The SMM Group’s System for Value Creation

Through a history of over 430 years, we have provided society with the non-ferrous metals that are indispensable to people's lives. In this environment, the SMM Group has been keenly aware of major changes in the business environment and has generated new value. Based on our long-cultivated technologies for handling metals and our spirit of co-existence with society, we will recognize changes in increasingly diversifying and sophistication social demands as business opportunities and continue to take on new, transformative challenges.

Our History of Value Creation

The beginning of Sumitomo's original business: copper smelting and refining business In 1590, the Sumitomo copper business began in Kyotsu as a copper smelting and decorating cooper work operation. By being the first in Japan to perfect a smelting technique known as Nanban-buki for the separation of copper from silver, Sumitomo solidified its business foundation.

Opening of the Besshi Copper Mine triggers discovery of new value, mineral resources The Besshi Copper Mine operated continuously for 283 years from its opening in 1601 and made a huge contribution to Sumitomo's development. The opening of the mine presented an opportunity to expand the company's business to include mineral resources business in addition to copper smelting and refining. The mining technology cultivated at the Besshi Copper Mine continues to be inherited by SMM's Mineral Resources Business as it expands across the globe.

Adding new metals to the Smelting & Refining and Mineral Resources Businesses portfolio At a time when the importance of gold as a resource was growing, we acquired the management rights for the Kounomai Mine in Hokkaido in 1917. Beginning in 1939, SMM also pioneered and commercialized the smelting and refining of nickel in Japan, which had hitherto relied on imports as nickel could not be smelted domestically.

Entered into the Materials Business In 1950, the electronic materials business was being watched as a new market, and SMM began production of germanium dioxide for use in transistors. Since then, we have continued to provide the market with various electronic materials.

Participated in overseas copper mines and acquired interests The downsizing of mines in Japan meant that smelting and refining businesses had to switch to resources produced overseas. In 1961, SMM signed an investment and financing contract with Bethlehem Copper Mines, beginning the company's involvement with overseas mines and creating a foothold for the acquisition of mining interests that continues to this day.

Started operation of the Hishikari Mine With the closure of the Saza Mine in 1979, the curtain closed for a time on SMM's long heritage of mining technology. However, in 1985, operations began at the Hishikari Mine and SMM's technology began to chart a new history in a new area. The mine boasts a rich gold content rate, even to date and has become a primary source of profit for the Group, and it also played a role in passing down our mining technology.

Starting in the Meiji Period, with the growth in demand for communications lines, wires for electric lighting, and copper alloy fabricated products, domestic demand for copper increased significantly. The Besshi Copper Mine, which introduced Western-style smelting and refining, supported the industry in Japan.

In the Edo period, about half of all copper produced in Japan for international trade was exported through Nagasaki. In the year 1868, Sumitomo's annual production reached about 1,500 tons, a quantity that accounted for one quarter of Japan's copper production.

Through a history of over 430 years, we have provided society with the non-ferrous metals that are indispensable to people's lives. In this environment, the SMM Group has been keenly aware of major changes in the business environment and has generated new value. Based on our long-cultivated technologies for handling metals and our spirit of co-existence with society, we will recognize changes in increasingly diversifying and sophistication social demands as business opportunities and continue to take on new, transformative challenges.

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Corporate reform since the JCO criticality accident

In September 1999, a criticality accident occurred at SMM subsidiary, JCO Co., Ltd., which manufactured fuel for nuclear power generation. This was a turning point in the management of the SMM Group, whereupon it reflected and in 2000 formulated the Corporate Reform Plan. We have thoroughly followed and instilled compliance and a culture of safety, and even though more than 20 years have passed since the accident, we will not forget and will pass the lessons learnt on to younger generations.

Return to core business

Since FY2002, following the Corporate Reform Plan, in order to improve our profitability, we have been further promoting business selection and concentration to reform the business and cost structure of the SMM Group to build a corporate structure strong enough to withstand international competition even in a severe business environment.

Promoting the growth strategy

From FY2004 onward, we have steered our course toward the growth strategy by promoting large-scale projects and concentrating management resources in growth areas to expand and strengthen our core businesses. In FY2010, we shifted our business model to three core businesses: Mineral Resources, Smelting & Refining, and Materials. We have continued to implement our growth strategy to enhance our corporate value and competitiveness.

Began to increase the production of battery materials

We have been promoting high-performance materials for automobile batteries (cathode materials), which are expected to grow significantly in the future, and gradually increasing production capacity by leveraging our strength of an integrated process from the procurement of nickel raw material through to processing (business collaboration synergy).

Long-term vision to become a world leader in the non-ferrous metals industry

In the 2018 3-Year Business Plan, we set the long-term vision of becoming the world leader in the non-ferrous metals industry and worked to strengthen our growth foundation through the promotion of large-scale projects, reinforced collaboration among our three businesses, and strengthened our corporate functions. In the subsequent 2021-3-Year Business Plan, under the theme of “overcome challenges for change”, we will tackle 4 Challenges to realise our long-term vision.

SMALLتحول إلى استراتيجية Core Business

نوفمبر 2000، أعقب التحول الإداري، نمت الشركة التحليلية، جي سي أو، والتي تنتج الوقود النووي، إلى نقطة تحول في إدارة الشركة. حيث قررنا ببرنامج التحول الإداري في عام 2000، أن ن-focus على صناعة فائقة السعة، ونقوم بالتركيز على التحسينات الفنية والاقتصادية للشركة، حتى تكون قادرة على تحمل التحديات العالمية في التجارة. 

-return إلى ثقافة الأعمال الرئيسية

من فبراير 2002، نظرًا لبرنامج التحول الإداري، ننفّذ نهجًا موجهًا نحو تركيز الأعمال وتحسينه، بما يتيح لنا تحسين البنية التحتية للشركة والقدرة على التحمل في بيئة أعمال صعبة. 

-تعزيز استراتيجية النمو

من فبراير 2004، نقلنا قوتنا نحو استراتيجية النمو من خلال تنفيذ مشاريع كبيرة وتركيزنا على الموارد الموجودة في مناطق النمو، لتوسيع وتمكيننا من الأعمال الرئيسية. في عام 2010، نقلنا نموذج أعمالنا إلى ثلاث أعمال رئيسية: المعدنات، التصفية، والمواد. 

-زيادة الإنتاج للوقود الكهرومكسي

ونحن نعتزم تطوير مواد البطاريات للأتومبيلات، وهي مادة تنمو بسرعة كبيرة في المستقبل، ونقوم بزيادة إنتاجنا في هذه المنازل بشكل قوائي من خلال استخدامنا لطريقة متكاملة من التوريد إلى المعالجة. 

-رؤية طويلة المدى لتصبح أبرز الشركات في عالم المعادن غير الحديد

في خطة الأعمال الثلاثية لعام 2018، ن 设置 قرارًا لتصبح أبرز الشركات في عالم المعادن غير الحديد، وعملنا على تقوية قاعدة النمو عبر تشغيل مشاريع كبيرة، وتعزيز التعاون بين القطاعات لدينا، وتعزيز أدائنا الإداري. في الخطة التالية، خطة الأعمال الثلاثية لعام 2021، تحت ميثاق “تجاوز التحديات”، سنواجه 4 تحديات لتنفيذ رؤيتنا للنمو المدى الطويل.
Copper is thought to be the first metal used in human history. It offers high heat and electrical conductivity, is relatively inexpensive, and has superior workability. This has resulted in it becoming an indispensable base metal for electrical wiring and copper alloy fabricated products in a wide range of industries.

Chile and Peru are the world’s two largest copper ore producing countries, followed by China, the Democratic Republic of Congo (DR Congo) and the U.S.

Copper is an indispensable base metal in a wide range of industries, particularly for infrastructure such as electrical wiring and copper alloy fabricated products, and China accounts for about half of global copper demand. Going forward, there is expected to be firm increases in demand along with global economic development. However, on the supply side, with development moving forward on the world’s superior mines, the development of new sites will unavoidably occur in increasingly remote locations or higher elevations and with increasingly lower grade ore, making it more difficult. It is thought that this will result in the continuation of the current tight situation, including for recycled products.
The Business Environment Surrounding Nickel

The main end-use of nickel is in stainless steel and a certain amount of increase in demand is expected. In addition to this, the electrification of the automotive sector has accelerated globally in recent years and an increase in demand for nickel for use in cathode materials for lithium-ion secondary batteries is expected to accompany this.

Indonesia and the Philippines are the world’s two largest nickel ore producing countries. The end-use of about 70% of all nickel is in stainless steel and, like copper, China accounts for about half of global demand. In recent years, the growth in demand for nickel has been increasing at a much greater rate than growth in demand for copper and going forward, an increase in demand for use in cathode materials for lithium-ion secondary batteries is expected to accompany the spread of EVs. However, on the supply side, although the supply of products that are not of particularly high grade—so-called “class 2” nickel grades, such as ferronickel and nickel pig iron (NPI), which are mainly used as raw materials for stainless steel production—will be brisk due to development by Chinese companies in countries such as Indonesia, for products in the “class 1” high-grade nickel category used as raw materials in nickel pig iron (NPI), which are mainly used as raw materials for stainless steel production will be brisk due to development by Chinese companies in countries such as Indonesia, for products in the “class 1” high-grade nickel category used as raw materials in stainless steel and, like copper, China accounts for about half of global demand. In recent years, the growth in demand for nickel has been increasing at a much greater rate than growth in demand for copper and going forward, an increase in demand for use in cathode materials for lithium-ion secondary batteries is expected to accompany this.

World’s Largest Nickel Ore Producing Countries

<table>
<thead>
<tr>
<th>Country</th>
<th>Nickel (kt, 2020)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indonesia</td>
<td>781</td>
</tr>
<tr>
<td>Philippines</td>
<td>334</td>
</tr>
<tr>
<td>Australia</td>
<td>199</td>
</tr>
<tr>
<td>Russia</td>
<td>233</td>
</tr>
</tbody>
</table>

Global Nickel Supply and Demand

<table>
<thead>
<tr>
<th>Year</th>
<th>Supply (kt)</th>
<th>Demand (kt)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>1,600</td>
<td>1,700</td>
</tr>
<tr>
<td>2012</td>
<td>1,700</td>
<td>1,800</td>
</tr>
<tr>
<td>2013</td>
<td>1,800</td>
<td>1,900</td>
</tr>
<tr>
<td>2014</td>
<td>1,900</td>
<td>2,000</td>
</tr>
<tr>
<td>2015</td>
<td>2,000</td>
<td>2,100</td>
</tr>
</tbody>
</table>

Statistical Data Regarding Nickel

<table>
<thead>
<tr>
<th>Nickel End-Use</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stainless steel</td>
<td>69%</td>
</tr>
<tr>
<td>Alloys and diescasting</td>
<td>12%</td>
</tr>
<tr>
<td>Plating</td>
<td>11%</td>
</tr>
<tr>
<td>Battery</td>
<td>10%</td>
</tr>
<tr>
<td>Other</td>
<td>3%</td>
</tr>
</tbody>
</table>

Source: JOGMEC Mineral Resource Material Flows 2021
The SMM Group’s System for Value Creation
Value Creation Process

**INPUTS**

<table>
<thead>
<tr>
<th>Inputs</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financial capital</td>
<td></td>
</tr>
<tr>
<td>Human capital</td>
<td></td>
</tr>
<tr>
<td>Social and relationship capital</td>
<td></td>
</tr>
</tbody>
</table>

**BUSINESS ACTIVITIES**

<table>
<thead>
<tr>
<th>Business Activities</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mineral Resources Business</td>
<td></td>
</tr>
<tr>
<td>Materials Business</td>
<td></td>
</tr>
<tr>
<td>Smelting &amp; Refining Business</td>
<td></td>
</tr>
</tbody>
</table>

**OUTCOMES**

<table>
<thead>
<tr>
<th>Outcomes</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>Financial capital</td>
<td></td>
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<tr>
<td>Human capital</td>
<td></td>
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<td></td>
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</tbody>
</table>

**IMPACTS**

<table>
<thead>
<tr>
<th>Impacts</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financial impact</td>
<td></td>
</tr>
<tr>
<td>Environmental impact</td>
<td></td>
</tr>
<tr>
<td>Social impact</td>
<td></td>
</tr>
</tbody>
</table>

**Non-ferrous metal materials**

- **Non-smelting & refining**
  - Annual production volume: 80,804t

- **Gold & silver ore usage**
  - Annual production volume: 13.7787Mt
  - 75% of total energy consumption

**Highly advanced materials**

- **Cathode materials for batteries**
  - Shares in global market share

- **Effective use of resources**
  - Reduce scandium and chromium from nickel oxide one
  - Develop a recycling process for lithium-ion secondary batteries

**Natural capital**

- **Hazardous substances emitted into the atmosphere and water**
  - Increase in emissions of hazardous substances into the atmosphere and water
  - Increase in consumption of energy from coal and coke
  - Percentage of recycled materials used
  - Reduction in GHG emissions

**Human capital**

- **Development of human resources**
  - Skill development through OJT
  - Officers and employees who have inherited and interacted with company history

**Social and relationship capital**

- **Risk management structures**
  - A firm resolve in regard to safety and a management framework that heightens hazard awareness

**Financial capital**

- **Sound financial standing (equity ratio of 50% or higher)**
  - Capital expenditure on renewable energy GJillion/2 billion
  - Risk management structures

**Human capital**

- **Development of intellectual capital**
  - Intellectual property rights held
  - Research and development expenses (roughly two times that of the previous fiscal year)
  - Research centers

**Social and relationship capital**

- **Enhanced social capital**
  - A close affinity with customers and the community
  - Relationships with business partners, governments, and local communities

**Financial capital**

- **Developments and improvements in business sites and equipment**
  - Increase in production capacity in response to growth in demand

**Human capital**

- **A firm resolve in regard to safety and a management framework that heightens hazard awareness**
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The SMM Group’s System for Value Creation

Value Creation Process (Business Model) Explanation

Business Model

Suppliers Business Partners

Mining Interest Holders

Steel Manufacturing and Trading Companies

Mining and Trading Companies

Pre-processing Manufacturers of Waste Batteries

Material Manufacturers and Trading Companies

Key INPUTS—Seven Competitive Strengths

The SMM Group’s seven competitive strengths come from its various management capital. Throughout its 430-plus years of history, we have continuously honed our competitiveness and achieved sustainable growth by combining diverse capital to execute strategies and businesses that meet the demands of the times.

Business Model—Organic 3-Business Collaboration

Our Mineral Resources Business develops and operates mines in a way that is considerate to the environment and society. Our Smelting & Refining Business then generates high-quality metal materials from the extracted ores. And, our Materials Business adds value to these materials that meet the needs of the times. In this way, SMM has a globally unique 3-business collaboration business model in which we operate three businesses — Mineral Resources, Smelting & Refining, and Materials — which collaborate in an organic way. We are building up competitive capabilities by sharing and utilizing human resources, goods, technology, and information between each business.

Mineral Resources Business

We invest in copper and gold mines, develop mines with our partners, supply ore to our Smelting & Refining Business, and sell some of the ore to outside parties. We also own and operate the Hishikari Mine, where we mine gold ore and supply it to our Smelting & Refining Business.

Smelting & Refining Business

We procure copper and gold ores from the market and our Mineral Resources Business, and nickel and cobalt ores from our investment mines for smelting and processing. As for products, metallic materials are sold to metal fabricators and trading companies, and used for battery cathode materials are supplied to our Materials Business.

Materials Business

In our battery materials business, we procure metallic materials from other sources, process them into battery cathode materials, and sell them to battery manufacturers. In the advanced materials business, we have various product groups such as crystal materials, powder materials, and package materials, and we procure raw materials internally and externally for processing and selling to customers such as electronic device manufacturers.

Competitive capabilities generated by our 3-business collaboration model

(1) Great reduction of procurement risk due to the sharing of resource development regulations, supply and demand trends, and other information

(2) Promotion of efficient development of new products, etc. through the sharing of technological information concerning non-ferrous metals and collaborating with customers in the Materials Business

(3) A stable supply of highly-advanced materials including cathode materials for automobile batteries by collaboration between the Smelting & Refining and Materials businesses

(4) Optimization of characteristics in the materials we supply through collaboration between the Smelting & Refining and Materials businesses

(5) Advancement of knowledge and expansion of mining business opportunities through collaboration between the Mineral Resources and Smelting & Refining businesses

(6) Cutting-edge innovation through the collective wisdom possessed by human resources with diverse backgrounds

(7) Building of cyclical systems and expansion of opportunities realized through collaboration between the Mineral Resources, Smelting & Refining, and Materials businesses

(8) Assurance of traceability in terms of quality and the like through an integrated internal supply chain

Material businesses

The SMM Group is engaged in various recycling efforts. In the Smelting & Refining Business, we collect steel dust from steel manufacturers and trading companies to produce and sell zinc oxide pellets, which is the raw material for metallic zinc. We also purchase copper scrap from electric wires and other sources, smelt, refine, and recycle it.

In recent years, as the shift to electric vehicles has rapidly progressed, we have been promoting battery recycling by recovering nickel and cobalt from used secondary batteries for automobiles in our Smelting & Refining Business, processing them into metallic materials, and supplying them to our Materials Business to be reused as cathode materials for batteries in our Materials Business. In addition, we have invented a technology to recover lithium from used secondary batteries. We will continue to promote a variety of recycling efforts.

Outcomes and Impacts—Forming a Sustainable Society

The SMM Group has established its “Vision for 2030” to serve as a milestone for realizing its long-term vision to become “the world leader in the non-ferrous metals industry” and has identified 11 material issues as initiatives that must be accomplished. In addition, a major tenet of the SMM Group’s corporate philosophy is “sustainable co-existence with the global environment,” which is our social mission as a manufacturing company that relies on resources. By steadily addressing each of the 11 material issues, we will earn our social license to operate, which is indispensable for our business. We will also contribute to a sustainable society together with our customers, NGOs, NPOs, employees, local communities, business partners, and other stakeholders.
The SMM Group has cultivated a variety of management capitals over its 430 years of history, which started with the copper smelting and refining business that was the original business it inherited from the Sumitomo Group, and it has combined these in its strategies and businesses to create “Seven Competitive Strengths.”

These strengths form the base of the Group’s growth and they are built upon the Sumitomo Business Spirit. The application of this business spirit has enabled the Group to overcome every difficulty so far. Now we are responding flexibly to changes in the times through collaboration among our three businesses of Mineral Resources, Smelting and Refining, and Materials in a way that leverages the strengths of each business and by realizing “transformation”, “legacy”, and “education” through the 4 Challenges of the 2021 3-Year Business Plan.

The SMM Group’s System for Value Creation

The SMM Group’s System for Value Creation

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### 1. Intellectual Capital, Manufactured Capital, Natural Capital

#### Technology that has been continually honed over 430 years and is focused on the next generation

- Originated in the Manbun-buki method for separating crude copper from silver, developed in Kyōto by Soga Rienmon around 1600
- Have exploration, mining, and mineral processing technology for taking on the challenges presented by difficult-to-develop new deposits and sub-surface resource development
- Have advanced smelting and refining technology such as High Pressure Acid Leach (HPAL), the world’s first method for converting low-grade oxide ore into a nickel resource
- Have combined high-level knowledge of metals cultivated through our history and status-of-the-art technological capabilities in the materials field and a 3-business collaboration model based on an integrated supply chain from resource development to production and recycling of highly advanced materials contributing a decarbonized society
- Have collaborations with academic institutions to realize technological innovation focused on the society of 2050

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### 2. Human Capital

#### Employees who share our business spirit and an open and vibrant organizational climate

- Have Sumitomo DNA, which has been passed down from generation to generation for more than 430 years
- All employees understand and practice the Sumitomo Business Spirit, SMM Group Corporate Philosophy, and Management Vision because they are instilled through continual education
- Actively invest in human resources (various training programs, provision of learning opportunities, promotion of health and productivity management, etc.)
- Our corporate culture values people and respects diversity (assigning jobs and providing support matched to employees’ life stages, and strengthening of mid-career recruitment)
- Promote initiatives to stimulate communication across organizations and positions

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### 3. Social and Relationship Capital, Natural Capital

#### Relationships of trust with business partners that have been formed with a long-term perspective

- Build and maintain good relationships with reliable, world-class partners as a foundation for superior mine interests overseas
- Have strong partnerships with our business partners based on the trust that comes from Sumitomo’s approach to business operations, rooted in the Sumitomo Business Spirit, and our high-level knowledge and technologies related to metals cultivated over our long history
- Create further business opportunities through our long-term partnerships and relationships of trust

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### 4. Involvement with local communities that has been built up through our core business

- Have a long history of co-existence and mutual prosperity with local communities through our business activities, based on the Sumitomo Business Spirit, in which we work to make people happy, including the families of employees, and develop together with society
- Develop mines starting with town building. For example, an elementary school in Nihama City, Fukuoka Prefecture, was founded by Sumitomo 120 years ago, when Besshi Copper Mine was in operation
- Contribute to local communities not only in Japan, but also overseas through scholarship programs, the operation of hospitals and schools, road construction, and other initiatives
- Build trust with local communities based on dialogue and collaboration

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### 5. Human Capital, Manufactured Capital

#### Management of serious risks fulfilling responsibilities according to each level of the job classification, with a firm resolve in regard to safety

- Have a target of zero occupational accidents based on the recognition that unless the correct management framework is established, there is the risk of serious accidents that cost lives, and collaboration of labor and management to promote safety initiatives
- Promote equipment-related measures including those related to essential safety facilities, with a focus on risks of serious accidents involving operating facilities, high places, heavy loads, and heavy machinery
- Improve on-site management capability by strengthening checks on realities and actions through work observation and practical risk assessment (RA) as well as through priority-oriented initiatives, etc.
- Improve hazard awareness by introducing and practicing more effective education and training (including hands-on training based on VR)

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### 6. Social and Relationship Capital

#### A close affinity with our customers’ needs and the collaborative capabilities to continuously respond to them

- Have strength provided by a comprehensive knowledge of not only metals but also the characteristics of the metals that are their raw materials, which we leverage to connect the various technologies we have developed to date with the innovation sought by the customer
- Have a “top-class share of the global market” of nickel-based cathode materials for lithium-ion secondary batteries used by major electric vehicle manufacturers, realized through our technology for extracting nickel from low-grade oxide ore and a framework that enables us to secure materials stably
- Recognize the importance of taking a long-term approach to handling customer demands steadily and sincerely, in a way that wins trust, with ongoing new product creation in the automotive, energy and environment, communications, and other fields

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### 7. Financial Capital, Natural Capital

#### Financial position that enables us to take advantage of investment opportunities

- Maintain a sound financial position to withstand large one-time cash outflows for resource and smelting & refining development projects, which require a long period of time from investment to recovery, and to avoid missing investment opportunities
- Possess several superior mine interests that support a sound financial position; (including Japan’s only large-scale commercial gold mine, the Hishikari Mine, and the Morenci Copper Mine, one of the world’s top-class producers of copper)
- Decisively review the portfolio to maintain profitability
Risks and Opportunities

The SMM Group’s System for Value Creation

Risk Factors (External/Internal)

Governments and Policy
• Changes in laws and regulations (rise in mineral resource nationalism, increase in environmental awareness, etc.)
• Conflicts and friction between countries

Economic Environment
• Metal price and foreign exchange rate fluctuations
• Supply chain risks

Social Environment
• Increased social responsibility for climate change
• Acceleration of the carbon neutrality movement
• Emergence of issues related to Business and Human Rights

Work Environment
• Shrinkage and increasingly mobile Japanese labor market
• Securing human resources and diversifying work styles

Technology
• Evolution of technology in the field of information and communication technology
• Catching up with the technology by overseas competitors
• Increasing and growing cybersecurity risks
• Growing importance of intellectual property due to globalization

Development of Resources, Smelting & Refining Operations, Development of Highly Advanced Materials
• Decrease in superior mines and increased uncertainty in mining investment

Smelting & Refining Operations
• Instability in procurement of non-ferrous metal raw materials and equipment

Development of Highly Advanced Materials
• Rising demand for cathode materials and prolonged production of new product development
• Potential huge financial burden for deficits in in-vehicle products

Other
• Increased frequency and intensity of natural disasters
• Spread of infectious disease

Risks (Threats) and Opportunities

• Rationalization of mines, increased taxation
• Prohibition of export of mineral ores and intermediates
• Stricter approval for development and operation
• Negative impacts on production, including supply and demand and supply chains
• Introduction of preferential taxation in the automobile market

• Adverse impacts on business performance due to lower metal prices and exchange rate fluctuations
• Switch to alternative materials due to a sharp rise in metal prices
• Decrease in competitiveness due to higher operating costs
• Expanding demand for non-ferrous metals, especially copper and nickel, which are indispensable for the electrification of automobiles, etc.

• Exclusion from investment due to legacy of ESG
• Capital constraints in development due to GHG emissions reduction
• Delays or withdrawal from projects due to opposition from local communities or due to infringement of the rights of local communities and indigenous peoples
• Growing demand for low-carbon products that contribute to GHG reduction, such as battery materials

• Outlined excellent human resources
• Adverse effects on operations due to shortages of labor (project delays, loss of opportunities for new entry), increased difficulty of technology transmission and continuation of production activities, and occurrence of occupational accidents
• Attract diverse human resources and create innovation

• Adverse impact due to failure of outsourcing
• Difficulties in procurement of rare metals and equipment and price hikes
• Failure in the development of in-house projects, which are indispensable for the electrification of automobiles, etc.

• Increased difficulty in acquiring materials due to intensified competition
• Increase in the cost of investing in and operating mines
• Expanding demand for non-ferrous metals, especially copper and nickel, which are indispensable for the electrification of automobiles, etc.

• Deterioration of raw material purchase conditions, plant shutdown
• Difficulty in procurement of raw materials and equipment and skyrocketing prices
• Growth in demand for recycling associated with the increased demand for metals, increased collection of used products, etc.

• Obsolescence of products and technologies due to technological innovation and market change
• Product liability and claims litigation (renewals and damages incurred for end products containing defective in-vehicle products)
• Growing demand for cathode materials due to increasing demand for electric automobiles
• Growing demand for advanced materials used in electronic devices for the realization of a digital society

• Increased frequency and inaccessibility of spills due to intensified flooding of soils, etc.
• Interruption of global supply chains

Strategies

• Full consideration of country risk and making investment decisions while expanding the business globally
• Cooperation with overseas local partners to monitor the status of the market entry and taking appropriate measures as needed to respond to changes after entering a new market

• Participating in the EU’s and introducing new and energy-saving equipment at production sites to achieve net zero GHG emissions by 2050
• Promoting with reducing GHG emissions, and promoting initiatives for reduction and development of products that contribute to the realization of a carbon-neutral society, etc.
• Support the United Nations Guiding Principles on Business and Human Rights, and conduct due diligence and operate a complaint resolution (remedy) mechanism based on the Santos Mining Group Policy on Human Rights

• Providing employees with safe and healthy work opportunities by reforming work styles and rebuilding an open and vibrant organization climate
• Promote human resource development, encouraging and enable efforts to address long-term issues, build a corporate culture that enables continuous “taking on of challenges,” “change,” and “growth,” and secure, foster, and utilize a diverse human capital

• Developing DX infrastructure to address human resources in an era of a shrinking birthrate, improving management efficiency, and create business reform and new businesses
• Continuing to develop technologies to maintain and improve the HPAL recovery rate
• In addition to information security education for employees, implementing to a cloud service with advanced security features that enable safe use of internal and external systems regardless of the usage environment
• Establishing a department dedicated to intellectual property management to ensure acquisition and preservation of intellectual property

• Emphasizing social license on co-existence with local communities
• In addition to our own exploration activities, working with business partners overseas to acquire new projects
• Collecting selection of investments based on a decision of profitability from our many years of experience in exploration and mine evaluation, and securing high-quality status in the preparatory stage of development

• Strategic cooperation with government support programs, etc., including government support programs, etc.
• Continuing to develop technologies to maintain and improve the HPAL recovery rate, improve management efficiency, and create business reform and new businesses
• Strengthening of information security
• Enforcement of and support for intellectual property management
• Application of DX to model factories and business sites

• Increase in demand for cathode materials and related technologies
• Increase in demand for cathode materials and related technologies
• Increase in demand for cathode materials and related technologies
• Increase in demand for cathode materials and related technologies
• Increase in demand for cathode materials and related technologies

• Adapting to changing market needs, and putting in place sufficient sales and development structures to respond to market development based on this understanding and to mitigate the impact of such development
• Ensuring the effective functioning of the Group’s quality management system (QMS) to further improve quality and enhance traceability
• Accelerating development through the use of government support programs, joint development with external parties, and industry-academia collaboration

• Accelerating development through the use of government support programs, joint development with external parties, and industry-academia collaboration

• Consequence of contracts that make allowances for resource nationalism
• Information gathering through embassies, governments, and joint partners
• Approach to local communities and indigenous peoples
• Differentiation of materials suppliers and product customers
• Establishment of ECP and crisis management framework
• Consideration of establishment of new plant to increase production of battery materials

• Priority analysis of management impacts caused by fluctuations in metal prices and exchange rates
• Information incorporated into information materials and technology businesses (e.g., LFP), expansion of the advanced materials business
• Promotion of energy conservation (switch to high-efficiency equipment and improvement of manufacturing processes)
• Promotion of large-scale projects
• GHG emissions reduction activities
• Dialogue and co-existence with local communities and enhancement of understanding of Indigenous cultures
• Outflow for mineral procurement
• Expansion of business for low-carbon products (e.g., battery materials and the near-infrared absorbing material C400)

• Strengthening of engagement by raising the brand profile within the Group
• Rationalization and reduction of labor through the introduction of DX, etc. to reduce working hours
• Revision of the personnel system for managerial-track employees
• Raising awareness and actively recruiting by strengthening corporate branding

• Launching a DX Department and developing human resources proficient with digital technologies
• Improving operations through data analysis
• Deepening/continuing improvement and stable operation of production technology
• Strengthening of information security
• Enforcement of and support for intellectual property management
• Application of DX to model factories and business sites

• Operational improvements (dispatch of engineers for stable operation and downsizing, improvement of existing operation equipment, improvement of processing capacities)
• Securing of a sound financial base
• Participation in development of in-house in overseas countries, etc.

• Ongoing study of measures to secure mineral reserves for GINH and THPAL
• Strengthening the search for new nickel projects in the next period
• Promoting the commercialization of battery recycling

• Response to large-scale disasters
• Establishment of ECP and crisis management framework
• Stable supply through an integrated supply chain

Risk Countermeasures

Accelerating development through the use of government support programs, joint development with external parties, and industry-academia collaboration

Spreading up development of LFP battery materials

Compliance with the quality management system and initiatives to further improve quality and strengthen management

Expansion of production by 2,000 tons/month, including construction of a new plant in Nihama (project eligible for a subsidy from the Ministry of Economy, Trade and Industry)

Promoting commercialization of silicon carbide (SiC) substrates

Approach to local communities and indigenous peoples

Compliance with the quality management system and initiatives to further improve quality and strengthen management

Approach to local communities and indigenous peoples

Stricter approval for development and operation

Development of products that contribute to the realization of a carbon-neutral society, etc.

Attract diverse human resources and create innovation
Financial and Non-Financial Highlights

Net Sales

- Consolidated net sales increased by ¥165.9 billion year on year to ¥1,452.0 billion due mainly to the extremely weakened yen, rising nickel prices, and strong sales of automobile battery components.

Profit Attributable to Owners of Parent

- Profit attributable to owners of parent decreased by ¥120.4 billion year on year.

Consolidated net sales increased by ¥163.9 billion year on year to ¥2,707.9 billion due mainly to increases in inventories, property, plant and equipment, investments accounted for using equity method, and other financial assets under non-current assets.

Total assets as of March 31, 2023 increased by ¥439.1 billion year on year, due mainly to increases in inventories, property, plant and equipment, investments accounted for using equity method, and other financial assets under non-current assets.

Equity Attributable to Owners of Parent Ratio of Equity Attributable to Owners of Parent to Total Assets

- Total equity attributable to owners of parent increased by ¥185.4 billion year on year to ¥1,487.8 billion. The ratio of equity attributable to owners of parent to total assets (equity ratio) was 63.9%. We were able to achieve a level higher than 50%, our target for maintaining a sound financial position.

Dividend per Share/Payout Ratio

- Our dividend policy is performance-based. For FY2022, the annual dividend per share was ¥205, comprising an interim dividend of ¥90 and a year-end dividend of ¥115. The payout ratio reached 35.1%, fulfilling the dividend policy of a consolidated payout ratio to be 35% or more in principle in our 2021 3-Year Business Plan.

Net Cash Provided by Operating Activities

- Net cash provided by operating activities decreased by ¥39.1 billion year on year.

Interest-Bearing Liabilities/Debt-to-Equity Ratio

- The amount of interest-bearing liabilities as of March 31, 2023, increased by ¥155.9 billion year on year to ¥457.3 billion. The debt-to-equity ratio increased by 0.07 points year on year to 0.28 times.

ROA/ROE

- ROA decreased by 7.08 points year on year to 6.45%. ROE decreased by 11.32 points year on year to 10.44%.

Capital Expenditure/Depreciation

- We are making the necessary capital investments to maintain, enhance, and improve productivity. Capital investment in the period ending March 31, 2023 increased by ¥76.3 billion year on year, due mainly to a decrease in profit before tax and an increase in inventories due to the impact of an increase in non-ferrous metals prices, despite a decrease in trade and other receivables.

Income Tax by Country or Region (FY2022)

- Income tax by country or region for FY2022 includes the effects of the application of accounting procedures, and significant amounts of income tax due to the changes in accounting principles and methodologies in accordance with the transfer of equity are omitted from the dividend calculation. Basic earnings per share, excluding the effects of this application of accounting procedures, were ¥857.47.

1. The gain on sale associated with the transfer of all equity interest in the Serra Gorda copper mine recorded in FY2022 includes an amount equal to a portion of the allowance for bad debt for loines and other receivables for Serra Gorda SCA, which were adjusted in the opening balance of retained earnings in FY2023 as a cumulative effect (Blended 19). "Investment in associates and joint ventures" for this reason. The FY2021 results reflect the application of these accounting procedures and methodologies in accordance with the transfer of equity.

2. Amounts of interest-bearing liabilities and the figures for the debt-to-equity ratio do not include lease liabilities.

*With regard to equity-method affiliates, the above amounts include the Company’s proportional burden of income tax.
Number of Employees & Officers by Region, Consolidated (As of March 31, 2023)  Numbers in parentheses indicate the change from the end of March 2022.

Number of Employees & Officers Worldwide (Consolidated) Figures are for March 31 of each fiscal year

Capital Expenditure Related to Environmental Preservation

<table>
<thead>
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<th>FY</th>
<th>2018</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
<th>2023 (plan)</th>
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<tbody>
<tr>
<td>Pollution prevention/environmental preservation</td>
<td>5,508</td>
<td>5,244</td>
<td>5,715</td>
<td>7,549</td>
<td>11,694</td>
<td>18,446</td>
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<td>Energy conservation</td>
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<td>141</td>
<td>339</td>
<td>157</td>
<td>477</td>
<td>481</td>
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<tr>
<td>Total</td>
<td>5,608</td>
<td>5,385</td>
<td>6,054</td>
<td>7,706</td>
<td>12,171</td>
<td>18,847</td>
</tr>
</tbody>
</table>

| Ratio of capital expenditure                     | 11.8%  | 10.6%  | 17.9%  | 11.5%  | 8.6%   | 9.5%        |

Distribution of Economic Value to Stakeholders

Number of Employees & Officers Worldwide (Consolidated) Figures are for March 31 of each fiscal year

Occupational Accident Frequency Rate

At business sites in Japan, despite advancing facility safety through risk assessment and enhanced line management through work observation, the number of accidents increased slightly to 24, due mainly to falls. Business sites overseas took effective disaster countermeasures, such as hazard prediction education and safety patrols, and in 2022, too, the situation remains favorable compared to business sites in Japan.

Greenhouse Gas Emissions (Scope 1 and 2)

In FY2022, the SMM Group’s GHG emissions (Scope 1 and 2) were 2,823 kt-CO2e due to an increase in production. Direct GHG emissions reductions from energy conservation and other activities in FY2022 were approximately 6 kt-CO2e.