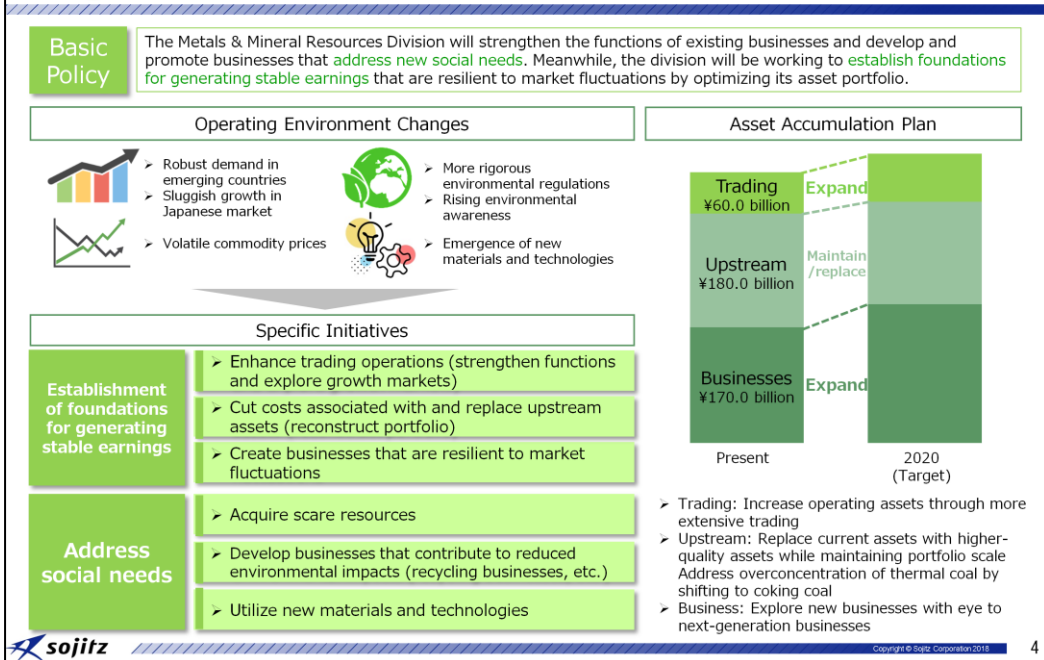
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- Comprised of five departments, the Metals & Mineral Resources Division operates wide-ranging businesses that span from upstream areas to downstream areas of the metal and mineral resource supply chain.
- The Coal & Iron Ore Department sells coal and iron ore to Japan and other Asian countries through means such as trading.
- The Mineral Resources Development Department is focused on upstream interest operations pertaining to coal and iron ore and other metals.
- With operations spanning from trading to upstream interests, the Ferroalloys, Non-Ferrous & Precious Metals Department is responsible for ferroalloys (rare metals), nonferrous metals, and precious metals.
- In the Industrial Minerals Department, we supply fluorite, vermiculite, bentonite, and other industrial minerals primarily to the steel industry.
- The Metal Products Office is tasked with developing businesses overseen by Metal One and exploring new businesses, such as the 3D metal printer business.
- The Metals & Mineral Resources Division sees Asia as representing the primary market for its trading operations, and we sell metals and mineral resources from across the world to this market. This division also invests in upstream interests to secure supplies of resources. As such, the Metals & Mineral Resources Division is comprised of the two pillars of trading and upstream interest operations.
- In the year ended March 31, 2018, this division posted profit for the year (attributable to owners of the Company) of ¥21.9 billion and return on assets (ROA) exceeding 5%. We are forecasting profit for the year of ¥20.5 billion in the year ending March 31, 2019. Our progress toward this goal was exceptionally strong in the three-month period ended June 30, 2018, with profit for the year of more than ¥8.0 billion.



# Division Policy Under Medium-Term Management Plan 2020



- “Establish foundations for generating stable earnings” and “address social needs” are key focuses for the Metals & Mineral Resources Division in the current medium-term management plan.
- Substantial change has been seen in the operating environment over the past two or three years. For example, countries such as China are taking a more serious look at environmental issues, a development that represents a significant business opportunity for Sojitz. In addition, automobiles are increasingly being made lighter and electric vehicles are spreading. Addressing these trends is thus a pressing task.
- The Metals & Mineral Resources Division organizes its operations into three categories: trading, upstream, and businesses. Our operations in each of these categories will be developed through the initiatives described in the table on the bottom-left corner of this slide.
- In our trading operations, we are strengthening our marketing and information functions. Currently, BHP Billiton Limited & Plc, Rio Tinto plc, and other major players are stepping up their iron ore production in Australia. However, the ore produced is of increasingly lower grades. Sojitz, meanwhile, is procuring iron ore from countries other than Australia, such as Canada, Brazil, and Peru, so that it can supply higher grade ore. We also deal in niobium, a high-end steel auxiliary feedstock. Demand for this resource is expected to grow in China, India, Vietnam, and other countries that are seeking to create higher quality steel products. We are in the process of preparing to increase production in response to this projected growth in demand.
- In our upstream operations, we are looking to increase the cost competitiveness of existing products to ensure that profits can be generated even when commodity prices are low. Those projects that have lost potency will be sold and replaced with assets that enhance our presence in fields where Sojitz boasts strength (aluminum, nickel, chrome, coal, etc.).
- As for business operations, we plan to revise our supply chains, which span from resource excavation to product sales, with an eye to taking part in projects that will contribute to stable earnings. For example, we see room for participation in projects in areas outside of excavation and sales, such as transportation, storage, and processing.
- There are three specific initiatives that the Metals & Mineral Resources Division will advance to address social needs. As the first initiative, the division will seek to acquire scarce resources through means such as strengthening operations pertaining to iron ore and stainless steel materials. The second initiative will be to respond to environmental issues by turning attention to recycling business for precious and rare metals, which have been garnering attention in recent years. The third initiative is to utilize new materials and technologies, with one concrete example being our exploration of new fields, such as 3D metal printers.
- The Metals & Mineral Resources Division accounts for more than ¥400.0 billion worth of Sojitz’s total assets, which are valued at between ¥2.3 trillion and ¥2.4 trillion. After making sure we can secure returns on these assets that met the Company’s target of 3% for ROA, we will work toward ROA of between 4% and 5% based on consideration for resource price volatility. In principle, we aim to maintain the current scale of assets, but we anticipate that this scale may increase slightly. Furthermore, we will proceed to replace upstream assets as we also accumulate trading and business assets to stabilize earnings.



## Reconstruction of Asset Portfolio —Acquisition of Supplies of High-Grade Coking Coal

### Policy

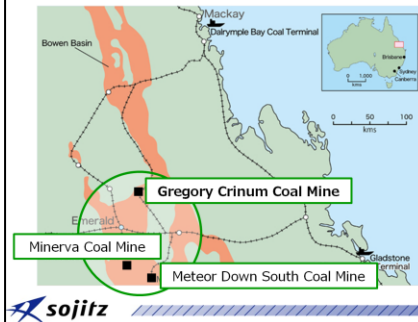
The Sojitz Group will replace its coal assets to address its overconcentration of thermal coal assets and **strengthen coking coal operations** from the perspective of rising global awareness and long-term business continuity in order to construct a balanced portfolio.

### ■ Acquisition of 100% of Gregory Crinum Coking Coal Mine in Australia

#### Overview

Agreement reached in May 2018 to acquire 100% of interests in Gregory Crinum coking coal mine located in Queensland from BHP Mitsubishi Alliance, interest transfer to be completed in 2018.

- Acquisition cost: Approx. ¥8.0 billion
- Start of coal production: 2nd half of 2019 (tentative)
- Production volume: Approx. 2 million tons/year
- Deposit volume: Enough to be mined into late 2030s

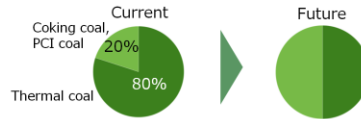


#### Purposes of Initiatives

##### 1. Acquisition of coking coal interests

- **Improvement of asset portfolio**
- Reinforcement of coking coal trading operations

※Distribution of Production Volumes by Coal Type (Sojitz's Stake)



##### 2. Reduction of costs through integrated operation

- Integration of operation of MDS and Gregory through utilization of existing operation functions of Minerva

##### 3. Creation of new business opportunities

- Utilization of infrastructure obtained through acquisition to expand into surrounding undeveloped mining areas and contract operation business

**Continue strengthening coking coal operations while developing contract rehabilitation operations, which are expected to benefit from increased opportunities going forward, and other businesses that address social needs and are resilient to market fluctuations.**

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- I would now like to turn the spotlight to three new projects. The first of these projects will enable us to secure a source of high-grade coking coal. Sojitz currently holds equity stakes entitling it to more than 7 million tons of coal, around 80% of which is thermal coal. However, we are looking to replace some of our thermal coal assets with coking coal assets from the perspective of business sustainability. As one facet of these efforts, we reached an agreement with BHP Billiton Mitsubishi Alliance in May 2018 to acquire the Gregory Crinum coking coal mine, a mine owned by this company that is located in Queensland, Australia. Operations at the Gregory Crinum mine are currently on a halt, but we aim to recommence production in mid-2019 at the earliest.
- This project is meaningful for three reasons. The first reason is that it contributes to the reconstruction of our asset portfolio. When the projected production volume of this mine—between 2.0 million and 2.5 million tons of coking coal a year—is added into our portfolio, it will result in the portion of our portfolio accounted for by coking coal rising to 40% to 50%.
- The second reason is that the Gregory Crinum mine is located near Sojitz's Minerva Coal Mine and Meteor Down South Coal Mine. This cross proximity will allow for exchanges and integration with regard to management, marketing, and equipment, which should in turn result in higher cost competitiveness.
- The third reason that this project is meaningful lies in its potential to lead to new business opportunities. The coal handling and preparation plant and loading equipment attached to the mine boast sufficient capacity, and we therefore see a possibility to use these ancillary facilities to develop coal mines in the surrounding areas. Sojitz possesses the exploration rights for some of the mines in these areas, and the development of these mines could further strengthen our coking coal operations.
- We are also examining the possibility of developing fee-based businesses in which we perform operation of nearby coal mines that are in need of people, equipment, or transportation facilities on a contract basis. Sojitz plans to seek out opportunities to develop such businesses that are resilient to market fluctuations.
- Furthermore, we anticipate that the rehabilitation of closed coal mines in Australia to get them producing again will be increasingly important going forward. We are therefore looking at ways to utilize Sojitz's coal mine operation functions to commercialize such rehabilitation needs.



## Response to New Social Needs 1 —Participation in 3D Metal Printer Business

### Policy

As conventional business models are transformed by manufacturing and distribution innovations, Sojitz will pursue a **leading position** in the 3D metal printer business through early participation

### ■ Establishment of JAMPT Corporation

#### Overview

Joint venture established with partners boasting expertise and technologies in additive manufacturing industry  
Japan's first company to perform everything from metal powder production to product manufacturing

- Investment amount: Approx. ¥0.5 billion (66%)
- Establishment: October 2017
- Partners: Koiwai Co., Ltd.



3D metal printer (left)  
Products manufactured using 3D metal printer (above)

#### Purposes of Initiatives

1. Entry into 3D metal printer market at its dawn ➢ **Acquisition of firstcomer benefits**

2. Development of business model compatible with product manufacturing and mass production ➢ Creation of business generating **stable revenues** that are resilient to market fluctuations

3. Exploration of new fields ➢ **Entry into manufacturing field**

4. Contributions to communities ➢ Establishment of factory in special reconstruction industrial park in Miyagi Prefecture to **contribute to economic recovery** of areas impacted by Great East Japan Earthquake



Rendering of completed factory

- Commencement of operations encompassing everything from powder production onward in fall 2018
- Target mass production in 2020 after three-year verification period

**Steadily move ahead with development of 3D metal printer business using new technologies to play a pioneering role in the industry**



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- The second new project I will explain is our participation in a 3D metal printer business, which represents an industry in which Japan is lagging behind Europe and the United States.
- In November 2017, we established JAMPT Corporation together with Koiwai Co., Ltd., a trailblazer in the field of 3D printing technologies that laminate metal powders. In this project, we have also partnered with TOHOKU University Venture Partners Co., Ltd. JAMPT's factory, located in Tagajo City, Miyagi Prefecture, was completed in August 2018, and operations were commenced thereafter.
- The 3D printer industry is expected to come to serve a market with a scale ranging from tens of billions to hundreds of billions of yen over the next several years. As this is a yet unexplored field, we will need to be careful in charting our course for growing the business of JAMPT. Nevertheless, we have already begun negotiations for working with several major Japanese manufacturers in various initiatives.
- Furthermore, JAMPT represents the Metals & Mineral Resources Division's first forays into the field of manufacturing. We will no doubt face difficulties in this uncharted domain, but we are committed to advancing in this business.



## Response to New Social Needs 2 —Development of Niobium Anode Materials for Next- Generation EV Batteries

### Policy

We will seek to capture EV demand, which is expected to grow on a global scale going forward, by participating in the development of next-generation EV battery materials as a new application for niobium, a type of steel auxiliary feedstock, together with promising partners.

### Conclusion of Contract for Joint Development of Niobium Anode Materials for High-Capacity, Next-Generation LiBs (SCiBTM) with Toshiba and CBMM

#### Overview

Conclusion of contract for joint-development of niobium titanium oxide (NTO) for use in EV LiBs between Toshiba Infrastructure Systems & Solutions, CBMM, and Sojitz in June 2018

#### Role of Each Company

- CBMM: Production of niobium oxide for use in making NTO
- Toshiba Infrastructure Systems & Solutions: Manufacture and performance evaluation of NTO electrodes
- Sojitz: Stable supply of raw materials, project management



Signing ceremony (left)  
CBMM Araxá Mine, Brazil (above)

#### Purposes of Initiatives

1. Capturing of EV demand
  - **Response to customer needs** through development of next-generation LiBs with higher energy density and ultra-rapid recharging
2. Exercise of Sojitz's strengths
  - **Utilization** of stable supply and application development insight and expertise as sole distribution agent for niobium in Japan
3. Strengthening of relationships with promising partners
  - Collaboration with Toshiba as well as with CBMM, which boasts niobium industry-leading technologies

- Provision of SCiBTM, a safe and fast-charging LiB launched by Toshiba in 2008
- Expansion of rechargeable battery business through collaboration between three companies with eye to mass production of next-generation SCiBTM in FY2020

Pursuit of ongoing growth by supporting business foundations and reducing environmental impacts through stable supply of niobium.



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- The third and final new project II will touch on today is our development of niobium anode materials for next-generation electric vehicle batteries.
- Niobium is primarily used as an additive in high-quality steel in the form of ferroniobium. However, recent years have seen niobium utilized in additives and catalysts for optical lenses, in anode materials for lithium-ion batteries, and for various other non-steel applications.
- Together with Toshiba Infrastructure Systems & Solutions Corporation and Companhia Brasileira de Metalurgia e Mineração (CBMM) of Brazil, Sojitz is advancing joint development of niobium anode materials for next-generation, high-capacity lithium-ion batteries for electric vehicles (SCiBTM). Currently, graphite anode materials are mainstream, but we anticipate that the use of niobium anode materials will contribute to higher energy density and ultra-rapid recharging in SCiBTM batteries.
- The Metals & Mineral Resources Division emphasizes efforts to address environmental issues, and we therefore look forward to contributing to society through electric vehicle battery materials.
- If use of SCiBTM spreads, we expect a significant increase in the amount of niobium used. We are therefore targeting higher earnings for investee CBMM as well as greater earnings from niobium trades.



## Measures Targeting Future Growth

Drive growth of Companywide earnings through promotion of division growth strategies  
Achieve ongoing growth by fulfilling resource supply responsibilities and addressing social needs

### Three Growth Strategies

#### Enhance trading operations based on new functions

- Strengthen relationships with customers to respond to their diverse needs
- Expand lineups of products that contribute to reduced environmental impacts



Low-sulfur coal produced near region of use\*



Next-generation battery materials

#### Reform upstream interest operations

- Construct portfolio that can generate profits even when conditions are poor



Exhaustive cost reductions for existing projects



Replacement of assets with higher-quality assets

#### Explore midstream and downstream businesses that are resilient to market fluctuations

- Create businesses that address social needs and environment changes

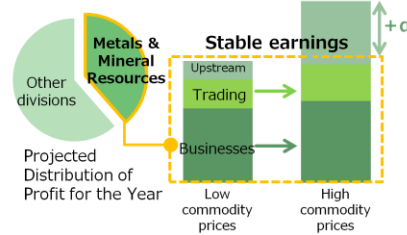


3D metal printer business



Resource recovery / recycling businesses

- Construct earnings foundation that is resilient to market fluctuations to drive growth of Companywide earnings



- Fulfill responsibility of supplying resources to resource-scarce Japan and rapidly growing emerging countries
- Respond to changing social needs based on environmental issues



\* Coal produced near the region of use to contribute to reduced CO2 emissions from transportation



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- The Metals & Mineral Resources Division aims to make ongoing earnings contributions as the driver of the growth of Companywide earnings. To achieve this goal, we will move forward with growth strategies to address social needs as we fulfill our resource supply responsibilities
- We therefore plan to enhance trading operations, reform upstream interest operations, and explore midstream and downstream businesses.
- Resource businesses are affected by market fluctuations. It is for this reason that we are pursuing further cost reductions with regard to upstream interests in order to boost our resilience to market fluctuations. The goal of these efforts is to guarantee that a certain degree of profits can be maintained to achieve the Companywide target of ROA of 3% even when market conditions are poor and to create earnings foundations that will generate greater earnings when conditions are beneficial.
- The Metals & Mineral Resources Division has a long history in the resource business, and we are committed to continuously fulfilling our resource supply responsibilities. At the same time, we hope to create new businesses that address social needs and environment changes in order to contribute to the development of society. We anticipate that this quest will also foster a greater sense of motivation and purpose for employees of the division.





***sojitz***

***New way, New value***