

Advanced Products Business

Global First Supplier



Yasunobu Suzuki, Executive Vice President and Executive Officer
President, Advanced Products Company

Aim to become the first supplier that customers over the world turn to, due to our swift/flexible development capability and proposal capability

The main markets for our materials and components are the automotive, semiconductor, and electronics markets, as well as infrastructure including medical infrastructure. We consider the positive factors facing the current business environment to include progress in automobile electrification and electronic control, digital transformation based on the introduction of 5G, and the development of the data economy, and negative factors to include intensifying price competition due to the emergence of new companies, the appearance of substitute materials based on new technologies, rising prices for resources such as copper, and economic slowdown caused by COVID-19. In the long-term, we are keeping an eye on the possibility of multipolarization/bloc-building of the economy due to a reversal in globalization.

In this business environment, we aim to become the first

Specific Measures of the FY2023 Strategy

- Assign key account managers acting cross-sectionally
- Enhance information analysis by digital marketing such as the employment of AI or IoT
- Share product road maps with customers (co-creation capabilities)
- Develop new products through collaboration with Central Research Institute
- Enhance manufacturing capabilities (improve production efficiency and mass-production technologies, etc.)
- Pursue opportunities to execute M&A or business alliances

Projected Achievements at the End of FY2023

In our main business fields*, we will have:

- Earned customers' trust
- Released new products by integrating our technical capabilities
- Generated new applications of our products

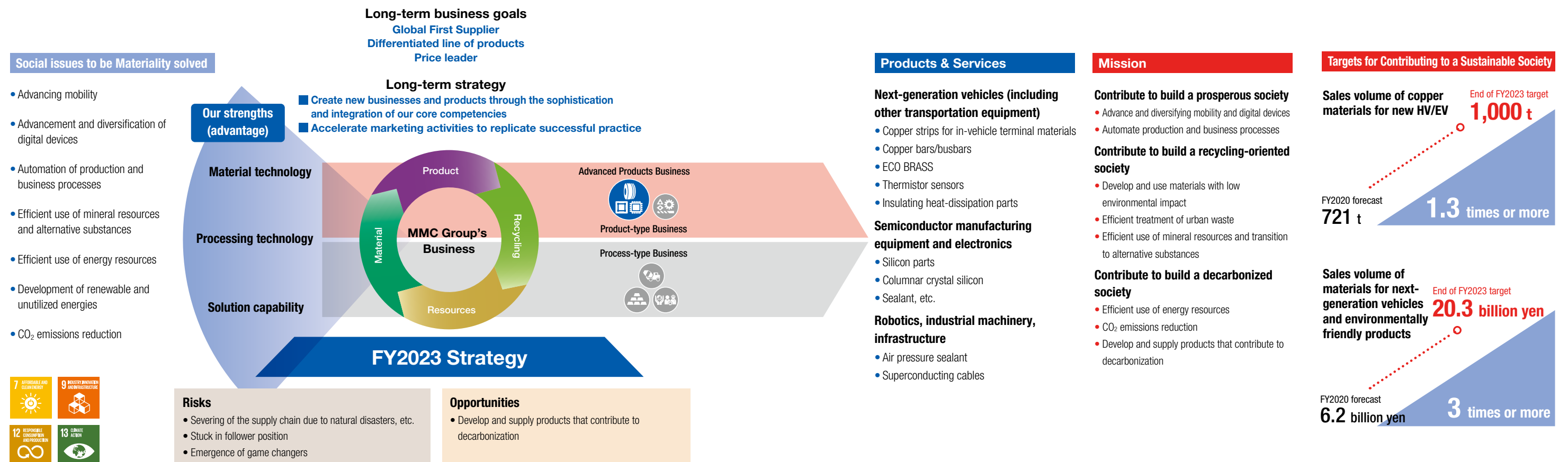
*Next-generation vehicles, semiconductor / electronics, industrial machinery / infrastructure

supplier that customers over the world turn to, and become a global-first supplier in terms of customer satisfaction in quality and product originality. The Company's strengths are material technology to create high-performance/high-quality alloys and oxygen-free copper, processing technology for joining dissimilar materials such as insulating heat-radiating parts, a diverse product lineup, and our ability to swiftly and flexibly provide solutions by coordinating with the Central Research Institute. On the other hand, challenges include enhancing our mass-production technology, improving our marketing capability, including digital transformation, and securing and developing human resources. Our policy is to work on solving these issues while further polishing our strengths in order to lead the market.

We expect COVID-19 to have a lasting impact on the

economy and industry during the period of our Fiscal 2023 Strategy, but in the medium to long-term, there will be no major change to the IoT conversion of infrastructure and demand for automobile electrification and autonomous driving, and our customers are steadily proceeding with development. The evolution of medical devices for supporting health will also remain uninterrupted, as demand for environmentally-friendly materials, the utilization of renewable energy, and the aging of the world population continue.

We consider changes in such growth markets to be an opportunity, and will leverage our strengths as a partner that provides unique materials, components, and services supporting new technologies to our customers globally and in a timely manner, in order to achieve our goal of becoming a global-first supplier and business growth.



Aim to become a global-first supplier by enhancing marketing and technical development functions as well as investing heavily in the copper & copper alloy product business

We will create new businesses and products through the sophistication and integration of our core competencies (production and development technology for oxygen-free copper and copper alloys, and functional materials as well as technical capabilities such as bonding different metals, etc.), and build relationships of trust by sharing our product road map with key accounts.

Expand Copper Alloy Sales

Building a supply network for responding promptly to the demands of a rapidly changing market and creating new value for our customers, we absorbed Mitsubishi Shindoh Co., Ltd., the company with the top share of rolled copper products in Japan, on April 1, 2020, in addition to our acquisition of Luvata Group (Special Products Division) in May 2017 for the goal of globalizing our copper & copper alloy product business.

One of our strengths is oxygen-free copper, which is a material required for increasing the current and voltage of next-generation vehicles, and high-performance copper alloys are widely used over the world as the terminal material for automobiles, etc. Demand for copper & copper alloy products is expected to increase due to electronic control, IoT, and AI in markets such as robotics, industrial devices, and infrastructure, as well as the CASE revolution in the automobile industry.

Responding to this market expansion, we plan to invest a total of approximately 30 billion yen in capital over the years 2020 to 2026 to expand our production capacity by approximately 30%.

The Company will further enhance cooperation with the Luvata Group to expand global sales of copper alloys, and thereby aim to be a global-first supplier in the copper & copper alloy product industry.

Enhance Marketing and Technical Development Function

Our strengths lie in development and manufacturing technology for oxygen-free copper and copper alloys, development of functional materials, and technical capabilities such as bonding different metals so that we have developed revolutionary products that were world-firsts, such as high performance insulating heat-dissipation parts for power modules, namely DBAC, which dramatically improves heat cycle resistance in the high temperature range.

In the FY2023 Strategy, we plan to further polish these strengths and share our future product road map with customers to quickly draw out market needs for creating new products and new businesses as well as new applications. We also plan to adopt digital marketing to increase our ability to analyze customers and markets, and enhance the synergy between business divisions.

In addition to these measures, we will utilize our global manufacturing, development, and sales network, including that of the Luvata Group, to build relationships of trust with customers over the world, have our key accounts in particular recognize us as the first-call vendor, and thereby aim to be the number one supplier in terms of customer satisfaction regarding quality and product originality.

■ Global expansion of the Group



Markets to focus on

Next-generation vehicles



Lead-free brass, ECO BRASS® products with high strength, wear resistance, and corrosion resistance

Next-generation vehicles



Oxygen-free copper to handle the high current and high voltage requirements of xEV

Next-generation vehicles



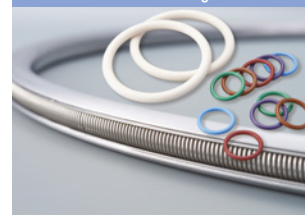
Insulating heat-dissipation part (DBAC), that combine reliability with high heat dissipation performance

Semiconductor manufacturing and electronics



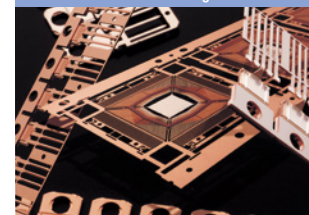
Micromachined silicon components used in semiconductor manufacturing equipment, etc.

Semiconductor manufacturing and electronics



Seals with excellent heat resistance, chemical resistance, radical resistance, and low particle generation

Semiconductor manufacturing and electronics



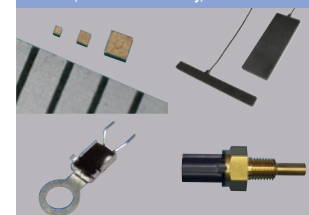
Copper alloy lead frames for plating technology, stamping, and high-precision molds

Robotics, industrial machinery, and infrastructure

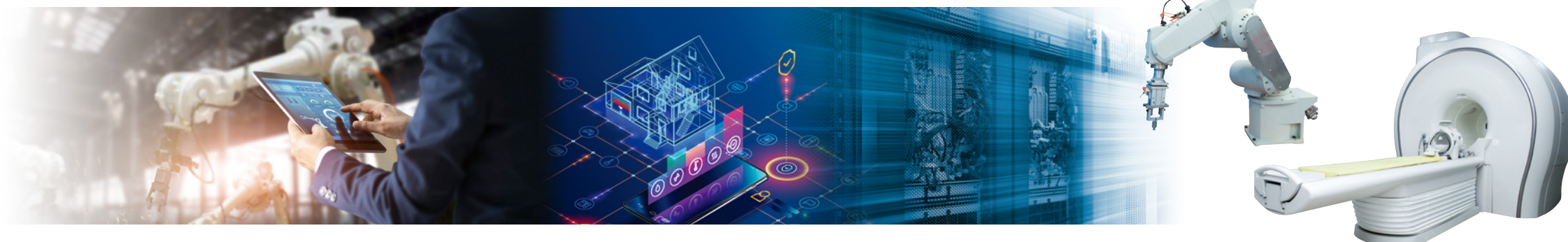
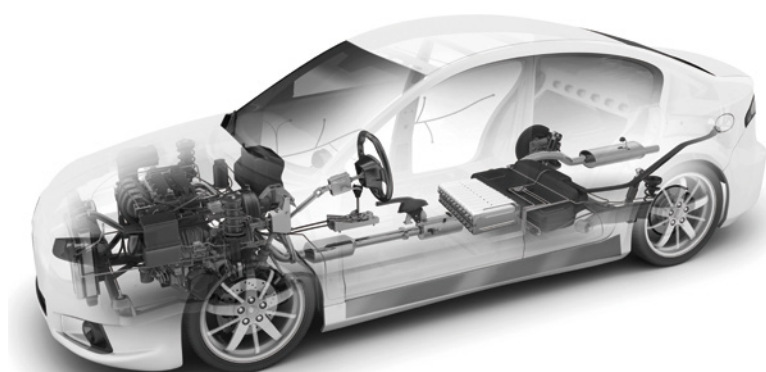


Superconducting wires often used in medical devices for applications such as MRI and international science projects

Robotics, industrial machinery, and infrastructure



On-board temperature sensors for EV batteries, etc.



Metalworking Solutions Business

Top 3 supplier in strategic markets



Tetsuya Tanaka, Managing Executive Officer
President, Metalworking Solutions Company

Aim to be ranked by customers as one of the top three companies in the strategic markets of the automotive, aerospace, medical, and mold and die industries

The Metalworking Solutions Company is expanding its business activities by focusing management resources on the automotive, aerospace, medical, and mold and die industries. Positive aspects of the market environment include increased demand in the aerospace and medical industries for processed materials with improved weight, durability, and corrosion resistance, which is expected to lead to increased demand for cutting tools used for the machining of difficult-to-cut materials. Negative aspects include demand fluctuation in the supply chain expected due to structural reforms in the automotive industry, and concerns about increased procurement costs due to rising raw material prices. In the long term, we recognize the possibility of the market structure changing drastically due to changes in lifestyles and society due to COVID-19.

Specific Measures of the FY2023 Strategy

- Increase recycling rate in our tool recovery system and utilize renewable energy
- Provide high efficiency tools and digital solutions
- Transition to smart factory and optimization of logistics and supply chain
- Expand advanced metal powder business to rechargeable battery market

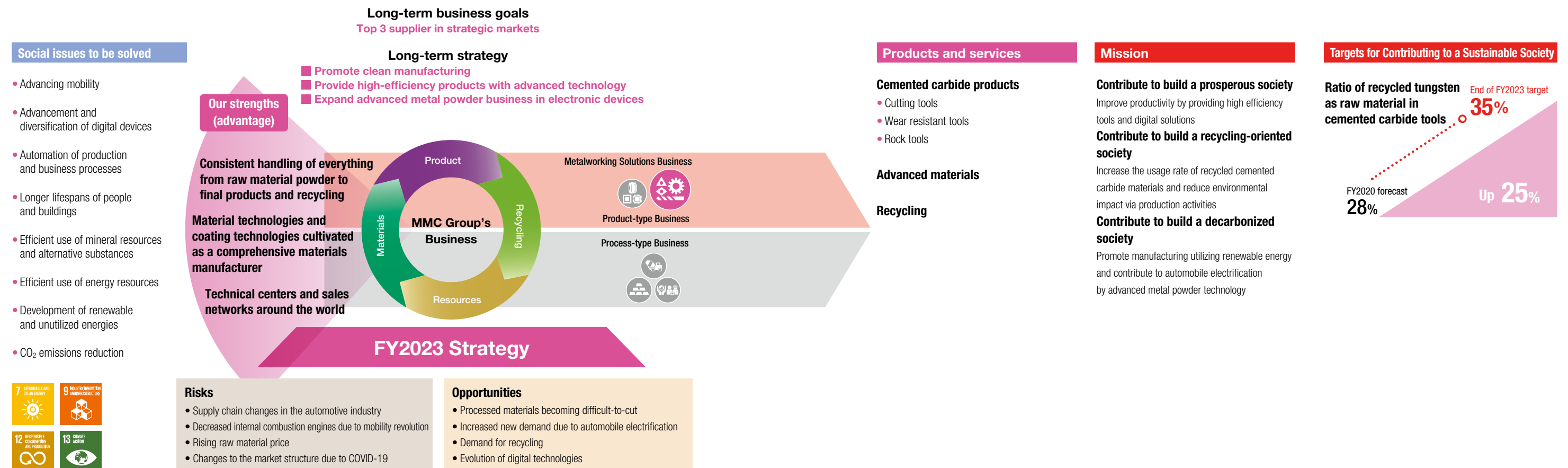
Projected Achievements at the End of FY2023

- Establishment of a competitive global business base capable of expanding in strategic markets using digital technologies

We believe that our strengths lie in our consistent handling of everything from raw material powder to final products and recycling, our ability to develop distinct products with superior performance that feature material technologies and coating technologies as their core competency, stable quality, and our ability to propose solutions at our technical centers and sales networks around the world. On the other hand, one challenge we face is that we lag behind global competition in terms of digital solutions for customers. In response to this, we will focus management resources on promoting digital transformation, such as launching an IoT team for customers and providing data infrastructure.

We have established technical centers in countries around the world in order to enhance our ability to propose solutions to customers, and will further improve this function in the

future. In particular, we will promote the provision of technical data and IoT via digital transformation. We believe that this will enable us to contribute to enriching society by providing proposals that always meet the needs of our customers and contribute to improved productivity. We will also contribute to building a decarbonized society via manufacturing that utilizes renewable energy, and contribute to building a recycling-oriented society by further expanding efforts to collect used cemented carbide products and recycle them as cemented carbide materials. By striving to increase both our social and economic value in this manner, we will aim to be ranked one of the top three suppliers by our customers.



Metalworking Solutions Business

Expansion of the utilization of new technologies and services that can solve customer issues

Enhancement of the global supply system and functions

The Company will conduct strategic investment in growing markets and enhance global competitiveness in order to achieve its aim of becoming one of the top three suppliers in the strategic markets of the automotive, aerospace, medical, and mold and die industries.

Establishment of a competitive global business base

The Metalworking Solutions Company will utilize its position having the top share of cemented carbide products in Japan to respond to diversifying and globalizing market needs as “YOUR GLOBAL CRAFTSMAN STUDIO.” We plan to accelerate global expansion focused on the automotive and mold and die industries, where demand is expected to continue to increase, as well as the aerospace and medical industries, which are forecast for high growth. We also plan to establish a system that will allow the collection to recycling of used cemented carbide products at all our sites over the world. Furthermore, we will utilize manufacturing that is made more efficient and higher quality via digital technologies to establish more efficient global distribution and supply according to market fluctuation.

Global collaboration of technical center functions

The Company has established nine technical centers over the world, including two in Japan (in Saitama and Gifu), which enable us to provide a wide range of solutions to users over the world, including cutting tests, training, technical consultations, and direct proposals for improving customer processes. In the future, we plan to further reinforce the functions of these centers to enhance our ability to provide a wider range of solutions.

Strategic investment in markets with rapid potential

In terms of investment, the Company will enhance our marketing functions with a focus on customers in the automotive, aerospace, and medical industries, expand our manufacturing and sales functions, including M&A, and promote strategic investment with an eye on expansion in the advanced metal powder business for rechargeable battery market, as well as digital technologies for consultation and simulations.

Global expansion of recycling process

The Company will promote existing efforts to collect and recycle used cemented carbide products, and work on collection schemes overseas. In order to support the building of a recycling-oriented society, we aim to achieve stable procurement of tungsten and cobalt, which are the raw materials for cemented carbide.

We will also promote manufacturing that utilizes renewable energy and efforts for achieving a decarbonized society.

Digital

Utilization of digital technologies for consultation and simulations

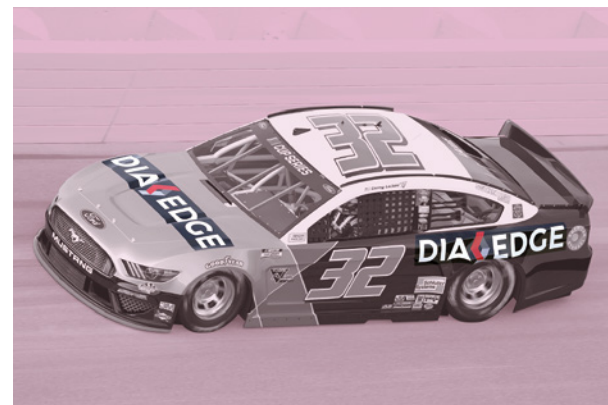
We digitize data accumulated in the Company such as cutting test results and product information to build a technical database. By developing and adopting a system (MICS) for collecting and analyzing machining information, we have become able to conduct more detailed analysis. Our technical centers located over the world will contribute to improved customer productivity by proposing optimal machining methods and ways of solving customer problems based on digitized technical information and consultation conducted via a dedicated system.



Strategic Markets

Automotive

Since the appearance of automobiles with gasoline engines in Germany 150 years ago, the automobile has become commonplace all over the world, and led to new challenges posed by environmental problems. Automotive manufacturers are promoting environmentally-friendly technologies, such as low fuel cost technologies. Progress in production technology is essential for achieving these technologies, and the Company is involved in improving component machining technologies by closely cooperating with manufacturers in Japan and overseas. We are also involved in daily research into machining technologies for electric vehicles and fuel cell vehicles in order to respond to future changes in mobility.



Aerospace

The aerospace industry demands advanced technology for machining difficult-to-cut materials into complex shapes. The Company established an Aerospace Department in 2016 to provide advanced products and more specialized services to these customers. Dedicated staff based in Japan, Europe, and the United States provide swift and detailed support. We also collaborate with research institutes involved in aerospace manufacturing and universities in Japan and overseas to promote the development of revolutionary cutting tools melded with unique MMC technologies. Furthermore, we propose high value-added solutions to meet customer needs, such as cutting tests conducted at our technical centers over the world and proposals for machining methods that utilize simulation technologies.



Medical

In the orthopedic market, the Company is enhancing its ability to propose solutions to customers in the medical industry by establishing a dedicated sales organization and marketing office in the United States, based on the fact that many cutting-edge technologies are found in North America. Orthopedic devices also use many difficult-to-cut materials (cobalt-chromium alloys, titanium alloys, and stainless steel alloys) like aerospace components. This means that the life of cutting tools is extremely short and there is high demand for improvements to tool life. We conduct tool development in all processes from raw materials to completed products in order to contribute to improved customer productivity by launching products that improve tool life and machining efficiency in the machining of components for orthopedic devices, such as making deep, small-diameter holes, which has particularly poor efficiency, and machining of cobalt-chromium alloys, which especially requires wear resistance.



Metals Business

Leader in environmentally-friendly mining & smelting business

Establishing a business model for the sustainable supply of clean nonferrous metals in society through improvement of our smelting & refining technologies



Tetsuro Sakai, Managing Executive Officer
President, Metals Company

Copper continues to become increasingly important in our highly digitalized society, and as a smelting company, we have a mission to support the development of society by providing a stable supply of high-quality copper to society. On the other hand, sustainable growth of our business cannot be achieved without sincere efforts to tackle environmental issues. With this view in mind, we have set a long-term goal to establish a more environment-friendly mining and smelting business model and to be the forerunner in the industry.

To achieve this goal, we have formulated three strategies. The first strategy is to create a sustainable raw material portfolio to support the stable supply of copper, which consists of clean copper concentrates secured by promoting investment in blue-chip mine projects and recyclable materials including E-Scrap. This will enable us to overcome challenges in procurement of copper concentrates arising from resource

Specific Measures of the FY2023 Strategy

- Secure clean copper concentrate by investing in new mines
- Develop impurity removal technology in copper concentrate
- Optimize valuable metal material flow
- Reduce fossil fuels

Projected Achievements at the End of FY2023

- Optimization of valuable metal material flow derived from E-Scrap
- Reduction of smelter CO₂ emissions by 5%

nationalism in resource-rich countries as well as emerging new smelters in China. The second strategy is to promote recycling, which involves further qualitative enhancement of our advanced, large-scale processing technology E-Scrap and the smelting and refining processes in all our distinctive production sites, as well as efforts to optimize material flows amongst these production sites. This will enable us to recycle minor elements derived from E-Scrap with a high level of efficiency, improving our profitability and contributing to effective use of finite resources. The third strategy is to tackle climate change. Our smelting and refining process (the Mitsubishi Process) is a unique, proven technology with high efficiency and exceptionally low environmental impact, and we will capitalize on these advantages. Furthermore, we will work aggressively to reduce the use of fossil fuels by utilizing alternative fuels, improving energy conversion and increasing

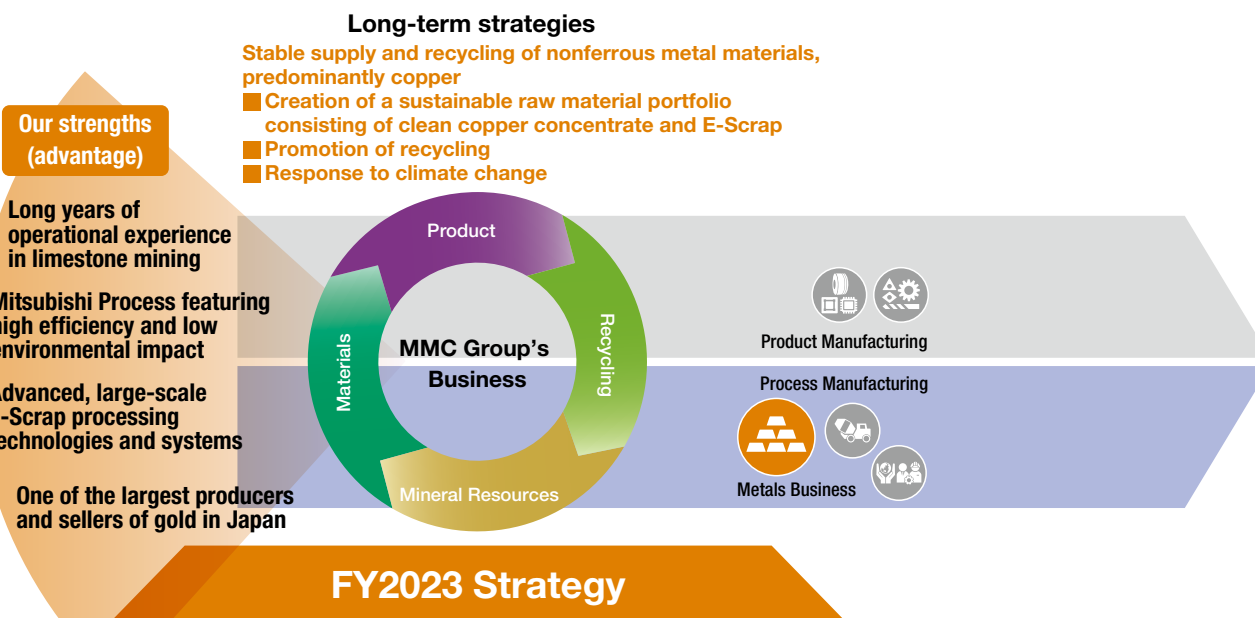
efficiency of energy use. E-Scrap, for which we boast the largest processing capacity in the world, can also be used as an excellent alternative fuel.

The impact of COVID-19 will inevitably slow down the global economy, and there is a concern that prices and demand for copper may be negatively affected. It may also affect progress in mine development projects, and if this is the case, we may be forced to review the schedule of our FY2023 strategies. However, we have a clear vision in the long run, and will promote our strategies from a long-term perspective while flexibly responding to the short-term economic situations. When the world economy begins to grow again, we will be in the position to contribute to its growth as the most environment-friendly smelting company in the world.

Long-term business goal Leader in environmentally-friendly mining & smelting business

Social issues to be solved

- Advancing mobility
- Advancement and diversification of digital devices
- Automation of production and business processes
- Longer lifespans of people and buildings
- Effective measures against disasters
- Efficient use of mineral resources and alternative substances
- Efficient use of energy resources
- Development of renewable and unutilized energies
- CO₂ emissions reduction



Risks

- Risks for copper concentrate procurement due to resource nationalism in resource-rich countries
- Intensifying competition following the growth of Chinese smelting and refining manufacturers
- Operational problems attributed to increasing input of minor elements in the smelting and refining process
- Stricter regulations on environmental concerns in smelting and refining operations
- Presence of a powerful competitor in the precious metal retail market

Opportunities

- Potential for developing technologies for removing impurities from copper concentrate
- Enhancing recovery of minor elements that are input and use of these in products
- Transition to a recycling-oriented and decarbonized society
- Worldwide expansion of the E-Scrap supply market with growing environmental awareness
- Increase in demand for gold as a safe asset

Products and services

Copper cathode
Precious metals
Various metals
Sulfuric acid
Copper slag
Recycling

Mission

Contribute to build a prosperous society

Provide nonferrous metal materials, predominantly copper, and high value-added functional materials and products

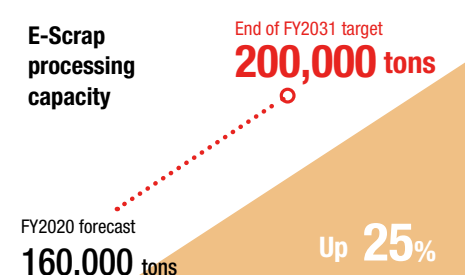
Contribute to build a recycling-oriented society

Provide recyclable products and advanced technology-based waste recycling

Contribute to build a decarbonized society

Promote the development and use of CO₂ reduction technologies and ensure due consideration of environmental load in manufacturing

Targets for Contributing to a Sustainable Society



Stable supply and recycling of nonferrous metals, centering on copper

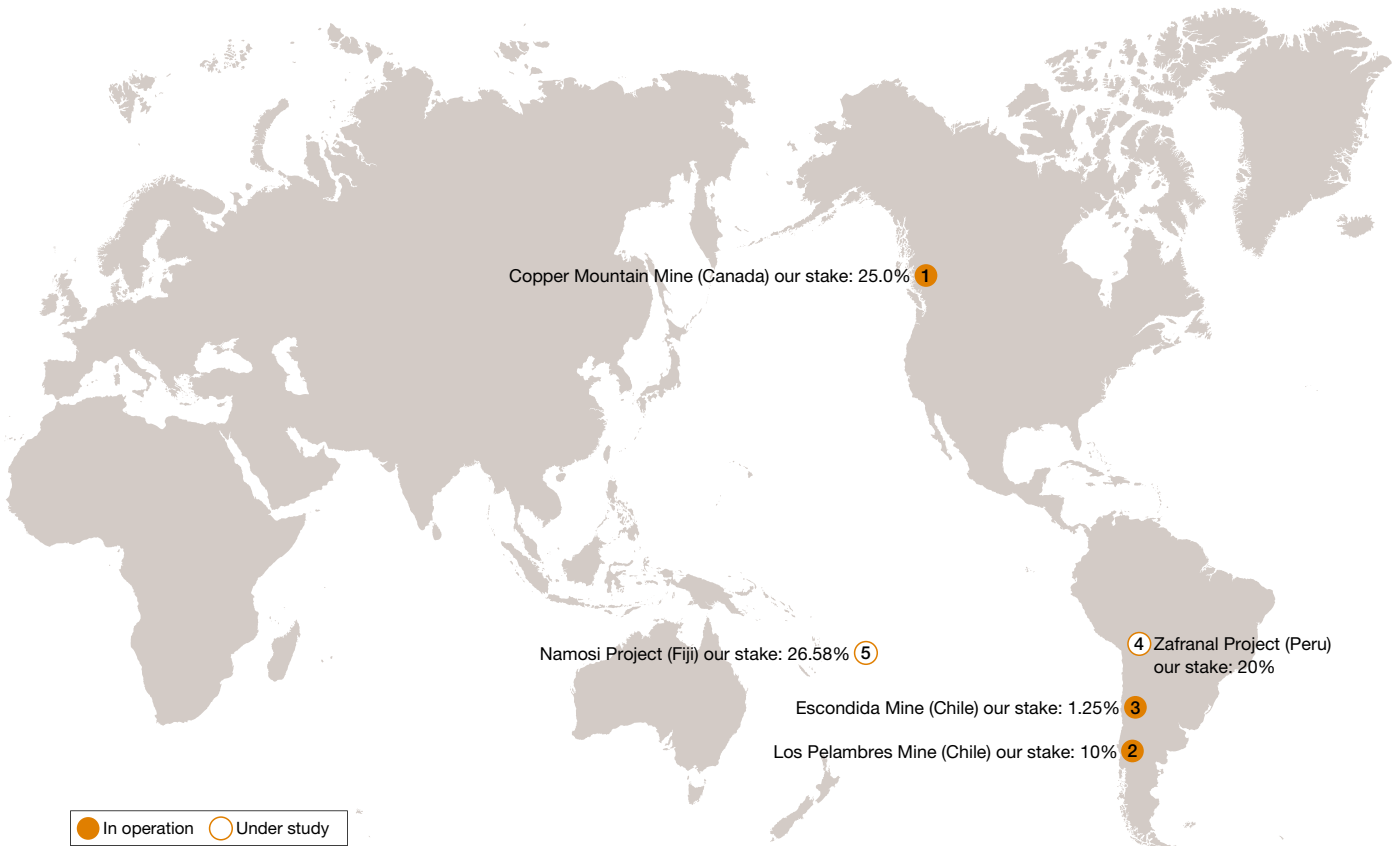
We will form a sustainable raw material portfolio consisting of clean copper concentrate and E-Scrap and enhance efforts to promote recycling and respond to climate change. The aim of this is not only to provide a stable supply of nonferrous metals essential for the development of society but also to contribute to efficient recycling of these.

Stable Supply of Materials

It is important to secure clean raw materials to fulfill our social mission as a smelting company to provide a stable supply of non-ferrous metals to society. We will promote new mine investments, such as acquiring an interest in the Mantoverde mine and proceeding with the Zafranal Project. We will also

work on R&D of smelting and mining technologies including technology to remove impurities from copper concentrate. Furthermore, in order to expand opportunities for participating in blue-chip projects, we will continue to explore possibilities to invest in greenfield projects and/or form consortiums.

■ Company's stakes in mining & mine development projects



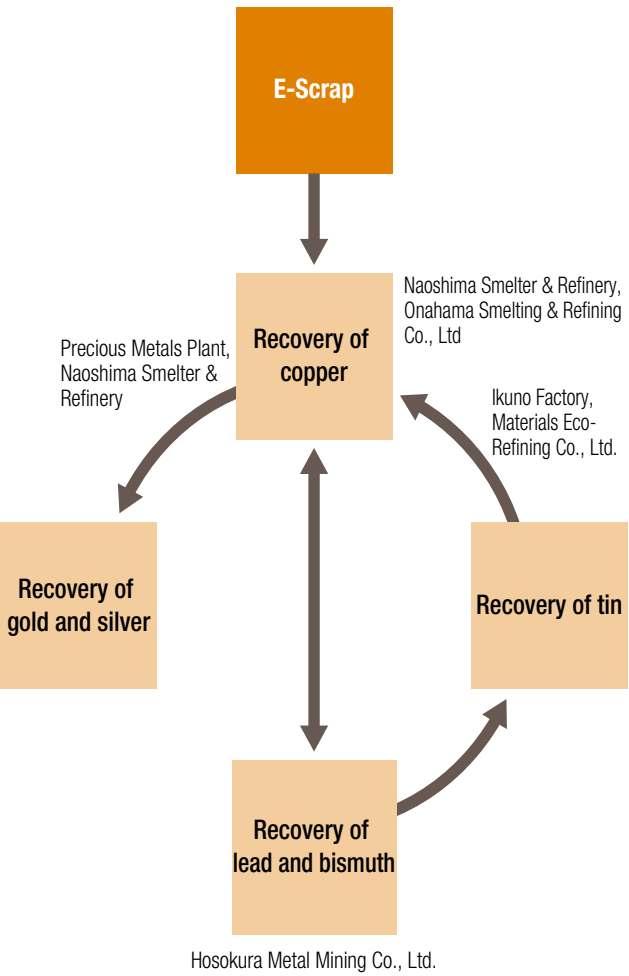
Promotion of Recycling

By building a new process flow amongst all the production sites of our group and improving the efficiency of smelting and refining processes at these sites, we will optimize the material flow of the entire group. This optimized material flow enables efficient recycling of various metals in recyclable materials that we process as raw materials, including E-Scrap. Furthermore, we will figure out constraints in the input volume of E-Scrap and optimize the processing process. These efforts will lead to future expansion of our recycling business.

Response to Climate Change

To tackle the problem of climate change, we will work on reducing fossil fuel usage by using alternatives such as other fuels, E-Scrap and recycled oil while making the best use of the superior qualities of the Mitsubishi Process, our original smelting and refining process with a low environmental impact. We also have plans to proactively utilize renewable energy to improve energy conversion rates such as boiler heat transfer efficiency and power generation efficiency and to achieve more efficient energy usage in steam and electrolytic currents.

■ Material flow



TOPICS

The History of “Mitsubishi Gold” Spans Over a Century

Mitsubishi initiated its gold metal refining business in 1896 when it acquired the Osaka Refinery from the Japanese government, as well as the Sado gold mine in Niigata and the Ikuno silver mine in Hyogo. “Mitsubishi Gold” has a purity of 99.99%. Its high quality meets international standards as evidenced by the stamp on its surface approved by the London Bullion Market Association (LBMA) and New York Commodity Exchange (COMEX). “Mitsubishi Gold” has earned a solid reputation over many years.



Mitsubishi Gold

Cement Business

Leader in the domestic and international cement industry with advanced environmental technologies



Kazuhiro Kishi, Managing Executive Officer
President, Cement Company

Tackle climate change by reducing CO₂ emissions, increasing the sophistication of waste disposal, and ensuring the stable supply of fundamental building materials, while securing growth in overseas markets and building a robust business foundation in Japan via business restructuring

Positive factors for the Company in Japan include special procurement for the Linear Chuo Shinkansen, continuing construction work for urban redevelopment, and construction work for disaster prevention and reduction measures, etc. On the other hand, negative factors include declining base demand in regional areas due to labor shortages, rising material costs, and increasing the transport cost of raw materials and products. Demand is expected to remain stable overseas, particularly with public works in the United States, but there are concerns about the impact of personnel costs and the trade friction between the United States and China on the demand environment.

The Company's strengths in Japan include the cost competitiveness of the Kyushu Plant located close to our limestone mines in the coastal region, rich limestone reserves, and high-quality multi-purpose cement production. After

Specific Measures of the FY2023 Strategy

- Improve and optimize production system through domestic business restructuring
- Expand capabilities in waste plastics processing and install chlorine dust cleaning equipment
- Introduce low-temperature burning technology and develop CO₂ reduction, capture, and recycling technologies
- Expand US business and develop new overseas bases

Projected Achievements at the End of FY2023

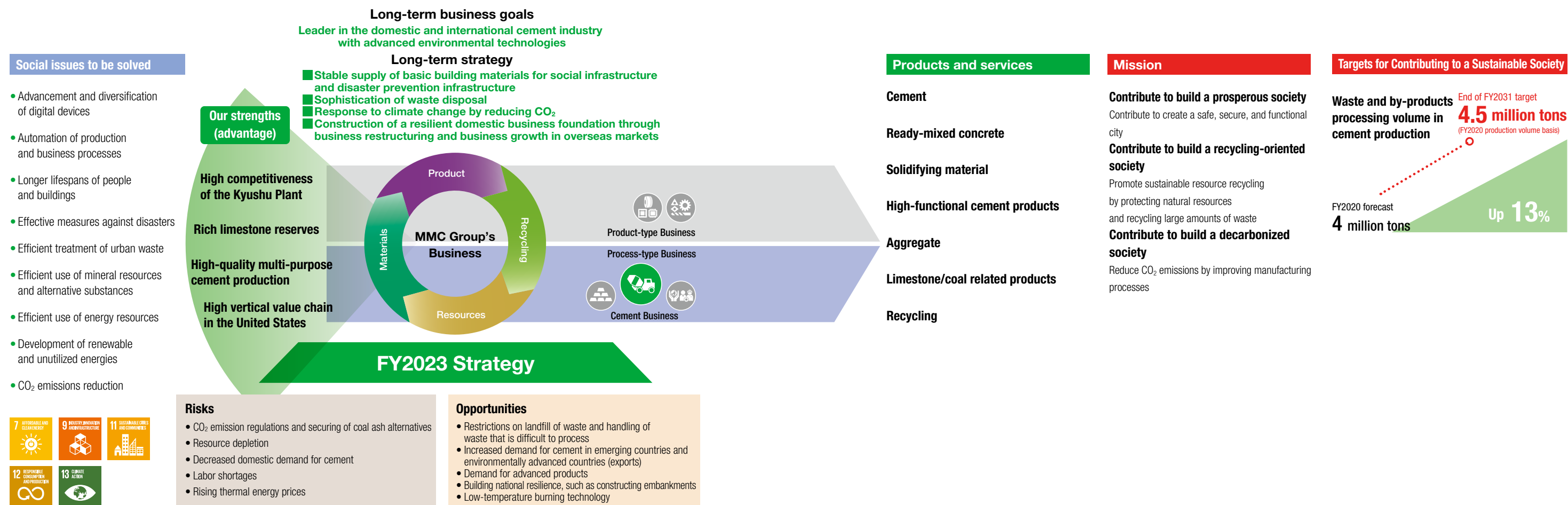
- Domestic business restructuring
- Optimized production systems and promotion of overall business efficiency

integrating our business with Ube Industries, Ltd., we will consider optimization of our domestic production system, including the plants of Ube Industries. Overseas, our strength lies in our high vertical value chain from upstream (the cement business) to downstream (ready-mixed concrete/aggregate business) in the United States. We are making efforts to expand our ready-mixed concrete plants and aggregate quarries and maintain a system for supplying cement and additive to maintain competitiveness, and we plan to promote the development of new business bases in overseas markets where growth is expected.

The Company will continue to promote the active utilization of IoT and AI, response to climate change via the development of technology for capturing, utilizing and reducing CO₂ emissions, and sophistication of waste disposal such as increased use of thermal energy alternatives in the cement manufacturing process, by further strengthening the Kyushu Plant, which is our core plant. Via these efforts, we will strive to comprehensively

improve the level of environmental technologies, contribute to building a decarbonized society, and become a leader in efficiency in the cement industry both in Japan and overseas.

Although concerns remain regarding the impact of COVID-19 on our business activities in Japan and overseas, we will flexibly and rapidly respond to environmental changes. The cement business provides a stable supply of fundamental building materials for maintaining social infrastructure and disaster-prevention infrastructure, and plays a role in contributing to building a recycling-oriented society by recycling a large amount of waste and by-products in addition to household waste such as sewage sludge, and we will continue to improve these functions via various the development of technologies. Furthermore, we hope that we will contribute to building a sustainable low-carbon society by leading the cement business itself to decarbonization, while also indirectly promoting decarbonization of other industries via popularization of concrete paving and power saving.



Cement Business

Reorganization of domestic business and development of new overseas bases

The Company will reorganize domestic business, optimize the production system, and aim to establish a stable profit base through economies of scale in order to respond to the decreased demand for cement in Japan. We will also utilize our superiority in Japan to expand growth in overseas markets by increasing our overseas bases, including those in the United States.

[Domestic]

Create rationalization effects by consolidating factories, logistics facilities, and sales functions

In Japan, we will promote domestic business restructuring and production system optimization, while strengthening our Kyushu Plant and enhancing/optimizing our downstream business. In regard to business expansion, we have determined that the benefits obtained by conducting cement business independently are limited, and therefore should pursue the merits and synergies of business consolidation.

Amount of waste and byproducts:

Approx. **4 million tons/year**

Environmental business expansion and development in new technology

We plan to pursue expansion of the environmental business and increase reception of industrial waste based on the top production capacity in Japan by expanding the recycling business, reducing CO₂ emissions, and promoting the development and commercialization of new technologies for collecting and recycling. We will also improve the ratio of alternative thermal energy by focusing on waste treatment with thermal energy, as there is room for expansion.



Waste tires



Wood chips

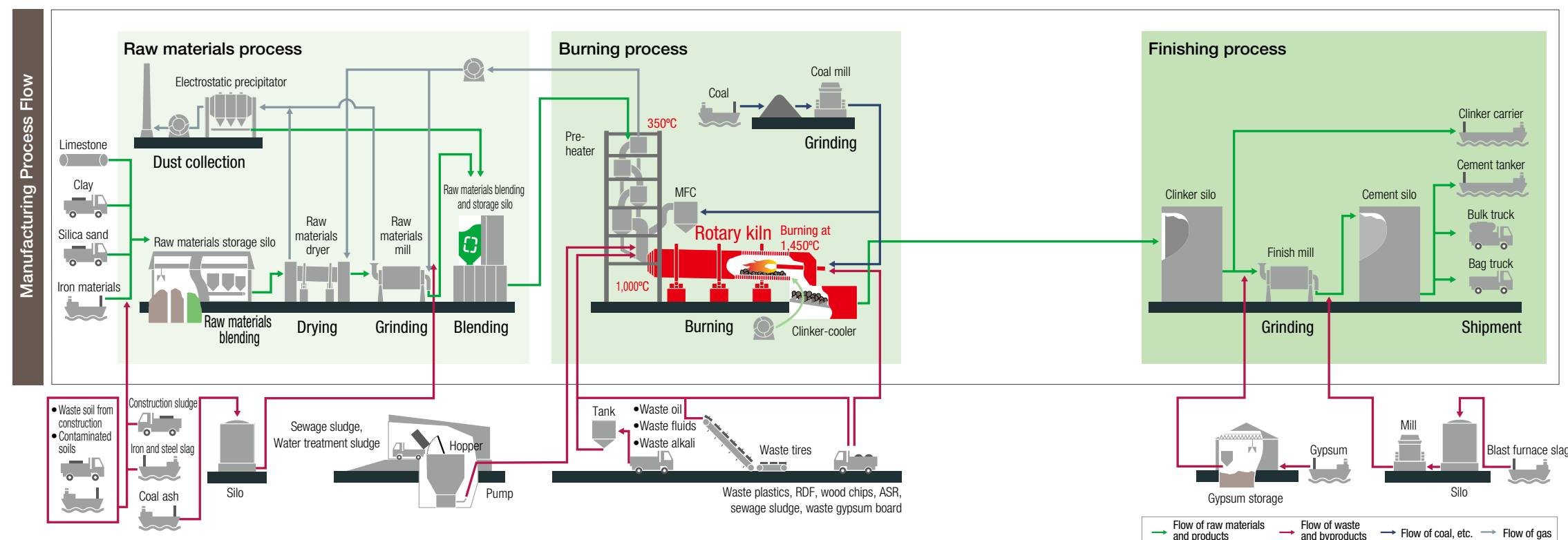


Waste plastics



Sewage sludge

Cement production process and waste reception



[Overseas]

Expand business foundation overseas where population growth is expected

Overseas, we will aim to expand business and create new business in regions where future growth can be expected. In the United States, we will further enhance our business foundations by further developing and expanding upon the strengths of Robertson's Ready Mix, Ltd., which is our core company and has the top share of ready-mixed concrete in the region of Southern California. We also plan to develop new business bases in areas other than the United States, with a focus on promising countries and regions where growth can be expected, in anticipation of business development via the construction of a vertical value chain.



Mitsubishi Cement Corporation in the United States
Cushenbury Plant



Robertson's Ready Mix, Ltd. ready-mixed concrete plant

TOPICS

Integrate business with long-time partner Ube Industries, Ltd.

The Company decided to integrate its cement business and other related businesses with that of Ube Industries, Ltd. by April 2022. We previously established Ube-Mitsubishi Cement Corp. as an equally-owned joint venture and collaborated for many years, but due to current market changes, we have decided to integrate the entire cement business in order to focus the cash flow obtained in domestic business on growth fields and thereby aim for sustainable growth as a company that contributes to the maintenance of social infrastructure and the development of a recycling-oriented society.

We aim to integrate our cement business and other related businesses with that of Ube Industries, Ltd. by April 2020

Main businesses for integration

- Domestic & overseas cement business
- Ready-mixed concrete business
- Limestone resource business
- Energy & environment related business
- Construction material business and other related business

Integration method

- "Establish a new equally-owned joint venture that inherits the target business and conduct an absorption-type merger in which the new joint venture is the surviving company, and Ube-Mitsubishi Cement is absorbed"
- The investment ratio of the new company is expected to be 50:50

Integration schedule

- February 2020: Signing of letter of intent
- Late September 2020 (scheduled): Signing of definitive agreement on integration
- June 2021 (scheduled): Obtaining approval for integration at the ordinary general shareholders' meetings of both companies
- April 2022 (scheduled): Conduct integration



Environment and Energy Business

Environmental recycling

Renewable energy

Driving force of resource-recycling systems

Leading company in geothermal development

Contributing to achieving a safe, secure, and sustainable society by utilizing our unique technologies and superiority in the fields of environmental recycling and renewable energy

Risks and opportunities facing the environmental recycling business include the market entry of competitor companies, home appliance manufacturer restructuring, national and local government emission trends, and the price of recovered materials such as copper and iron scrap is a factor that affects business performance. The risks and opportunities facing the renewable energy business include the trends and market entry of competitor companies and demand for renewable energy, and weather conditions are a factor that affects performance.

The strengths of the Company in the environmental recycling business include our recycling processing technology, technology for recovering materials such as rare earths, incineration fly ash recycling technology, and our possession of recycling systems at nonferrous smelters and cement plants. In the renewable energy business, our strengths include our experience with developing and



Shogo Yamaguchi, Managing Executive Officer
President, Environment & Energy Business Company

Specific Measures of the FY2023 Strategy

- Expand home appliance recycling business, advance automation, and improve added-value of recovered products
- Demonstrate LiB recycling technology and solar panel recycling technology
- Secure stable plant operations in incineration fly ash recycling business and biogasification business
- Complete Komatagawa New Power station, construction of Appi Geothermal Power Station, and survey of new geothermal areas

Projected Achievements at the End of FY2023

- Establishment of a stable business base for the environmental recycling business
- Expansion and stable operations of renewable energy stations and search for new geothermal areas

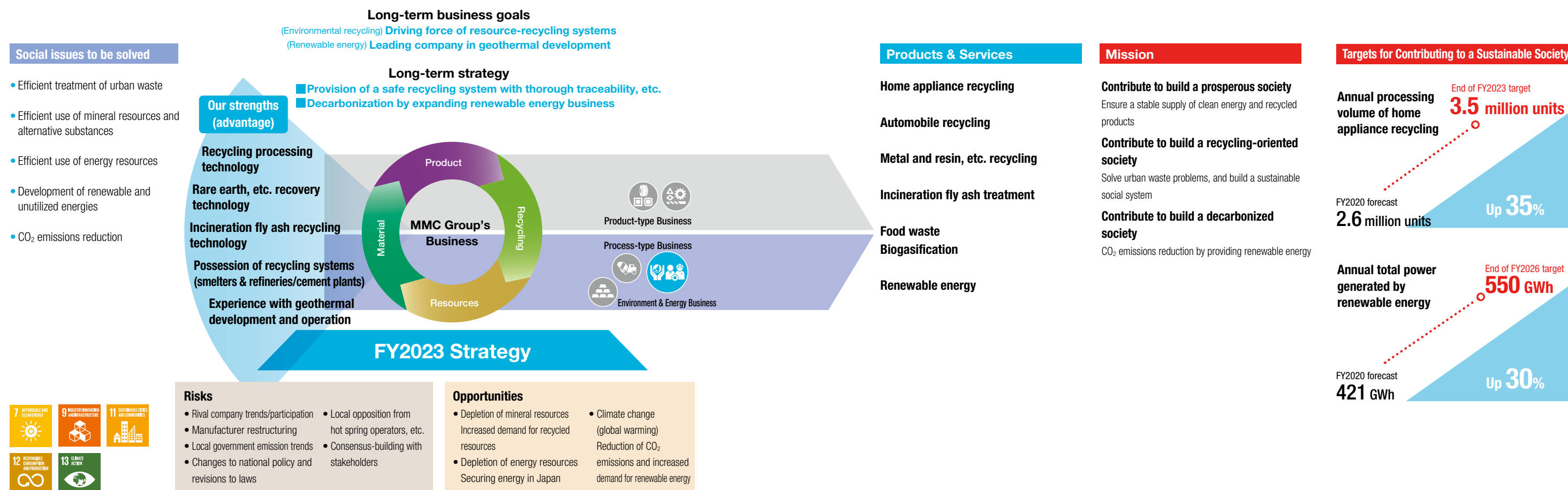
operating geothermal energy. On the other hand, future challenges facing the environmental recycling business include the promotion of automation, ensuring high added-value for recovered materials, and stable operation of the incineration fly ash recycling business. Future challenges facing the renewable energy business include the survey and development of new geothermal areas.

The Company will utilize this superiority to achieve sustainable systems, which are not based on landfill or incineration, via the synergy generated with the smelting and cement recycling system that the Group possesses. We also aim to utilize our technologies and expertise accumulated in the recycling business of used products such as home appliances and automobiles in order to build an advanced business model that maximizes circulation of resources from various types of waste and scrap. We aim to become a company that proposes and builds new societal systems in

the future, as a driving force of resource-recycling systems. In the field of geothermal power generation, we aim to become a leading company that utilizes and enhances the geothermal related technologies we have in surveying, construction, and operation in order to drive the industry with our performance, technical ability, and presence.

We are expecting to see privatization of waste processing systems due to the economic slump caused by COVID-19. We hope that we can accelerate the formation of a recycling-oriented society by proposing and building suitable systems for processing urban waste that incorporate our knowledge and technologies.

We believe that the next 10 years will be an important decade for the environmental recycling business and renewable energy business, as the values and morals of humanity head towards environmental conservation and the formation of a sustainable society.



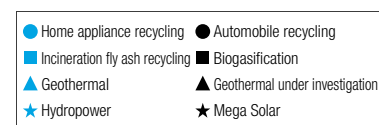
Environment and Energy Business

Enhanced competitiveness and expansion of environmental recycling businesses Completion of Komatagawa New Power Station, construction of Appi Geothermal Station, and survey of new geothermal sites

In order to achieve our goals of becoming a driving force of resource-recycling systems and a leading company in geothermal development, we will promote decarbonization by expanding the renewable energy business and providing reliable recycling systems via measures such as thorough traceability.

Environmental Recycling Initiatives

By making the most of the characteristics and functions of the materials company, we will aim to contribute to the construction of a recycling-oriented society by developing and expanding recycling business that does not rely on final disposal sites and can be trusted by stakeholders. In order to establish resource-recycling systems, we plan to build a system that brings our customers peace-of-mind by ensuring traceability in home appliance recycling, automobile recycling, incineration fly ash recycling, and food waste biogasification.



Home appliance recycling

We are promoting a home appliance recycling business that can contribute to building a recycling-oriented society by achieving higher added-value of recovered materials, development of automation technologies, and appropriate recycling processing.



Incineration fly ash recycling

The Company promotes a recycling business that desalinizes the incineration fly ash generated when household waste, etc. is burned to recycle it as material for cement.



Automobile recycling

As the electrification of automobiles continues, we will utilize our technologies and expertise accumulated in the home appliance recycling business to promote the automobile recycling business. We also work on developing LiB recycling technologies.



Food waste biogasification

(New Energy Fujimino Co., Ltd.: Scheduled to start operation in September 2020)
The Company promotes a recycling business that performs biogasification (methane fermentation) on the food waste output from locations such as food factories and retail stores to generate renewable energy (electricity), and thereby achieve both the suitable treatment of waste and the supply of energy to society.

Renewable Energy Initiatives

Based on the management resources we have cultivated, we will expand the renewable energy business and contribute to the construction of a decarbonized society by providing a stable energy supply with a low environmental impact.



Wasabizawa Geothermal Power Station (Yuzawa City, Akita Prefecture)
Operator: Yuzawa Geothermal Power Generation Corporation
Started commercial operation in May 2019 (output capacity 46,199 kW)



Komatagawa New Power Station (Kitaakita City, Akita Prefecture) (under construction)
Operator: Mitsubishi Materials Corporation
Scheduled to start operation in December 2022 (output capacity 10,326 kW)



Appi Geothermal Power Station (Hachimantai City, Iwate Prefecture) (under construction)
Operator: Appi Geothermal Energy Corporation
Scheduled to start operation in April 2024 (output capacity 14,900 kW)



Irigama Solar Power Station (Kurihara City, Miyagi Prefecture)
Operator: LM Sun Power Co., Ltd.
Started commercial operation in January 2015 (output capacity 6,930 kW)

Other Businesses (Aluminum and Affiliated Businesses)

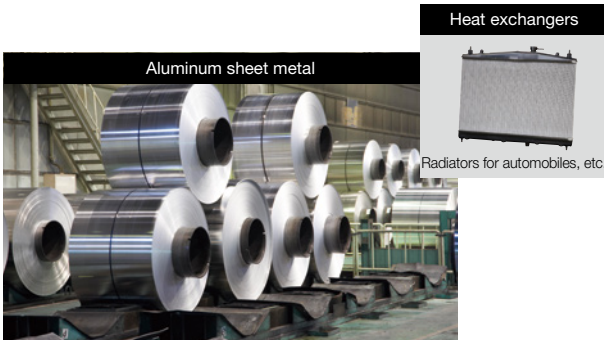
Utilizing our technical strengths in aluminum to accurately identify the needs of society and create new added-value

Our Aluminum Business is comprised of the Mitsubishi Aluminum Group, which runs our rolled and processing business, and the Universal Can Group, which runs the manufacturing and sale of our aluminum beverage can business.

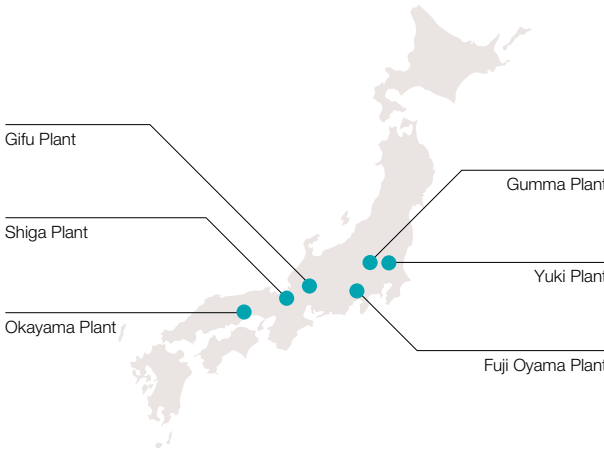
In our rolled and processing business, aluminum is expected to continue to grow due to its promise as a material that contribute to energy-saving through weight reductions in vehicles, and that can serve as a substitute for copper and other such high-priced materials. Mitsubishi Aluminum Co., Ltd. focuses its growth strategy on the exterior materials used in lithium-ion batteries for automobiles and is investing in its Fuji plant to improve productivity and profitability.

As to the aluminum beverage can business, demand for such is expected to shrink due to the declining birth rate and aging population in Japan. In spite of such a business environment, the Universal Can Corporation has contributed to the building of a recycling-oriented society through the utilization of used aluminum beverage cans as recycling materials, while leading the way in expanding the market ahead of its competitors, leveraging such advanced technical capabilities by introducing an aluminum bottle with outstanding resealing properties to the market early on. While competition with plastic bottles has also intensified in recent times, we will strive to create new added-value such as reducing the weight of aluminum bottles and developing new shapes and sizes of bottles.

■ Mitsubishi Aluminum sheet metal for heat exchangers



■ Manufacturing sites of Universal Can Corporation



Affiliated Business

In affiliated businesses, diverse group companies operate a varied range of businesses.

In addition to engineering and trading, the businesses are involved in the manufacture and sale of salt, as well as tourism at former mining sites.

Mitsubishi Materials Techno Corporation conducts comprehensive engineering from design to post-construction maintenance in a wide range of fields including nonferrous metal plants and chemical/pharmaceutical plants, both in Japan and overseas. It is also expanding its business over Japan with heat pump systems that utilize geothermal heat, which is one form of renewable energy.

Mitsubishi Materials Trading Corporation, the general trading company of the Mitsubishi Materials Group, handles a wide range of products and businesses, such as nonferrous metals, metal products, automotive parts, new materials, semiconductors, electronic materials, electronic devices, industrial machinery, micro-machined products, construction materials, and construction work, and also sells precious metal clay and fine gold cards manufactured at our Sanda Plant to end consumers.



Construction of a practical geothermal heat pump system (Tokyo Skytree)



Ellatzite Mine, where our mine drainage management technologies are in operation (Bulgaria)



Fine gold cards sold by Mitsubishi Materials Trading Corporation