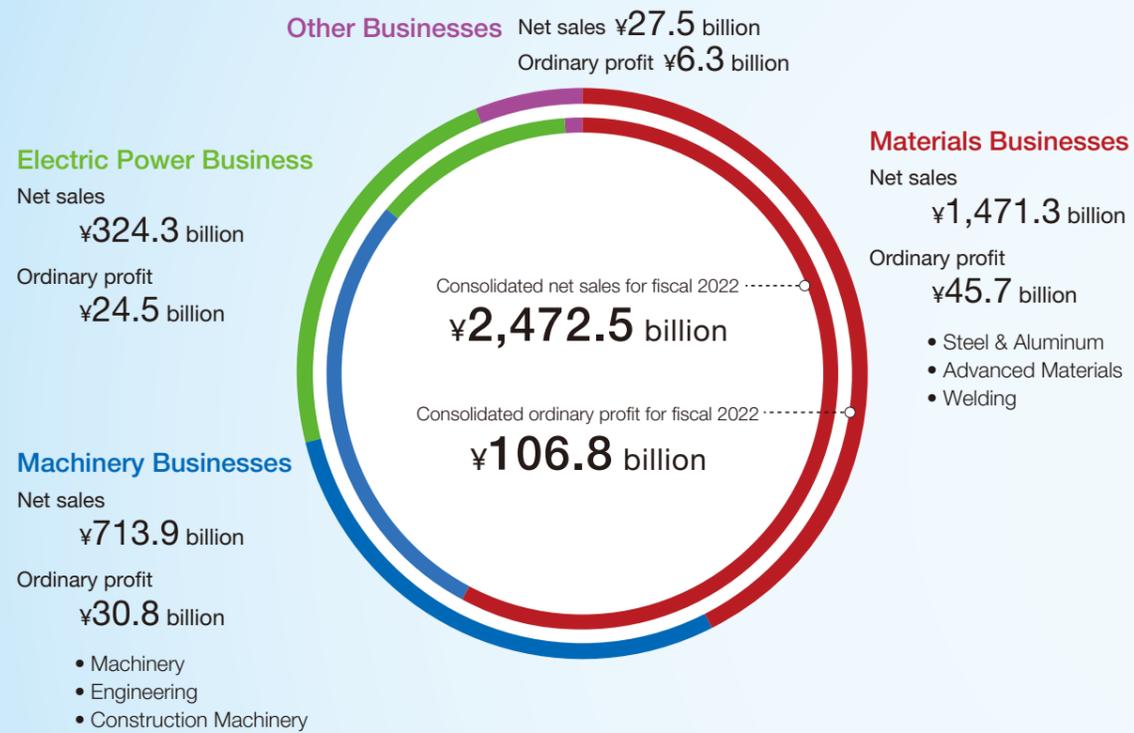


Overview of the Kobelco Group (Fiscal 2022)

Founded	Capital (consolidated)	Total assets (consolidated)	Number of employees (consolidated)
1905	¥250.9 billion	¥2,874.7 billion	38,488

Global operations (consolidated)	Group companies	Research and development expenses	Number of intellectual property rights owned
22 countries	251 <small>Subsidiaries 202 Affiliated companies 49</small>	¥36.7 billion	8,115 <small>(Japan 3,525, Overseas 4,590)</small>

Net Sales and Ordinary Profit



Materials Businesses

Steel & Aluminum	Advanced Materials	Welding
<ul style="list-style-type: none"> Wire rods and bars Steel sheets (hot-rolled, cold-rolled, surface treated) Steel plates Aluminum flat-rolled products Other (steel billets, foundry pig iron, pig iron for steelmaking, slag products) 	<ul style="list-style-type: none"> Steel castings and forgings Aluminum-alloy and magnesium-alloy castings and forgings Titanium and titanium alloy Aluminum-alloy forgings and fabricated products Aluminum extrusions and fabricated products Copper rolled products Steel powder 	<ul style="list-style-type: none"> Welding materials (covered welding electrodes, wires for automatic and semi-automatic welding, fluxes) Welding robots Welding power supplies Robotic welding systems Welding-related testing, analysis, and consulting

Machinery Businesses

Machinery	Engineering	Construction Machinery
<ul style="list-style-type: none"> Equipment for energy and chemical fields Equipment for nuclear power plants Tire and rubber machinery Plastic processing machinery Ultra-high-pressure presses Vapor deposition systems Metalworking machinery Various compressors Refrigeration compressors Heat pumps Various plants (steel rolling, nonferrous metals, etc.) Various internal combustion engines 	<ul style="list-style-type: none"> Various plants (direct reduction ironmaking, pelletizing, petrochemical, nuclear power-related, water treatment, waste treatment, etc.) Civil engineering Urban transit systems Chemical and food processing equipment 	<ul style="list-style-type: none"> Hydraulic excavators Mini excavators Environmental recycling machinery Crawler cranes Wheel cranes Mini wheel loaders

Global Locations



Electric Power Business

- Electric power supply
- Heat supply

Other Businesses

- Special alloys and other new materials (target materials, etc.)
- Analysis and testing of materials
- High-pressure gas cylinder manufacturing
- Superconducting products
- General trading company

Note: Beginning in fiscal 2023, Kobelco Research Institute, Inc., which was under the Other Businesses segment, has come under the Machinery segment. According to this change, the two items "Special alloys and other new materials (target materials, etc.)" and "Analysis and testing of materials" will be under the Machinery segment from fiscal 2023.

- Materials Businesses [▶ See p. 62-65](#)
- Machinery Businesses [▶ See p. 66-69](#)
- Electric Power Business [▶ See p. 70-71](#)

DNA of the Kobelco Group, a Provider of Solutions for Society

Since the founding of Kobe Steel in 1905, the Kobelco Group has worked for the development of society with customers as we create and provide the products they need. We have worked diligently with craftsmanship in manufacturing while listening sincerely to customers and responding to their requests. We believe our willingness to boldly take on various challenges to provide solutions for the development of society represents the mission and social significance of our Group.

Sparing no effort for the benefit of society

The spirit of tackling social issues

Suzuki Shoten, the predecessor of Kobe Steel, worked to establish domestic production of industrial products that Japan depended on for import, with the corporate philosophy of “enhancing national interests,” which was passed down to our Company. With the mission of contributing to the “independence of Japanese industry” in the heavy industry sector, Kobe Steel launched many of Japan’s first domestically produced products not only in the steel sector but also in the aluminum, copper, machinery, engineering, and construction machinery businesses.

Just three months after the end of World War II, the Company resumed production of wire rods, and contributed to Japan’s early recovery. In the Great Hanshin-Awaji Earthquake of 1995, our Company suffered a lot of damage, including damage to the blast furnace at Kobe Works (currently Kobe Wire Rod & Bar Plant). The blast furnace, which was initially expected to require six months to repair, was restored in a short period of two and a half months, thus becoming a symbol of Kobe City’s post-earthquake reconstruction.

The spirit of sparing no effort for the benefit of society, which the Company has cultivated since its founding, is now a core value of the Kobelco Group that strives to help realize a sustainable society through its technologies, products, and services.



About the background photo



A sugar cane press (1,200 tons) made by Kobe Steel—Japan’s first sugar production machinery, which had been imported from the U.K. and Germany.



- 1914 Begins developing Japan’s first air compressor
- 1926 Completes Japan’s first cement plant
- 1930 Completes Japan’s first domestically produced electric shovel
- 1940 Begins production of Japan’s first welding electrodes
- 1955 Begins industrial production of Japan’s first titanium metal
- 1962 Japan’s first plant export (to former East Pakistan)
- 2022 Announces the launch of Japan’s first low-CO₂ blast furnace steel product Kobenable Steel

Flexibly responding to the changes of the times

A corporate culture that drives growth through taking on new challenges

In the prewar period, our Company entered various business fields, all of which required advanced technology. Therefore, we aggressively introduced and avidly absorbed new technologies from overseas companies, while actively recruiting human resources from outside. Through these efforts, we have nurtured a corporate culture that encourages the willingness to respond to people’s wishes and take on new challenges, as well as a spirit of contributing to the growth of the Company and the development of society, as we build trust from customers in each task, which brings a request for the next new tasks.

Even today, such corporate culture and spirit remain as the common values shared by all members of the Kobelco Group, as expressed in KOBELCO’s View of the Future and KOBELCO’s Mission.

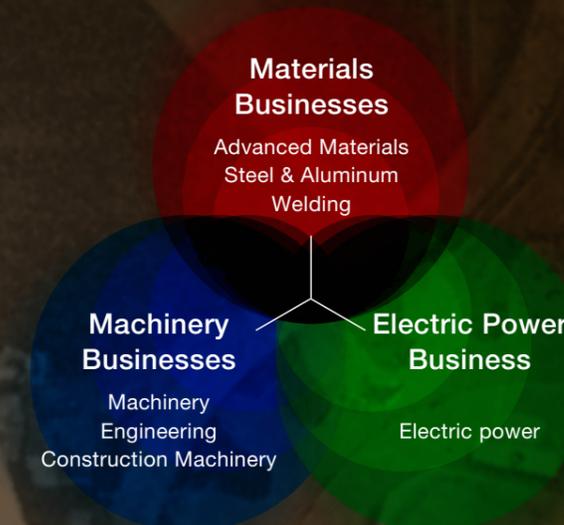
Aiming to become a company required by society, by bringing innovation through combining technologies of different business segments

Pursuing Group’s comprehensive strengths

When you hear the name Kobe Steel, the first thing that comes to mind is probably a steel manufacturer, but our Company has many other businesses in its three core business areas—materials businesses (steel & aluminum, advanced materials, and welding), machinery businesses (machinery, engineering, and construction machinery), and the electric power business, which leverages the technology and know-how that we have developed over many years of in-house power generation operations at steelworks. In such a wide range of business fields, we provide solutions for the issues faced by our customers.

The technologies refined in the respective business domains generate rare and unique values and strategies, regardless of scale, leading us to hold the largest market shares in many technologies, products, and services in Japan and overseas.

Furthermore, the integration of those technologies that were once separately developed in different business fields creates synergy that will be the seeds of innovation. Our endeavor to create new values continues, as exemplified by multi-material solutions that combine steel, aluminum, and welding technology in the field of automotive weight reduction and electrification, low-CO₂ ironmaking technology that combines the technologies of our steel and engineering businesses, the hybrid-type hydrogen gas supply systems developed in collaboration between the machinery and engineering businesses that share their management resources.



Embracing diverse values and enhancing organizational creativity

Integration of diverse technologies and unique qualities of individuals

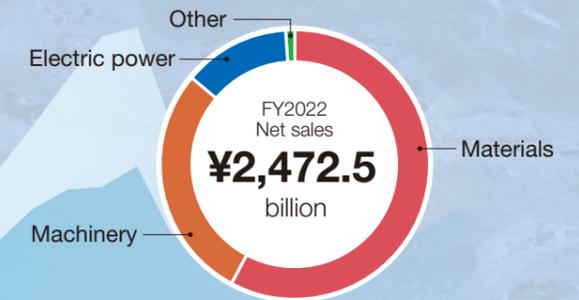
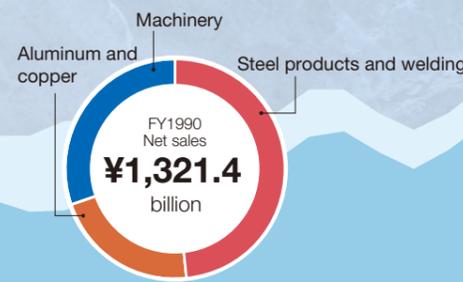
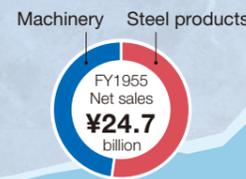
KOBELCO has become a global brand that is recognized in various countries around the world. Behind such business development, there are people who support a wide range of business areas. The Kobelco Group has skilled personnel who are well-versed in not only various materials and machinery products but also process and control technologies, production control, and quality management for manufacturing them, as well as people who have professional skills in areas such as marketing, sales, accounting, and legal affairs. Integrating such diverse expertise of individuals leads to enhancing our Group’s corporate value.

Our Group also has a free and open atmosphere that promotes the utilization of skills of our human resources and various technological elements and a corporate culture that allows us to share diverse values while providing support for the growth of each individual. This culture enables many mid-career hires, who have experience in various different industries, to play an active role in a wide range of divisions of the Company.

Going forward, we will continue to take on challenges as “Kobelco one team,” interacting with each other in ways that transcend organizational boundaries, and fostering a corporate culture that respects new ideas derived from different views and ways of thinking.

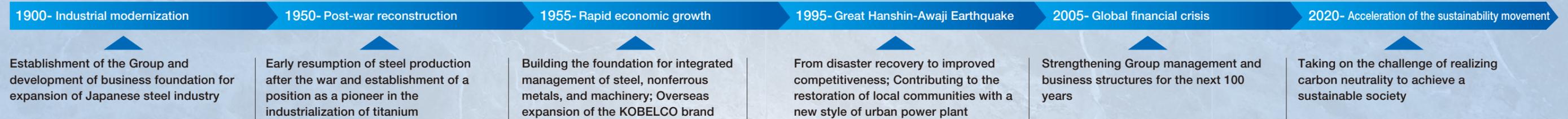
History of the Kobelco Group, a Provider of Solutions for Society

In 1905, the general partnership trading company Suzuki Shoten acquired a steel business in Wakinohama, Kobe, called Kobayashi Seikoshō, operated by Seiichiro Kobayashi, and changed its name to Kobe Seikoshō. Then, in 1911, Suzuki Shoten spun off the company to establish Kobe Steel Works, Ltd. in Wakinohamacho, Kobe. Over the 117 years since its founding, our Group has been responding to the social issues and demands of the times through its materials, machinery, and electric power businesses.



Overseas sales
Domestic sales

Notes 1. Domestic sales are calculated by subtracting overseas sales (value of exports until fiscal 1998, consolidated overseas net sales from fiscal 1999) from company-wide net sales (non-consolidated basis until fiscal 1980, consolidated basis from fiscal 1981).
2. The ratios of sales in the pie charts are based on the simple total of net sales of each segment, including inter-segment transactions.



Groupwide

<p>1905 Founded</p> <p>1937 Listed on the stock market</p>	<p>1960 Opens office in New York</p> <p>1979 Establishes KOBELCO as international unified trademark</p> <p>1988 Establishes U.S. headquarters</p>	<p>2000 Establishes Corporate Code of Ethics</p> <p>2006 Establishes corporate philosophy</p> <p>2011 Establishes China headquarters</p>	<p>2017 Launches Next 100 Project</p> <p>2017 Announces quality misconduct and formulates measures to prevent recurrence</p> <p>2017 Establishes headquarters in Southeast Asia and South Asia</p>	<p>2019 Establishes regional headquarters in Europe</p> <p>2020 Establishes Group Corporate Philosophy</p> <p>2021 Announces Kobelco Group Medium-Term Management Plan (Fiscal 2021-2023)</p>
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Materials Businesses

<p>1905 Begins steel casting and forging business</p> <p>1916 Begins steel products business</p> <p>1917 Begins copper business</p>	<p>1937 Begins aluminum business</p> <p>1940 Begins welding business Produces Japan's first welding electrodes</p>	<p>1955 Begins titanium metal business Begins Japan's first industrial production of titanium</p> <p>1959 Establishes integrated steel production</p>	<p>1968 Establishes production base in Thailand</p> <p>1970 Completes Kakogawa Works</p> 	<p>1979 Develops ARCMAN™ welding robot</p> 	<p>1990 Establishes manufacturing and sales base for automotive hot-dip galvanized steel sheet in the U.S.</p>	<p>2006 Starts operations of special steel wire rod processing base for automobiles in China</p> <p>2006 Starts operations of aluminum forging plant for automotive suspension products in the U.S.</p>	<p>2014 Establishes manufacturing and sales base for automotive cold-rolled, high-tensile strength steel in China</p> <p>2016 Begins producing aluminum panel material at Tianjin plant in China Becomes first Japanese company in China to produce automotive aluminum panel material</p> 	<p>2017 Consolidates upstream processes at Kakogawa Works</p> 	<p>2018 Establishes production and sales base (KPEX) in the U.S. for aluminum extrusions and fabricated products</p> <p>2022 Announces the launch of low-CO₂ blast furnace steel product Kobenable Steel</p>
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Machinery Businesses

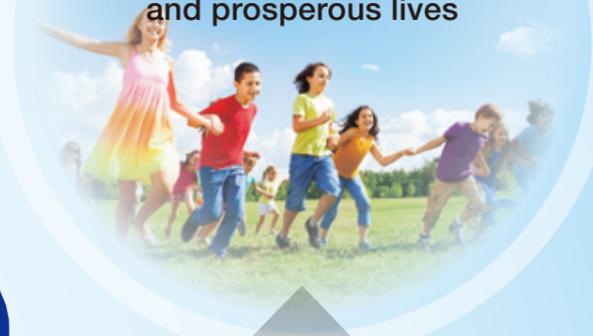
<p>1914 Begins machinery business Begins first domestic development of air compressors</p> <p>1926 Begins engineering business Completes Japan's first cement plant</p>	<p>1930 Begins construction machinery business Completes first domestically produced electric mining shovel</p>  	<p>1962 Begins overseas plant business Japan's first plant export (East Pakistan, currently Bangladesh)</p> <p>1975 Introduces automated guideway transit (AGT) system Begins operation of AGT system "KRT" at Okinawa International Ocean Exposition</p>	<p>1983 Acquires U.S. company Midrex Technologies, Inc. Begins direct reduction ironmaking plant business</p> 	<p>2004 Establishes manufacturing and sales base for standard compressors in China</p> <p>2006 Establishes manufacturing and sales base for nonstandard compressors in the U.S.</p> 	<p>2017 Acquires Quintus Technologies of Sweden (World's leading isostatic press manufacturer)</p> 	<p>2021 Kobelco Eco-Solutions Co., Ltd. becomes a wholly owned subsidiary</p> <p>2022 Begins capital and business alliance with Miura Co., Ltd.</p>
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Electric Power Business

<p>1996 Enters wholesale power supply (IPP) business</p>	<p>2002 Starts commercial operations of Kobe Power Plant No. 1 unit</p> 	<p>2004 Starts commercial operations of Kobe Power Plant No. 2 unit</p>	<p>2016 Begins Electric Power Business</p>	<p>2019 Starts commercial operations of Moka Power Plant No. 1 and No. 2 units</p> 	<p>2021 Starts commercial operations of Kobe Power Plant No. 3 unit</p> <p>2022 Starts commercial operations of Kobe Power Plant No. 4 unit</p>
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Value Creation Process

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



Assessment of the current business climate

- Risks**
 - Weakening of earnings base and damage to corporate value
- Opportunities**
 - Reforming business structures and capturing new revenue opportunities

Transition to carbon neutrality and social transformation

Sustainability movement

Digital transformation

Structural problems of the steel industry

Changes in industrial structure triggered by COVID-19

Higher procurement costs and supply chain risks (affecting both demand and production)

Assessment of business environment by customer domain

Economic Environment by Customer Domain
▶ See p. 60-61

Kobelco Group's Materiality (Medium- to long-term key issues)

Contributing to a green society

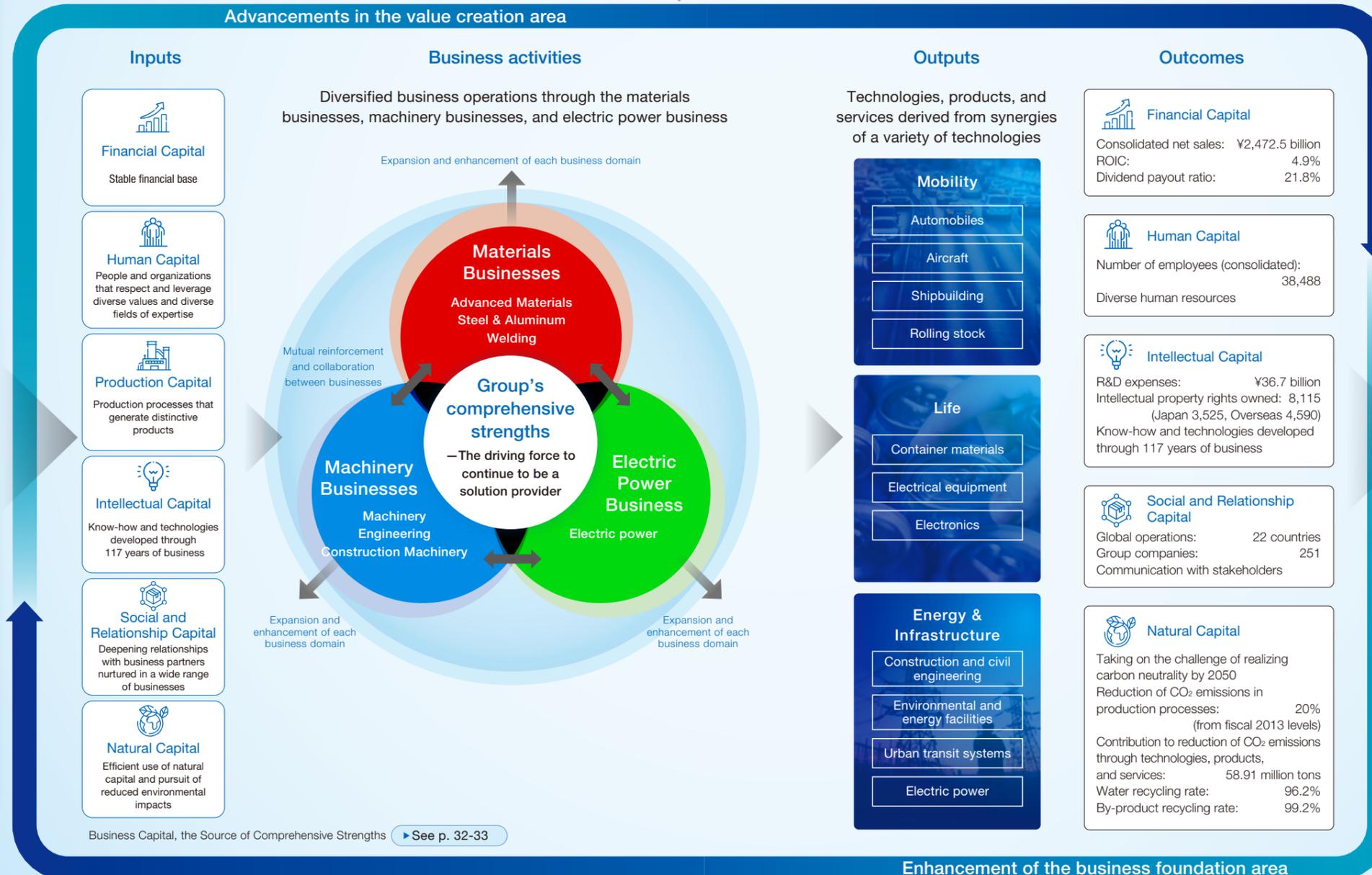
Ensuring safety and security in community development and manufacturing

Providing solutions for the future connecting people and technology

Promoting active participation of diverse human resources

Pursuing governance that supports sustainable growth

Advancements in the value creation area



Impact on stakeholders

Customers

Better quality of life (QOL)
Safety and security in people's lives

Business Partners

Creation of high-quality products
Improved labor productivity through operational efficiency

Shareholders and Investors

Enhancing shareholder value over the medium to long term
Ensuring returns

Employees

Increasing employee satisfaction in work and personal life
Promoting employees' global activities

Local and international community

Collaboration to realize a recycling-oriented society where eight billion people live worldwide

Environment

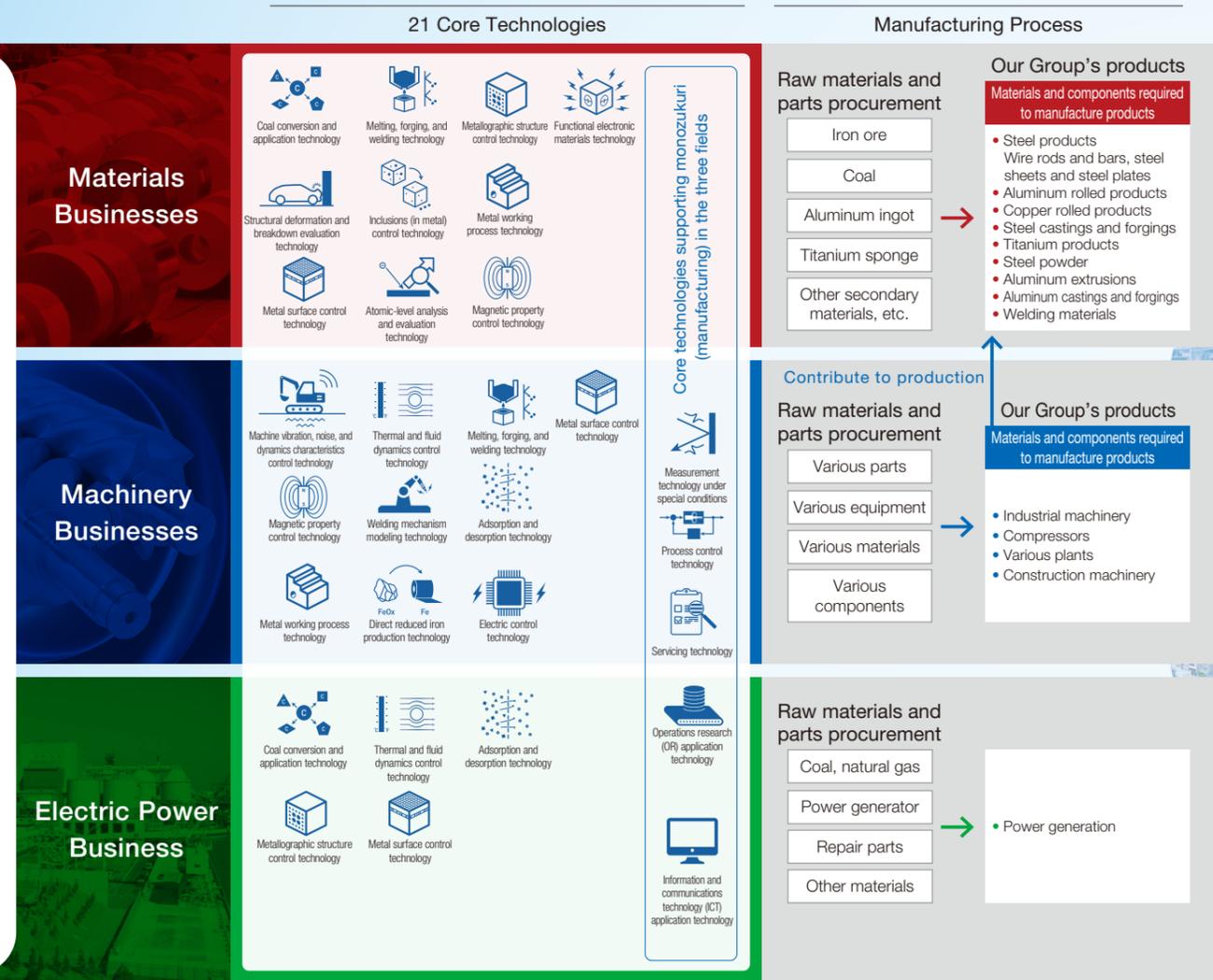
Contribution to a sustainable global environment



Business Model and Value Provided

Creating a variety of technologies, products, and services through the Group's comprehensive strengths, the driving force to continue to be a solution provider for society

Assessment of business environment by customer domain



Economic Environment by Customer Domain [▶ See p. 60-61](#)

Founded in 1905 as a manufacturer of steel castings and forgings, the Kobelco Group has gradually expanded its business into machinery, rolled steel, copper, engineering, construction machinery, aluminum, and welding. In our history of over 110 years, we have responded to the needs of society through selection and expansion and developed our business in three areas: the materials businesses that include materials (steel castings and forgings, aluminum, etc.), advanced materials (steel, aluminum castings and forgings, etc.) and welding materials; the machinery businesses that include industrial machinery, engineering, and construction machinery; and the electric power business.

The Group's technologies, products, and services constitute an essential part of society in diverse areas, such as Mobility, Life, and Energy & Infrastructure. Our Group creates competitive advantages by supplying a wide range of customers with a diverse lineup of unique products, such as distinctive materials and components created using our original technologies, and a variety of energy-saving and environmentally friendly machinery products and engineering technologies. Moreover, the electric power business provides services that benefit the public, such as the supply of electricity, which is an extremely important social infrastructure. Engaged in such a wide range of

businesses, we believe our Group bears a significant social responsibility. These technologies, products, and services are derived from the knowledge and technological capabilities that our Group has developed through its broad range of business activities. By utilizing these resources across business divisions as shared assets of the entire Group, we will strengthen the product development and manufacturing capabilities of respective businesses for the creation of new value and thereby provide solutions for the issues faced by our customers and society. Today, our global society is undergoing major changes,

which include the response to climate change. Our Group is not only working to reduce CO₂ emissions from its own production processes, but also developing a variety of technologies, products, and services that contribute to the reduction of CO₂ emissions by customers. As we work to provide solutions for various issues by combining the advantages of our diverse businesses, we will respond swiftly to changes in the social environment with our Group's comprehensive strengths, with the aim of realizing a world in which people, now and in the future, can fulfill their hopes and dreams while enjoying safe, secure, and prosperous lives.

Business Capital, the Source of Comprehensive Strengths

The Kobelco Group has been engaged in a wide range of businesses over its 117-year history. The Group's comprehensive strengths are built on the knowledge and technological capabilities it has cultivated and a solid base of diverse human resources working in the Group. We will continue to provide solutions to the issues faced by our customers and society by creating a variety of technologies, products, and services through the collective strengths of our Group.



Financial Capital

Stable financial base

A stable financial base is essential for the sustainable growth of our Group.

Under the Kobelco Group Medium-Term Management Plan (Fiscal 2021-2023), we aim to achieve an ROIC of 5% or higher and a D/E ratio of 0.7 times or lower in fiscal 2023, both of which are expected to be achieved as planned.

In order to stably achieve an ROIC of 8% or higher, which is the Group's future goal, we will continue to work to strengthen its financial base as we pursue sustainable growth.

Total assets
¥2,874.7 billion

Stockholders' equity
¥838.2 billion

ROIC
4.9%

ROE
8.4%

Interest-bearing debt
(Excluding project financing)
¥590.5 billion



Human Capital

People and organizations, respecting and leveraging diverse values and expertise

Our Group, which operates in diverse business domains, has a wide range of human resources who have extensive knowledge and skills in a variety of fields. The Group's global presence in 22 countries around the world and its employees with diverse values, knowledge, and nationalities are part of our strengths.

With the aim of enabling these diverse human resources to demonstrate their individual abilities to the fullest, we will reform our work environment and organizational culture and maximize the Group's comprehensive strengths.

Number of employees
38,488

Percentage of employees returning from childcare leave
(non-consolidated)
99.4%

Employee training
(non-consolidated)
Total hours of training (across all employees)
408,216 hours
Average hours of training per employee
35.9 hours

Number of annual paid leave days taken
(non-consolidated)
17 days/person

Lost time injury frequency rate
0.24



Production Capital

Production processes to create distinctive products

While accelerating capital investment necessary to create technologies, products, and services that addresses social issues, we make disciplined investment decisions and respond to changes in the business environment.

In addition, with the first priority placed on the safety of employees working at manufacturing sites, we systematically implement facility maintenance, renovation, and renewal to prevent accidents.

Capital investment
(payment basis)
¥98.9 billion

Property, plant and equipment
¥1,066.0 billion

Depreciation
¥112.5 billion



Intellectual Capital

Know-how and technologies developed over 117 years of business operations

We utilize across business divisions the technological capabilities and knowledge that each business has cultivated and integrate them into new forms to create new value.

In October 2022, we established the Kobelco Future Pioneering Co-Creation Research Center in cooperation with Osaka University. We are actively working with external organizations to create and co-create new innovations through studying solutions for innovation that enable people and digital technology to coexist in *monozukuri* (manufacturing).

Research and development expenses
¥36.7 billion

Number of intellectual property rights owned
8,115
(Japan 3,525; Overseas 4,590)

Number of employees with PhDs
170

Number of DX personnel trained
(Cumulative since fiscal 2020)

IT evangelists **278**
Data scientists **137**



Social and Relationship Capital

Deepening relationships with business partners nurtured through a wide range of businesses

Our Group is working to collaborate appropriately with multi-stakeholders, recognizing the importance of co-creating value with various stakeholders, including shareholders, investors, employees, customers, business partners, and local communities. We are earnestly listening to our stakeholders in dialogues with shareholders and other investors and through customer/business partner surveys. Considering that improving management transparency is a priority, we are promoting timely, appropriate, and extensive information disclosure.

Global operations
22 countries

Group companies
251

Communication with stakeholders
Individual dialogue with domestic and international institutional investors and analysts
134 companies
(cumulative total)



Natural Capital

Pursuit of efficient use of natural capital and reduced environmental impact

Our Group's business activities are closely related to natural capital, as we use mineral resources as raw materials for products and industrial water. Therefore, it is important to minimize negative impacts on natural capital.

Our Group is boldly working to achieve carbon neutrality by 2050, and we are also working to reduce environmental impact by utilizing our technology in water recycling and by-product recycling.

Reduction of CO₂ emissions in production processes
20% reduction
(compared to fiscal 2013 levels)

Contribution to reduction of CO₂ emissions through technologies, products, and services
58.91 million tons

Water recycling rate
96.2%

By-product recycling rate
99.2%

Business Capital, the Source of Comprehensive Strengths

Making the Best Use of the Talents of Our Employees and Our Technologies to Continue to Create New Value

The Kobelco Group operates businesses in 22 countries and regions around the world and has approximately 38,000 employees on a consolidated basis. In addition, we have a wide range of human resources who have extensive knowledge and skills in a variety of fields because we operate in diverse business domains. Our Group will continue to grow with its global human resource base, and we will aim to make further great leaps forward.

Developing diverse human resources with extensive knowledge and skills in a variety of fields



Aiming to create an environment where diverse employees can play active roles

We will fully support the growth of all employees so that they can further demonstrate their abilities, while actively promoting work style reforms, including eliminating long working hours and encouraging the taking of leave.

Diversity and Inclusion (D&I)

We aim to enable each employee to achieve self-improvement and demonstrate their individuality and strengths, as well as to support the efforts of "KOBELCO One Team" to take on challenges and create new values from diverse ideas and experiences.

Work Style Reform

We aim to realize a work environment in which diverse employees can work with a sense of fulfillment and with high productivity.

Human Resources Development

We aim to support the constant self-improvement of our employees so that each and every individual can carry out their daily work with pride and enthusiasm.

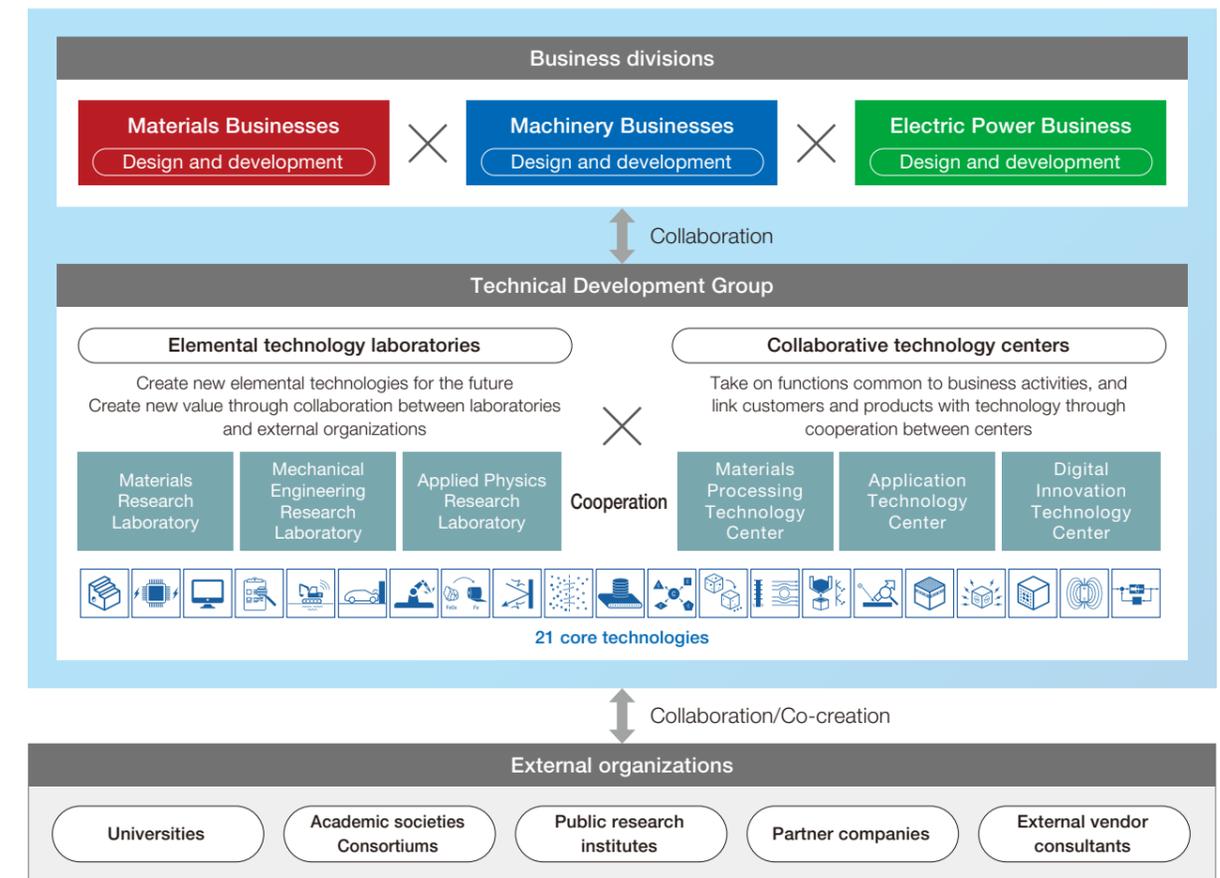
Human Resources Strategy ▶ See p. 78-82

Technical development to create new value through internal and external collaboration, utilizing a broad range of expertise

Leveraging the know-how and technological capabilities that we have developed in a wide range of business fields, including steel & aluminum, advanced materials, welding, machinery, engineering, construction machinery, and electric power, the Kobelco Group will create new value and provide solutions to the needs of its customers and society.

The Technical Development Group, with its three

elemental technology laboratories and three collaborative technology centers as the hub for its R&D activities, promotes the creation of distinctive technologies and products and strengthens *monozukuri* (manufacturing) through the integration of 21 core technologies in collaboration with business divisions. We also collaborate with external organizations to create and co-create innovations.



Employee VOICES

Engineering Business

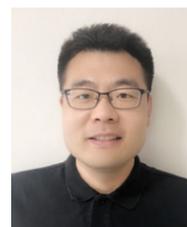
Human Resources Group, Planning & Administration Department

I am mainly in charge of personnel affairs in the Engineering Business. In my work, I strive to solve problems that arise every day by making use of my experience and personal connections in areas such as sales and administration in the Engineering Business and recruitment and IR at the Head Office. My wish is to help create an environment where diverse human resources can play active roles and create new value by finding the best solutions for society and the people involved without being bound by existing rules and values.



Kobelco (China) Holding Co., Ltd.

I am in charge of collecting and disseminating information on the automotive market and macro technology trends in China, where the transition to EVs is accelerating, and building and strengthening relationships with Chinese automotive customers. I use my language and technical skills and experience for these tasks. As a member of Kobe Steel, a multi-material supplier, I will strive to contribute to the creation of a safer, more secure, and greener society, as well as to improving customer satisfaction, by introducing and providing our Company's environmentally friendly advanced materials and weight reduction solution technologies.



Technical Development Group

AI & Data Science Promotion Section, Digital Innovation Technology Center

My wish is to realize a way of working that allows people to take on challenges that expand their potential. As a means to achieve this goal, we are conducting research and development on artificial intelligence (AI). By using AI, we can reduce the amount of simple tasks that employees do, allowing them to focus on the tasks that they are willing to do to the best of their ability. I believe our mission is to offer deliverables of social value by tapping the potential of employees.



Technical Development Group

Chemical Technology Research Section, Mechanical Engineering Research Laboratory

As a chemical engineering specialist, I am working on the process development to utilize new resources, such as hydrogen and biomass. We need to see the whole picture of the supply chain where resources are converted into products and consumed in order to identify the issues to be addressed in achieving carbon neutrality. By integrating our diverse technologies, we will develop processes with low environmental impact and contribute to solving issues that our society faces.



Value Creation Initiatives

Leveraging the advantages of operating diverse businesses, the Kobelco Group provides customers with unique value by promoting the cross-sectoral utilization of products and technologies of other business divisions and segments.

Value Creation Initiative

01

Kobenable Steel, low-CO₂ blast furnace steel product

Steel & Aluminum

×

Engineering

The Kobelco Group has successfully demonstrated the technology that can reduce a significant amount of CO₂ emissions from blast furnace operations, combining the technologies of the engineering business and the steel business. This was made possible by combining two key technologies of the Group.

1. Hot briquetted iron (HBI) manufacturing technology using the MIDREX® Process in the engineering business
2. Blast furnace operation technologies in the steel business, such as HBI charging technology for blast furnaces, AI-based blast furnace operation technology, and our Group's distinctive advanced pellet production technology.

Using these two CO₂ reduction technologies, our Group has launched Kobenable Steel with significantly reduced CO₂ emissions in the blast furnace ironmaking process and became the first company in Japan to commercialize low-CO₂ blast furnace steel products (according to Kobe Steel's survey). This product uses the mass balance methodology whereby CO₂ reduction effects are allocated to specific steel products.

Since we announced the launch of Kobenable Steel, we have

received many inquiries from customers in various fields, attracting extensive interest in the product. Kobenable Steel is manufactured in the same process as the conventional blast furnace ironmaking method and has the following two features.

- (1) Available for all types of steel products
Kobenable Steel is available for all types of steel products (steel sheet, steel plate, wire rod and bar products) that are manufactured at Kakogawa Works and the Kobe Wire Rod & Bar Plant of Kobe Steel.
- (2) Maintaining the same level of high quality as conventional products
Customers can continue to use blast furnace steel products that require high quality, such as special steel wire rods and ultra-high-tensile strength steel, which are our Group's strengths.

To date, Kobenable Steel has been adopted by customers from various industries including automotive, construction, and shipbuilding companies and has contributed to customers' efforts to reduce CO₂ emissions.

Kobenable Steel

<p style="font-size: 10px; margin: 0;">Automobile Jun. 2022</p> <p style="font-weight: bold; margin: 0;">Toyota Motor Corporation</p> <p style="font-size: 8px; margin: 0;">Kobenable Steel used in suspension members of Toyota hydrogen engine-equipped racing vehicle Corolla</p> <p style="background-color: #0070C0; color: white; text-align: center; padding: 2px; font-size: 8px;">Kobenable Premier</p>	<p style="font-size: 10px; margin: 0;">Automobile Dec. 2022</p> <p style="font-weight: bold; margin: 0;">Nissan Motor Corporation</p> <p style="font-size: 8px; margin: 0;">Kobenable Steel used in Nissan mass-produced vehicles</p> <p style="background-color: #0070C0; color: white; text-align: center; padding: 2px; font-size: 8px;">Kobenable Premier</p>
<p style="font-size: 10px; margin: 0;">Construction Dec. 2022</p> <p style="font-weight: bold; margin: 0;">IHI, Mitsubishi Estate, Kajima</p> <p style="font-size: 8px; margin: 0;">Kobenable Steel used in Toyosu 4-2 Development Project, Building B (Toyosu, Koto-ku, Tokyo)</p> <p style="background-color: #0070C0; color: white; text-align: center; padding: 2px; font-size: 8px;">Kobenable Premier</p>	<p style="font-size: 10px; margin: 0;">Shipbuilding Mar. 2023</p> <p style="font-weight: bold; margin: 0;">Imabari Shipbuilding Co., Ltd.</p> <p style="font-size: 8px; margin: 0;">Kobenable Steel used in a 180,000-ton class bulk carrier built by Imabari Shipbuilding</p> <p style="background-color: #0070C0; color: white; text-align: center; padding: 2px; font-size: 8px;">Kobenable Premier</p>

Employee VOICES



Steel & Aluminum Business
CN Group, Business Development Department

Kobenable Steel was launched in May 2022 as Japan's first low-CO₂ blast furnace (BF) steel product. Its CO₂ reduction effect was obtained by charging a large amount of HBI into the BF. As it was the first of its kind to be commercialized in Japan, there was a lot of trial and error in establishing methods and obtaining certification, and we had many meetings with a certification company.

Since the launch of Kobenable Steel, we have received enthusiastic responses from customers, including many voices of support, noting that Kobe Steel has taken a big step toward decarbonization. Internally, the product name Kobenable Steel has been well received as "easy to understand," and our motivation to develop the next Kobenable product has been increasing. These efforts toward a decarbonized society were highly evaluated within the Company, and we received the Grand Prix at the 4th Kobelco Core Values Awards.* Going forward, our Steel & Aluminum Business division will work together to expand the use of Kobenable Steel.

* For more information about the Kobelco Core Values Awards, please See p. 83.

Value Creation Initiative

02

Hybrid-Type Hydrogen Gas Supply System

Machinery

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Engineering

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Advanced Materials

Our hybrid-type hydrogen gas supply system provides solutions to stable and low-cost hydrogen production for small- to medium-scale hydrogen users. The hybrid system is based on the following three products and technologies of our Group:

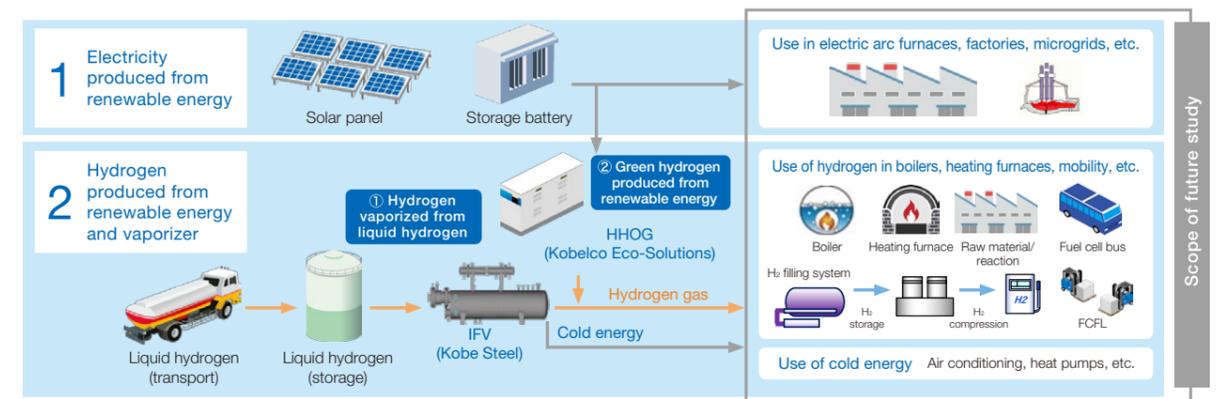
- (1) Cryogenic liquid hydrogen vaporizer under development, utilizing the machinery business' core technology of the Intermediate Fluid Vaporizer (IFV)
- (2) High-purity Hydrogen Oxygen Generator (HHOG), developed by Kobelco Eco-Solutions Co., Ltd.
- (3) Operation management system that monitors and controls hydrogen production and feed, utilizing the technological resources of the engineering business

In order to promote the utilization of hydrogen, the hybrid system is designed to have in parallel a liquid hydrogen vaporizer and a water-electrolysis hydrogen generator utilizing renewable energy, achieving both cost minimization and elimination of supply instability of renewable energy.

It also remotely monitors the amount of hydrogen used in facilities such as heating furnaces and boilers to control the

hydrogen supply system (hydrogen production) optimally for hydrogen demand change over time, so that hydrogen is always supplied stably and efficiently. In addition, the cold energy generated during the vaporization of liquid hydrogen (-253°C) can be used at the customer's factories for cooling manufacturing facilities, air conditioning, heat pumps, etc. It saves energy and improves the energy efficiency of their production processes. Through such efforts, we will expand the utilization of hydrogen in various industries including our Group companies to contribute to the transition to decarbonization (namely, the transition to a hydrogen society).

In March 2023, we initiated a demonstration test at Takasago Works, Kobe Steel. The demonstration test of the hybrid-type hydrogen gas supply system was carried out in collaboration with Kobe Steel and Kobelco Eco-Solutions through the mutual use of business resources from the machinery business and the engineering business to provide solutions for the realization of a hydrogen society. This system is not only expected to be further developed through collaboration with the advanced materials business but also attracts strong interest from governments and external business operators, and we have many visitors to our demonstration facilities.



Employee VOICES



Business Development Department
Hydrogen Working Group

In the fields of carbon neutrality and hydrogen, initiatives must be carried out from various perspectives. The Kobelco Group has a wide range of product lines centered on machinery, materials, and electric power and is able to offer its unique value in many places, taking advantage of being a producer as well as a user of hydrogen. In fiscal 2021, the Hydrogen Working Group started Groupwide working-level activities. As one of these activities, we hold regular weekly online meetings where more than 50 members from each department participate to share the status of projects, the latest news, and the activities of each company.

Currently, carbon neutrality and hydrogen are hot topics in various news outlets, but there are only a few projects that have become concrete initiatives. Each week, we have a number of visitors from outside the Company to the demonstration facilities at Takasago Works and they give us useful suggestions that we are not able to hear in normal sales activities, such as an idea for new ways to use demonstration facilities, saying, "It is very interesting that the verification facility actually exists. There must be potential to try something new even more." Utilizing this kind of information, we, the members of the Hydrogen Working Group, will work together to take one step further in creating value unique to Kobelco.