Review of Past 3-Year Business Plans

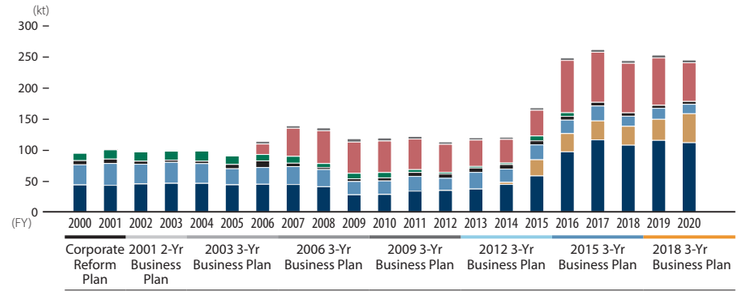
Passing through the business reforming conducted after the JCO criticality accident in 1999, SMM's business plans have continued up to the current growth strategies of the 2018 3-Year Business Plan. From the time of the Corporate Reform Plan (FY2000 to FY2001) that we formulated in 2000 following the accident, and through our 2001 2-Year Business Plan (FY2002 to FY2003), we implemented the selection and concentration of core businesses as a measure to reinforce corporate organization. From the 2003 3-Year Business Plan (FY2004 to FY2006) onward, we steered our course toward the growth strategy and realized long-term growth by expanding and strengthening core businesses, particularly large-scale projects. Following a degree of success in the 2015 3-Year Business Plan (FY2016 to FY2018), we are now tackling further growth upon a new stage under our current 2018 3-Year Business Plan. (FY2019 to FY2021).

	2012 3-Year Business Plan FY2013–FY2015	2015 3-Year Business Plan FY2016–FY2018
Overview	**Long-Term Vision: Become the world leader in the non-ferrous metals industry and an excellent company of Japan** • Growing business and improving corporate value • Promote and establish operations in the Sierra Gorda Project • Complete the Taganito HPAL and ensure a smooth launch of operations • Implement structural reforms in the Materials Business and stable acquisition of own profit • Reduce costs by ¥10 billion/year	**Mineral Resources** • Full-scale production at the Sierra Gorda Copper Mine • Acquire new gold mine interests **Smelting & Refining** • Expand Taganito HPAL • Advance growth strategies using HPAL peripheral technologies • Enhance competitiveness of copper smelting business **Materials** • Profit contribution from expanded battery material and LT/LN production • Continuously create and adapt next-generation products • Corporate governance strengthening • Globalization measures
Results	**Mineral Resources** • Morenci Copper Mine: Complete expansion • Cerro Verde Copper Mine: Expansion: solid progress → Expand copper interest **Smelting & Refining** • Taganito HPAL: Smooth ramp-up to full-scale operations • Electrolytic Nickel: Complete 65-kt production structure • Harima Refinery: Start nickel sulfate production → Establish 100-kt nickel production structure **Materials** • Expand battery materials production • Expand LT/LN substrate production → Create the foundation for the growth	**Mineral Resources** • Enter into Côté Gold project **Smelting & Refining** • Complete 36-kt production structure at Taganito HPAL • Proceed with commercialization of scandium and chromite recovery • Achieve 450-kt electrolytic copper production volume **Materials** • Complete 4,550-t/month battery material production structure • Complete increased LT/LN production structure • Develop nickel oxide powder for fuel cell electrodes • Enter into silicon carbide (SiC) business
Challenges	**Mineral Resources** **Smelting & Refining** • Effective operation of existing mines and smelters/refineries: Cut costs to secure profits • Sowing seeds and planting toward the next 3-Yr Business Plan and beyond **Materials** • Continually create next-generation products that satisfy customer needs	• Enhancing and improving site management capability (production capabilities) and management capability • Creating new products and businesses • Securing and developing the human resources to support growth

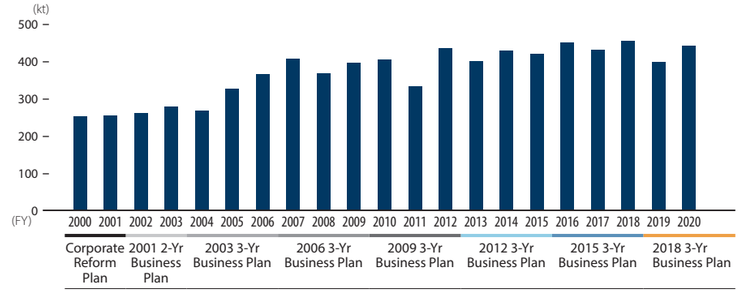
Copper Interest Production

- Morenci (12% + 13%, just 12% up to FY2015)
- Sierra Gorda (31.5%)
- Candelaria (16%)
- Northparkes (13.3%)
- Batu Hijau (5% → 0%)
- Cerro Verde (16.8%)
- Ojos (16%)

(% indicates the Company's interest)



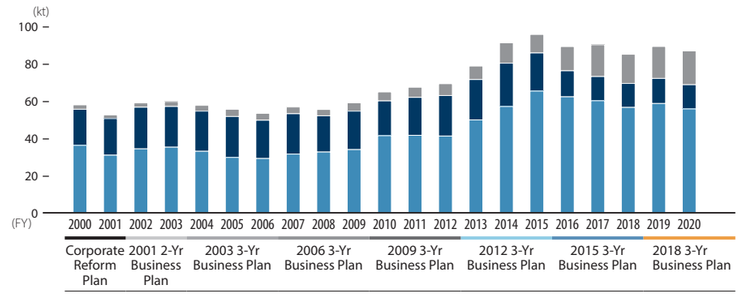
Electrolytic Copper Production



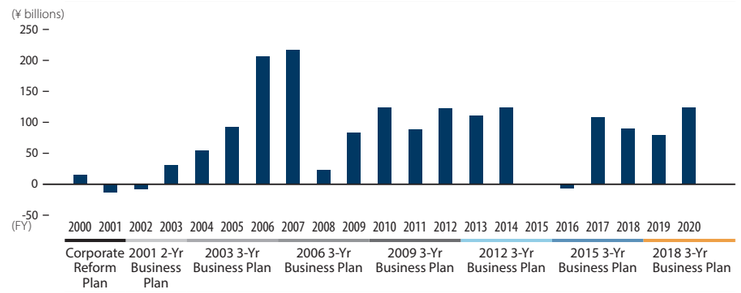
Nickel-based Product Production

- Electrolytic Nickel
- Ferronickel
- Nickel sulfate, other chemical products

Amounts converted to a nickel content basis

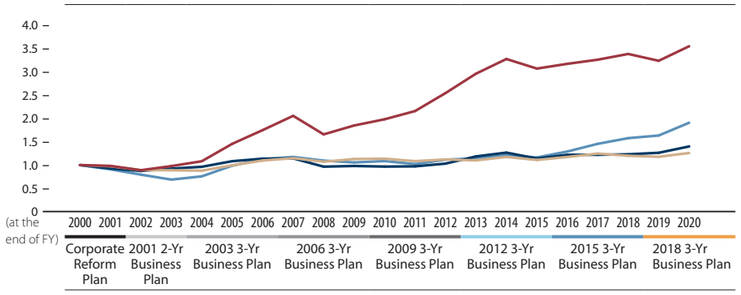


Profit before tax



Growth Rate of Total Assets (book value, compared to the end of FY2000)

- SMM
- Domestic competitor A
- Domestic competitor B
- Domestic competitor C



Progress of the 2018 3-Year Business Plan, FY2020 Results, and FY2021 Plan

Progress of the 2018 3-Year Business Plan

FY2020 marked the second year of the 2018 3-Year Business Plan spanning FY2019 to FY2021. However, some strategies under the plan hit delays due to the COVID-19 pandemic. In the Mineral Resources Business, construction was temporarily suspended at the Quebrada Blanca 2 Project (Chile) due to the pandemic, but has since been restarted. In the Smelting & Refining Business, we are moving the Pomalaa Project (Indonesia) toward annual nickel production of 150,000 tons, and are continuing a definitive feasibility study (DFS). Due to the pandemic, however, obtaining the necessary permits is taking time.

In the Materials Business, in July 2021 we made the decision to increase production of nickel-based cathode materials for automotive secondary batteries by 2,000 tons amid the ongoing electrification of automobiles.

As we now formulate the next 3-Year Business Plan for the period FY2022 to FY2024, our major directions for the growth of core businesses remain unchanged. We will continue working to maximize our corporate value through sustainable growth.

Review of FY2020 Results

In the Group's performance in FY2020, sales declined due to temporary production adjustments in materials for automobile batteries. Despite this, consolidated net sales increased year on year due mainly to prices of copper, nickel, and gold being higher than in the previous year. Consolidated profit before taxes increased year on year due to factors including an increase in income and an upturn in share of profit (loss) of investments accounted for using the equity method. Profit attributable to owners of parent increased year on year due to factors including an increase in consolidated profit before tax.

Three Main Basic Strategies

1 Strengthen the growth foundation of core businesses (Mineral Resources, Smelting & Refining, Materials)

- Steady promotion of growth strategy and swift realization of competitiveness: Aggressive investment
- Minimization of lost profits and opportunity loss and consolidation of business base: Defensive investment

2 Strengthen three-business collaboration centered on cathode materials for batteries

- Maximally leverage the integrated production structure and win through overall capabilities, including battery recycling

3 Strengthen corporate functions

- Stimulate communication with stakeholders both inside and outside the company
- Rebuild an open and vibrant organizational climate

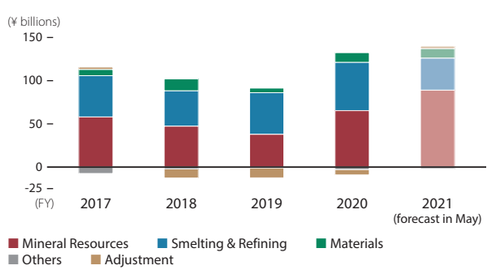
Seize the chances presented by changing times and establish a position as a world leader in the non-ferrous metals industry

Move into a new stage of the growth strategy
Minimize lost profits and opportunity loss

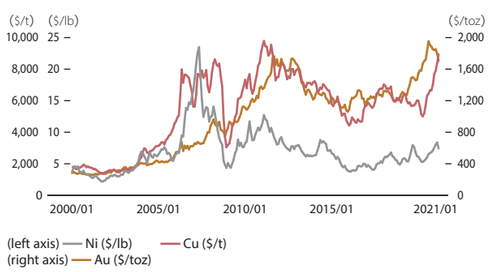
Employees take the initiative and work with resolve to produce results

Investment on an unprecedented scale
Secure and develop the human resources to promote and support growth

Segment Income (Loss)



Metal Prices



● Mineral Resources Segment

Segment income increased year on year due to factors such as increases in gold and copper prices, despite a decline in sales volume due to the COVID-19 pandemic and deterioration attributable to recording of expenses during the suspension of construction at the Quebrada Blanca Copper Mine (Chile).

Mining operations at the Hishikari Mine remained steady. The sales volume of gold was in line with the planned amount, nearly unchanged from the previous fiscal year at 6 tons.

Production volume at the Morenci Copper Mine (United States) (of which the Company holds a 25.0% interest, excluding non-controlling interest) declined year on year to 446,000 tons, due mainly to a decrease in ore throughput.

Production volume at the Cerro Verde Copper Mine (Peru) (of which the Company holds a 16.8% interest, excluding non-controlling interest) declined year on year to 372,000 tons, due mainly to the temporary transition of operations to care and maintenance status in response to the declaration of a national state of emergency under the COVID-19 pandemic.

Production volume at the Sierra Gorda Copper Mine (Chile) (of which the Company holds a 31.5% interest, excluding non-controlling interest) rose year on year to 149,000 tons, due mainly to an increase in ore throughput.

● Smelting & Refining Segment

Segment income increased year on year, due mainly to an increase in non-ferrous metals prices.

Although production and sales volumes of electrolytic copper increased year on year, production and sales volumes of electrolytic nickel decreased in the same period.

The production volume at Coral Bay Nickel Corporation (Philippines) remained unchanged year on year as the impact of the COVID-19 pandemic was minimal. At the same time, the planned shut-down period at Taganito HPAL Nickel Corporation (Philippines) was partially extended due to the pandemic. Following the shut-down, operations resumed largely in line with plans; however, the production level decreased year on year, due in part to heavy rainfall.

● Materials Segment

Despite a decrease in the sales volume of battery materials, etc. as a result of temporary production adjustments, segment income increased year on year, due mainly to an increase in the sales volume of powder and other materials year on year.

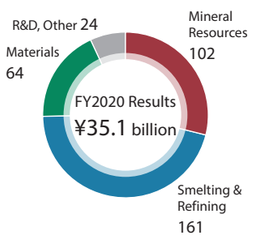
FY2021 Plan

Although the global economy is expected to recover to an extent due to countries' monetary and fiscal policies in response to the COVID-19 pandemic as well as the proliferation of vaccination, rapid economic deterioration is a possibility, depending on the COVID-19 situation. While non-ferrous metals prices have remained high due to expectations of an economic upturn and the inflow of surplus funds into commodities markets, prices are at a level considered out of line with the supply and demand environment and a risk of sharp decline is assumed.

In industries related to the Materials Business, although continued demand growth is expected due to accelerated efforts to achieve carbon neutrality and support digital transformation, the situation remains unpredictable due to concerns including the impacts of shortages of semiconductors for automobiles.

In the forecast for FY2021 consolidated operating results, our forecast for major non-ferrous metals prices was set through consideration of levels at the time of plan formulation and prediction of future supply-demand balance. Production and sales volumes of major products were planned on the basis of the business environment. We expect net sales of ¥1,047.0 billion, profit before tax of ¥138.0 billion, profit of ¥114.0 billion, and profit attributable to owners of parent of ¥104.0 billion on a consolidated basis.

Capital Expenditure Results and Plans (FY2020 Results and FY2021 Plan (May))



Main projects of the FY2021 Plan (May)
(Figures in parentheses are total amounts under the plan)

- Côté Gold Project: ¥18.6 billion (total US$395 million)
- Expansion and improvement of Battery Research Laboratories: ¥1.4 billion (total ¥1.6 billion)
- Besshi-Niihama District Div. new company dormitory: ¥1.0 billion (total ¥4.7 billion)
- Development of lower orebodies at Hishikari Mine (construction of new hot spring water extraction room): ¥0.4 billion (total ¥3.7 billion)
- Switch to LNG boilers*: ¥0.2 billion (total ¥0.8 billion)

* Project subject to internal carbon pricing

Financial Strategy

Basic Approach

Because the SMM Group deals in resources that become depleted, we must always prepare to participate in large-scale projects in order to acquire new resource interests. Mineral Resources Business and Smelting & Refining Business development projects, including the construction of new smelters and refineries, involve relatively long periods of time between execution and recovery of investment. Accordingly, it is important to maintain a sound financial position that can withstand large temporary cash outflows. Based on this thinking, we set a consolidated equity ratio of 50% or more as a foundation for our financial strategy. As of the end of FY2020, our consolidated equity ratio was 59.1%.

Funding

We believe it is necessary to maintain a certain amount of liquid funds on hand based on overall demand for funds such as for large-scale overseas projects in the Mineral Resources and Smelting & Refining businesses, or strategic expansions within the Materials Business. This is essential from the standpoint of management stabilization. Under that premise, we conduct funding in line with the use of the funds, while comprehensively considering the outlook for non-ferrous metal prices and currency exchange, conditions in interest rate markets, and other factors.

In FY2020, based on the state of progress of large-scale projects, we worked to reduce interest-bearing liabilities by allocating cash inflows generated through operating activities to the repayment of debt, without undertaking new funding for projects. As a result, our interest-bearing liabilities in FY2020 decreased by ¥37.2 billion to ¥330.7 billion.

Investment

Raw material ores for non-ferrous metals are subject to sharp price fluctuations related to supply and demand, natural disasters, and other factors, and it is not always possible to secure necessary quantities of ores due to price levels. For this reason, we must secure stable sources of raw materials through the development of overseas mines and acquisition of interests. In mine development and acquisition of interests, and in large-scale overseas projects in the Smelting & Refining Business, we carry out investments by leveraging our extensive exploration experience, knowledge of mine valuation, and smelting and refining technologies, with country risk and local issues fully taken into account, to avoid additional investments or increases in costs arising from uncertainty. We also carefully select and execute capital investments other than large-scale projects, with full consideration of investment effect and efficiency (profitability).

Investment in FY2020 totaled ¥35.1 billion, falling with the scope of cash flow from operating activities (¥91.5 billion).

In our 2018 3-Year Business Plan, we planned for a total of ¥490.0 billion in capital investment and in investment and financing over the course of three years. However, we expect progress in these outlays to reach only about 50% of the planned amount due to delays in investment period and other impacts of the COVID-19 pandemic.

Return to Shareholders

In our dividend policy, we decide on a balance of dividends and internal reserves through comprehensive consideration of our business performance, our dividend payout ratio, the business outlook, the soundness of our financial position, and other factors. As our financial strategy in the 2018 3-Year Business Plan, we will continue working to uphold the soundness of our financial position and will maintain a consolidated equity ratio of 50% or higher, with a consolidated dividend payout ratio of 35% or higher. In FY2020, we increased the annual dividend by ¥43 from the previous fiscal year to ¥121, for a dividend payout ratio of 35.1%.

■ Share Price (Share prices calculated with share price at the end of March 31, 2011 set to 100)

■ Share Price Performance (TSR)

Investment period	1 year	3 years		5 years		10 years	
	Cumulative and Annualized	Cumulative	Annualized	Cumulative	Annualized	Cumulative	Annualized
SMM	120.9%	12.7%	4.1%	131.5%	18.3%	93.2%	6.8%
TOPIX	41.8%	20.3%	6.4%	57.8%	9.6%	157.8%	9.9%
TOPIX Nonferrous Metals	66.1%	-0.2%	-0.1%	53.0%	8.9%	56.3%	4.6%

Source: Bloomberg
- TSR (Total Shareholder Return): Calculated using ([share price at the end of the fiscal year ended March 31, 2021] – [share price at the end of the fiscal year X years previous to the fiscal year ended March 31, 2021] + [total cash dividend per share for the relevant period]) ÷ [share price at the end of the fiscal year X years previous to the fiscal year ended March 31, 2021]
- Annual cash dividend per share for TOPIX and TOPIX Nonferrous Metals: Calculated using the weighted average of the cash dividend per share value for each stock over the 12 months previous to the base date and the formula used by TOPIX itself (Calculated using Bloomberg values)

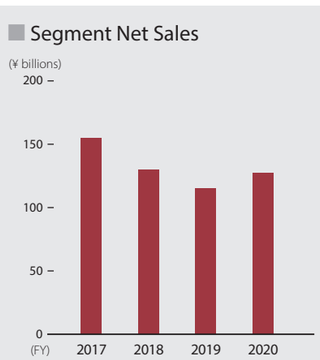
Mineral Resources Business

Expanding the development and operation of superior mines globally

Ryoichi Sato
Managing Executive Officer,
General Manager of Mineral Resources Division

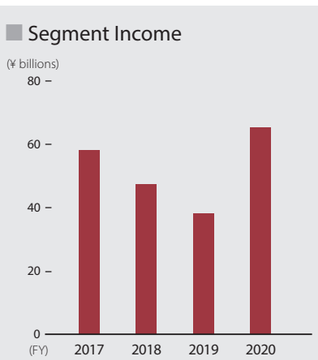
The Mineral Resources Business is leveraging over 300 years of mine development and operational experience that we have inherited to operate the Hishikari Mine, Japan's largest gold mine, and to participate in mine development and operation projects around the world. We work to secure mineral resources by pursuing new superior mines and advancing projects in countries all over the globe.

Segment Net Sales



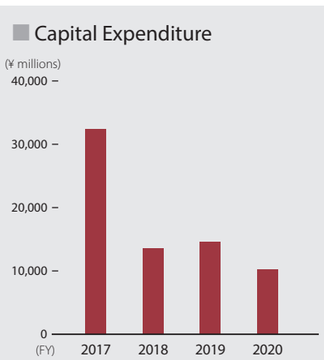
Net sales figures do not include results from affiliate companies accounted for using the equity method.

Segment Income



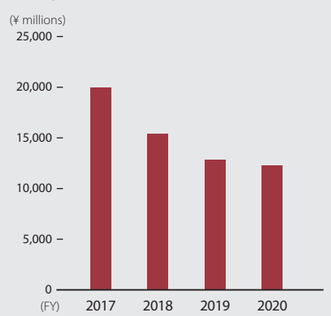
In FY2020, segment income rose year on year, mainly due to increases in gold and copper prices and despite negative factors such as a decrease in sales volumes due to the impact of the COVID-19 pandemic. This income includes profit from investments accounted for using the equity method.

Capital Expenditure

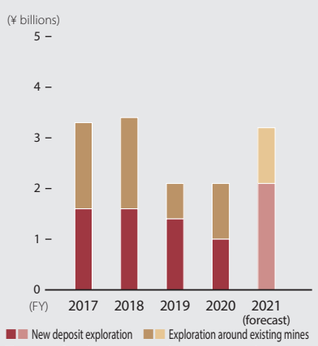


The SMM Group continued to carry out capital expenditure at Hishikari Mine, primarily focusing on exploration and development. We also invested capital to carry out construction in the Côté Gold Project and to support mining and production at overseas mines, including the Morenci Copper Mine.

Depreciation and Amortization Expense



Exploration Costs



The cost of exploration around existing mines has decreased since FY2019 due to the divestment of the Pogo Gold Mine and in FY2020, new deposit exploration costs also decreased due to the COVID-19 pandemic.

Recoverable Gold Reserves at the Hishikari Mine

(gold: tons)

2016	2017	2018	2019	2020
169	169	167	163	159

Recoverable reserves of gold at the Hishikari Mine, calculated as of December 31, 2020, are 159 tons (down 4 tons from last fiscal year).

Review of FY2020

In FY2020, as the situation regarding the effects of the COVID-19 pandemic remained unclear, we implemented anti-infection protocols (monitoring, prevention, and management planning) at each of our mines and projects and worked to minimize impact through cost-cutting measures. In regard to our major mines, mining operations at the Hishikari Mine remained steady, and the volume of gold produced was in line with the planned amount.

Production volumes at the Morenci Copper Mine (U.S.) exceeded the planned amount mainly due to a high level of cathode production. At the Cerro Verde Copper Mine (Peru), we limited operations at the request of the government as part of measures to prevent the spread of COVID-19 infections. However, once these measures were lifted, mining operations remained steady, and we were able to keep the decrease in production volumes to a minimum. At the Sierra Gorda Copper Mine (Chile), the results of the accumulated operational improvements made to date were reflected in production levels, and we were able to achieve every major indicator according to plan, including ore processing volume, recovery rate, and production volume. In the Quebrada Blanca 2 Project, which is one of the three major projects in our 2018 3-Year Business Plan, construction was halted for several months from March 2020 in order to ensure the safety of workers involved in the construction as the COVID-19 pandemic spread. Construction restarted after thorough anti-infection measures were put in place and at present, we have mobilized a greater number of workers than before construction was halted while keeping infections under control. The Côté Gold Project (Canada) has been progressing according to plan since the decision to begin construction was made in July 2020. We are also continuously working to raise the value of the project through exploration activities in the surrounding area.

Business Environment and Outlook

The COVID-19 pandemic has also had a huge impact on the mining industry.

Regarding copper supply, there was a big decrease in production volumes following the manifestation of the pandemic in March 2020 as many mines halted operations. However, from May onward, mine operations restarted under anti-infection measures, dispelling concerns about supply. In early 2021, sharp rises in copper prices prompted discussions about raising taxation and strengthening the regulations of the mining industry, which is a concern for the future.

Copper demand dropped significantly in the first half of 2020 as economies slumped. Within this, demand in China recovered from March 2020 due to economic stimulus measures, such as large-scale investment in infrastructure, and movement toward the restart of economic activity. There was also an upward trend in demand in other countries as measures for coming out of lockdown were planned. Additionally, copper has been attracting attention as a "green metal" that has many applications in electric vehicles and the renewable energy industry, so demand is forecast to rise in the long-term.

In March 2020, the price of copper was 4,618$/t, its lowest price since 2016, due to a fall in demand accompanying the COVID-19 pandemic. However, as economic activity restarted due to monetary easing and economic stimulus measures carried out around the world, demand also recovered. This led to a rapid rise in price toward the end of the fiscal year and as of March 2021, prices were in excess of 9,000$/t.

Regarding gold prices, the declaration of the pandemic in the middle of March 2020 led to a temporary decline in investor confidence, resulting in 2020's lowest price of 1,477$/toz. However, lower interest rates accompanying monetary easing and a sense of uncertainty about the pandemic drove a sharp rise in price, reaching a record high of 2,058.15$/toz in August. Following this, the recovery prospects of the global

economy led prices to decline again and in March 2021, gold was 1,720$/toz.

Progress on the 2018 3-Year Business Plan and Future Strategy

Advancement of the Quebrada Blanca 2 Project

This project is being advanced under the firm leadership of our business partner Teck Resources Limited ("Teck"). Full-scale construction on the project began in January 2019 and has been progressing smoothly.

In April 2021, we completed 50% of overall progress on the project. Going forward, we will continue to move the project forward in close cooperation with Teck with a view to realizing our Long-Term Vision target of copper production from interests of 300 kt/year.

Mineral processing facility location: About 165 km southeast of Iquique, Region 1, Chile

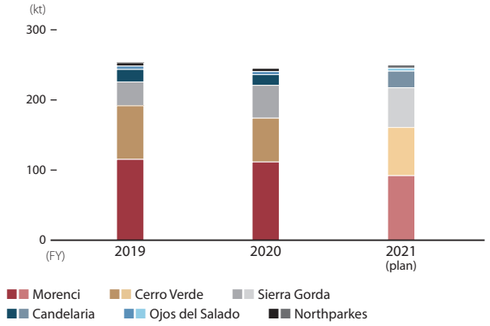
Port location: About 60 km south of Iquique, Region 1, Chile

Overview of the Quebrada Blanca 2 Project

Equity interest	Teck 60%, SMM 25%, Sumitomo Corporation 5%, other 10%
Planned investment	US$5.2 billion (100% of the project, includes effects of inflation)*
Average annual copper production volume	240 kt

* Figures do not take into account the effects of the COVID-19 pandemic.

Copper Production from Interests



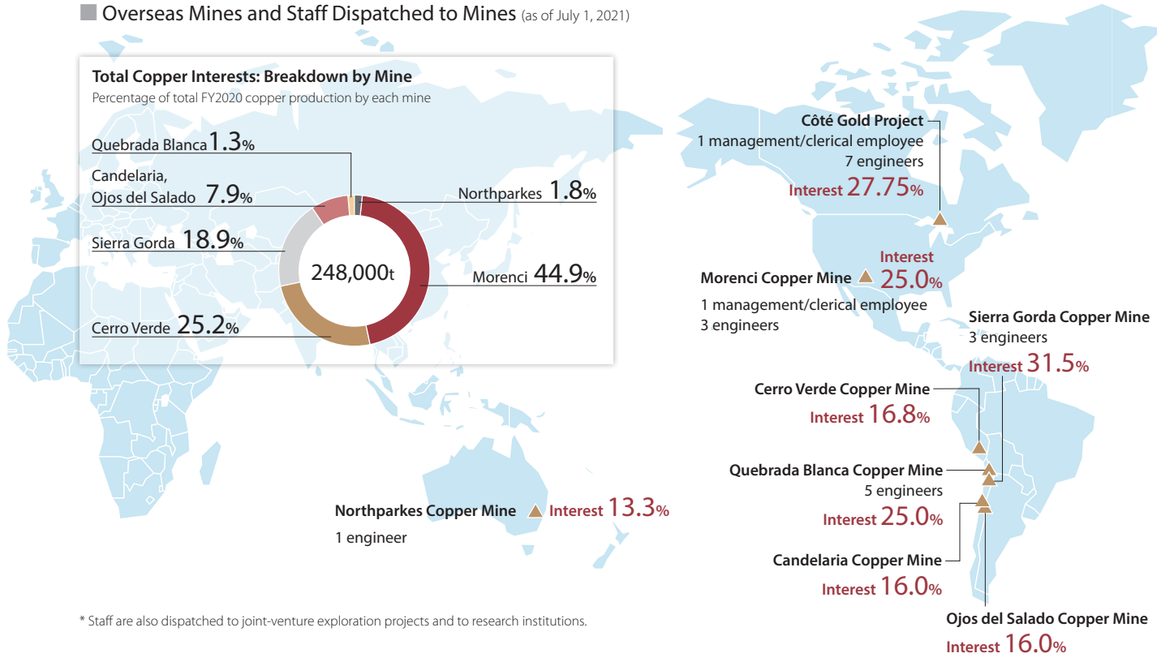
Progress of Debottlenecking at the Sierra Gorda Copper Mine

At the Sierra Gorda Copper Mine, the debottlenecking project (a project to enhance operations by strengthening a portion of existing operational lines) that has been considered and implemented since 2017 was completed in December 2020 and ore processing capacity has been increased from 110 kt per day to 130 kt. The annual copper production volume for FY2020 was 149 kt (as 100% equity interest), a record high. In FY2021, we will continue advancing measures to reduce costs while stably maintaining a 130-kt per day ore processing structure.

Promotion of the Côté Gold Project

This is a gold mine development project being advanced together with Canadian gold producer IAMGOLD Corporation ("IMG"). In July 2020, the decision was made to begin construction. In September 2020, a groundbreaking ceremony was held attended by guests including Canadian Prime Minister Justin Trudeau. In FY2021, construction has been progressing steadily under thorough anti-infection protocols,

Overseas Mines and Staff Dispatched to Mines (as of July 1, 2021)



* Staff are also dispatched to joint-venture exploration projects and to research institutions.

Progress and Plans on Our Top Priorities

	FY2019	FY2020	FY2021	FY2022	FY2023 and later
Cu Sierra Gorda Copper Mine	● Operational structure that can process 110 kt/day ● Debottlenecking underway	● Operational structure that can process 130 kt/day	● Planned increase in copper production to 180 kt/year		
Cu Morenci Copper Mine	● Exceeded planned production volume	● Consideration of cost reductions and investment postponements			
Cu Cerro Verde Copper Mine		● Temporary operation under care and maintenance -> Restart			
Cu Candelaria Copper Mine		● Operations halted due to strike -> Restart	● Mining delayed due to pit safety concerns		
Cu Quebrada Blanca 2 Project	● Acquisition of interest	● Temporary halt of construction -> Restart			● Start of production scheduled
Au Hishikari Mine		● Continuing lower orebody development			
Au Côté Gold Project		● September: Groundbreaking ceremony ● October: Start of construction			● Start of production scheduled

Strategies for the Mineral Resources Business in the 2018 3-Year Business Plan

1 Promotion of the Quebrada Blanca 2 Project

2 Stabilization of operations at the Sierra Gorda Copper Mine

3 Promotion of the Côté Gold Project

4 Hishikari Mine: Establishment of a foundation for long-term stable operation

primarily work to prepare the land at the site planned for the mineral processing area and work to reroute a river that flows through the planned pit site. We are continuing to collaborate closely with IMG to advance the project with the goal of starting production in 2023. Also, in 2020, exploration activities in the Gosselin zone, located about 1.5 km to the northeast of the planned pit site, confirmed continuing gold mineralization. We will continue test boring activities aimed at raising the future value of the project and will analyze information such as the continuity and grade of the ore body.

The Côté Gold Project construction site

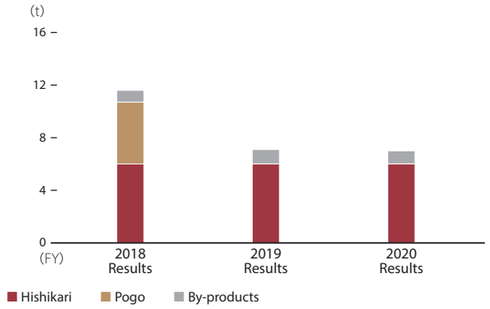
An explanation using a model given at the groundbreaking ceremony attended by Prime Minister Trudeau

Long-Term Stable Operation at Hishikari Mine

The Hishikari Mine (Kagoshima Prefecture) has produced 254.2 tons of gold (as of the end of March 2021) since it opened in 1985. Worldwide, the amount of gold contained in gold ore is said to be three to five grams per ton. However, the Hishikari Mine is characterized by its high grade with 20 grams of gold per ton, or about five times the average. The mine continues to produce about six tons of gold per year. As of the end of December 2020, the mine has recoverable reserves of 159 tons. We have been continuing stable mine operations while taking measures to prevent COVID-19 infections and our planned annual gold production volume for FY2021 is six tons. We are also carrying out the ongoing development of the mine's lower orebody with safety as our first priority.

We use the Hishikari Mine as a place for human resources development where resource engineers can accumulate the skills and experience needed for mine operation. We will continue to use the mine to develop human resources and to link these activities to overseas development.

Au Production (SMM's interests)



Hishikari Mine (Location: Isa, Kagoshima Prefecture)

Exploration Plans and Acquisition of New Interests

The possibility of success in exploration is said to be on the decline worldwide. However, exploration experts in the SMM Group are taking actions to enhance the chance of success through the strict selection of projects. We actively investigate gold- and copper-related exploration projects in high-potential regions, mainly in the Pacific Rim, and conduct exploration both on our own and through joint ventures. In regard to joint ventures, we actively participate in exploration projects that deliver results at the initial stage.

In addition to exploration activities, we also look to acquire new mine interests by continuously considering participation in projects all over the world. Although there is a global trend toward mine development taking place in increasingly remote locations and with increasingly lower grade ore, which results in a decrease in chances to participate in projects with promising conditions, we will use our extensive human network in the mining industry to ensure we do not miss any excellent opportunities for growth.

Sustainability Topics

Excavation at the Quebrada Blanca 2 Port Construction Site

Related: Vision for 2030, p. 91

In the Quebrada Blanca 2 Project, which we are advancing together with Teck, work to strip land in the port area led to the discovery of a number of important archaeological artifacts from a BCE culture and burial sites of indigenous peoples. In light of these historic discoveries, the Chile's National Monuments Council established a committee that includes government-affiliated members and there has been an ongoing constructive exchange of opinions. Work on the project in the area where the discoveries were made has been temporarily halted and careful excavation work was carried out with archaeologists and government-affiliated observers in attendance. The discovered artifacts were properly preserved and we carried out the required approval procedures. The National Monuments Council and government-affiliated observers have assessed the project as exemplary in regard to properly conserving cultural heritage. We will continue to carry out ESG initiatives, including cultural heritage conservation, at overseas mine development sites in the future.

Developing Human Resources and Enabling Them to Work Actively in the Mineral Resources Business

Related: Vision for 2030, p. 83-86

In the Mineral Resources Business, we are leveraging the strengths possessed by the Hishikari Mine by using it as a Mining School where new employees specializing in resources who have been assigned to the Hishikari Mine or Niihama Research Laboratories can acquire specialist skills and skills related to overall operations through OJT within Japan. Once employees complete this training, we ensure they accumulate a variety of experiences, such as onsite development and operations experience at an overseas mine or project management experience at the Head Office, in order to cultivate technicians who can work actively around the world.

Going forward, we are actively looking to carry out onsite surveys of overseas projects with a view to acquiring superior new interests, and we think that participating in this process will provide particularly valuable experience to each employee involved.

Striving Toward Digital Transformation in the Resources Business

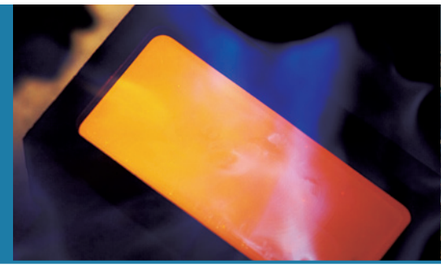
Related: Vision for 2030, p. 68-70

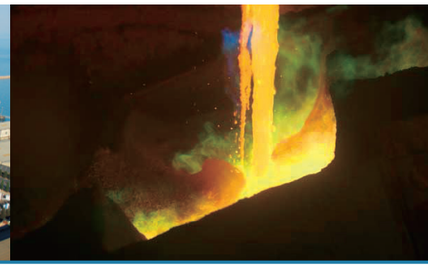
Major resources companies, among others, are introducing IoT and AI technology to improve their resource business operations. The Mineral Resources Division has been sharing technology with joint venture partners and continuously investigating the latest technologies, and we are advancing digitalization with a focus on three areas: establishing infrastructure, making operations more efficient, and making maximum use of information. At the Hishikari Mine, we are preparing to establish communications infrastructure within the mine in order to collect digital data and enable machinery to be operated automatically or remotely. We are also using AI to analyze exploration data from the area around the mine. Additionally, we are building a database for collecting daily production and management data in order to make the management of operations more efficient at mines in Japan and overseas and at closed mines in Japan, and to enable faster information sharing between business sites. We will also take changes in work styles into consideration as we make the maximum use of digital data to strengthen our competitive edge.

Smelting & Refining Business

Leveraging advanced technological capabilities to provide a stable supply of the metal materials that support society

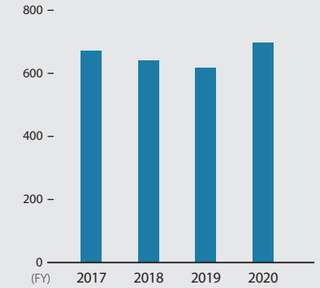
Nobuhiro Matsumoto
Director, Managing Executive Officer,
General Manager of Non-Ferrous Metals Division



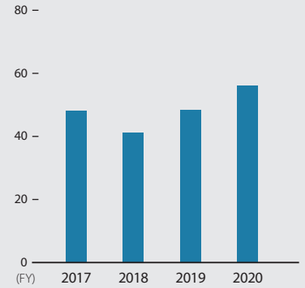


The Smelting & Refining Business has been developing and fine-tuning smelting and refining technology for over 430 years since the Company's foundation. This enables us to provide a stable supply of high-quality metal materials made using difficult to recover low-grade ores as a base material. We are also contributing to the formation of a sustainable, circular economy through initiatives such as recycling various metals and reducing greenhouse gas emissions.

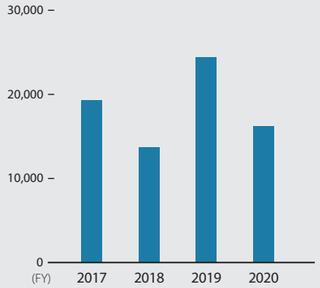
Segment Net Sales



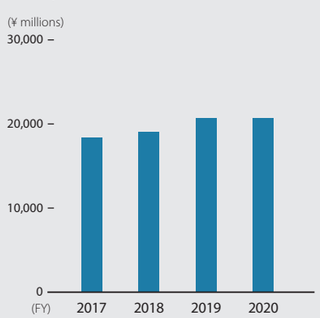
Segment Income



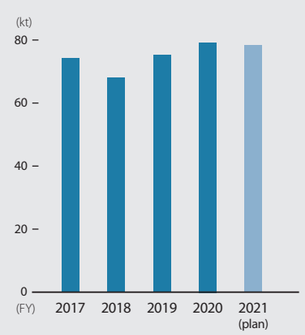
Capital Expenditure



Depreciation and Amortization Expense



Production Volume of Nickel Sulfate



TC/RC (benchmark)

Review of FY2020

In FY2020, as COVID-19 infections spread around the world, we were able to continue operations at our business sites in Japan and overseas while carrying out anti-infection measures such as requiring masks to be worn, ensuring physical distance between employees, limiting the number of participants at meetings, and encouraging remote working. As a result, we were able to keep the impact on areas such as raw materials procurement and planned stoppage schedules to a minimum and production volumes at each business site were roughly according to plan.

In regard to sales, there was a slowdown in the Japanese market, particularly during the first half of the fiscal year, so we implemented countermeasures such as increasing volumes for export.

In the Pomalaa Project, we are continuing to carry out a definitive feasibility study (DFS) but in FY2020, the effects of the COVID-19 pandemic meant that it took time to obtain permissions and coordinate with partners. We will continue carrying out the study to enable a decision to be made as early as possible.

Also, although the effects of the pandemic were felt all year round, we continued to address business issues such as reinforcing production capabilities, securing raw materials, and strengthening collaboration with other business divisions, particularly the Battery Materials Division. Our main successes in FY2020 included achieving record production volumes of nickel sulfate, a cathode material for lithium-ion secondary batteries, and the achievement by Taganito HPAL Nickel Corporation (THPAL) of mixed nickel-cobalt sulfide (MS) production levels of about 30 Ni-kt (or 30,000 tons of nickel) despite the effects of the COVID-19 pandemic.

Business Environment and Outlook

The COVID-19 pandemic continues to strongly affect the business environment around the Non-Ferrous Metals Division.

Regarding raw materials procurement, in FY2020, the pandemic caused a certain amount of disruption at mines and shipping ports, but we worked to minimize the impact as much as possible. At present, we expect to be able to secure the raw materials we require but we will continue to closely monitor the situation.

Regarding sales, the slowdown that began last year continues to affect some sectors of the Japanese market but there are signs of recovery overall. On a global scale, demand seems to be breaking free of the effects of the pandemic and gradually growing. Furthermore, an expansion in the applications of copper and nickel in the renewable energy sector and in electric vehicles, particularly as a battery material, is expected so demand is forecast to grow going forward.

In addition to this anticipated growth in demand, recently various countries have enacted economic stimulus measures and surplus funds resulting from this have flowed into the non-ferrous metals market, which has raised metal prices.

Also, the growing use of nickel as a battery material is leading to the emergence of technologies for converting nickel pig iron, which was previously used in Indonesia and other countries to manufacture stainless steel, into battery materials such as nickel sulfate. We are watching this trend closely.

Progress on the 2018 3-Year Business Plan and Future Strategy

Nickel Business

In the Pomalaa Project, the nickel business' most important project, we are continuing to investigate whether or not to invest in a nickel refining plant that uses HPAL technology in Indonesia. We are already carrying out a DFS together with our project partners, but at present, the effects of the COVID-19 pandemic means that it is taking time to obtain permissions and coordinate with partners. We will continue to carry out the study to enable an investment decision to be made as early as possible.

THPAL Plant

At THPAL, we previously had frequent trouble with equipment which led to a decrease in operating capacity. However, we have taken various measures in response to this, including revising inspection and maintenance procedures, upgrading equipment, promoting preventive maintenance, and strengthening the management of spare parts. As a result, MS production levels reached 32.3 Ni-kt in FY2019 and 29.4 Ni-kt in FY2020, despite the effects of changes to planned stoppage schedules (a decrease of about 2 Ni-kt) due to the pandemic. Going forward, we will continue to enhance operating rates.

At the Niihama Nickel Refinery, in FY2020 we completed capital expenditure aimed at enhancing capabilities for removing impurities, such as iron and copper, from raw materials in anticipation that it will become difficult to secure high quality materials with low levels of impurities in the future. We will use the results of this expenditure in order to broaden the scope of raw materials we procure going forward.

At Hyuga Smelting Co., Ltd., we continued to focus on maintaining the stable operation of a structure comprising two kilns and one electric furnace. In FY2020, raw material procurement was slightly hindered by disruptions at raw material sourcing regions due to the COVID-19 pandemic, but we were able to achieve planned production levels.

We are also continuing consideration of various measures for maximizing synergies between the nickel business and the battery materials business. In FY2020, the Harima Refinery and Niihama Nickel Refinery achieved record production volumes of nickel sulfate. For details on our various other initiatives, see the Special Feature (p. 30–33).

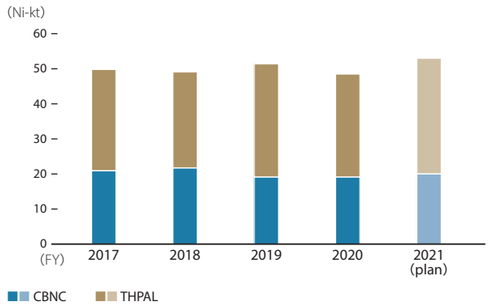
Copper Business

In FY2019, the Toyo Smelter & Refinery produced 399 kt of electrolytic copper. This fell below planned production levels due to factors such as a decrease in anode production caused by equipment trouble. From the second half of FY2019 through to FY2020, we undertook various measures to improve this situation, including renewing and repairing various smelting and refining equipment and reducing the rate of loss in other areas. As a result, the electrolytic copper production volume for FY2020 was 443 kt, roughly level with plans.

As an ongoing effort to reduce instances of equipment trouble, going forward we will strengthen efforts to carry out planned maintenance and renewals of equipment, as well as preventative maintenance, with the aim of further enhancing operating rates.

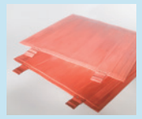
Also, regarding copper smelting and refining, factors such as the fact that the grade of copper found in copper concentrate has fallen by about 20% compared to 20 years ago mean that it has become difficult to secure superior ores. Therefore, to maintain electrolytic copper production volumes, we are investing in enhancing our ability to process more raw materials by eliminating bottlenecks in smelting and refining processes.

■ MS Production Volume



■ SMM Group Refineries and Their Main Products

Toyo Smelter & Refinery



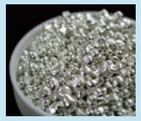
Electrolytic copper

Copper sulfate

Gold ingots

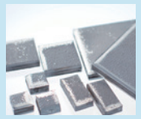
Slag sand

Gold shot



Silver shot

Niihama Nickel Refinery and Harima Refinery



Electrolytic nickel

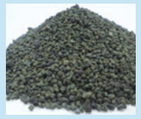
Electrolytic cobalt

Nickel sulfate

Nickel chloride

Hyuga Smelting Co., Ltd.

Ferronickel shot



Green sand

Shisaka Smelting Co., Ltd.

Zinc oxide pellets

Coral Bay Nickel Corporation
Taganito HPAL Nickel Corporation

MS (mixed nickel-cobalt sulfides)

■ Progress and Plans on Our Top Priorities

	FY2019	FY2020	FY2021	FY2022	FY2023 and later
Ni Pomalaa Project			● Decision on investment following in-progress DFS ● Continuation of procedures and discussions		● Operation to start in the second half of the 2020s (target)
Ni Taganito HPAL Nickel Corporation	● Achievement of at least 30-kt production volume ● Start of commercial production of chromite ● Start of commercial production of scandium oxide				
Ni Nickel sulfate Niihama Nickel Refinery and Harima Refinery	● Achievement of record high production level (75.1 kt)	● Achievement of new record high production level (79.1 kt) ● Maximum production and output to meet cathode material demand			

■ Strategies for the Smelting & Refining Business in the 2018 3-Year Business Plan

1 Expansion of our nickel business

- Promotion of Pomalaa Project to achieve 150-kt production structure

2 Reinforcement of production capabilities

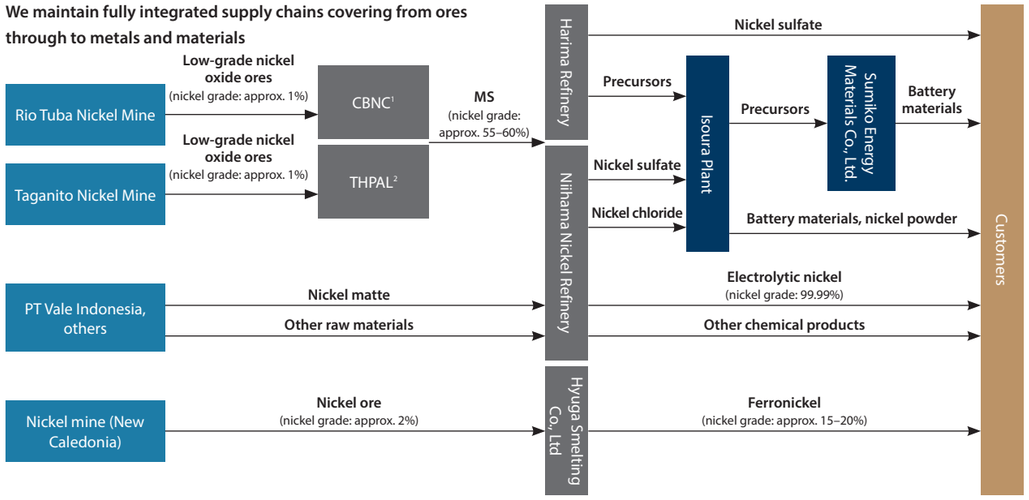
- THPAL: Establishment of a stable, full-scale production structure
- Toyo Smelter & Refinery: Establishment of a stable production system and the pursuit of earning capacity
- Niihama Nickel Refinery and Harima Refinery: Continuous implementation of productivity improvements and cost reductions
- Maximization of HPAL by-product recovery
- Hyuga Smelting Co., Ltd.: Maximization of production level under structure of two kilns and one electric furnace

Greenhouse Gas Emission Reduction Initiatives

We are continuing to implement initiatives for reducing greenhouse gas emissions at each of the Non-Ferrous Metals Division's business sites. At each of our plants, we are actively implementing measures such as improving fuel consumption per unit, recovering waste heat from smelting and refining exhaust gas, expanding the use of recycled fuels, introducing highly efficient energy-conserving equipment, and installing LED lighting. Going forward, we intend to further expand measures aimed at reducing greenhouse gas emissions.

Supply Chains for Realizing a Stable Supply of Nickel

We maintain fully integrated supply chains covering from ores through to metals and materials



1. Coral Bay Nickel Corporation (CBNC): Shareholders: Sumitomo Metal Mining Co., Ltd. (54%); Mitsui & Co., Ltd. (18%); Sojitz Corp. (18%); Nickel Asia Corporation (10%). Head Office: Rio Tuba, Bataraza, Palawan Province, Philippines.
2. Taganito HPAL Nickel Corporation (THPAL): Shareholders: Sumitomo Metal Mining Co., Ltd. (75%); Mitsui & Co., Ltd. (15%); Nickel Asia Corporation (10%). Head Office: Taganito, Surigao del Norte Province, Philippines.

Sustainability Topics

Utilizing Low-Grade Nickel Ore Through HPAL Technology

Related: Vision for 2030, p. 68–70

The HPAL process adopted at Coral Bay Nickel Corporation (CBNC) and THPAL is able to recover metals such as nickel and cobalt from low-grade nickel oxide ore conventionally not subject to smelting and refining, meaning it has huge significance in terms of effectively utilizing unused resources. Our supply chains also enable the stable production of nickel and cobalt, which face growing demand for use in secondary batteries, and this has become a strength of the Group's nickel business.

Winning the Presidential Mineral Industry Environmental Award in the Philippines

Related: Vision for 2030, p. 75–79

In March 2021, CBNC and THPAL were presented with the 2020 Presidential Mineral Industry Environmental Award (PMIEA) by the Philippine Department of Environment and Natural Resources. This is the sixth time CBNC has received the award and the first time for THPAL.

PMIEA is the highest honor that can be awarded in the Philippine mining industry. It was given to CBNC and THPAL in recognition of their continuing operations in the Philippines that give consideration to both safety and the environment.

Moving forward, CBNC and THPAL will continue to operate in a socially responsible manner and contribute to surrounding areas by building infrastructure for local communities, increasing employment, sourcing materials locally, and other initiatives. They will also strive to operate with minimum environmental impact, prevent environmental accidents, and preserve biodiversity through initiatives such as greening tailings dams to restore ecosystems.

The award trophies (left: CBNC, right: THPAL)

Recovering and Reusing Raw Materials from Used Lithium-Ion Secondary Batteries

Related: Vision for 2030, p. 68–70

We are working to recover and reuse the copper and nickel contained in used lithium-ion secondary batteries through a process that combines the Toyo Smelter & Refinery's copper smelting and refining processes and the Niihama Nickel Refinery's nickel smelting and refining processes.

This process is the first practical application in Japan for recovering copper and nickel from used lithium-ion secondary batteries.

In particular, the recovered nickel is processed as a secondary battery cathode material at the Isoura Plant, realizing Japan's first "battery to battery" recycling using materials recovered from used lithium-ion secondary batteries.

SMM is working to form a sustainable, circular economy and to contribute to addressing global resource depletion through the promotion of resource recycling. We are doing this by continuing research and development focused on reusing resources from used lithium-ion secondary batteries, including developing processes that enable the recovery of cobalt and lithium (see p. 62).

Smelting & Refining University

Related: Vision for 2030, p. 83–86

Since 2017, we have been holding Smelting & Refining University for young technical employees in the Smelting & Refining Division. Employees participate in the university after they have built up some experience in their assigned department. The aim is for employees to learn the theory behind onsite production processes and to develop problem-solving skills by once again participating in an off-the-job training environment.

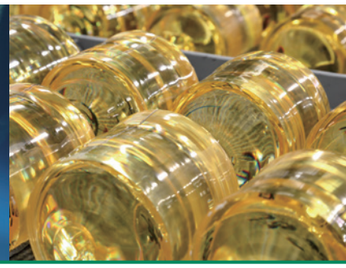
Smelting & Refining University is carried out through two lectures a week, given by lecturers that include researchers from the SMM research laboratories and section managers from various plants. It provides participants with a valuable opportunity to acquire specialized knowledge and learn how to approach problems as a smelting and refining engineer. Going forward, we will continue holding the Smelting & Refining University program and focus on cultivating smelting and refining engineers to take over the skills and technologies developed by the Group.

Materials Business

Addressing the needs of the times and adding new value to materials

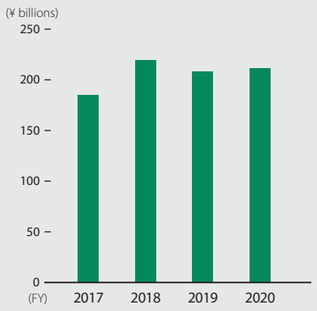
Isao Abe
General Manager of Battery Materials Division

Kazunori Takizawa
Executive Officer, General Manager of Advanced Materials Division

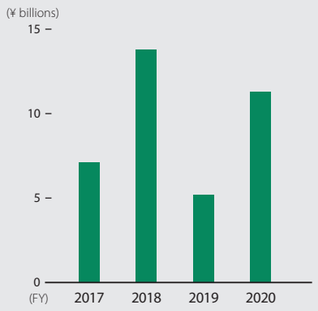


The Materials Business develops and produces cathode materials and other materials for secondary batteries, for which demand is expected to grow under the advance of electric vehicles, as well as advanced materials used primarily in the fields of energy, the environment, and ICT.

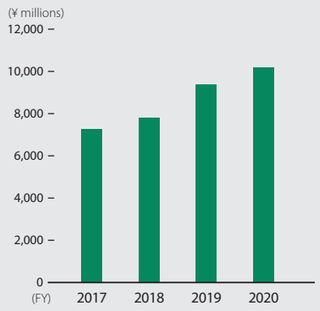
Segment Net Sales



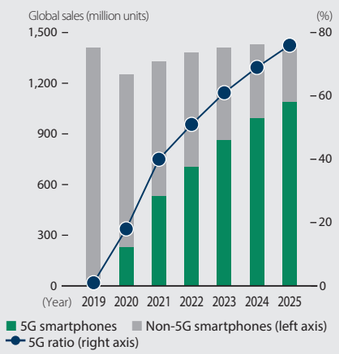
Segment Income



Depreciation and Amortization Expense

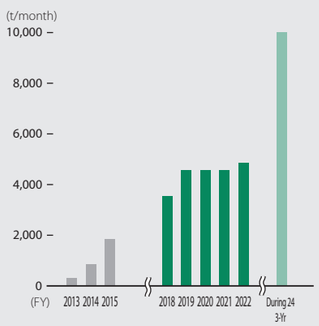


Smartphone Sales Volume and 5G Ratio Forecast



Source: Fuji Chimera Research Institute, Inc., "Future Prospects for Core Technologies in the Realization of 5G Telecommunications, 2021"

Growth of Cathode Materials Production Capacity and Future Plans



Review of FY2020

Industries related to the Materials Business faced sluggish demand at the start of FY2020 under the COVID-19 pandemic, but demand recovered in the second half of the fiscal year. Economic recovery picked up in China from April, ahead of other countries. Sales to China were strong under the restoration of production and policy-driven 5G infrastructure investment.

In the battery materials business, sales volume declined in the first half of the fiscal year due to the COVID-19 pandemic and slumping demand for automobile batteries, a key application for our products. In the second half, sales recovered as automobile sales revived in many countries and demand for electric vehicles grew. In response to the increase in customer demand, in September 2020 we decided to increase monthly production of lithium nickel oxide from 4,550 tons to 4,850 tons. We explored responses to subsequent further increases in demand, and in July 2021 decided on an additional 2,000 tons of nickel-based cathode material production per month.

In the advanced materials business, the COVID-19 pandemic brought telework and other changes to people's lifestyles around the world and accelerated digitalization. Restrictions on leaving home boosted demand for at-home products, and sales of smartphones, personal computers, televisions, games, and other consumer products maintained high levels. The smartphone market was affected by the pandemic in the first half of the fiscal year, but recovered to nearly the level of the previous year in the second half, and shipments of components for smartphones increased under the advance of 5G. Amid strong market conditions, our manufacturing sites continued to operate at high levels while enacting contagion control measures, successfully fulfilling our supply responsibilities. To spur the ongoing creation of new products, in October 2020 we held the grand opening of X-MINING (pronounced "Cross-Mining"), a product information site aimed at the development of new applications and the creation of value for existing powder material products.

Business Environment and Outlook

The 5G-centered digital society is expected to further accelerate in the post-COVID-19 period, when economic activity has normalized. Environmental measures such as carbon neutrality and clean energy will ramp up, and social needs for highly advanced materials will increase.

In the battery materials business, movement toward the electrification of automobiles is intensifying with the aim of carbon neutrality in 2050, and demand for battery materials is expected to grow. We will leverage the advantage that we hold in a stable supply capacity that spans nickel raw materials to cathode materials, and in cutting-edge technology for the manufacture of nickel-based cathode materials for automobiles, refined together with our customers over the span of two decades. Doing so, we will continue to expand the scale of our business.

In the advanced materials business, we have set a new vision for our future selves. We will continue to closely watch market trends, anticipate customers' needs, and create new products as we work to achieve that vision.

Our vision for the advanced materials business

Be the lead runner in the markets for our products, continue to refine our material technology capabilities to meet the needs of every era, and secure high profitability and top-class market share

Progress on the 2018 3-Year Business Plan and Future Strategy

In the 2018 3-Year Business Plan, we aim to achieve sustainable growth in our business against a backdrop of increasing demand as 5G advances in the field of communications. We also anticipate market expansion in automobile-related fields amid the ongoing shift to electric drive and electric components. Upheavals such as U.S.-China trade friction and the COVID-19 pandemic are also occurring in the market environment, causing the growth of our business to fluctuate. Some areas exhibit a sense of overheating under current extremely strong demand; coupled with semiconductor shortages, this is creating concerns that a temporary inventory adjustment phase may occur. In FY2021, we will accurately assess these fluctuations in demand and quickly respond to customers' needs, to prepare for the future expansion of sales and production capacity.

In the advanced materials business, we are creating a roadmap that connects societal circumstances and markets a decade from now with our products and technologies, to make our vision for the business a reality. While maintaining a watchful eye on changes in the needs of society and the market, we will continue to adapt our technologies and products to these changes and to expand our business.

SMM Products in Daily Life

Progress and Plans on Our Top Priorities

1.NCA: An acronym for a type of secondary battery cathode material composed primarily of N (nickel), C (cobalt), and A (aluminum).
2.NMC: An acronym for a type of secondary battery cathode material composed primarily of N (nickel), M (manganese), and C (cobalt).

	FY2019	FY2020	FY2021	FY2022	FY2023 and later
Battery materials	● Completion of 4,550 t/month production structure			● NCA[1]: Increase in production to 4,850 t/month from mid-2022	● 10-kt/month cathode material production by FY2027 (NCA + NMC[2] + nickel hydroxide)
Crystal materials			● SiC launch for consumer markets		● SiC launch for automotive markets

Strategies for the Materials Business in the 2018 3-Year Business Plan

1 Continuous creation of new products and renewal of business portfolio

- Make energy and the environment, and information and communications our domain, and continually create new products
- Materials business portfolio for the 2024 3-Year Business Plan

2 Become self-sufficient as a true core business

- Establish a strategic implementation structure for the battery materials business and sustainable growth for the advanced materials business

Sustainability Topics

Commercialization of Nickel Oxide for Fuel Cells through the Use of In-house Raw Materials

Related: Vision for 2030, p. 68–70

We are working toward the commercialization of nickel oxide for fuel cell applications, a powerful means of achieving a hydrogen-based society that is expected to reduce CO_2 emissions. In demonstration tests aimed at mass production, we confirmed production capacity at the same level as design values through increases in processing speed and improvement of yield. In FY2021, we will tackle optimization of production conditions and labor-saving to reduce costs.

Commercialization of Silicon Carbide (SiC) Substrates

Related: Vision for 2030, p. 68–70

SiC is a power semiconductor material used mainly in electric power control applications. As a material capable of reducing energy loss in high-capacity fields (high current and high voltage resistance) demanded for drive control devices, particularly in hybrid vehicles and electric vehicles, SiC faces high expectations for its mass production.

We are working to develop low-cost SiC substrate manufacturing using bonding technology, and have so far received positive evaluations of samples from multiple customers. We aim to begin sales for electric vehicles around 2025.

Thermal Management Using Near-Infrared Absorbing Materials

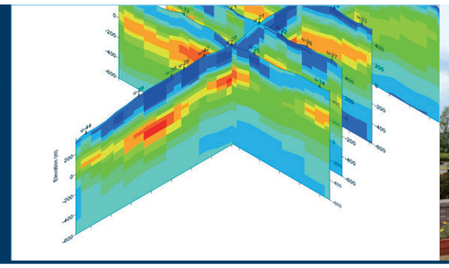
Related: Vision for 2030, p. 71–74

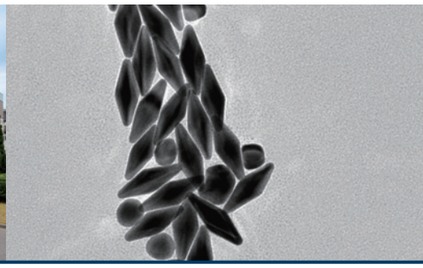
Our near-infrared absorbing material is able to selectively absorb the near-infrared energy of sunlight and convert this into usable thermal energy, achieving both transparency and heat-shielding performance at high levels. We are taking advantage of these unique material properties to pioneer new applications in clothing, horticulture, and the life sciences, in addition to the environmental field of actively creating energy. This near-infrared absorbing material is a product that contributes to a low-carbon society and to the reduction of GHG emissions.

Research & Development

To sustainably grow the business, we must strengthen our new product development capabilities

Shuichi Ogasawara
Executive Officer,
General Manager of Technology Division





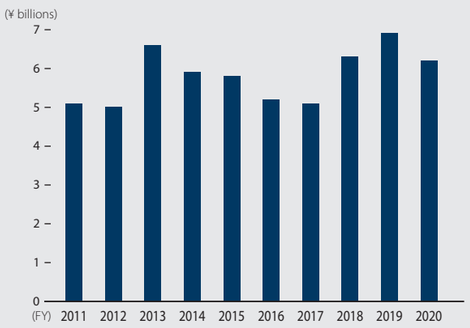
The SMM Group has four research and development sites and we are engaged in raising our competitiveness by evolving existing technologies while also advancing research and development into next-generation metal smelting and refining technologies and pioneering new materials.

Review of FY2020

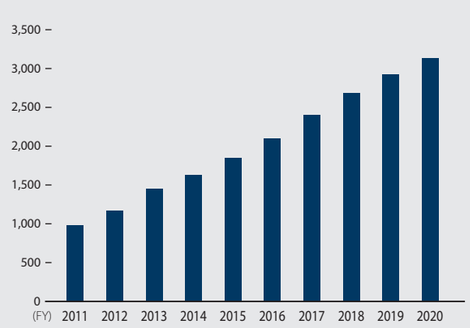
In our 2018 3-Year Business Plan, the three major themes for research and development were (1) create new businesses with a view to 10 years from now, (2) develop products that customers will prefer, and stay ahead of competitors, and (3) develop new processes that can differentiate us and support sustainable growth.

Looking back on our progress on these themes in FY2020, in regard to (1) creating new businesses, we centered exploration on areas where future growth is anticipated such as automobiles, environment, energy, and communications, while also discovering the functions of new materials and identifying the mechanisms that lead to flaws. In regard to (2) developing products that customers will prefer, we continued to focus on development that will enhance our competitiveness, including raising productivity and the performance of products such as battery cathode materials for automobiles and crystal materials for SAW devices. Also, in regard to (3) developing new processes, we are carrying out pilot tests in order to verify a new process for recycling used lithium-ion secondary batteries.

Research and Development Expenses



Number of Patents and Design Rights Held by the SMM Group



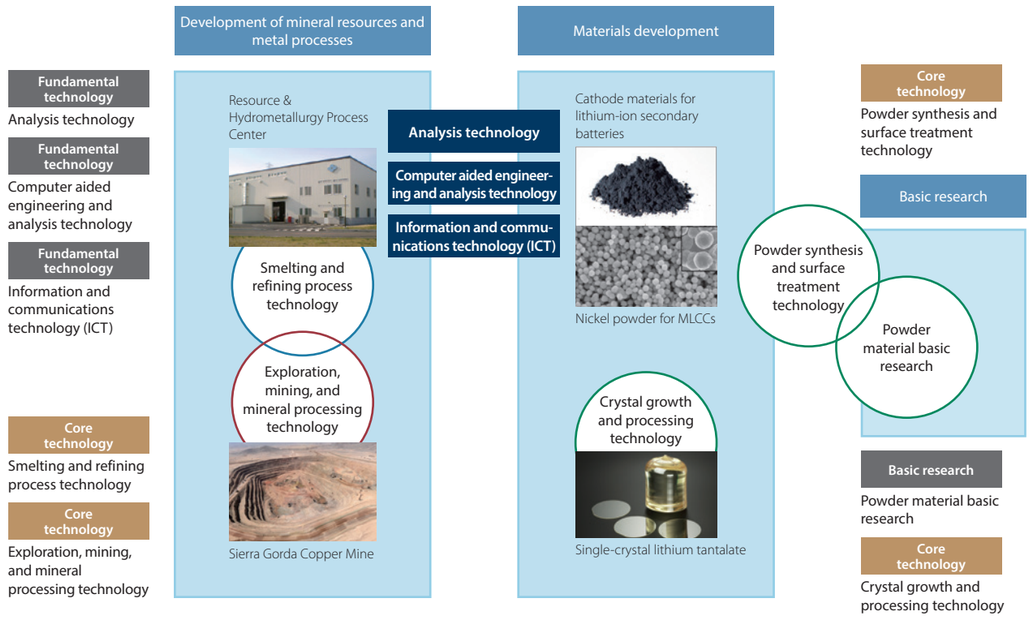
Future Research and Development Strategy

In FY2021, the final year of the 2018 3-Year Business Plan, we will implement research and development primarily focused on growth businesses. In battery cathode materials, which has been positioned as a target growth market, at the same time as carrying out development aimed at raising performance, we will also advance the development of next-generation battery materials, including solid-state batteries, and work on developing new processes to raise productivity.

These efforts will mainly be led by the Battery Research Laboratories. We are also constructing a new building and expanding facilities, which will be completed in 2022, with the aim of strengthening development capabilities and improving efficiency.

At the Materials Laboratories, we are continuing development that aims to realize larger diameters of crystal materials for SAW devices. At the Ichikawa Research Center, we are continuing to focus on development related to powders and crystal materials. At the Niihama Research Laboratories, we are advancing research and development related to the

Research and Development by the SMM Group



recycling of used lithium-ion secondary batteries and lithium refinement processes. Furthermore, we will continue development closely related to business activities, such as improving mineral processing technologies for the Mineral Resources and Smelting & Refining businesses, and in this field, we are beginning to explore themes that will contribute to solving social needs included in our Vision for 2030.

When formulating Vision for 2030, we considered how the world will be in 2050 or 2100, and thought about ways to generate materials without damaging the global environment, as represented by the carbon neutral movement, and discussed what the non-ferrous metals industry needs to do now to realize these. Also, we will take a medium- to long-term perspective and constantly watch how trends in society change and transform in the almost 10-year period up to 2030, so we can respond swiftly in line with these changes and transformations and advance initiatives for realizing the effective use of non-ferrous metal resources.

Sustainability Topics

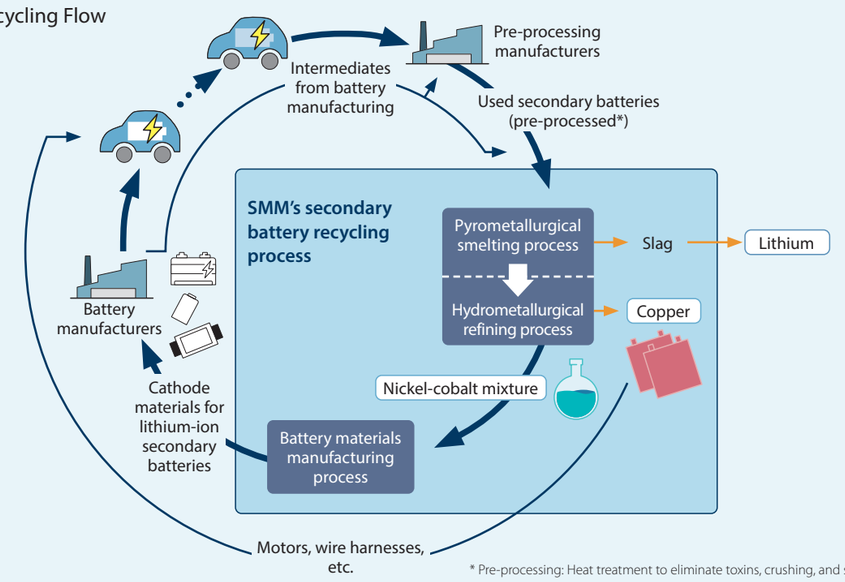
Developing Battery Recycling Technologies

Related: Vision for 2030, p. 68-70

The electrification of automobiles is forecast to be a rapid and long-term development and in accordance with this, demand is rising for nickel and cobalt, which are used in cathode materials for electric vehicle lithium-ion secondary batteries. However, as these are rare metals, establishing stable supplies is a major issue and demand for the recycling of these resources is growing more than ever before. We have used existing metal, smelting, and refining technologies to start operations for recovering and recycling copper and nickel from used lithium-ion secondary batteries, and as a result of further development of these technologies, we are able to purify the recovered nickel and cobalt and we have verified that it can be reused as a raw material in lithium-ion secondary battery cathode materials. Additionally, through our world-first original lithium recovery technology, we have established a new recycling process that is able to recycle copper, nickel, cobalt and lithium from used secondary batteries.

Going forward, we will work on ways to use these efforts to realize "battery to battery" recycling. (See p. 55)

Recycling Flow



* Pre-processing: Heat treatment to eliminate toxins, crushing, and selection

Digital Transformation (DX) at the SMM Group

In April 2021, we formulated our DX Promotion Regulations and established the DX Promotion Committee, chaired by the president, as an organization responsible for drafting the Group's DX Vision and promoting Group-wide DX activities. Through such actions, we are accelerating our DX initiatives.

DX Vision: Leverage DX to enhance our competitiveness and create new businesses.

Vision for 2030

- A company that generates resources through high technological capabilities
- A company where all employees work together with safety first the priority in a comfortable working environment as well as safe facilities and operations
- A company where all employees can take a vibrant and active part

Specific Issues and Responses

Business reform and creation of new businesses

- Utilize DX in business transformation and development of new products and processes, and to accelerate the speed of these.
- Shift to new business models through supply chain reform.

Development of DX

Securing of human resources amid a declining birthrate

- Enable business continuity and development amid a declining birthrate through automation and unmanned operations at manufacturing sites, drastic streamlining of indirect operations, etc.
- Become a company that is attractive to workers by using DX to create safe workplaces and achieve diverse work styles that consider work-life balance.

Related

Improvement of management efficiency

- Use data to make speedy management decisions.
- Carry out operational streamlining and enhancement of labor productivity through DX to improve competitiveness in all fields of business.
- Build a foundation for high-speed networks, cloud utilization, the IoT, and other elements indispensable for DX, and respond to ever-changing and growing information security threats.

Road Map