

## Message from the President and CEO



Mitsugu Yamaguchi  
President, CEO and  
Representative Director

As we strive to prosper and sustain growth, the true value of the KOBELCO Group's comprehensive capabilities with diverse technologies is being tested in this unprecedentedly challenging business environment. We are pushing ahead with reforms, including a shaking up of our business portfolio, for the next 100 years without being afraid of change.

### Our Response to the COVID-19 Pandemic

#### Our first and foremost priority is the safety and health of all our stakeholders

The KOBELCO Group believes its highest priority is to protect the safety and health of its customers, employees and their families. While making every effort to prevent the spread of the novel coronavirus, the Group is continuing operations to ensure an uninterrupted supply of essential products and services for social infrastructure. Recognizing this as our social responsibility and mission, we are working diligently to this end.

We established a Companywide COVID-19 response office in January 2020. This organization was upgraded in April to a Companywide response headquarters (headed by the president) and charged with ensuring appropriate business continuity while taking measures in response to COVID-19 based on the three basic policies. On May 25, the Japanese government decided to completely lift the state of emergency. Meanwhile, Kobe Steel is continuing to implement measures at all of its bases in Japan so that employees can work remotely from home. We are encouraging our employees to telework to the extent possible by making necessary arrangements to continue business operations unimpeded. Head offices, branch offices and sales offices are to reduce the ratio of employees coming to

work to less than 50%, and similar targets were set by respective divisions at other business locations. If they come to work, employees have been instructed to commute during off-peak hours, always wear masks, and take other measures to prevent the spread of the novel coronavirus. In principle, all business trips inside Japan that require transportation by bullet train or airplane are prohibited. All international travel is forbidden. Additionally, the Board of Directors and Executive Council have moved to online conferences for making important decisions that affect the entire company.

Since the KOBELCO Group also has bases in China, we were able to rapidly assess the outbreak in China and set up the response office at an early stage.

Steelworks operate 24 hours a day. This is why it is essential that we make every effort to prevent infections, avoid closed and crowded spaces, and limit to the extent possible close contact among people across the entire Group. We are keenly aware that the Group's responsibility to society entails operating its manufacturing sites and ensuring a reliable supply of products. We will fulfill this responsibility while making sure our employees stay safe.

#### Three Basic Policies

1. We place the highest priority on safety and health for all stakeholders in Japan and overseas, including customers, business partners, community members, employees of the KOBELCO Group and others working on company premises, and their respective families.
2. In order to fulfill our social responsibility, we continue to provide products and services necessary to maintain the social infrastructure and other aspects, while carrying out thorough preventive measures against infection.
3. We implement timely and appropriate information disclosure to fulfill our accountability to stakeholders.

## The Rolling of the Medium-Term Management Plan (Fiscal 2019–Fiscal 2020) Urgent Issues to Address with a Sense of Crisis

Progress on the Rolling of the Medium-Term Management Plan has been beset by challenges arising from external conditions, mainly deterioration in demand, while also encountering numerous issues caused by internal factors.

Under the current Medium-Term Management Plan, Kobe Steel aims to establish a business enterprise centered on the three core business areas of materials, machinery and electric power, and has implemented measures to achieve this objective through fiscal 2018. Key initiatives included measures to establish a stable earnings foundation by consolidating upstream operations in the steel business and advancing new power generation projects, in addition to pursuing growth opportunities through automotive weight reduction strategies. Furthermore, the Company strengthened corporate governance and reinforced its business foundation through the Core Values of KOBELCO Next 100 Project (activities looking ahead to the next 100 years).

Kobe Steel laid out investment plans for its automotive weight reduction strategies, pursuing growth opportunities, but has not yet earned a return on these investments due to major changes in demand in a deteriorating external business environment.

In the Rolling of the Medium-Term Management Plan, announced in May 2019, Kobe Steel identified and then

enacted measures for two key themes in fiscal 2019–fiscal 2020, namely (1) strengthening profitability with a focus on materials, and (2) making efficient use of management resources and strengthening the business base. In fiscal 2019, the Company made more progress than anticipated on increasing the efficient use of management resources in terms of reducing strategically held shares, among other plans. With regard to strengthening profitability with a focus on materials, however, fixed costs have not been reduced as much as we had intended, despite being able to cut costs as planned (mainly variable costs) through the consolidation of upstream operations at Kakogawa Works. This slow progress is attributable to an increase in maintenance work costs to ensure stable output and issues with our *monozukuri*\* capabilities, notably production issues at an aluminum-related business unit.

As evidenced by the significant amount of impairment losses on fixed assets the Company booked in fiscal 2019, Kobe Steel has not made adequate progress on strengthening its *monozukuri* capabilities or improving sales prices in the materials businesses, in addition to delays in achieving returns on strategic investment projects. The KOBELCO Group's most pressing issue now is to strengthen profitability with a focus on materials.

\* Craftsmanship in manufacturing

## KOBELCO Group's Strengths and Future Issues Facing Reality, Embracing Change without Fear

We are facing an unprecedentedly challenging business environment, with flagging demand due to U.S.–China trade friction and the COVID-19 pandemic. In order to prosper and sustain growth, the KOBELCO Group must directly face reality and embrace change without fear.

In the materials businesses, where we are addressing pressing issues with a sense of crisis, management has identified the following three factors behind the deterioration in earnings.

### 1. Changes in Industry Structure

Kobe Steel increased its cost competitiveness in the steel businesses by consolidating upstream operations at steelworks in 2017. However, earnings worsened owing to

structural problems arising from higher raw material costs and lower product prices, in addition to fixed costs remaining stuck at high levels. Despite these circumstances, Kobe Steel has maintained its competitive advantages in special steel wire rod and ultra-high-strength steel sheets for automobiles.

Looking ahead, Kobe Steel will rapidly work to reduce fixed costs while monitoring profitability and production volume, in addition to improving sales prices by focusing on products that have competitive advantages in the market. In light of shrinking production of crude steel in Japan, management is also examining changes to the production structure. Instead of chasing profits by selling commodity products on a large scale, the Company aims to steadily

generate profits by focusing on its fields of expertise, such as special steel and ultra-high-strength steel sheets.

### 2. Delayed Expansion in Demand

In the aluminum sheet business, Kobe Steel's strengths are derived from its technological advantages and high market share in automotive materials. Despite a decision made by management to invest (capital expenditures and strategic investments) in automotive materials, we have seen a delay in aluminum applications in the industry and a slowdown in sales of automobiles in China since then. For these reasons, the Company was forced to downgrade its forecasts for demand, and as a result, returns on these investments will take much longer to materialize than initially anticipated.

To rectify this issue, Kobe Steel newly established the Application Technology Center in April 2020 to lead efforts for improving solutions proposed to customers. At the same time, the Company aims to increase profits by reducing fixed costs, including emergency measures to improve profitability, in addition to expanding overall sales mainly focusing on beverage can stock.

### 3. Issues with *Monozukuri* Capabilities

In fiscal 2019, we recorded impairment losses on fixed assets in the titanium, aluminum suspension and aluminum

casting and forging businesses, where the Company has high shares of markets with strong growth potential. Such earnings deterioration is attributed mainly to our *monozukuri* capabilities on the productivity and cost side, despite strenuous efforts to win orders to expand business and market share. In the relatively large materials businesses of steel, aluminum and copper, another problem was a delay in establishing a management structure to expand the parts business, where markets and business customs are different. Starting with the Advanced Materials Business, which was created in the April 2020 reorganization, the Company aims to secure stable sources of earnings through business management that emphasizes profitability, including the streamlining of product lines, in the titanium, aluminum suspensions and aluminum casting and forging businesses. More specifically, with a focus on strengthening business management, we will reinforce business planning and management functions, including monitoring of order-taking decisions, while improving *monozukuri* capabilities and parts business strategies for each demand field centered on parts.

In the steel casting and forging business, where changes in the industry structure have undermined earnings, we aim to secure steady profits by reducing fixed costs to match demand and improving prices to maintain business continuity.

## Promotion of Sustainability Management Based on the Group Corporate Philosophy Taking on challenges to solve social issues for continued value creation

Over the past few years, the concepts of ESG and SDGs have caught on as values shared around the world. These shared goals aim to enhance the sustainability of society and corporations. As the world confronts a variety of social issues, corporations have become increasingly oriented toward sustainability management that strikes a balance between economic value and social value, in their position as global enterprises. Here, it is important for companies to sustain growth in their corporate value through an approach of providing value to both society and the environment. Sustainability cannot be truly achieved unless value is provided to both society and the environment, while companies generate sustainable profits.

In May 2020, the KOBELCO Group created a new Corporate Philosophy for the Group. Starting with the Core Values of KOBELCO and the Six Pledges of KOBELCO Men and

Women as the basis, KOBELCO's View of the Future and KOBELCO's Mission were incorporated into the new corporate philosophy. KOBELCO's View of the Future and



Message from the President and CEO

KOBELCO's Mission were carefully crafted from the bottom up over the course of a year, reflecting various opinions gleaned from discussions by employees on the Dialogue Platform at their workplaces.

Furthermore, the KOBELCO Group updated its framework for sustainability management, making its approach to sustainability management more presentable and easily understood by people both inside and outside the Company. The idea behind this is to divide all of the KOBELCO Group's activities into either the value creation area, which realizes business growth, or the business foundation area, which prevents damage to corporate value, and to advance all of these activities based on the Group Corporate Philosophy.

For employees, this framework is designed to accelerate

the PDCA cycle for checking the current status of issues and initiatives being undertaken and taking actions for solutions. It also serves as a compass for connecting initiatives undertaken by organizations and individuals with the Group Corporate Philosophy. Additionally, this framework is shared externally with stakeholders as an essential part of the KOBELCO Group's value creation process of creating both economic and social value.

The promotion of sustainability management based on the Group Corporate Philosophy will be a recurring theme in the next Medium-Term Management Plan. To be an indispensable company to customers and society, we believe the mission of the KOBELCO Group is to continue creating new value while addressing social issues.

expansion of businesses that help reduce the environmental load and the search for growth opportunities in the machinery businesses. We will pursue growth opportunities that translate into value that only the KOBELCO Group can offer, by fusing together technologies accumulated in various fields such as the Company's electric power business, the initiatives for water treatment, waste processing, and effective biomass power generation undertaken by the consolidated subsidiary Kobelco Eco-Solutions Co., Ltd., as well as the unsurpassed direct reduction ironmaking process at the U.S. consolidated subsidiary Midrex Technologies, Inc. From the lessons we learned from our quality misconduct, the Company is pushing forward coordinated efforts across

business divisions at an organizational level while increasing such awareness among employees. As our cross-divisional task force has made progress on efforts to reduce CO<sub>2</sub> emissions, we have come to have heightened awareness of utilizing resources available Companywide.

Kobe Steel will introduce ROIC metrics to strengthen management of its business portfolio, in an aim to further evaluate business within the context of (1) specializing in truly competitive products and services and (2) tackling future growth fields and new fields.

The third step is (3) reexamining the business foundation and organizational structures that support our businesses to enable organic connections across diverse businesses.

### Concepts and Framework of the Next Medium-Term Management Plan Priority on specializing in truly competitive products and services

Toward the upcoming Medium-Term Management Plan, Kobe Steel is working to keep fixed costs as low as possible while curtailing expenditures on investment by screening capital investments and financing as a part of emergency measures to increase earnings and cash flow due to the uncertain outlook brought about by the COVID-19 pandemic.

We will begin by (1) specializing in truly competitive products and services, objectively evaluating the position, strengths

and weaknesses of products and services provided by the KOBELCO Group with an eye on increasing earnings power. This will necessarily entail a sweeping review of all operations, including unprofitable businesses, without designating any business as a sanctuary.

The next step is (2) tackling future growth fields and new fields, in pursuit of value creation that leverages our unique advantages and diverse technologies. This initiative includes

### To Our Stakeholders Transforming KOBELCO into a company indispensable to customers, society and employees

Two years have passed since I was appointed president in 2018. As president, my first mission was to restore trust in Kobe Steel after the quality misconduct was discovered and then implement measures to prevent a recurrence on all fronts. I focused my own efforts in particular on restoring the confidence of employees that had been lost due to the quality misconduct, by engaging in dialogue with employees at business locations in order to close the gap between management and employees. In this context, I believe proactive measures taken under the Next 100 Project have led to tangible results, and I will continue to move forward with these initiatives.

However, I realize that we have not made adequate progress toward our earnings targets and objectives in the Medium-Term Management Plan, with some businesses still dealing with structural issues and other businesses needing more time to see returns on investments. I am also well aware that investors are quite disappointed with our performance so far.

The business environment has become even more challenging than before, with demand softening due to U.S.–China trade friction and the COVID-19 pandemic. In order to prosper and sustain growth, the KOBELCO Group takes this new reality seriously and is working on all kinds of reforms, such as selectively focusing the business portfolio and implementing measures to leverage its collective strengths. The process industry, like the materials businesses at the KOBELCO Group, requires massive amounts of energy to transform its business operations. However, we must change ourselves for the next 100 years as the world around us also changes. I believe it is my current mission to transform KOBELCO into a company indispensable to customers, society and employees. To achieve this goal, we will continue to promote sustainability management based on the Group Corporate Philosophy and create economic and social value by providing solutions to the needs of society.

We ask for the continued guidance and support of our stakeholders as we move forward.

#### Approach and Framework for the Next Medium-Term Management Plan



*M. Yamaguchi*

Mitsugu Yamaguchi  
President, CEO and  
Representative Director

Special Feature: KOBELCO's Mission Story

# Using the Group's Collective Strengths to Reduce CO<sub>2</sub> Emissions



The KOBELCO Group Takes on the Challenge of Solving Social Issues with Its Unique Strengths and Technologies.

## Long-Term Initiatives to Address Climate Change

Around the world, the movement toward addressing climate change is gaining momentum with the start of the Paris Agreement from 2020, which was adopted at the 21st Conference of the Parties to the United Nations Framework Convention on Climate Change (COP 21).

By reducing CO<sub>2</sub> emissions throughout its value chain, the KOBELCO Group contributes to the achievement of goals in the Paris Agreement, as well as Japan's long-term vision and government policies, such as those embodied in Japan's Draft Commitment and Strategic Energy Plan. These ambitions also align with KOBELCO's View of the Future, which was integrated in the Group Corporate Philosophy in May 2020, stating "We envision a world in which people, now and in the future, can fulfill their hopes and dreams while enjoying safe, secure, and prosperous lives." We recognize our commitment to society is tested

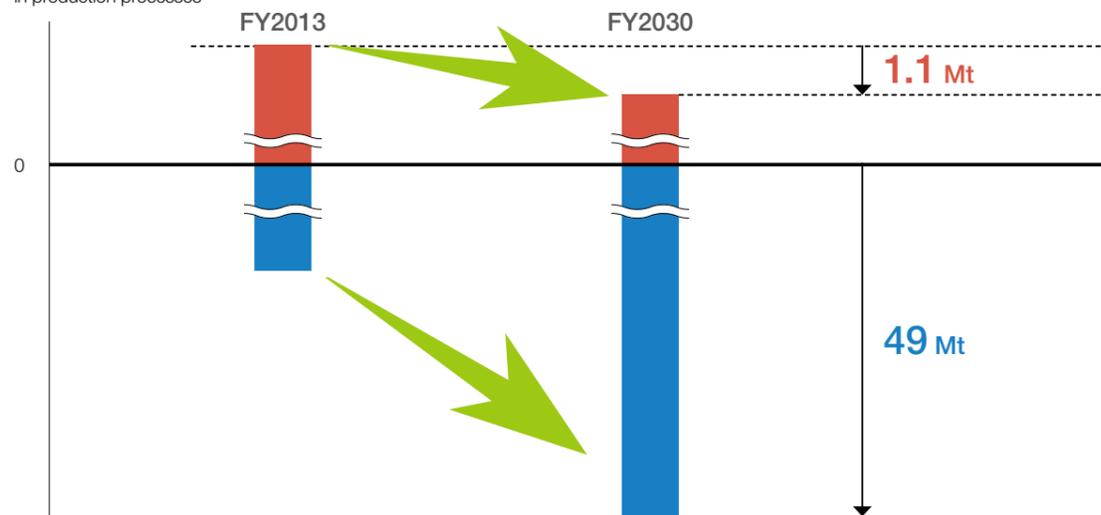
through our efforts to reduce CO<sub>2</sub> emissions, as we affirm it in KOBELCO's Mission, which states "Our mission is to provide solutions to the needs of society, by making the best use of the talents of our employees and our technologies."

In addition to reducing its own CO<sub>2</sub> emissions, the KOBELCO Group helps reduce CO<sub>2</sub> emissions at the stage of use in various areas of society through its innovative technologies, products, and services. In a new development, the Company has created objectives for fiscal 2030 and set two management metrics, consisting of (1) Reduction of CO<sub>2</sub> emissions in production processes and (2) Contribution to reduction of CO<sub>2</sub> emissions through technologies, products, and services.

Taking the long-term view, we are keen to reduce CO<sub>2</sub> emissions and achieve KOBELCO's View of the Future.

### The KOBELCO Group's FY2030 CO<sub>2</sub> Reduction Objectives

Reduction of CO<sub>2</sub> emissions in production processes



Contribution to reduction of CO<sub>2</sub> emissions through technologies, products, and services

## 1 Reduction of CO<sub>2</sub> Emissions in Production Processes

Over 95% of the KOBELCO Group's CO<sub>2</sub> emissions come from the Steel & Aluminum Business and the Advanced Materials Business, making the reduction of CO<sub>2</sub> emissions in their production processes a key issue. The Group's steel, aluminum, and other products are used by a broad range of industries. As such, we have a responsibility to reduce CO<sub>2</sub> emissions while maintaining cost competitiveness in order for our products to truly contribute to society.

The Company has endeavored to reduce CO<sub>2</sub> emissions at its business locations, such as by installing high-efficiency power generation facilities at Kakogawa Works. We aim to reduce 1.1 million tons of CO<sub>2</sub> by FY2030 (vs. BAU in FY2013) by continuing to conserve energy and invest in more efficient facilities.

## 2 Contribution to Reduction of CO<sub>2</sub> Emissions through Technologies, Products, and Services

Through its innovative technologies, products, and services, the KOBELCO Group helps reduce CO<sub>2</sub> emissions at the stage of use in various areas of society. With the global population poised to expand, it has become increasingly necessary for society as a whole to reduce CO<sub>2</sub> emissions. We therefore believe reducing CO<sub>2</sub> emissions is an important link to our growth strategy. As more automobiles are driven, cars need to become lighter in weight to improve their fuel economy. As a leading manufacturer of steel, aluminum and welding materials, the Group can make a significant contribution to automotive weight reduction in a wider range of fields.

Midrex Technologies, Inc., a wholly owned subsidiary of Kobe Steel, has developed the MIDREX® Process, a method for making direct reduction iron (DRI) using natural gas, which emits less CO<sub>2</sub>. The MIDREX® Process produces over 60% of the DRI in the world. We believe demand for DRI will only increase as industries move to combat climate change.

By expanding sales of MIDREX® plants, we are thus able to help reduce CO<sub>2</sub> emissions in the future. Midrex Technologies also has technology for a direct reduction process that uses hydrogen and is working on the development of hydrogen reduction ironmaking.

Through these initiatives, the KOBELCO Group aims to reduce 49 million tons of CO<sub>2</sub> by FY2030 through its technologies, products, and services.

### The KOBELCO Group's FY2030 Objectives

**1 Reduction of CO<sub>2</sub> emissions in production processes\*<sup>1</sup>**  
Reduction target: **1.1 Mt** (vs. BAU in FY2013)\*<sup>2</sup>

**2 Contribution to reduction of CO<sub>2</sub> emissions through technologies, products, and services**  
Reduction target: **49 Mt**

<sup>1</sup> Scope of the reduction target consists of business locations of Kobe Steel and Kobelco Construction Machinery.  
<sup>2</sup> BAU: Business as usual; emissions of greenhouse gases, or emissions per unit, assuming no additional measures are taken

**Contribute to the Paris Agreement and Japan's long-term vision and government policies by reducing CO<sub>2</sub> emissions throughout the value chain**

**FACT** Our Solutions to Social Issues

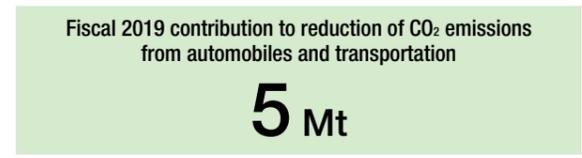
**1** Contribution to Reduction of CO<sub>2</sub> Emissions in Automotive Field

As the importance of protecting the global environment mounts, automakers have been working to electrify and reduce the weight of automobiles in order to achieve goals for reducing CO<sub>2</sub> emissions (i.e., improve fuel economy). Regulations for fuel economy and exhaust gas are likely to become stricter through 2030, adding momentum to the transition to lighter weight vehicles and electric vehicles. Environmentally friendly vehicles, such as hybrid and electric cars, often have heavy batteries, making it necessary to reduce the weight of the vehicle. However, collision safety or the rigidity of the car body cannot be sacrificed just to save weight.

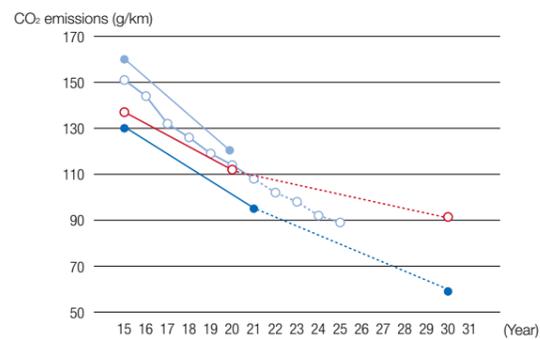
In April 2020, the KOBELCO Group reorganized the materials businesses and established the Application Technology Center to further support its customers as the only manufacturer in the world to provide steel, aluminum, and welding materials and dissimilar material joining technologies. The Company proposes ideas for weight reduction in a bid to provide value as a company with technologies for joining dissimilar materials. In fiscal 2019, we helped

reduce CO<sub>2</sub> emissions by an estimated 5 million tons through products that contribute to weight reduction in automobiles.

In addition to automotive weight savings, the KOBELCO Group has diverse technologies, products, and services that satisfy the need to comply with regulations on fuel economy and exhaust gas that are becoming stricter as vehicle electrification progresses. We will continue to help reduce CO<sub>2</sub> emissions further. Our ongoing efforts include developing compressors and heat exchangers for hydrogen stations that will facilitate the proliferation of fuel-cell vehicles (FCVs) and more.

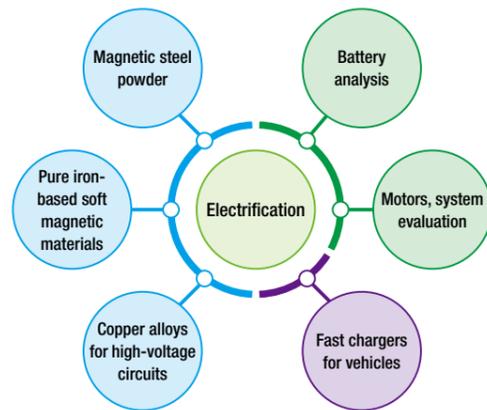


**Fuel Economy Regulations by Region (CO<sub>2</sub> emission equivalent)**



Europe: Decided to further tighten fuel economy and emissions regulations with a view to 2030  
Japan: Laws currently being revised for 2030 regulatory values  
Note: Created by Kobe Steel based on data from regulatory authorities in each country and region

**Contribution to Automobile Electrification**



**Multi-Materials That Contribute to Automotive Weight Reduction**

**Hoods, fenders, doors, roofs, etc.**  
Aluminum: Aluminum sheets for automotive body panels

**Bumpers, door impact beams**  
Steel: Ultra-high-strength steel  
Aluminum: Aluminum extrusions

**Joining and analysis**  
Joining: Welding materials, dissimilar material joining technology  
Analysis: Structure, processing, joining analysis



**Body frame**  
Steel: Ultra-high-strength steel  
Aluminum: Aluminum extrusions

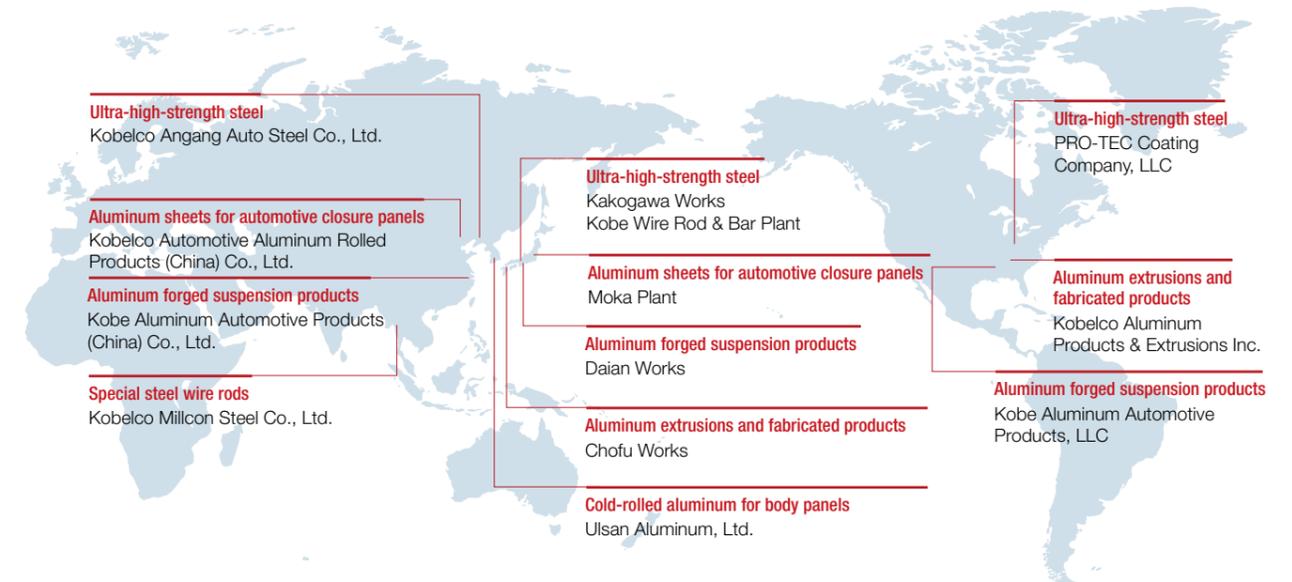
**Engine power trains**  
Steel for high-strength bolts  
High-strength steel powder for sintering gears

**Underbody parts**  
Aluminum: Aluminum forged suspensions

**Expansion of Global Supply Structure**

The KOBELCO Group has been expanding its global supply structure since automotive weight reduction is a worldwide issue. The Company is making strategic investments in materials for reducing the weight of automobiles, such as automotive valve spring steel

with a global market share of 50%, ultra-high-strength steel with a leading share of the industry, and forged suspensions for automobiles with a top share of the domestic market.

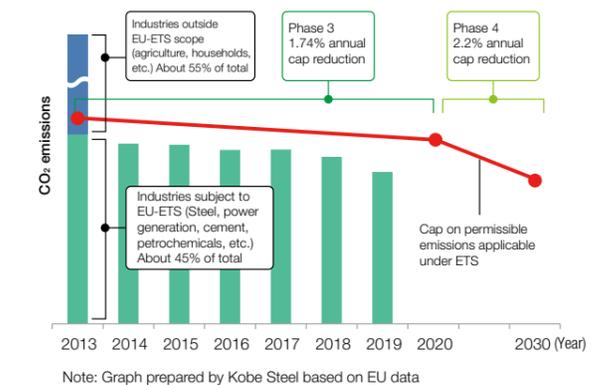


**2** Reduction of CO<sub>2</sub> in Ironmaking Field: Direct Reduction Ironmaking by MIDREX® Process

Steel has many excellent qualities as a basic material, in terms of resource abundance, production cost, and functional diversity. Steel supports our lifestyles as a core material used in social infrastructure and durable consumer goods. It is also a highly recyclable material. However, as the world population grows and society develops, steel scrap recycling cannot satisfy all of the demand for steel. Scrap steel has many impurities, such as copper and tin, making it difficult to produce high-grade steel. Clean sources of metallics are needed to dilute impurities in recycled steel. For these reasons, new steel will still have to be produced from iron ore in the future.

Steel helps reduce CO<sub>2</sub> emissions at the stage of use in various products. One example is ultra-high-strength steel, which reduces the weight of automobiles. On the other hand, the steel industry is one of the largest emitters of CO<sub>2</sub>, and reducing these emissions has been a hot topic. New steel is mainly produced by the blast furnace method, in which coke is used to reduce the iron ore. A drawback of this reduction process is emissions of large amounts of CO<sub>2</sub>. Around the world, CO<sub>2</sub> emission trading systems have gained momentum, as seen in the European Union and the Republic of Korea, where the steel industry is subject to cap-and-trade emission trading systems (ETS). Companies that emit

**Volume of and Limit for Emissions Applicable Under European Union Emissions Trading System**



greenhouse gases in excess of their emission framework must obtain emission credits from other companies or markets. In these regions, the need to reduce CO<sub>2</sub> emissions has been increasing.

Special Feature: KOBELCO's Mission Story

Against this backdrop, the direct reduction process is drawing attention as a next-generation ironmaking process that can substantially lighten the burden on the environment. Direct reduction plants, which use natural gas to reduce iron ore, emit less CO<sub>2</sub> than the blast furnace method. Direct reduction plants are not as large as blast furnaces and do not require coke. This is why they have mainly been constructed in developing countries that have their own natural gas resources. In advanced countries as well, electric arc furnace steelmakers have been using DRI as an alternative to high-grade scrap and pig iron in recent years, since DRI is a clean source of iron with few impurities. Especially in Europe, the use of DRI has been attracting attention as a way to reduce CO<sub>2</sub> emissions.

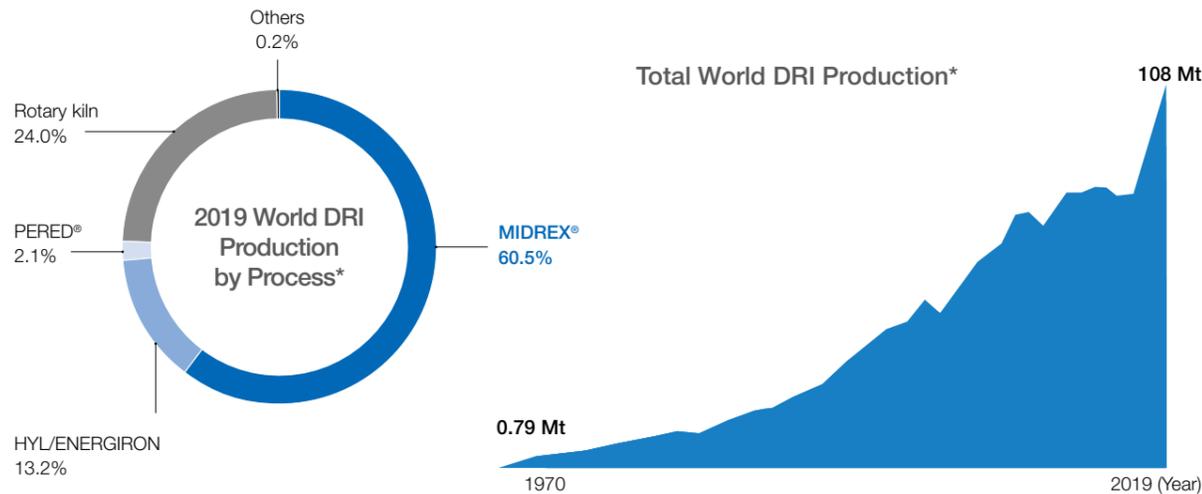
The annual global DRI production has grown dramatically, from roughly 0.8 million tons in 1970 to over 100 million tons in 2019, and it is expected to continue growing. Around two-thirds of the DRI in the world today is produced using the MIDREX® Process.

In 1983, Kobe Steel acquired U.S.-based Midrex Technologies, Inc., the company that developed the MIDREX® Process, and turned it into a wholly owned subsidiary. In the 40 years or so since then, we, as the process owner, have been promoting the MIDREX® Process around the world.

Fiscal 2019  
Contribution to CO<sub>2</sub> reduction from MIDREX® Process  
**23 Mt**



voestalpine's direct reduction plant in the U.S. in operation since mid-2017



\* Created by Kobe Steel based on data from 2019 World Direct Reduction Statistics

**NEWS** Midrex Technologies, Inc. Collaboration on Low CO<sub>2</sub> Metallics and Low CO<sub>2</sub> Ironmaking Solutions with Vale S.A. and Mitsui & Co., Ltd.

Along with Midrex Technologies, Kobe Steel has agreed to collaborate with Vale S.A., the world's largest iron ore producer, and Mitsui & Co., Ltd., a global trading company with a diversified business portfolio that includes resource businesses, on providing the global steel industry with low CO<sub>2</sub> metallics and low CO<sub>2</sub> ironmaking solutions.

The KOBELCO Group will leverage its collective strengths in diverse technologies, including the MIDREX® Process, as well as its products, services and human resources, while collaborating with Vale and Mitsui & Co. on solutions for the social issue of reducing CO<sub>2</sub> emissions in the global steel industry.

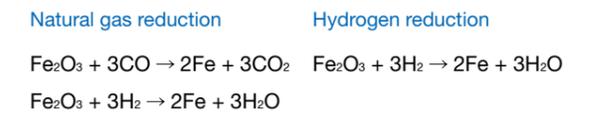
**TOPICS** Direct Reduction Ironmaking Using Hydrogen

Some CO<sub>2</sub> is inevitably released during ironmaking because the iron ore reduction process requires coke to be used in blast furnaces, while natural gas is used in the direct reduction process. Around the world, the commercialization of hydrogen reduction ironmaking is highly anticipated because CO<sub>2</sub> is not released during the iron reduction process that uses hydrogen as the reducing agent. The KOBELCO Group has world-class technologies for hydrogen reduction ironmaking.

The MIDREX® Process is an ironmaking technology that uses natural gas, so it emits less CO<sub>2</sub> than blast furnaces. The advantages of the MIDREX® Process are not limited to being a low CO<sub>2</sub> ironmaking method. The MIDREX® Process can reduce CO<sub>2</sub> emissions even more by replacing, in stages, the natural gas with hydrogen. Furthermore, without a large additional investment, it

is possible to transition to a hydrogen-based reduction ironmaking process that uses 100% hydrogen gas as the reducing agent. In this respect, the MIDREX® Process is an ideal technology for flexibly transitioning to a carbon-free society because the ratio of hydrogen can be increased in stages while keeping additional costs at a minimum, together with the proliferation of hydrogen made from renewable energy sources and improvements in cost performance.

• Reduction reaction in the MIDREX® Process



**NEWS** Midrex Technologies, Inc. Collaboration Agreement Signed with ArcelorMittal for Hydrogen Steel Production

Midrex Technologies has signed a Framework Collaboration Agreement (FCA) with ArcelorMittal S.A., the world's leading steelmaker, to collaborate on the research and development of low CO<sub>2</sub> ironmaking using hydrogen. Midrex Technologies will provide a direct reduction technology using hydrogen.

As a part of their agreement, Midrex Technologies has been commissioned to design a demonstration plant to produce direct reduced iron using hydrogen. The demonstration plant will be constructed inside ArcelorMittal's steelworks in Hamburg, Germany.

This demonstration plant will perform verification of hydrogen reduction by recovering the hydrogen contained in the top gas emitted from the existing direct reduction plant that uses natural gas as the reducing agent. The plant will produce about 100,000 tons of direct reduced iron per year, making it the world's largest direct reduction plant that uses only hydrogen as the reducing agent.



ArcelorMittal's existing direct reduction plant at its steelworks in Hamburg, Germany

## Roundtable Talk Among Three Independent Directors



**Takao Kitabata**  
Independent Director  
Chairman of the Board



**Hiroyuki Bamba**  
Independent Director



**Yumiko Ito**  
Independent Director

Roundtable  
Talk on  
Corporate  
Governance

In an increasingly challenging business environment, characterized by the COVID-19 pandemic, the KOBELCO Group is facing a pivotal moment in its history. How should we link the benefits of corporate governance reforms undertaken over the past few years with efforts to reinforce the business foundation? How should we sketch a roadmap for healthy and sustainable growth? Independent directors Mr. Takao Kitabata (Chairman of the Board and Head of the Nomination & Compensation Committee), Mr. Hiroyuki Bamba, and Ms. Yumiko Ito sat down for a candid discussion from a wide range of perspectives.

### What has been unveiled by COVID-19?

**Ito** Kobe Steel's response to the COVID-19 outbreak was swift overall, in my opinion. In January 2020, when it was still unknown whether COVID-19 would become a pandemic, the Company rapidly set up a Companywide COVID-19 response office, and the Board of Directors discussed measures at an early stage, focusing on cash flow.

**Bamba** Kobe Steel quickly moved to implement thorough preventive measures to counter the spread of COVID-19. From the detailed reports at the Board of Directors about how the Company responded to this crisis, I could see management gave clear instructions about business trips and meetings, such as limiting the number of people who gather together. I believe such response underscores the significant progress that has been made in strengthening risk management as an organization in the wake of the quality misconduct discovered in fiscal 2017.

**Kitabata** Management has promptly addressed individual issues and we independent directors received reports about them in emails frequently. I was particularly impressed by the message conveyed by the president that the health of all employees and their families is the highest priority. I believe Kobe Steel's response to this crisis has been above and beyond the base guidelines for the steelmaking industry.

It was also impressive that teleworking and video conferencing have gone unexpectedly smoothly. Remote working conditions have not impeded the duties of the Board of Directors or daily business execution, and have positive aspects as well. Although companies had been slow to introduce work-style reforms and teleworking options, the pace of change seems to have significantly accelerated. I believe it is important to be willing to change areas that should be changed, as we look back at this experience.

**Ito** Underlying issues tend to get exposed in a crisis situation. I hope Kobe Steel takes this opportunity to advance reforms without forgetting the issues that have come to the surface. IT will be a key to facilitating improvements on many fronts, such as diversity and business efficiency.

**Kitabata** Teleworking can help employees increase productivity and achieve a work-life balance. For example, it could be beneficial especially for employees struggling to balance work with child-rearing. Through teleworking, some employees may be able to complete their tasks more efficiently by concentrating on their work, reducing the required time from eight hours at the office to five hours at home. Taking it one step further, this new normal may shed light on a variety of problems with the current functions of headquarters including the need to retain large head offices in major cities and obligate employees to commute to work at scheduled times.

### Drastic Improvement of Profitability

**Bamba** Kobe Steel is currently facing major challenges on the earnings front. The next two to three years will truly test the Company, especially on whether it can persevere in the materials businesses. The external business environment is quite challenging indeed, but this is the time for the Company to return to the basics and reassess its internal conditions. Taking a factory as an example, it is necessary to check that production lines are being operated with specified volumes, costs, quality, and delivery schedules. Also, it is important to quickly identify any divergences from the set goals by visualizing the progress made in daily business activities. The key is ratcheting up the precision of these efforts.

The KOBELCO Group has steadily improved its corporate structure while responding to the quality misconduct. Quality management and daily business management are common components in the structural foundation, so the benefits of various reforms can be shared across the entire organization. Kobe Steel has plenty of excellent components and strengths in fields other than steel. I am confident that the Company will emerge from this crisis as an even stronger company.

**Kitabata** In my opinion, inadequate communication inside the Company was partly to blame for the quality misconduct. Major strides have been made in improving communication since then. If the sales side can communicate even better with the production side, I think it would drastically strengthen profitability, and allow Kobe Steel to leverage its strengths further, as Mr. Bamba said.

However, Japan's steel industry is coping with extremely challenging business conditions. Since 1990, new factors have arisen, namely the steel glut in China and, more recently, the geopolitical confrontation between the U.S. and China. Given these changes in the business environment, I understand why Kobe Steel needed to update its Medium-Term Management Plan on a rolling basis. I believe the Company should use this opportunity to broaden the scope of its business plans, by incorporating broader perspectives such as trends in international politics and digital transformation in society.

**Ito** The Rolling of the Medium-Term Management Plan centers on two points: (1) strengthen profitability with a focus on materials, and (2) make efficient use of management resources and strengthen the business base. Of these, strengthening the business base is connected to the problem of restoring trust, and I have high praise for Kobe Steel's series of initiatives to invite external experts as needed to join the meetings of the Quality Management Committee and the Compliance Committee, while facilitating communication with the Board of Directors.

Roundtable Talk Among Three Independent Directors



I believe the new Group Corporate Philosophy, which was formulated through a bottom-up process, will have the power to bring all employees together.

Takao Kitabata

With regard to strengthening profitability, I have an impression that the Company is still at the halfway mark. Fostering common understanding to be shared within the Company is crucial in this context. In other words, numerical targets should be unified to some degree in each business. I believe our monitoring duties would also be easier if there was a shared awareness about customers, competitors, and internal conditions across the entire Group.

One more idea concerns the effective utilization of human resources across organizational boundaries. Being engaged in various businesses, Kobe Steel is rich in human resources with diverse knowledge. I would recommend that Kobe Steel enhance the horizontal deployment of human resources, for instance, by identifying employees who have good skills to launch a new business from a project and assigning them to a promising project in a different business division. Through such initiatives, the Company could gain better leverage over the strengths of its diverse business portfolio. Some managers have actually voiced this opinion inside the Company.

In the context of digital transformation, Kobe Steel needs to update its IT infrastructure. How to move it forward is a complex issue.

**Kitabata** Updating IT infrastructure is rather costly, and the technology quickly becomes obsolete.

**Bamba** Determining how long it will take to see a return on capital investments is also a hard problem. Even though it is a problem unique to this industry, I believe it is necessary to set shorter timelines for returns on investments and increase responsiveness to changes in the business environment. I believe the KOBELCO Group can maneuver more flexibly and effectively than its competitors.

**Ito** In these times of rapid change, it may be necessary to move first and then change course later, without being bound by conventional practices in the industry.

**Bamba** Each individual strategy, such as digital transformation, is a means toward the larger goal of what a

company aims to achieve. Medium-term plans are the vehicle for setting these goals. By reviewing how daily work is carried out and the logic that connects goals to strategies, the organization can steadily change. I hope we can have a deeper discussion about this for the next Medium-Term Management Plan.

Bottom-Up Approach to the Creation of the Group Corporate Philosophy

**Kitabata** Over the past few years, Japanese companies have introduced a variety of frameworks for corporate governance. This is a welcome trend in principle, but some parts need more polishing. In the past, Japanese people came up with the saying “Japanese spirit with Western learning.” To truly improve organizations, it is essential to incorporate the soul of the organization into a framework formed of outside elements. Corporate philosophies and business creeds have nurtured this soul component of Japanese companies.

In other countries, they call it SDGs, ESG and similar concepts, but Japanese companies have implemented this concept for a long time as a natural course of business. The same concept is also found in the idea that companies exist for their employees. In ancient Japan, Omi merchants held dear a business concept called *Sanpo-Yoshi* (three-way fulfillment, where the seller, buyer and society at large are satisfied). This was a forerunner of the SDGs.

Kobe Steel also must have inherited this philosophy, so it is wonderful to see that the Group Corporate Philosophy was created to codify the Company's basic principles. I believe this corporate philosophy will have the power to bring all employees together because it was formulated in a bottom-up process.

**Ito** Every company has a corporate philosophy in some shape or form. By putting it into words, a corporate philosophy becomes an effective compass for navigating a world that is going through dramatic changes. At young companies,

corporate philosophies are typically drawn up by the founders. With more than 100 years of history, the KOBELCO Group employed a bottom-up approach to create its corporate philosophy, facilitating the engagement of all employees in the process. I believe the substance of the corporate philosophy has strong affinities with the concepts of the SDGs and ESG.

This philosophy is the essence of the entire Group and is its greatest common divisor. With that said, I believe this corporate philosophy needs to be broken down a little bit more in order to infuse it into specific actions taken on the front lines. While steadily taking these next steps and combining approaches to business and social contributions, I believe Kobe Steel's future as a 200-year company will take shape.

**Bamba** I also think that it was an opportune time to craft a corporate philosophy, because companies need the grounds to rely on especially in challenging times, rather than in profitable times. Putting into words why our company exists, what it aims to accomplish, and where its competitive strengths lie will be certainly a positive force for the sustained growth of the Company.

By defining the vision of a company and sharing these goals with employees, employees become more motivated and focused on their work. This is another major benefit that a corporate philosophy brings.

Meetings of Independent Directors and Their Missions

**Kitabata** Meetings of Independent Directors assume a variety of functions, but they basically exist to augment the functions of the Board of Directors. Since deliberations by the Board of Directors are limited by time, it is difficult for independent Board members to reach decisions on the spot on matters like large-scale investment projects. Therefore, it is useful to have preliminary meetings and receive detailed explanations on these matters from management.

In addition to business visions, medium-term plans and investment projects, we have discussed individual strategies such as those for weight reduction of automobiles. Through a lively exchange of opinions, it is possible to draw out perspectives that may differ from those inside the Company, and when these matters are presented to the Board of Directors, we will be prepared to give our own precise opinions on the matters being discussed. For these reasons, the Meetings of Independent Directors are intended to dispel any information gaps between insiders and outsiders, with no need to reach a consensus of opinions.

**Ito** As expressed in the Corporate Governance Code (Supplementary Principle 4.8.1.), I believe securing a forum for discussion among solely the independent outside directors is important from the standpoint of facilitating deliberations at the Board of Directors meetings and making better decisions. The Board of Directors has certain restrictions in terms of time and rules for discussing and reporting matters. It is my understanding that the Meetings of Independent Directors were set up as a forum for exchanging opinions without being bound by these restrictions.

Looking ahead, I would suggest exploring a greater role for the Meetings of Independent Directors, beyond that of a channel for inputting information. For example, I would like to have meetings to exchange ideas on matters related to rebuilding the business portfolio and approaching sustainability management.

Toward Healthy and Sustained Growth

**Bamba** In the next Medium-Term Management Plan, it will be important to horizontally introduce across business divisions the practice of doing ordinary tasks thoroughly, which demonstrated positive results in the recovery from the quality misconduct. While paying attention to the details, I believe it is necessary to further advance the strategic management of the business portfolio. Kobe Steel began using return on invested capital (ROIC) as a business

Every company has a corporate philosophy in some shape or form. By putting it into words, a corporate philosophy becomes an effective compass for navigating a world that is going through dramatic changes.

Yumiko Ito



Roundtable Talk Among Three Independent Directors



I see considerable potential in Kobe Steel, with its very advanced level in each and every resource, especially its technologies and human resources.

Hiroyuki Bamba

management indicator in fiscal 2020. When using this indicator, however, the Company will have to carefully monitor whether the current state of a business unit expresses future potential or whether it is attributable to problems in business management.

Regarding the Group's current organization, I expect the variety of reforms already implemented to lead to the movement of employees within the Group and more interaction among employees. I think the greater rotation of employees among business units, head offices, and subsidiaries would allow employees to gain more experience and come up with ideas for specific reforms. By implementing such policies for human resources on all fronts, the strengths of the KOBELCO Group's business portfolio will be demonstrated, in my opinion.

**Ito** The profitability of business units is predicated on eliminating losses in every area. Along with this, in implementing management focused on capital cost, ROIC-based management is essential.

Some aspects of earnings can be controlled, while other aspects cannot. The controllable aspects, as Mr. Bamba said so well, hinge on a thorough analysis of how much improvement can be made. Depending on the situation, changes to the business portfolio may have to be considered. For the uncontrollable aspects of earnings, it is important to monitor the impact from changes in the business environment and other factors while using sensitivity analysis and other methodologies to assess the situation.

Such response to change is intertwined with overall management plans. Instead of sticking with a plan once it is made, if the underlying assumptions change, it is necessary to flexibly respond with updates to plans.

**Kitabata** Unified indicators are essential for monitoring business execution, and for the head office to steer and advance overall management. ROIC is an important benchmark for evaluating capital efficiency as well. While keeping pace in these times of rapid change, it is necessary to form a consensus inside the Company in order to make nimble management decisions in response to prevailing conditions.

**Bamba** I see considerable potential in Kobe Steel, with its very advanced level in each and every resource, especially its technologies and human resources. With some creative thinking on business management, the Company will certainly have any number of opportunities. I hope the next medium-term plan will go one step closer to the Company realizing its full potential.

**Kitabata** In Japan, there are around 46,000 companies that were founded more than 100 years ago, including Kobe Steel, representing about 50% of the world total. One reason why there are so many in Japan is because Japanese firms have prioritized their continued existence. With this priority in mind, Japanese companies take care of the employees they hire and fulfill their obligations to financial institutions and investors.

This directly relates to the concept of sustainability management. In order to contribute to the sustainability of society and the global environment, Kobe Steel must remain sustainable as a corporation. What should a company do to realize healthy and sustainable growth? While being mindful of the major trends today, I hope to focus on this issue and promote further discussions with everyone.

Message from the Newly Appointed Independent Director



Masaaki Kono

Independent Director  
Chairman of Audit &  
Supervisory Committee

Actions for Change Opens a New Page in the History of Kobe Steel

In its history of over 110 years, the KOBELCO Group has contributed to the development of Japan by fulfilling the expectations of its customers and society in a broad range of business fields. Today, however, the Group is facing unprecedented challenges in the business environment, including weakening demand and declining steel prices due to trade friction between the U.S. and China, persistently high prices for raw materials, and the COVID-19 pandemic. Now is a pivotal moment for Kobe Steel, as it must surmount these tough conditions and create a new history while plotting a course toward the next stage of growth.

The KOBELCO Group's history and traditions are our pride and we should continue to value them as an integral part of our organization. On the other hand, amid rapid and sudden changes in the business environment, the Company must be willing to reform itself in order to adapt to changes around the world. While honoring its history and traditions, the KOBELCO Group needs to begin a new chapter in its history by boldly taking actions for change.

Sustained Growth Hinges on a Universal Corporate Philosophy Shared Across Group Companies

The KOBELCO Group formulated a new Group Corporate Philosophy in May 2020 based on the lessons learned from its quality misconduct in October 2017. This new philosophy aims to heighten awareness of how we are connected to society and

stakeholders and promote a deeper understanding and sharing of KOBELCO's View of the Future and KOBELCO's Mission among all employees. Starting with this universal corporate philosophy commonly shared across Group companies, the KOBELCO Group aims for sustained growth along with society by providing solutions for social issues while rapidly adapting to changes around the world.

In my career at banks and consumer finance companies, I have had the opportunity to come into contact with a large number of customers. By being involved in the management of these financial institutions, I have dealt with the daily struggles in corporate governance and strategies to sustain growth. Although the industries are different, there is a common thread in their corporate missions to serve society and stakeholders.

Making Improvements in Corporate Value from the Viewpoint of Society and Stakeholders

At the KOBELCO Group, strengthening corporate governance is an ongoing management priority. From the perspective of society and stakeholders, corporate governance is a necessary stepping-stone for the next stage of growth.

As an independent director and an Audit & Supervisory Committee member, I intend to frankly voice my opinions from an independent perspective and help the KOBELCO Group improve its corporate value over the medium to long term by not only auditing, but also evaluating and monitoring the fairness of business plans and management strategies.

## Message from the CFO

**Our first and foremost priority is to shore up our financial health by rapidly and steadily executing measures to increase capital and asset efficiency and cash flow.**

**Taking a medium- and long-term perspective, we are rebuilding our business portfolio with a strong commitment to change.**

**Yoshihiko Katsukawa**  
Director, Senior Managing Executive Officer



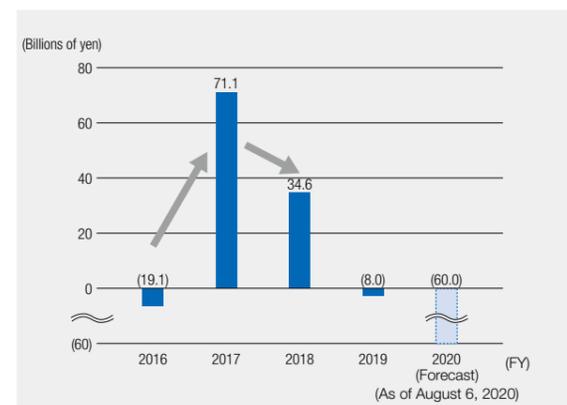
### Summary of Accomplishments in the Rolling of the Medium-Term Management Plan Steady Execution of Emergency Measures to Increase Earnings and Cash Flow

When the Rolling of the Medium-Term Management Plan was originally created, Kobe Steel targeted savings of ¥50 billion from greater capital and asset efficiency over two years, fiscal 2019 and fiscal 2020. During fiscal 2019, the Company was unwinding cross-shareholdings and reorganizing Group companies at a pace that surpasses this target. At the end of fiscal 2019, however, the D/E ratio worsened to 1.19x, despite our intent to keep it below 1x, owing to a decline in cash flow (especially operating cash flow) caused by deteriorating earnings and working capital, as well as the booking of impairment losses on fixed assets.

In fiscal 2019, when it eventually became apparent that the Company would incur heavy losses in mainly the steel, aluminum and copper businesses, we established the Special Committee for Emergency Profit Improvement in February 2020 as an entity to study emergency measures and monitor their execution. The committee formulated emergency measures to improve profits by ¥27 billion through cuts in directors' remuneration and fixed costs, in addition to measures to increase cash flow by ¥130 billion, by reducing inventories and selling assets. These emergency measures are being steadily implemented in fiscal 2020. Approximately ¥23 billion in cost reductions, centered on variable costs, are being planned and executed for

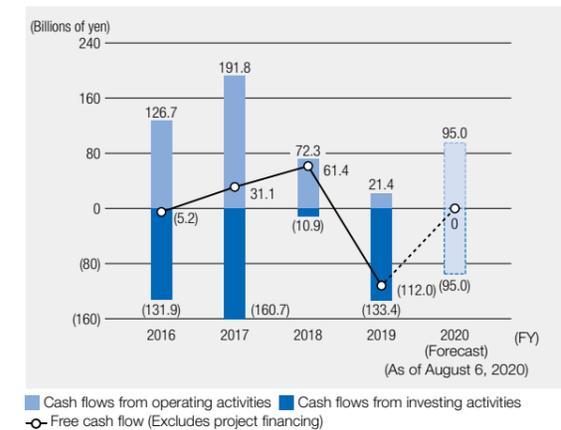
steel, aluminum, and raw materials. We are considering additional cost cuts due to the impact from COVID-19. In the materials field, automakers slashed their production plans by roughly 40% in the April-June quarter. Looking at individual products, Kobe Steel supplies some steel products directly to automakers, as well as to secondary processing manufacturers. We see the possibility of a time lag occurring for steel products to these secondary processors and the risk of a further impact on our business.

#### Ordinary Income (Loss)



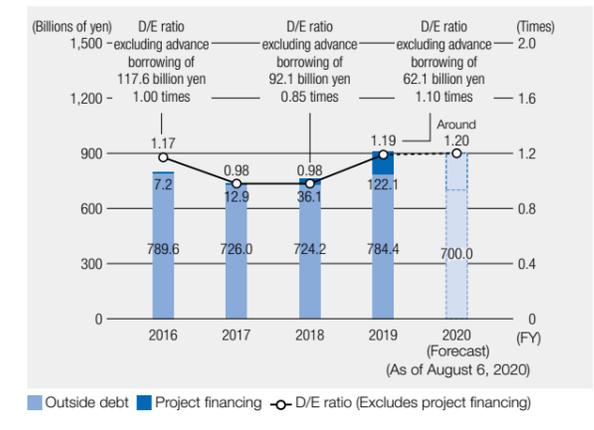
The KOBELCO Group will continue to take emergency measures until an end to the COVID-19 pandemic comes into sight, by curtailing expenditures as much as possible while matching production to demand, and temporarily freezing capital investments and other investments and loans, except for those essential for business operations. The Special Committee for Emergency Profit Improvement continues to examine and execute all possible measures

#### Free Cash Flow



for reducing costs further and creating additional cash flow, such as continuing the temporary leave program that began in May 2020. As of March 31, 2020, Kobe Steel had ¥146 billion in cash and cash equivalents and ¥150 billion in commitment lines. Management is sparing no effort to improve the monitoring of cash flow while utilizing emergency financial support systems that banks have set up in response to COVID-19.

#### Outside Debt & D/E Ratio

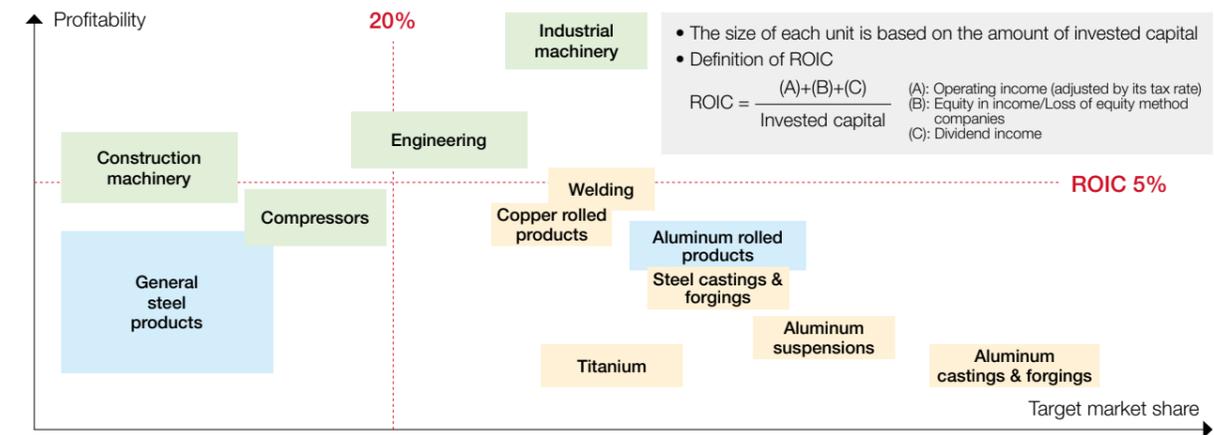


### Objectives and Framework of the Next Medium-Term Management Plan Rebuilding the Business Portfolio to Transform the KOBELCO Group

At an investor briefing in May 2020, management showed a matrix of the KOBELCO Group's business portfolio in fiscal 2019, with "target market share" on the horizontal axis and "profitability" on the vertical axis. The Group has a mix of businesses, with some businesses very profitable but having low market shares, and other businesses having high market shares but weak profitability. Although the Company has invested management resources in growth fields with

the intention of expanding market share, its initial assumption for production costs has tended to be overly optimistic. Even though we had some influence over prices thanks to high market shares, we accepted orders at low prices in pursuit of greater volume. Taking seriously the impairment losses on fixed assets, we believe we can overcome these challenges by improving and strengthening the management of our businesses in the future.

#### FY2019 Business Portfolio



Message from the CFO

Kobe Steel is clarifying the current position of each business unit in terms of the cost of capital by introducing ROIC-based management at the business-unit level. At the same time, the Company is reassessing its future direction from a business and financial perspective while taking into account growth potential and global goals, such as the SDGs, which are commonly shared by the international community. While responding to the severe impact on its operations from COVID-19, in the next medium-term management plan, Kobe Steel will chart its future direction at an early stage with the objective of creating an optimal business portfolio from a Companywide perspective down to

the individual business unit level. In the past, our analysis was not sufficiently detailed in terms of the growth potential of individual business units, but we will pursue a different approach from now on. With an eye on the future, Kobe Steel will increase scrutiny of the allocation of management resources, abandon unprofitable businesses and refocus resources in businesses with growth potential that are truly able to generate profits. In this regard, we believe the KOBELCO Group must enter new business domains. Rebuilding the business portfolio will be a key theme in the next medium-term management plan.

Monitoring of Non-Financial Indicators as KPIs

Kobe Steel has reconfigured its business management indicators to align with the objective of achieving sustainable improvement in corporate value, and to remedy management approaches that overemphasize profitability, a problem that was highlighted in the *Report on Misconduct in Kobe Steel Group*, issued on March 6, 2018. We began to use these seven new indicators in April 2019: (1) safety, (2) quality stability, (3) environmental management, (4) legal & contractual compliance, (5) employee awareness, (6) customer

satisfaction, and (7) economics. Six of these seven indicators are non-financial indicators, and all of them are essential requirements for a company to survive.

While monitoring non-financial indicators in addition to financial indicators, the Company will establish a structure that enables the early identification of risk and an appropriate response, with sound internal controls functioning throughout the organization.

<b>(1) Safety</b>	Key objectives: Zero accidents leading to death or serious injury, and lost time injury frequency rate (LTIFR) of 0.10 or less
<b>(2) Quality stability</b>	Management indicator: Cost of quality failures. The Quality Management Committee was created in April 2019, with external experts forming a majority of members, to monitor activities to improve quality management throughout the Group.
<b>(3) Environmental management</b>	KOBELCO Group's FY2030 Objectives (see pages 18, 19, 62, and 63 for information on targets) 1. Reduction of CO <sub>2</sub> emissions in production processes Reduction target: 1.1 million tons (vs. BAU in FY2013) 2. Contribution to reduction of CO <sub>2</sub> emissions through our technologies, products, and services Contribution target: 49 million tons
<b>(4) Legal &amp; contractual compliance</b>	Management indicator: Employee compliance awareness survey
<b>(5) Employee awareness</b>	Management indicator: Employee awareness survey
<b>(6) Customer satisfaction</b>	Management indicator: Customer satisfaction survey filled out by customers. Survey results are shared with business division and efforts are made to improve customer satisfaction.
<b>(7) Economics</b>	Management indicator: ROIC (return on invested capital)

Medium- and Long-Term Financial Strategy  
Shoring Up Our Financial Health Is Our Foremost Priority

**Cash in: (1) Operating cash flow + (2) Greater capital and asset efficiency**  
**Cash out: (3) Growth investments and spending on maintenance and upgrades**  
**+ (4) Shareholder returns**

In fiscal 2020, Kobe Steel plans to return (1) operating cash flow to normal levels through the aforementioned emergency measures to improve profits and measures to increase earnings in mainly the materials businesses. In addition, the Company aims to thoroughly increase "cash in" by advancing measures to improve cash flow through (2) greater capital and asset efficiency, such as by reducing inventory and selling assets. By being more selective in (3) growth investments and spending on maintenance and

upgrades, the Company will curtail expenditures on investments. Our first and foremost priority is to improve our financial health.

Taking our financial condition, earnings trends, and future capital needs into comprehensive consideration, management aims to restore dividend payments as early as possible, targeting fiscal 2023, the year when all new projects in the electric power business should be operating.

To Our Stakeholders  
Building a Healthy Financial Foundation and Fulfilling Expectations for the KOBELCO Group's Future

Kobe Steel has been receiving harsh evaluations from investors, and we believe this is for two main reasons. The first reason is our inability to secure adequate earnings. The other reason is a lack of confidence in our ability to create new value in the future. We believe fixing these two problems is a key priority for management.

We are well aware of the vulnerabilities in the financial foundation of the KOBELCO Group. As the director in charge of financial affairs, my primary responsibility is to build a healthier financial foundation by (1) increasing capital and asset efficiency, and (2) carefully selecting capital investments.

While screening investment projects, we will continue to plant the seeds for future growth. Amid changes in the demand structure and market scale, it will also be important to leverage the collective strengths of the KOBELCO Group and take on new business opportunities.

The materials businesses are process industries that require medium- and long-term investment plans. In contrast, the machinery businesses are knowledge-intensive

industries that require less capital investment but more human resources and technological capabilities. Kobe Steel is also engaged in the electric power business, utilizing the operational know-how it has accumulated in process industries. Looking to the future through the lens of ROIC, for example, machinery businesses seem to have an advantage over the process industries. However, new value can still be created even when ROIC is low. We must reallocate our resources considering the characteristics of each business.

The KOBELCO Group will marshal its collective strengths and strive to create new value while flexibly adapting to the changing times from a medium- and long-term perspective. In this way, I am confident our Group will remain indispensable to society.

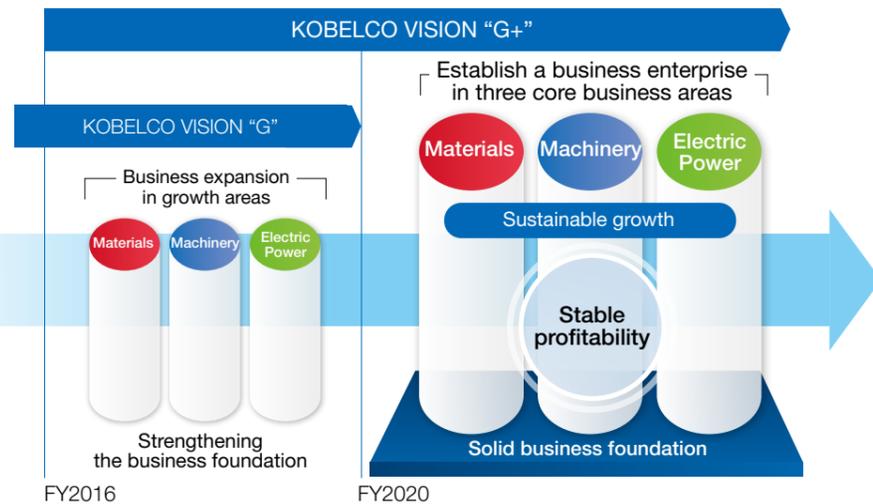
We value the opportunities to engage in dialogue with all of our stakeholders, including shareholders and investors, and reflect these external viewpoints in management. Once again, we ask for your candid opinions and ongoing support.

# Outline of the Fiscal 2016–Fiscal 2020 Group Medium-Term Management Plan

## KOBELCO Group's Medium- to Long-Term Business Vision

### KOBELCO VISION “G+”

The KOBELCO Group formulated the Fiscal 2016–Fiscal 2020 Group Medium-Term Management Plan to realize the KOBELCO VISION “G+” business vision for establishing a solid business enterprise and furthering growth strategies centered on the three core business areas of materials, machinery, and electric power. The Group aims to contribute to society while expanding and advancing its businesses by concentrating management resources on growth fields likely to expand over the medium to long term, such as energy and infrastructure, as well as strategies to reduce the weight of vehicles.



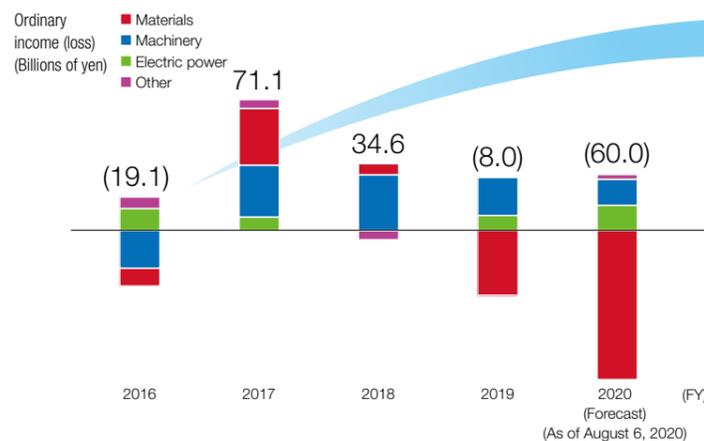
#### Growth Strategies for the Three Core Business Areas

Materials	Machinery	Electric Power
<ol style="list-style-type: none"> <li>Initiatives for weight reduction of vehicles</li> <li>Strengthening profitability in the steel business</li> </ol>	<ol style="list-style-type: none"> <li>Initiatives in the fields of energy and infrastructure</li> <li>Strengthening profitability in the construction machinery business</li> </ol>	Initiatives to stabilize profitability in the electric power business

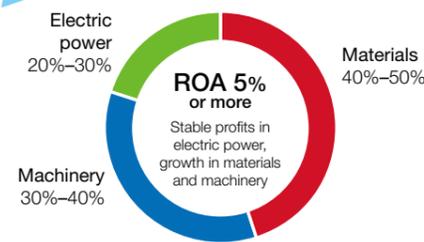
#### Strengthening the Business Foundation

- Strengthening corporate governance
- Securing and developing human resources
- Strengthening technical development and *monozukuri* (manufacturing) capabilities

#### Earnings Forecast



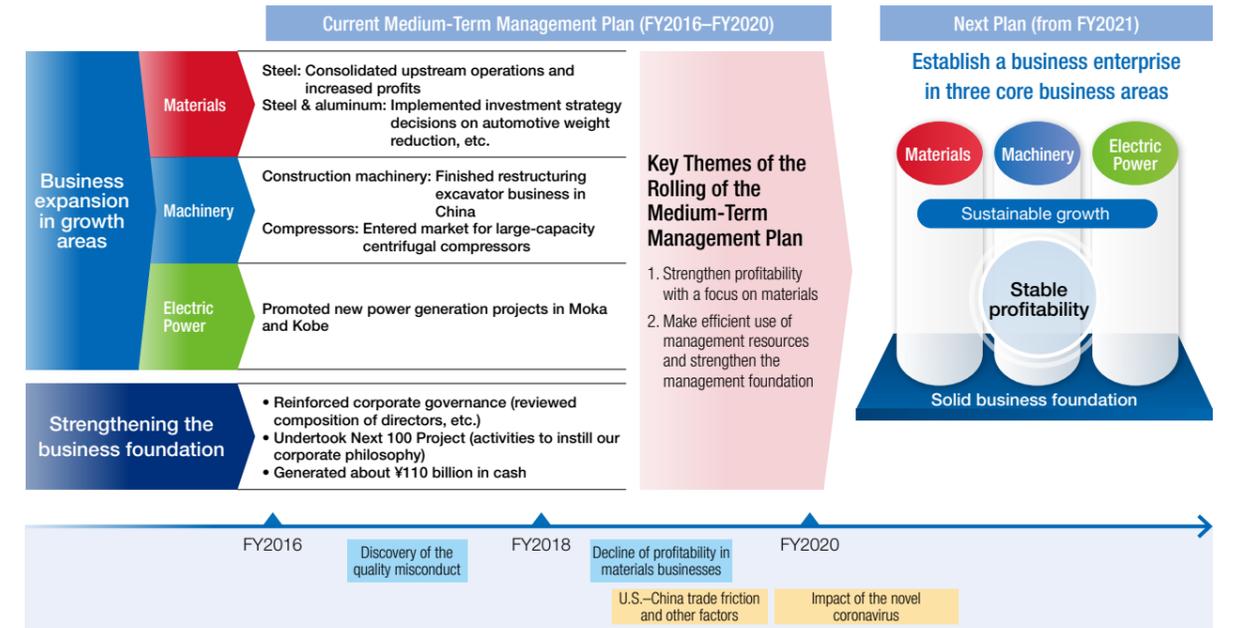
#### Target business portfolio (Profit distribution by business)



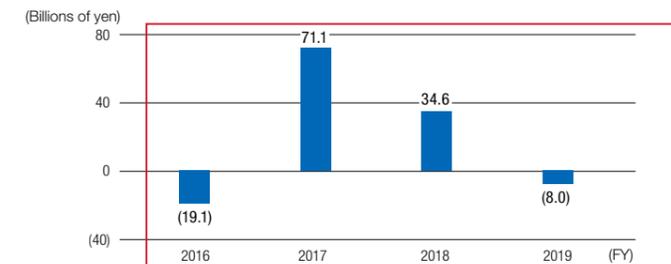
**Overview of business enterprise based on three core business areas**  
(After start-up of new electric power projects currently in progress)

## The Rolling of the Medium-Term Management Plan (announced in May 2019)

Rolling update to the current Medium-Term Management Plan to reflect changes in demand and other conditions since the plan's inception



#### Ordinary Income (Loss) in Fiscal 2016–Fiscal 2019



#### Ordinary Income (Loss) by Segment and Net Income (Loss) Attributable to Owners of the Parent (FY)

(Billions of yen)	2016	2017	2018	2019
<b>Materials</b>				
Iron & Steel	(29.5)	17.3	4.7	(21.3)
Welding	6.8	4.9	3.6	2.9
Aluminum & Copper	12.0	11.8	(1.5)	(20.4)
<b>Subtotal</b>	<b>(10.7)</b>	<b>34.0</b>	<b>6.8</b>	<b>(38.8)</b>
<b>Machinery</b>				
Machinery	5.8	2.3	1.2	9.6
Engineering	2.8	6.9	6.5	5.7
Construction Machinery	(31.3)	21.9	25.5	7.5
<b>Subtotal</b>	<b>(22.7)</b>	<b>31.1</b>	<b>33.2</b>	<b>22.8</b>
<b>Electric Power</b>	<b>13.0</b>	<b>7.9</b>	<b>(0.3)</b>	<b>8.9</b>
Other Businesses	7.6	5.4	2.3	3.3
Adjustment	(6.4)	(7.5)	(7.5)	(4.4)
<b>Total</b>	<b>(19.1)</b>	<b>71.1</b>	<b>34.6</b>	<b>(8.0)</b>
<b>Net Income (Loss) Attributable to Owners of the Parent</b>	<b>(23.0)</b>	<b>63.1</b>	<b>35.9</b>	<b>(68.0)</b>

#### Cash Flows and D/E Ratio in Fiscal 2016–Fiscal 2019

(Billions of yen)	2016	2017	2018	2019
Operating cash flow	126.7	191.8	72.3	21.4
Investing cash flow	(131.9)	(160.7)	(10.9)	(133.4)
Free cash flow*	(5.2)	31.1	61.4	(112.0)
D/E ratio (Times)	1.17	0.98	0.98	1.19
(Excludes advance procurement of borrowings) (Times)	1.00	—	0.85	1.10

#### Measures to Improve Earnings and Cash Flow in Fiscal 2020 (as of August 6, 2020)

Kobe Steel will implement the following measures in response to the economic slowdown caused by the COVID-19 pandemic and deceleration in the world economy due to trade friction between China and the United States.

##### Measures to Improve Earnings

- Emergency measures to improve earnings centered on reductions in fixed assets (i.e., reducing labor costs, regulation costs, R&D spending, and maintenance costs)
  - Measures to improve earnings centered on materials (improving base costs, expanding sales, etc.)
- In total for 1. and 2., improve earnings by about ¥50 billion

##### Measures to Improve Cash Flow

The Company will take measures to improve cash flow by about ¥130 billion, by improving working capital through inventory reductions, etc., selling assets, and postponing capital investments.

To further reduce fixed costs and improve cash flow, the Company will examine and implement measures without excluding any specific businesses, and prioritize efforts to enhance financial soundness.

Mission Story

# KOBELCO's Mission Story

The KOBELCO Group's business operations are centered on three core business areas comprising materials businesses, which include steel & aluminum, advanced materials and welding; machinery businesses, which encompass machinery, engineering and construction machinery; and the electric power business, an outgrowth from its own in-house power generation facilities at steelworks.



## Materials Businesses



**Koichiro Shibata**  
Executive Vice President and Representative Director

### My Third Year as Director in Charge of Materials Businesses

Three years have passed since I was appointed as the director in charge of the materials businesses. After reaching this position of responsibility, I have prioritized the restoring of trust, which was undermined by the quality misconduct, with determination to return Kobe Steel to the basics of manufacturing and bring employees together to overcome hardships. My resolve has not changed even now. Our initiatives to restore the trust of our customers, suppliers, and other stakeholders are never-ending endeavors that we will single-mindedly pursue while sparing no effort.

The Rolling of the Medium-Term Management Plan we announced in May 2018 identified “strengthen profitability with a focus on materials” as a key theme for the two years spanning fiscal 2019–fiscal 2020. In fiscal 2019, however, as it has been reported already, the Iron & Steel and Aluminum & Copper segments each posted ordinary losses in excess of ¥20 billion, while ¥50 billion in impairment losses on fixed assets was recorded, centered on the materials businesses. Although the external environment changed, our initiatives to improve *monozukuri*\* capabilities and sales prices remain insufficient, and strategic investment projects were slow to turn a profit. All of these factors resulted in little improvement in profitability. As the director in charge of the materials businesses, I recognize that strengthening profitability is the foremost issue that we must urgently address as a company.

The factors behind the impairment losses booked in fiscal 2019 that worsened earnings in the materials businesses can be broadly put into four categories (see p. 38): changes in the industrial structure, delayed growth in demand, issues with *monozukuri* capabilities, and insufficient increases in sales prices.

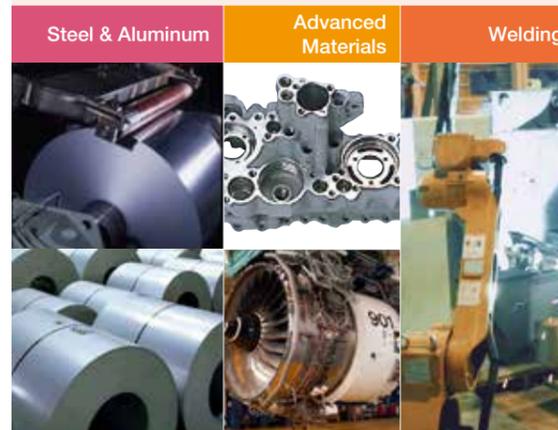
In the steel business, Kobe Steel made progress on the consolidation of upstream operations at Kakogawa Works ahead of other companies, securing downside elasticity during times of deterioration in business conditions, but the Company was unable to reduce fixed costs as planned. If fixed costs had been cut as initially planned, we would have been at a profitable level in fiscal 2019. I believe one of our most urgent issues now is to reduce fixed costs in the current structure (actual losses in fiscal 2019 were about ¥9.5 billion in steel products and ¥9.0 billion in advanced materials). Another issue to address is an ongoing increase in long-term contract prices, especially in the automotive industry. From a medium- to long-term perspective, I believe Kobe Steel must reexamine its production structure to align with the contraction in crude steel output in Japan, and we will look for the best solution to this issue.

In addition, demand was adversely affected by the COVID-19 pandemic, resulting in weak production volumes and performance in the materials businesses in the first quarter of fiscal 2020. Management is keenly implementing emergency measures to improve earnings while keeping an eye on trends.

\* Craftsmanship in manufacturing

### Advancing Sustainability Management Based on the Group Corporate Philosophy

Strengthening profitability in the materials businesses is an urgent issue in the short term. At the same time, it is also important for the KOBELCO Group to engage in sustainability management. To this end, we must



Mission Story

continue to ask ourselves how we can create new value and contribute to solutions for social issues through the products and services of the materials businesses.

The materials businesses have customers in a broad range of major industries, such as automobiles, aircraft, shipbuilding, railways, food containers, electronics, construction and civil engineering. I believe the technologies, products, and services in the materials businesses can help fix social issues in our customers' sectors as well. (For details about our initiatives by customer sector, see the special feature on p. 20 and table on p. 39.)

In May 2020, the KOBELCO Group formulated a new Group Corporate Philosophy, with the new additions

of KOBELCO's View of the Future and KOBELCO's Mission, which states "Our mission is to provide solutions to the needs of society, by making the best use of the talents of our employees and our technologies." KOBELCO's Mission tells us the importance of creating synergies beyond the boundaries of the materials businesses, not limited to synergies generated by the reorganization of the materials businesses. It will lead us to solving even more complex problems providing support for the foundations of society. We will harness the collective strengths of the KOBELCO Group to advance sustainability management based on the Group Corporate Philosophy to put us back on a growth trajectory again.

Materials Businesses: Cause of Earnings Deterioration and Future Measures

Steel & Aluminum

In steel products, Kobe Steel has sharpened its cost competitiveness by consolidating upstream operations at Kakogawa Works, but earnings deteriorated because fixed costs have remained stubbornly high amid weakening demand, while raw material prices have risen and product prices have declined faster than anticipated. In aluminum flat-rolled products, earnings worsened as a result of returns on investments taking far longer to materialize than initially anticipated, and we had to downgrade our demand forecasts in light of the slowdown in automobile sales in China and delays in the adoption of aluminum products versus our estimates when we decided to invest in automotive materials. However, Kobe Steel has competitive offerings in special steel wire rod and ultra-high-strength steel, as well as an edge in aluminum sheet and plate stemming from its market dominance and technological advantages. With this situation in mind, we are implementing the following initiatives.

	Issues	Initiatives
<b>Steel</b>	Respond to changes in industry structure <ul style="list-style-type: none"> <li>High fixed costs</li> <li>Rising raw material prices, declining product prices</li> <li>Weaker demand</li> </ul>	<ul style="list-style-type: none"> <li>Increase reproducible prices with an eye on profitability and volume</li> <li>Cut fixed costs</li> <li>Consider reviewing production structure in response to decreasing crude steel output in Japan</li> </ul>
<b>Aluminum flat-rolled products</b>	Respond to major delays in arrival of demand growth phase (aluminum sheets for automotive body panels)	<ul style="list-style-type: none"> <li>Established Application Technology Center to enhance solutions for customers</li> <li>Expand sales in all fields, with a focus on beverage can stock</li> <li>Cut fixed costs</li> </ul>

Advanced Materials

After booking impairment losses in fiscal 2019, Kobe Steel was keen to win orders with the aim of expanding business and securing market share in titanium, aluminum suspensions, and aluminum castings and forgings, in which the Company has high market dominance and sees strong market growth potential. However, earnings deteriorated owing to major problems with its *monozukuri* capabilities, including productivity and costs. One reason for this, I believe, was delays in bringing management up to speed on foreign markets and business customs when we tried to expand the parts businesses of the relatively large-scale materials businesses, represented by the former Iron & Steel and Aluminum & Copper segments. In castings and forgings, earnings worsened on account of changes in the industry structure, namely a prolonged slump in shipbuilding demand. In light of this situation, we are moving forward with the following initiatives.

	Issues	Initiatives
<b>Titanium Aluminum suspensions Aluminum castings and forgings</b>	Rebuild and strengthen <i>monozukuri</i> capabilities (reinforce business management)	<ul style="list-style-type: none"> <li>Reorganize to reinforce <i>monozukuri</i> collaboration and planning and administration functions*</li> <li>Improve <i>monozukuri</i> capabilities and advance strategies for each demand field based on product lines</li> <li>Enhance planning and administration functions, including monitoring of order-taking decisions</li> <li>Business management with emphasis on profitability (including streamlining product lines)</li> </ul>
<b>Castings and forgings</b>	Respond to changes in industrial structure (Respond to prolonged slump in demand)	<ul style="list-style-type: none"> <li>Cut fixed costs to match demand</li> <li>Undertake improvements to make prices sustainable</li> </ul>

\* On April 1, 2020, the Iron & Steel Business and the Aluminum & Copper Business were reorganized into the Steel & Aluminum Business and the Advanced Materials Business to handle materials and parts, respectively.

Customer sector	Market environment (including risks), growth opportunities	Main products	Initiatives to address issues, growth strategies	Vision, solutions for social issues
<b>Mobility</b>				
<b>Automobiles</b>	<ul style="list-style-type: none"> <li>Market environment</li> <li>Weak demand around the world. Recovery will take time.</li> <li>Opportunities</li> <li>Ongoing trend to reduce weight of automobiles</li> <li>Progress on development of self-driving technologies, electrification of automobiles gaining momentum</li> </ul>	<ul style="list-style-type: none"> <li>Wire rods for automotive engine valve springs</li> <li>High-strength steel sheets</li> <li>Aluminum sheets for automotive body panels</li> <li>Steel powder</li> <li>Aluminum suspensions</li> <li>Aluminum extrusions</li> <li>Copper alloys for automotive terminals and connectors</li> <li>Welding materials</li> <li>Welding processes</li> </ul>	<ul style="list-style-type: none"> <li>Contribution to CO<sub>2</sub> reductions in automotive field (➔ p. 20)</li> <li>Initiatives to address issues in steel &amp; aluminum plates (➔ p. 38)</li> <li><b>FACT 1</b></li> <li>Establishment of Application Technology Center as well as Materials Processing Technology Center (➔ p. 49)</li> </ul>	Aim for a global environment where everyone can lead safe, secure and prosperous lifestyles by helping to reduce CO <sub>2</sub> emissions and improve fuel economy in transportation field 
<b>Aircraft</b>	<ul style="list-style-type: none"> <li>Market environment</li> <li>Demand is anticipated to increase over the medium to long term, but COVID-19 pandemic has restricted travel, dampening expectations for new demand for a while.</li> <li>Opportunities</li> <li>Progress on technological development to reduce the weight of aircraft to improve fuel economy</li> </ul>	<ul style="list-style-type: none"> <li>Titanium for aircraft engine components</li> <li>Aircraft gearboxes</li> </ul>	<ul style="list-style-type: none"> <li>Initiatives to address issues in materials businesses (➔ p. 38)</li> </ul>	
<b>Shipbuilding</b>	<ul style="list-style-type: none"> <li>Market environment</li> <li>Large volume of new ships were ordered during demand boom, and recently handed over with capacity exceeding marine cargo volume. It will take some more time for supply-demand balance to improve.</li> <li>Opportunities</li> <li>Demand is likely to shift to high-value-added ships that are less likely to succumb to price competition, and development of energy-saving ships.</li> </ul>	<ul style="list-style-type: none"> <li>Structural steel for ship hulls</li> <li>Crankshafts</li> <li>Flux-cored wires</li> <li>Robotic welding systems for assembling large blocks in shipbuilding</li> </ul>		
<b>Life</b>				
<b>Food containers</b>	<ul style="list-style-type: none"> <li>Market environment</li> <li>Robust demand is likely to remain.</li> <li>Opportunities</li> <li>Plastic waste problems are renewing interest in metal containers.</li> </ul>	<ul style="list-style-type: none"> <li>Aluminum cans and bottle can stock</li> </ul>	<ul style="list-style-type: none"> <li><b>FACT 2</b></li> </ul>	Aim to protect marine environments by realizing a recycling society 
<b>IT &amp; semiconductors</b>	<ul style="list-style-type: none"> <li>Market environment</li> <li>Despite cyclical changes in demand, this field is anticipated to grow over the medium to long term.</li> <li>Opportunities</li> <li>Digital shift is likely to accelerate with advances in IT, teleworking, and cashless payments.</li> </ul>	<ul style="list-style-type: none"> <li>Aluminum disks</li> <li>Aluminum alloy plates for precision processing</li> <li>Materials for semiconductor lead frames</li> </ul>	<ul style="list-style-type: none"> <li><b>FACT 3</b></li> </ul>	Aim to support accelerating shift to a digital society through technological innovation in IT and semiconductor fields 
<b>Energy &amp; Infrastructure</b>				
<b>Construction &amp; civil engineering</b>	<ul style="list-style-type: none"> <li>Market environment</li> <li>Construction projects will be delayed by COVID-19 pandemic; demand is anticipated to remain weak for a while.</li> <li>Opportunities</li> <li>Advances in technological development related to corrosion performance, higher strength, and labor savings</li> </ul>	<ul style="list-style-type: none"> <li>Eco-View steel plates for longer-lasting paint on bridges</li> <li>KOBEMAG® steel sheets with excellent corrosion resistance</li> <li>REGARC™-equipped structural steel welding systems</li> </ul>	<ul style="list-style-type: none"> <li><b>FACT 4</b></li> </ul>	Aim to create communities where everyone can live safe, secure and prosperous lifestyles through provision of advanced materials and innovations in labor-saving robot technologies  

Mission Story

**FACT** Examples of Solutions for Social Issues

**Mobility**

**1** Soft Magnetic Steel Material (Wire Rods),  
Magnetic Steel Powder, Copper Alloys for  
High Voltage Circuits



Amid the growing importance of protecting the global environment, automakers have taken various steps to reduce CO<sub>2</sub> emissions. Of these, electric vehicles have caught on in various countries around the world, and automakers have been developing a variety of technologies to bring to market even better-performing electric vehicles.

The KOBELCO Group contributes to the reduction of CO<sub>2</sub> emissions by supplying special steel wire rods, steel powder and copper alloys with unique characteristics that support the proliferation of better-performing electric vehicles.



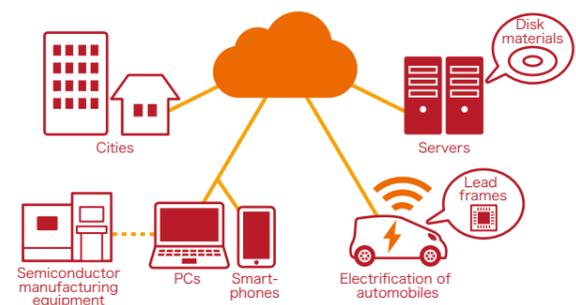
**Life**

**3** Aluminum Disks, Aluminum Flat-Rolled  
Products, Lead Frames



Digital technology has rapidly caught on in society today. In a majority of countries, initiatives are underway to spur innovation based on national strategies looking at the future transformation of society and industry driven by digital technologies. Changes are moving at a faster pace in society, including changes in our work styles and lifestyles, as a result of the COVID-19 pandemic.

The KOBELCO Group supports technological innovation on the various fronts of digital society by supplying excellent aluminum and copper materials.



**Life**

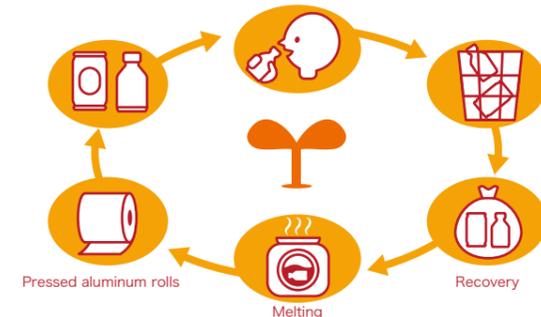
**2** Aluminum Cans



A key social issue today is the realization of a recycling-oriented society (a society where the burden on the environment is reduced as much as possible by restricting the consumption of natural resources), which was codified into law in Japan in 2000.

The KOBELCO Group aims to help preserve marine environments by slowing the increase in plastic waste, especially plastic bottles, which has become a big concern of late, through the production of highly recyclable\* aluminum can stock.

\* In Japan, the aluminum can recycle rate was 97.9% in 2019.



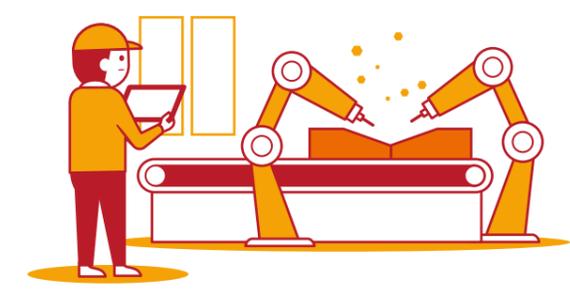
**Energy & Infrastructure**

**4** Welding Robots



Industrial robots for welding have the potential to change the way we work by reducing the workload amid labor shortages at worksites, while also ensuring the health and safety of workers.

The KOBELCO Group supplies REGARC™-equipped structural steel welding systems, mainly in Japan, in the face of falling birthrates and an aging population. In the future, we aim to solve issues affecting global society by tapping into potential demand for welding robots overseas.



**Machinery Businesses**



**Kazuto Morisaki**  
Executive Vice President and  
Representative Director

**Appointment as Director in Charge of Machinery Businesses**

Since joining the Company, I have belonged to the Engineering Business and have been involved in a variety of projects as a project manager and other positions, mainly in the energy and chemical fields, both inside and outside Japan. One of my most memorable moments was working on a fertilizer plant construction project in Malaysia, my first experience of being engaged in a project at Kobe Steel. When I saw the pure white fertilizer produced by the plant for the first time, after surmounting many hardships with my coworkers from different countries, I was emotionally overjoyed and celebrated the successful completion with my coworkers. This precious experience became a cornerstone for me and has lasted to this day. While leveraging my experiences like this one, as the new director in charge of machinery businesses, I place the highest priority on solving issues for our customers and society by gathering the knowledge and technologies of the KOBELCO Group from various fields and multiplying our strengths and capabilities. The Group possesses knowledge and technologies in various fields. However, to ensure that our technologies and products better satisfy customer needs, we must search globally for technologies and services we do not possess and work to integrate them into our operations.

In fiscal 2019, all machinery, engineering and construction machinery segments of the machinery businesses remained profitable. In fiscal 2020, we must be wary of the impact from the COVID-19 pandemic on business activities and earnings in the machinery businesses.

**Advancing Sustainability Management Based on the Group Corporate Philosophy**

Behind every crisis, there are always hints about trends in the future. During these challenging times, the KOBELCO Group's comprehensive strengths will truly be tested.

Our machinery businesses operate globally for customers in a diverse range of fields, including automobiles, aircraft, shipbuilding, construction and engineering, social and industrial infrastructure, and environment and energy. Furthermore, our machinery businesses cover a broad range of technologies, products, and services that help reduce CO<sub>2</sub> emissions and ease the burden on the environment. On a worldwide basis, I believe these businesses have the potential to contribute to the environment and society by solving the social issues faced by our customers. (See p. 42 for details about our initiatives by sector.)

In May 2020, the KOBELCO Group formulated the new Group Corporate Philosophy. KOBELCO's Mission states: "Our mission is to provide solutions to the needs of society, by making the best use of the talents of our employees and our technologies." This mission aims to attain KOBELCO's View of the Future, which states: "We envision a world in which people, now and in the future, can fulfill their hopes and dreams while enjoying safe, secure, and prosperous lives." These words express my most cherished belief as the director in charge of machinery businesses, which I mentioned earlier. And, these statements also tell us we must take on new challenges without being bound to organizational boundaries and conventional thinking, in order to solve increasingly complex problems while supporting the foundations of society.

Amid growing respect for value systems commonly shared internationally, such as the SDGs, I firmly believe that the driver for medium- to long-term growth of the machinery businesses will be sustainability management based on the Group Corporate Philosophy, which will be realized by the creation and deepening of our global development of technologies, products, and services in the machinery businesses through multiplying our diverse strengths.



Mission Story

Customer sector	Market environment (including risks), growth opportunities	Main products	Initiatives to address issues, growth strategies	Vision, solutions for social issues
<b>Mobility</b>				
Automobiles	<ul style="list-style-type: none"> <li>Market environment</li> <li>Weak demand globally; recovery will take time.</li> <li>Opportunities</li> <li>Ongoing trends to improve fuel economy, safety and comfort</li> </ul>	<ul style="list-style-type: none"> <li>Flexform™ hydraulic presses</li> <li>PVD coating systems</li> <li>Rubber mixers</li> <li>HyAC compressor units for hydrogen refueling stations</li> <li>Multi-dismantling machines for automobiles</li> </ul>	Initiatives to reduce weight of automobiles (→ p. 20)	Aim for a global environment where everyone can lead safe, secure, and prosperous lifestyles by helping reduce CO <sub>2</sub> emissions and improve fuel economy in transportation equipment field
Aircraft	See materials businesses	<ul style="list-style-type: none"> <li>Isostatic presses</li> </ul>		
Shipbuilding	See materials businesses	<ul style="list-style-type: none"> <li>Compressors for LNG-fueled ships</li> </ul>	→ <b>FACT 1</b>	
<b>Energy &amp; Infrastructure</b>				
Construction & civil engineering	<ul style="list-style-type: none"> <li>Market environment</li> <li>COVID-19 is likely to cause delays in construction projects, and demand should remain weak for a while.</li> <li>Opportunities</li> <li>Growing needs for telework systems at construction sites, and labor-saving solutions using ICT</li> </ul>	<ul style="list-style-type: none"> <li>Hydraulic excavators</li> <li>NEXT building demolition machines with main boom</li> <li>TK-G series of telescopic boom crawler cranes</li> <li>Dig Nav ICT-enabled construction machinery</li> </ul>	→ <b>FACT 2</b>	Aim to solve social issues by enhancing safety, saving labor, and improving productivity through teleworking systems for people working at construction sites 
Social & industrial infrastructure, environment & energy	<ul style="list-style-type: none"> <li>Market environment and opportunities</li> <li>Over the short term, COVID-19 is likely to adversely affect capital investment budgets.</li> </ul>			
	(Water treatment, waste treatment fields)	<ul style="list-style-type: none"> <li>Water treatment, waste treatment fields</li> <li>Water treatment</li> <li>Municipal waste treatment</li> <li>Special waste processing</li> </ul>	→ <b>FACT 3</b>	
	(Oil refining, petrochemical fields)	<ul style="list-style-type: none"> <li>Water treatment, waste treatment fields</li> <li>Mixing &amp; pelletizing systems for plastics</li> <li>Nonstandard screw compressors</li> </ul>		Aim to create communities where people can live in safety, security, and prosperity through technologies, products, and services that reduce environmental load   
	(Industrial machinery, renewable energy fields)	<ul style="list-style-type: none"> <li>Emeraude standard compressors</li> <li>Micro channel heat exchangers (DCHE)</li> <li>Heat pumps</li> <li>LNG-related equipment</li> <li>Power generation business</li> <li>Hydrogen-related equipment</li> </ul>		 
	(Urban transit field)	<ul style="list-style-type: none"> <li>Urban transit systems</li> </ul>	→ <b>FACT 4</b>	
(Direct reduced iron field)	<ul style="list-style-type: none"> <li>Despite excessive steel production capacity mainly in China, there is potential demand in some regions, such as the Middle East, North Africa, and CIS. Interest has been increasing in the direct reduction ironmaking method, which emits less CO<sub>2</sub> than the blast furnace method.</li> </ul>	<ul style="list-style-type: none"> <li>Direct reduction ironmaking (MIDREX® Process)</li> </ul>	Initiatives to reduce CO <sub>2</sub> emissions with MIDREX® direct reduction ironmaking (→ p. 21)	

**FACT**

Examples of Solutions for Social Issues

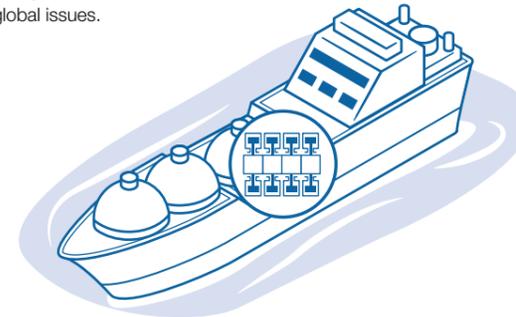
Mobility

**1** Compressors for LNG-Fueled Ships



Tighter environmental regulations have led to major changes around the world for large ships that are the backbone of marine transportation. Needs are increasing for better fuel economy and energy conservation in the operation of large ships.

Demand is growing for LNG-fueled ships, which have a smaller environmental footprint than traditional ships in response to tightening environmental regulations for SOx and NOx emissions. Kobe Steel has supplied a large number of compressors used in LNG-fueled ships and holds a large share of the market for these compressors. Through providing these products, we will continue to contribute to solutions for global issues.



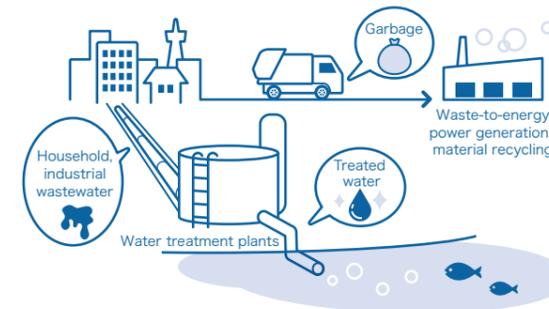
Energy & Infrastructure

**3** Water Treatment and Waste Processing Technologies



People's health and living environments depend on the proper maintenance of waterworks infrastructure and disposal of waste.

For many years, Kobe Steel has been engaged in special waste processing operations, including nuclear waste and chemical weapons disposal. At Kobelco Eco-Solutions Co., Ltd., we are involved in businesses around the world for detoxifying PCBs, treating municipal waste, and treating water, both water supply and wastewater. In the water and waste treatment businesses, we have contributed to securing safe water sources and the creation of sustainable communities.



Energy & Infrastructure

**2** Hydraulic Excavators



In the construction industry, Kobe Steel has played a vital role in upgrading and maintaining regional infrastructure, responding to emergencies during natural disasters, and creating local employment, while dealing with the major issue of labor shortages caused by the declining population and aging workforce in Japan.

Kobelco Construction Machinery Co., Ltd. has been advancing R&D for its K-DIVE CONCEPT under the slogan of realizing a teleworking system centered on people who work at construction sites. If successful, this system will enable on-site work without being restricted to specific people, location or time, helping to eliminate shortages of skilled construction workers and improving productivity through on-site automation.



Energy & Infrastructure

**4** Urban Transit Systems



Maintaining transportation infrastructure has a major impact on economic development, as well as the improvement of living conditions.

Kobe Steel owns self-driving technologies that have been developed through supplying new transit systems like the Port Liner and Yurikamome. We are expanding these technologies across not only Japan but also other Asian countries. Kobe Steel participated in the construction of Indonesia's first subway line, the North-South Line of the Jakarta Mass Rapid Transit system, which opened in April 2019, contributing to core infrastructure that eases chronic traffic jams in Jakarta and improves the urban environment.



# Electric Power Business



**Jiro Kitagawa**

Director, Senior Managing Executive Officer



## Review of Fiscal 2019 and Key Measures for Fiscal 2020

Fiscal 2019 was a remarkable year for the electric power business with operations starting up as planned for the No. 1 and No. 2 units at the Moka Power Plant, Japan's first full-fledged inland thermal power plant. At the same time, the No. 1 and No. 2 units at the Kobe Power Plant continued to operate reliably, and progress was made on the new projects at the Kobe Power Plant, the No. 3 and No. 4 units, as scheduled. In fiscal 2019, we are pleased to report the business booked ordinary income of ¥8.9 billion.

Lately, in the face of the COVID-19 pandemic, we have been taking thorough measures to ensure stable operations of the No. 1 and No. 2 units at the Kobe Power Plant and the No. 1 and No. 2 units at the Moka Power Plant, two large-scale power plants that are a cornerstone of social infrastructure. There have been no delays in the construction of the No. 3 and No. 4 units at the Kobe Power Plant, and we continue to prepare for the start-up of full operations in fiscal 2022.

In fiscal 2020, we are continuing to shore up support for earnings with stable operations of the No. 1 and No. 2 units at the Kobe Power Plant and the No. 1 and No. 2 units at the Moka Power Plant and are carrying out the construction of the No. 3 and No. 4 units at the Kobe Power Plant as planned.

## Advancing Sustainability Management Based on the Group Corporate Philosophy

In May, management formulated the Group Corporate Philosophy and defined KOBELCO's Mission, which states "Our mission is to provide solutions to the needs of society, by making the best use of the talents of our employees and our technologies."

Amid changes in the world energy landscape and growing concern about climate change, resource-poor Japan must tackle the enormous question of how to realize a low-carbon society while ensuring the stable supply of energy.

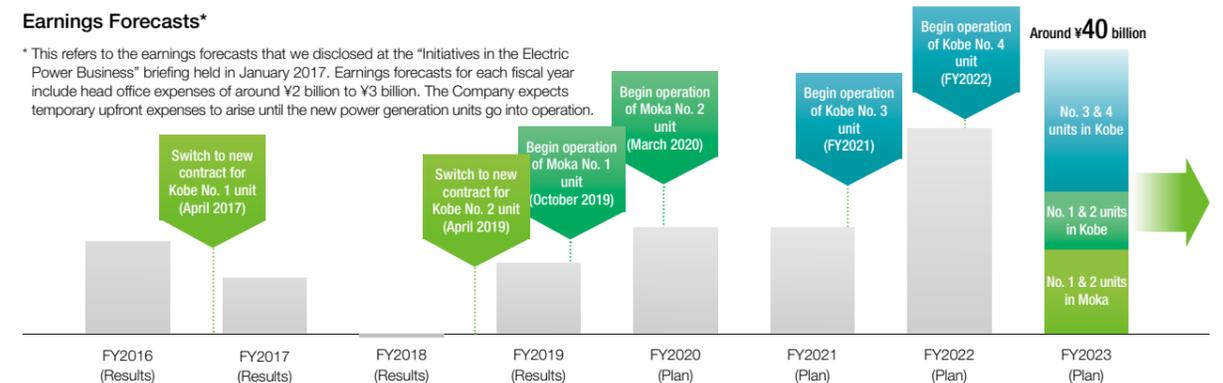
Heading this national policy, I believe our electric power business must strengthen efforts to further reduce carbon emissions from its thermal power plants. We must ensure stable operations at the Kobe Power Plant, a clean and highly efficient urban power plant that makes us proud, and the inland Moka Power Plant, which adds to the resiliency of the nation.

We have employed the supercritical pressure power generation system for the No. 1 and No. 2 units of the Kobe Power Plant, which is currently in operation. Being located in an urban area, the power plant transmits power with extremely low loss and utilizes world-class environmental equipment. It supplies heating using waste heat as well. From these factors, we consider that the total energy efficiency of the facilities is very high. While stably supplying highly economical electric power over the long term, we are moving toward low-carbon power generation in collaboration with the engineering business to convert wastewater sludge into biomass fuel. We aim to make safe, secure, and prosperous lifestyles a possibility for everyone by contributing to regional society and the global environment. I look forward to examining a broad range of initiatives when the new Medium-Term Management Plan is formulated.

	Market environment, growth opportunities and risks	Strengths and market position	Initiatives to address issues, growth strategies	Vision, solutions for social issues
<b>No. 1 to 4 units at Kobe Power Plant</b>	<p><b>Market environment: (1) Making coal more efficient and headwinds</b></p> <ul style="list-style-type: none"> <li>The national government has started creating a framework to spur the fading out of inefficient coal-fired power plants in line with its Strategic Energy Plan toward 2030. While ensuring the stable supply of energy, the introduction of new, more effective frameworks is being considered in order for us to move closer to a decarbonized society.</li> <li>Around the world, coal-fired power plants tend to be seen as hampering efforts to reduce greenhouse gas emissions.</li> </ul> <p>➔ In the Strategic Energy Plan, coal is positioned as a fuel for critical base load power sources, thanks to reliable sources of supply and excellent economic viability, calling for coal to be used while increasing efficiency further. (➔ p. 46)</p>	<ul style="list-style-type: none"> <li>Installation of high-efficiency power generation systems</li> <li>One of the largest power plants in Japan, helps improve electric power self-sufficiency of Kobe City and Hanshin region</li> <li>Low-emission power plant that satisfies toughest environmental standards in Japan</li> <li>Urban power plant with little power transmission loss</li> <li>Supplies heating from waste heat</li> <li>Effectively uses wastewater sludge from urban areas</li> <li>Effectively deploys operational technologies accumulated to date, utilizes infrastructure of port facilities</li> </ul>	<p><b>(1) Making coal more efficient and headwinds</b></p> <ul style="list-style-type: none"> <li>The Company's power generation facilities are designed to satisfy the power generation efficiency standards in the Energy Conservation Act based on the nation's Strategic Energy Plan. Our business activities follow national policy and laws governing electric power companies.</li> <li>The Kobe Power Plant is located near sources of demand for electric power in urban areas with little power transmission loss. It is able to efficiently deliver clean electric power while implementing best-in-class environmental protection measures.</li> <li>The Kobe Power Plant is one of only a few facilities in Japan that is able to supply heating from its waste heat, achieving high overall energy efficiency.</li> <li>The Kobe Power Plant is working on plans to use biomass fuel derived from wastewater sludge and install hydrogen refueling stations.</li> </ul> <p>➔ By taking the above measures, contributes to increasing the efficiency of coal and LNG-fired power plants, which are important sources in the energy source mix as specified by Japan's Strategic Energy Plan, and takes steps in line with the nation's policy to combat global warming</p>	<ul style="list-style-type: none"> <li>Contributes to nation's energy policy by reliably supplying economically viable energy to regional society</li> <li>Contributes to realization of low-carbon society by reducing CO<sub>2</sub> emissions through use of underutilized energy in regions</li> </ul>
<b>No. 1 and 2 units at Moka Power Plant</b>	<p><b>Market environment: (2) Changes in the energy landscape</b></p> <ul style="list-style-type: none"> <li>Tougher sales competition in electric power and invigoration of wholesale market, triggered by full liberalization of retail market and other reforms to electric power systems</li> <li>Downtrend in prices in the wholesale electricity market, owing to a large influx of solar power and other forms of renewable energy</li> <li>Greater awareness of saving and conserving energy, emergence of new electric power providers</li> </ul> <p>➔ Demand for stable sources of electric power with excellent economic viability</p> <p><b>(3) Risks to stable operations</b></p> <ul style="list-style-type: none"> <li>Risk of degradation in facility performance due to aging of the Kobe Power Plant</li> <li>Risk of early stage equipment malfunctions at the Moka Power Plant</li> </ul>	<ul style="list-style-type: none"> <li>As Japan's first inland thermal power plant, low risk of damage from earthquakes and tsunamis, acts as backup to Tokyo metropolitan area</li> <li>Employs world's highest levels of efficiency in gas turbine combined cycling</li> <li>Uses existing infrastructure such as gas trunk lines and industrial complexes that have already been developed, as well as technologies and know-how accumulated from operation of in-house power generation facilities</li> </ul>	<p><b>(2) Changes in energy landscape</b></p> <ul style="list-style-type: none"> <li>All of the electricity generated by the Company's power plants is supplied on a wholesale basis to electric power companies and gas companies based on long-term contracts.</li> <li>Effective use of infrastructure at port facilities in Kobe in particular, and deployment of power plant operational technologies accumulated to date</li> </ul> <p>➔ Reliable, long-term supply of electric power with excellent economic viability</p> <p><b>(3) Risks to stable operations</b></p> <ul style="list-style-type: none"> <li>Takes appropriate measures to prevent risks</li> <li>Makes every effort to reliably maintain facilities with advanced methods that use IT systems, collaborate with research labs, and study examples of problems at other companies</li> </ul>	

## Earnings Forecasts\*

\* This refers to the earnings forecasts that we disclosed at the "Initiatives in the Electric Power Business" briefing held in January 2017. Earnings forecasts for each fiscal year include head office expenses of around ¥2 billion to ¥3 billion. The Company expects temporary upfront expenses to arise until the new power generation units go into operation.



Mission Story

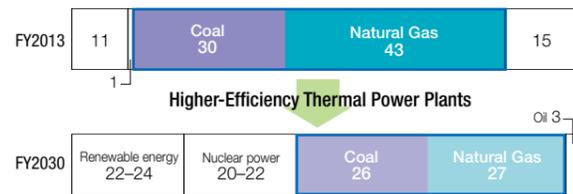
Social Significance of the Electric Power Business

National Energy Policy

Starting with the basic premise of energy security, Japan's Strategic Energy Plan calls for a diverse mix of power sources to simultaneously achieve a reliable supply of energy, economic viability, and environmental conservation.

The plan designates coal-fired power plants as an important baseload source for electricity due to coal's advantages in terms of reliable supply and economic viability. The government envisions coal-fired power plants generating 26% of Japan's total electricity in 2030, while promoting the updates of existing plants with the latest high-efficiency power generation equipment using the best available techniques (BAT). The Energy Conservation Act was revised to ensure steady progress toward achieving this goal, while mandating that electric power producers reach an average power generation efficiency standard of at least 44.3% by fiscal 2030 through improvements to the efficiency of their thermal power plants.

Targeted Energy Source Mix for FY2030 (%)



Source: Kobe Steel, based on public data from the Ministry of Economy, Trade and Industry

Kobe Steel's Aims

In accordance with the nation's energy goals, Kobe Steel contributes to the effort to increase the efficiency of thermal power plants by installing high-efficiency power generation equipment that conforms to BAT and satisfies the power generation efficiency standard set in the Energy Conservation Act.

Kobe Power Plant

The No. 1 and No. 2 units currently operating at the Kobe Power Plant and the No. 3 and No. 4 units under construction are capable of reliably supplying electric power with excellent economic viability, owing to the coal infrastructure at the Kobe Wire Rod & Bar Plant and our know-how in coal-fired power generation accumulated from operating in-house power generation facilities.

The Kobe Power Plant is located in an urban area close to sources of demand and implements high standards in environmental measures, enabling the highly efficient supply of clean electric power with little power transmission loss, thereby contributing to higher self-sufficiency in electric power for cities in the region. The power plant is resilient to earthquakes and tsunamis, thereby contributing to the development of communities resilient to natural disasters through more robust electric power infrastructure for major cities.

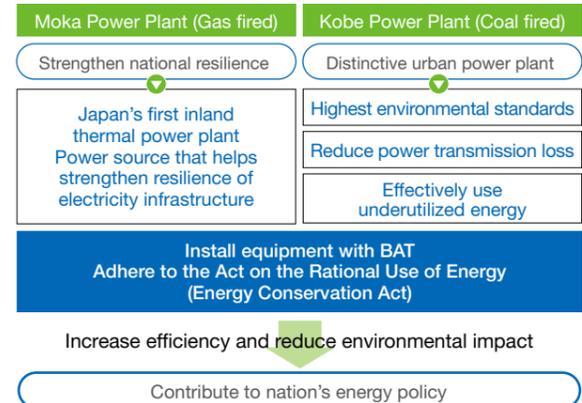
The Kobe Power Plant aims to be a highly efficient urban power plant that serves as a model to the world in terms of

environmental considerations, by supplying heating using the waste heat from its power generation facilities and by realizing its plans for installing hydrogen refueling stations and using wastewater sludge as biomass fuel.

Moka Power Plant

The No. 1 and No. 2 units of the Moka Power Plant began operation in fiscal 2019. These units deploy a cutting-edge gas turbine combined cycle power generation system and generate electricity at the highest level of efficiency in Japan, using city gas as fuel.

The Moka Power Plant is Japan's first inland full-fledged thermal power plant, located in a safe area with low probability of earthquakes and zero risk of damage from tsunamis. With this dispersion of risks, the Cabinet Secretariat selected the Moka Power Plant as an example of improving the resiliency of the nation and its energy infrastructure. The Moka Power Plant also contributes to increasing the electricity self-sufficiency of Tochigi Prefecture.



TOPICS

Start of commercial operations at Moka Power Plant

No. 1 unit: Started operations in October 2019  
No. 2 unit: Started operations in March 2020

Outline

**Location:** Moka, Tochigi Prefecture  
**Power generation capacity:** 1,248 MW (624 MW x 2)  
**Power generation method:** Gas turbine combined cycle generation  
**Fuel:** City gas  
**Power generation efficiency:** About 60% (lower heating value basis)  
**Contract partner:** Tokyo Gas Co., Ltd. (wholesale supply of entire amount for 15 years)

Features

- ▶ Japan's first large-scale inland thermal power plant, introduced by the Cabinet Secretariat as a model private-sector initiative to strengthen national resilience
- ▶ Covers about 40% of the maximum power demand in Tochigi Prefecture (increasing prefectural electricity self-sufficiency to 70%)
- ▶ Highly efficient with gas turbine combined cycle power generation system

Technical Development



Makoto Mizuguchi  
Executive Vice President and Representative Director

Appointment as Director in Charge of Technical Development

I have worked for many years at Kakogawa Works, and my most cherished memory is my second year after joining the Company, when I was put in charge of constructing an electrolytic cleaning line at the cold strip mill. I felt this was beyond my skills at the time. During this period, I gained experience in all aspects of the construction process, from drafting procurement specifications, talking with manufacturers, finalizing specifications, and managing on-site construction to conducting trial runs, with support from superiors behind the scenes. It was Kobe Steel's DNA handed down from one generation to another in the training of new employees. Veterans were always there to guide young people, taking time and effort. This experience has been a backbone for me to this day. Through the development of technology, I believe we can pass our DNA of "taking care of and training people" on to the next generation.

The business environment has become even more challenging than before. In fiscal 2020, Kobe Steel is focusing on development projects that will reinforce the business foundation and lead to stronger earnings, while also making steady progress on the development of technologies for future growth.

Advancing Sustainability Management Based on the Group Corporate Philosophy

The KOBELCO Group has been promoting initiatives to fulfill the needs of customers in existing markets, but in the future we will work harder to solve social issues by leveraging the intellectual assets we have accumulated through the development of diverse businesses.

To this end, our key initiatives will be to (1) leverage synergies among our technological assets that support our unique product lines and advanced *monozukuri*\* capabilities, as well as (2) gather ideas and plant the seeds for new technologies, products, and services that will lay the foundation for potential business growth in the future.

Regarding the former, Kobe Steel intends to create new value by marshaling its technological assets across the Group, like the Companywide activities underway to achieve its strategy for reducing the weight of automobiles. Regarding the latter, we aim to create new technologies and businesses that will carry us into the future, while setting key priorities for utilizing ICT and AI, electrifying transportation equipment, and reducing CO<sub>2</sub> emissions.

There is a tendency to focus on only the development part of technological development, but in reality it relates to all aspects of the development, manufacturing and selling process. Kobe Steel will boost earnings by reinforcing its *monozukuri* capabilities through connections between manufacturing and technologies, and create new value with an open mind by having technological development linked to the front lines that are addressing social needs.

\* Craftsmanship in manufacturing

Co-Creation Initiatives with Customers

For the purpose of disseminating information, facilitating co-creation with customers, and promoting the fusion of technologies of the KOBELCO Group, we are proactively setting up venues and opportunities to accurately identify the needs of customers and create more valuable ideas together with them, as exemplified by KoCoLab.

Kobe Corporate Research Laboratories	Technology Showroom: KOBELCO Co-creation Laboratory (KoCoLab)
Fujisawa Plant	Automotive Joining Technology Showroom
Takasago Works	Machinery Business Product Showroom (KoMPass)
The KOBELCO Group's Technology Exhibitions	The KOBELCO Group's Technology Exhibitions were held at the head offices and plants of automakers and parts manufacturers that are our customers, creating a venue for introducing our technologies, products, and services that help reduce the weight of automobiles.

Mission Story

We aim to create new technologies, products, and services that satisfy our customers.

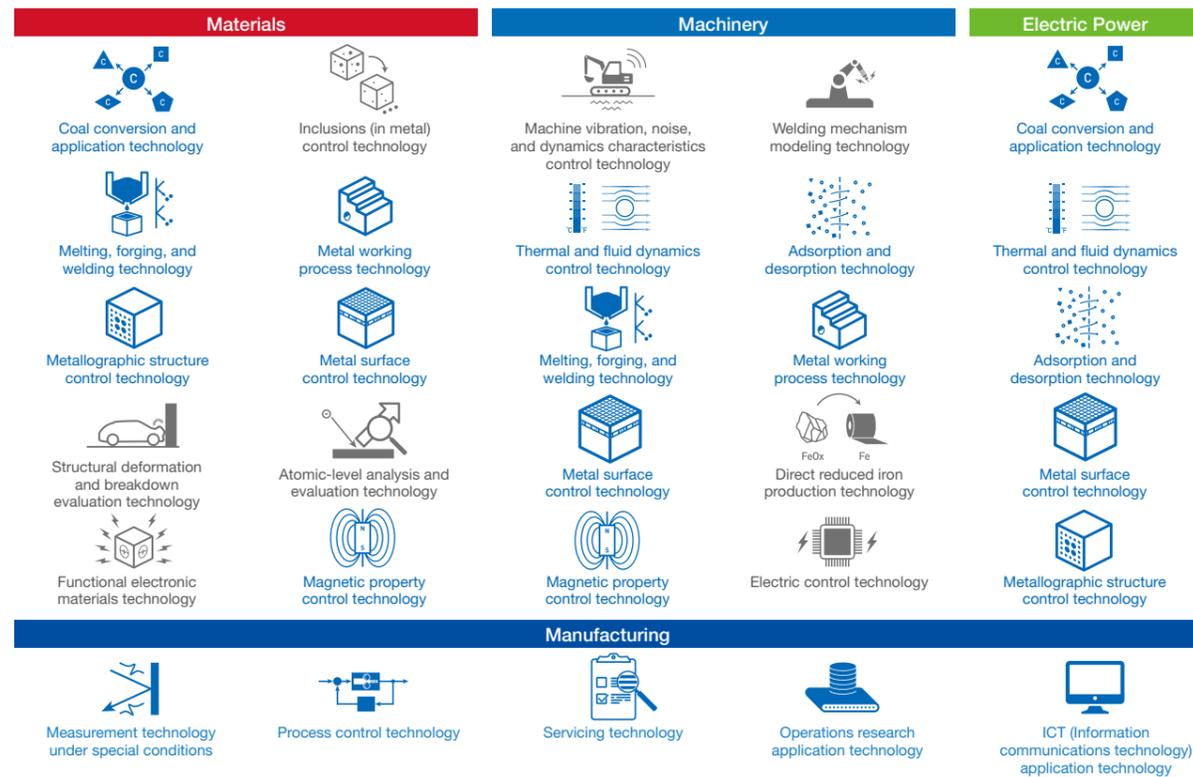
- We are strengthening the 21 core technologies that form the technological assets supporting the creation of distinctive products and our advanced *monozukuri* capabilities. Our co-creation initiatives with customers also lead to the creation of new value.
- We endeavor to create new technologies and businesses that will support the KOBELCO Group in the future, and have set as key priorities the transportation equipment field, CO<sub>2</sub> emissions reduction, and ICT and AI utilization.



21 Core Technologies

The Technical Development Group has dedicated many years to building up a broad base of technologies through research and development activities for diverse businesses that cover materials, machinery, and electric power. The technological assets that support the creation of distinctive products and our advanced manufacturing capabilities can be classified into the following 21 core technologies.

While working to strengthen these core technologies, Kobe Steel will endeavor to create new value for its customers.



Note: Icons shown in blue represent the core technologies that are utilized across business segments.

TOPICS

1 Establishment of Application Technology Center and Materials Processing Technology Center

On April 1, 2020, the Application Technology Center and Materials Processing Technology Center were established.

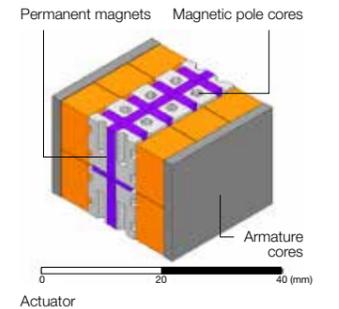
The Application Technology Center was established to integrate the solutions development entities from across business divisions and the Technical Development Group and concentrate all of them into the Technical Development Group. The objective is to expand sales and stimulate demand for the Company's products by strengthening solutions development and proposal capabilities. The center conducts R&D and provides prompt user support for application technologies (structural, welding and processing) that help reduce the weight of automobiles. It also examines potential technologies for automobiles and leverages them to develop new product lines and businesses. Furthermore, the center develops application technologies that support our *monozukuri* capabilities and our lineup of products for non-automotive applications.

The Materials Processing Technology Center was established to marshal together thermal, rolling process, and measurement experts from the Technical Development Group and various business divisions for the purpose of reinforcing the *monozukuri* capabilities of plants in materials businesses. By having these experts stationed at our materials plants, frontline knowledge can be combined with technical expertise to quickly find solutions for technical problems, discover potential problems at an early stage, and ultimately strengthen our capabilities for processing technology.

Both centers will leverage the benefits of centralized resources to ensure and advance our technological edge while systemically training human resources.

2 Activities to Spur Innovation

Kobe Steel takes steps to promote the creation of innovative products and services through technological development. Since 2015, the Company has launched initiatives for this purpose, which include: Management of Technology (MOT) Lectures to improve awareness of innovation that links technological capabilities to economic value; the Scenario Planning System to construct and examine the hypothesis behind new ideas while receiving guidance from external consultants; and the Challenge Theme System to carry out intensive research on highly practical ideas with the participation of experts. One of the technologies that emerged from these initiatives was a new actuator (linear direct-drive motor) structure that enabled more than three times the power output than previous products. The Company is verifying the technologies for this new actuator, which can be used in applications that require finely tuned control with large power in a compact form, such as robots on production lines or in power suits. By continuing to pursue such activities, we aim to contribute to the realization of safe, secure, and prosperous lifestyles.

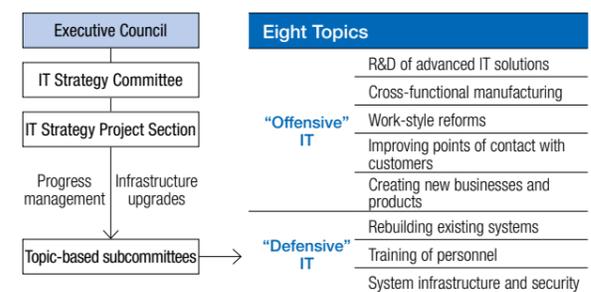


3 Deployment of IT

While accelerating the utilization of rapidly advancing IT, the KOBELCO Group is formulating an IT strategy to drive transformation of all its businesses.

The business transformation targeted by our IT strategy goes beyond reinforcing our *monozukuri* capabilities and extends also to R&D of advanced IT solutions, building information systems that support work-style reforms and better relationships with customers, and the training of IT personnel. Our IT strategy is divided into eight "offensive" and "defensive" categories, ranging broadly from production sites and points of contact with customers to the establishment of systems for work-style reforms of employees.

Framework for Implementing IT Strategy



AI Technology to Advance Automated Welding Robots

Kobe Steel has been working to reproduce the craftsmanship of veteran welders using artificial intelligence (AI) for many fields that require advanced and complex arc welding technology, such as shipbuilding and energy equipment.

In the past, welders were making high-quality welds by deftly adjusting parameters such as welding speed, weaving width and the center position of weaving while visually monitoring welding pools (the area where the base metal is being welded). Kobe Steel is working to create a system that enables a robot to perform welding at the same level of quality as veteran welders without requiring craftsman-level skills, by having AI control automatically the above set of parameters through the welding robot's visual sensor.

Kobe Steel plans to deploy a visual sensor to other robotic systems such as the compact and portable ISHIMATSU welding robot. We believe this technology provides our customers with greater efficiencies by minimizing man-hours and reduced time needed during welding, while ensuring weldment quality by various logs including visual image.



Compact and portable ISHIMATSU welding robot with visual sensor

## Distinctive Technologies, Products, and Services by Customer Domain

Since its founding in 1905, the KOBELCO Group has created and supplied products needed by its customers for more than 100 years. Today, the KOBELCO Group operates businesses centered on seven segments, but from the perspective of customers, its operations can be divided into the three main categories of Mobility, Energy and Infrastructure, and Life.

Below is a brief introduction to the KOBELCO Group's diverse and distinctive technologies, products, and services.



### Mobility

- Automobiles
- Aircraft
- Shipbuilding
- Rolling stock

### Energy and Infrastructure

- Construction and civil engineering
- Urban transit systems
- Environment and energy

### Life

- Container materials
- Electrical equipment and electronics

## Automobiles

**Materials**



**Wire rods for automotive engine valve springs**  
Used in half of all cars worldwide  
Kobe Steel's flagship product

**Materials**



**High-strength steel sheets**  
Japan's leading producer  
Leading producer in development and commercialization of ultra-high-strength steel sheets

**Materials**



**Aluminum sheets for automotive body panels**  
Advanced surface processing technology  
Contributions to automobile weight reduction via use in automobile engine hoods, etc.

**Materials**

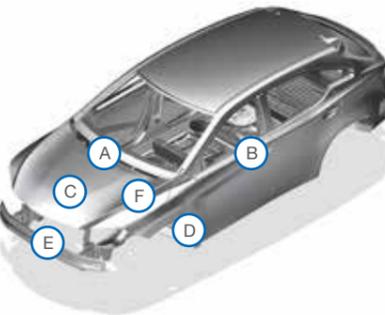


**Aluminum forgings for automotive suspensions**  
Japan's leading producer  
More than 40% lighter than conventional steel forgings

**Materials**



**Aluminum extrusions and fabricated products for automobiles**  
High-strength aluminum alloys  
Contributions to automobile weight reduction via use in bumpers and structural frames



**Materials**



**Copper alloys for automotive terminals and connectors**  
No. 1 market share in Japan  
For use in wire harnesses, the "nerves" of cars. Approximately 30% share of domestic market

**Materials**



**Steel powder**  
Japan's leading producer  
For use in complex-shaped automotive parts and such environmental applications as purification of polluted soil and water

**Materials**



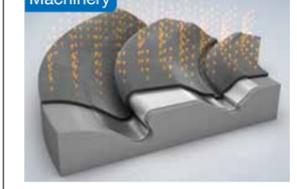
**Low-slag welding process**  
Contributions to enhanced anti-corrosion performance  
Revolutionary welding method that reduces slag, a starting point for rust, and enhances anti-corrosion performance of automotive underbody parts\*  
\* Jointly developed with Mazda Motor Co., Ltd.

**Materials**



**Non-copper coated solid wires (SE wires)**  
Reduce environmental impact  
Reduce environmental burden through our original wire surface treatment technology, which eliminates need for copper plating treatment during manufacturing

**Machinery**



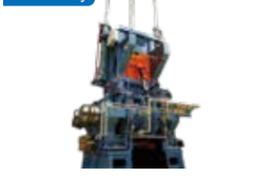
**Flexform™ hydraulic presses**  
Exclusive global technology  
One press can process metal into complex shapes. Various applications include automotive bodies and frames

**Machinery**



**PVD coating systems**  
25% share of world market  
Apply PVD coatings on auto parts, such as engine components, for improving durability under severe conditions

**Machinery**



**Rubber mixers**  
40% share of world market  
Indispensable for production of tires and rubber products. Offer high productivity and energy efficiency based on our leading-edge technologies

**Machinery**



**HyAC series of compressors for hydrogen refueling stations**  
Approx. 30% share of domestic market  
Compressors sold in sets with dispensers in United States, enabling refueling of fuel-cell vehicles with compressed hydrogen

**Machinery**



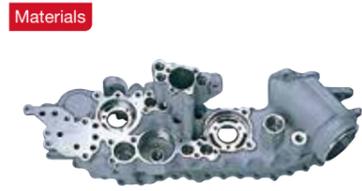
**Multi-purpose and vehicle dismantling machines**  
Contribute to automobile recycling  
These machines recover resources such as engines and wire harnesses with a special nibbler, shortening time to dismantle used vehicles safely.

Distinctive Technologies, Products, and Services by Customer Domain

Aircraft



**Titanium for aircraft engine components**  
Titanium pioneer  
Delivering fan case components for aircraft engines for more than 30 years



**Aircraft gearboxes**  
Sole supplier in Asia  
Aircraft parts realized thanks to our competence in aluminum casting, forging, analysis, and alloy development



**Isostatic presses**  
70% share of world market  
Contribute to adding value by increasing the strength of complex-shaped parts for aircraft and other applications

Shipbuilding



**Crankshafts**  
40% share of global market  
Boasting 40% share of the global market for built-up and solid crankshafts for ships



**Robotic welding systems for assembling large blocks in shipbuilding**  
Reduce welding time by roughly 20%  
Automated robotic welding systems improve productivity of welding for assembling large blocks in shipbuilding. Contribute to proliferation of robots



**Flux-cored wires**  
Contribute to improved quality and efficiency  
Enable high work efficiency and reduce spatter and fumes to improve workplace environments. Used in a wide variety of applications, including shipbuilding, architectural steel frames, and bridges

Shipbuilding



**Compressors for LNG-fueled ships**  
Exclusive world-class technology  
Compressors for supplying fuel in LNG-fueled ships. Contribute substantially to reducing CO<sub>2</sub> emissions

Rolling stock



**Aluminum shapes for rolling stock**  
No. 1 market share in Japan  
Used as materials that shape the bodies of rolling stock. Employed in rolling stock in Japan and the U.K.

Container materials



**Aluminum bottle can stock**  
Approx. 70% share of domestic market  
Holding domestic market shares of more than 30% for aluminum beverage can stock and approximately 70% for aluminum bottle can stock, which requires complex processing

Electrical equipment and electronics



**Materials for semiconductor leadframes**  
Approx. 20% share of Asia market  
Using proprietary elemental bonding to develop copper-alloy strip products that combine strength, conductivity, and heat resistance



**Aluminum disks**  
60% share of global market  
Used as substrates in hard disk drives mainly for desktop computers and data centers

Construction and civil engineering



**Eco-View steel plates for longer-lasting paint on bridges**  
Contribute to longer lifespans of steel bridges  
Eco-View steel plates offer excellent paint corrosion resistance, lengthening the interval for repainting bridges, even in high-salinity environments. Help reduce lifecycle costs

Construction and civil engineering



**KOBEMAG® corrosion resistant steel sheets**  
Contributions to reductions in lifecycle costs  
Superior corrosion and abrasion resistance and high workability. Used in wide applications, including structural components, buildings, electric machinery, and automobiles; certified by the Ministry of Land, Infrastructure, Transport and Tourism for compliance with building standards in February 2020



**Flux-cored wires**  
Contribute to improved quality and efficiency  
Enable high work efficiency and reduce spatter and fumes to improve workplace environments. Used in a wide variety of applications, including shipbuilding, architectural steel frames, and bridges



**REGARC™-equipped structural steel welding systems**  
Improve quality and productivity of structural steel welding  
Enhancing quality and productivity of structural steel welding through our original REGARC™ welding process, which significantly reduces sparks and fumes during welding



**NEXT building demolition machines with main boom**  
Lighten workloads at demolition sites  
NEXT attachments need fewer steps for safe dismantling, transport, and assembly before work operations begin. Compared with previous models, NEXT shortens work time, lightens labor, and reduces costs



**New-model TK-G Series telescopic boom crawler cranes**  
Excellent transportability  
While being less than three meters wide during transport, retains the original series' sturdy structure capable of withstanding tough construction and civil engineering work, compact layout with superior operability, and ability to lift to great heights



**Computerized construction work brand Dig Nav**  
ICT-enabled construction machinery featuring both efficiency and safety  
ICT-enabled construction machinery with a navigation system that significantly increases work efficiency by incorporating monitor displays and alarms in the driver's cab as well as a machine control system that allows the operator to conduct complex work operations through simple manipulation of a lever

Urban transit systems



**Urban transit systems**  
Best track record in Japan  
Boasting an extensive track record in supplying advanced transit systems, such as the Hiroshima Astram Line. Overseas, the North-South Line of the Jakarta Mass Rapid Transit system opened in April 2019

Environment and energy



**Emeraude standard compressors**  
High domestic market share  
Oil-free compressors with highest specs and energy efficiency



**Plastic processing machinery**  
37% share of global market  
Contributions to reduced petrochemical plant electricity consumption with high mixing performance and low energy consumption

Distinctive Technologies, Products, and Services by Customer Domain

Environment and energy



**Machinery**  
**Nonstandard screw compressors**  
 50% share of global market  
 Supplying compressors to large plants since manufacturing the first domestically produced screw compressor in 1956



**Electric Power**  
**Kobe Power Plant**  
 One of Japan's largest independent power producers



**Electric Power**  
**Moka Power Plant**  
 Japan's first large-scale inland thermal power plant



**Machinery**  
**MIDREX® Process**  
 World's top share  
 World's leading direct reduction process, with over 70 plants in operation worldwide



**Machinery**  
**Water treatment facilities**  
 Full product lineup  
 Meeting a wide range of water treatment needs by offering facilities for treating water, sewage, industrial water, wastewater, sludge, and pure/ultra-pure water



**Machinery**  
**Fluidized-bed gasification and melting furnaces**  
 Domestic leader  
 Address needs in waste treatment field for reducing CO<sub>2</sub> emissions and reducing final landfill disposal volume



**Materials**  
**Welding materials for low-alloy steel**  
 Top global share  
 Used in oil refining reactors and thermal power boilers



**Machinery**  
**Micro channel heat exchangers (DCHE)**  
 Best track record in Japan  
 Compact heat exchangers used in hydrogen fueling stations and natural gas-related equipment



**Machinery**  
**Wood biomass power generation**  
 Effective use of biomass  
 Unused timber from forest thinning left in mountainous regions is used as biomass fuel for boiler power generators



**Machinery**  
**Sewage biogas city gas pipe injection facility**  
 Effective utilization of biogas  
 City gas facility that refines biogas from sewage sludge to same quality as city gas

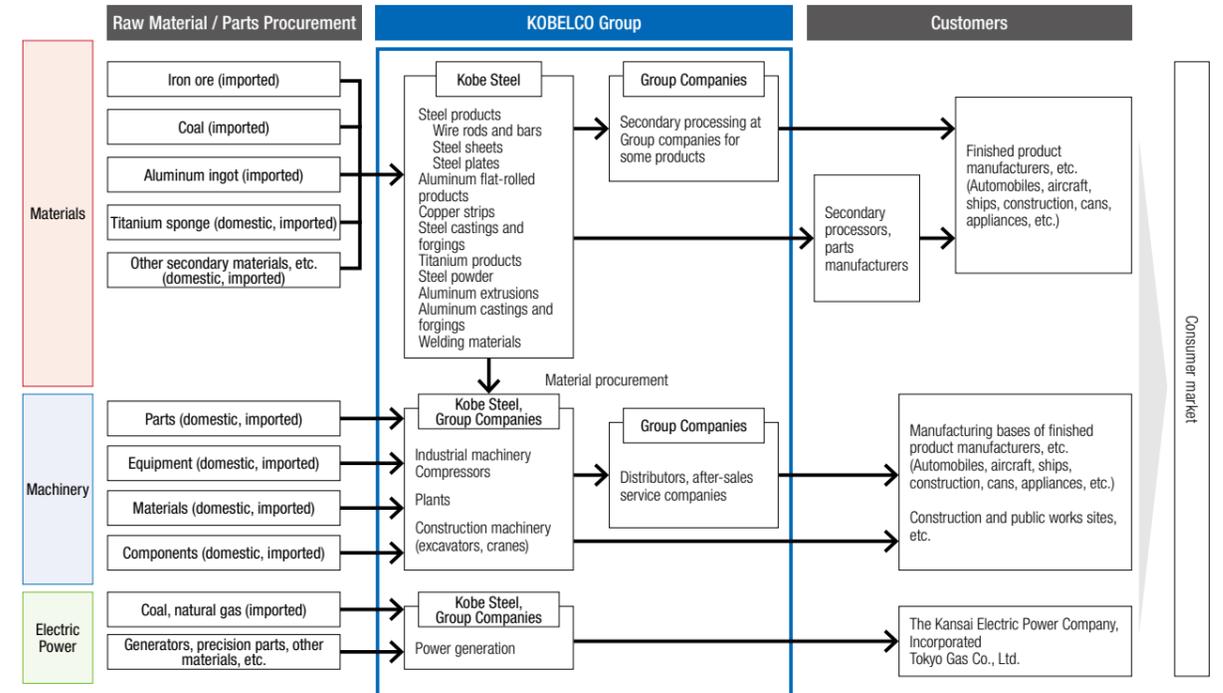


**Machinery**  
**LNG vaporizers**  
 World-renowned high reliability  
 Equipment for gasifying liquefied natural gas (LNG) to enable use at gas-fired power plants and city gas facilities



**Machinery**  
**Heat pumps**  
 Industry-leading energy efficiency  
 Energy-saving devices used for air conditioners and heaters in buildings and plants

The KOBELCO Group's Supply Chain



Procurement Policies

Kobe Steel's procurement divisions act in accordance with the following basic policies.

1	Compliance with laws and other social norms	2	Fair and impartial transactions	3	Coexistence with the global environment through procurement
4	Partnership with suppliers	5	Management of confidential information		

Promotion of Sustainability Management—Supply Chain Initiatives

We envision a world in which people, now and in the future, can fulfill their hopes and dreams while enjoying safe, secure, and prosperous lives. To realize that vision, we will share recognition of our social responsibility with regard to the following items with our suppliers, who are cherished business partners, and promote sustainability management initiatives across the supply chain. (Information on these initiatives will be uploaded to the Company's corporate website on an ongoing basis.)



For more information on Kobe Steel's procurement policies, please refer to the Company's corporate website. [https://www.kobelco.co.jp/english/about\\_kobelco/csr/](https://www.kobelco.co.jp/english/about_kobelco/csr/)