

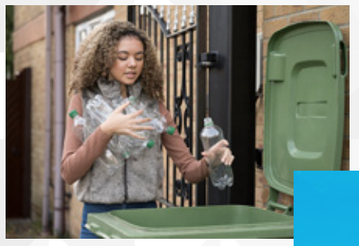




JSW

THE JAPAN STEEL WORKS, LTD.

JSW Integrated Report 2023







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OUR PHILOSOPHY

The corporate philosophy of JSW Group, starting with the Purpose

PURPOSE

Material Revolution™,

(Japanese Trademark Registration Number 6650455)

making the world sustainable and prosperous.

VISION

Benefiting all stakeholders by developing and implementing industrial machinery and new materials that solve social issues.

VALUE CREATION PROCESS

JSW Group will further refine its core competence, develop industrial machinery and new materials that solve social issues, and supply them to the world, thereby simultaneously creating social value and enhancing sustainable corporate value.

▶For details on the Value Creation Process, see p. 12-13

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Editorial Policy

Since fiscal 2021, The Japan Steel Works, Ltd. has been publishing an integrated report to inform all stakeholders, including shareholders and investors, of its initiatives for sustainably creating social value and enhancing medium-to-long-term corporate value.

We hope that this report provides readers with deeper insight into JSW Group from both financial and non-financial perspectives.

Reporting Period

April 1, 2022–March 31, 2023 (“Fiscal 2022” or “FY2022”)

Note: Certain activities and information are included from outside this reporting period.

Reporting Scope

The Japan Steel Works, Ltd. and Group companies

Note: Throughout this report, “JSW” refers to information relating to The Japan Steel Works, Ltd., and “JSW Group” refers to information relating to The Japan Steel Works, Ltd. and its consolidated subsidiaries.

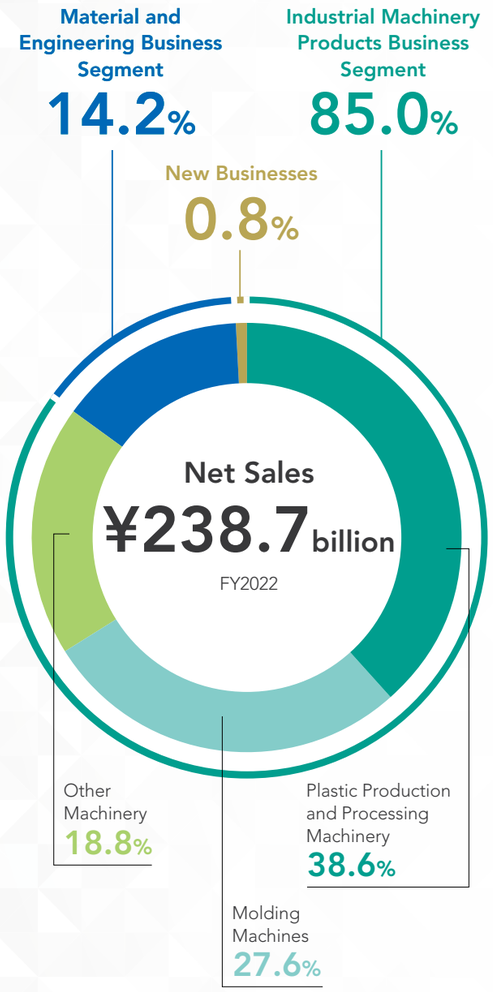
Referenced Guidelines

- International Integrated Reporting Framework, IFRS Foundation
- Guidance for Collaborative Value Creation 2.0, Japan's Ministry of Economy, Trade and Industry
- Environmental Reporting Guidelines 2018, Japan's Ministry of the Environment
- GRI Sustainability Reporting Standards, Global Reporting Initiative

Note on Forward-Looking Statements

The performance forecasts included in this report are judgments based on the information that was available to JSW at the time the report was prepared and are subject to underlying risks and uncertainties. Actual results may differ significantly from these forecasts due to a variety of factors.

At a Glance



Business Segments

Industrial Machinery Products Business Segment

Our Industrial Machinery Products Business Segment comprises three sub-segments: (1) Plastic Production and Processing Machinery, (2) Molding Machines, and (3) Other Machinery, and operates from three bases: the Hiroshima Plant, the Yokohama Plant, and the Meiki Plant.

With a lineup of plastic production and processing machinery and plastic injection molding machines for a variety of applications, we offer many products that command a high market share worldwide, such as our separator film manufacturing equipment for lithium-ion batteries, an essential element for the shift to electric vehicles. In this segment, which accounts for 85% of JSW Group's net sales, we are working to further expand the scale of our business, especially in the mainstay plastic processing machinery market, in order to contribute to a decarbonized world through energy savings and lighter weight.

Material and Engineering Business Segment

Our Material and Engineering Business Segment comprises two sub-segments: (1) Steel Castings and Forgings and (2) Engineering Services, and is operated by Japan Steel Works M&E, Inc. (Muroran Plant), which was established as an operating subsidiary in April 2020.

In steel castings and forgings, we are either the world's only manufacturer or have a high market share for products such as large shaft materials for power plants, pressure vessel components for nuclear power plants, and large components for pile-driving machines used in the construction of offshore wind farms. With the shift toward decarbonization, we are working to strengthen our earnings base through business structure reform.

New Businesses

We have narrowed down our new businesses to the three fields of photonics, composite materials, and metallic materials.

We are working to achieve profitability in each field through the supply of products: in photonics, materials for semiconductors and optical devices such as synthetic quartz and gallium nitride (GaN); in composite materials, lightweight and high-strength materials for aircraft such as carbon fiber reinforced plastic (CFRP) products; and in metallic materials, materials for various electronic devices such as titanium copper.

Production Bases


Hiroshima Plant


Yokohama Plant


Meiki Plant


Japan Steel Works M&E, Inc. (Muroran Plant)

Products

Plastic Production and Processing Machinery

- Pelletizers
- Film and sheet manufacturing equipment
- Twin-screw extruders
- After-sales services


Pelletizers


Twin-screw extruders


Vacuum laminators


Defense equipment

Other Machinery

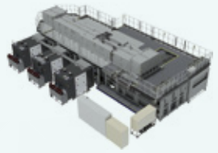
- Excimer laser annealing systems
- Defense equipment
- Railway products
- Hot press devices
- Vacuum laminators
- Deposition systems
- After-sales services

Molding Machines

- Plastic injection molding machines
- Magnesium injection molding machines
- Blow molding machines
- After-sales services


Plastic injection molding machines


Magnesium injection molding machines

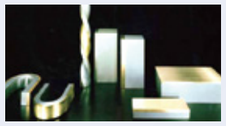

Excimer laser annealing systems

Steel Castings and Forgings

- Parts for reactors (shells, heads, etc.)
- Parts for steam generators
- Clad steel plates
- Rotor shafts
- Turbine casings
- Die steel
- Steel rolls for steel manufacturing


Shell flanges for pressure vessels

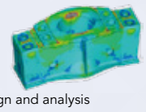

Integrated rotor shaft for power generation


Clad steel plates


Steel rolls for steel manufacturing

Engineering and Other Services

- Design and analysis
- Welded structures
- Inspection and survey
- Hydrogen-related products, etc.


Design and analysis


Welded structures



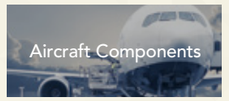
Hydrogen pressure accumulator

New Businesses

- Photonics
- Composite materials
- Metallic materials











Markets

Plastics | Mobility | High-Performance Batteries | Electronic Devices | Defense | Power Generation Equipment | Renewable Energy | Infrastructure | New Businesses

Our History of Creating Value

1907	1945	1970s	2000s	2023
Founding (pre-war)	Post-war recovery	Rapid economic growth	Preparation for a new era	

Social issues and needs

- Development of defense industry
- Transition to commercial business
- Increasing energy demand
- Accelerating adoption of electronics in industry
- Decarbonization-related demand (electric vehicles, use of hydrogen energy)
- Increasing LCD demand with the growing use of smartphones
- Problem of marine plastic pollution

Phases in our history

Launch as a national project

In 1907, The Japan Steel Works was established in Muroran, Hokkaido, as a joint venture between three companies: Hokkaido Colliery Steamship Company and two U.K. firms: Sir W.G. Armstrong, Whitworth & Co., Ltd., and Vickers, Sons & Maxim, Ltd. By manufacturing armaments as a national project, the Company contributed to the development of the defense industry. Purchasing Hiroshima Seisakusho Co., Ltd., in 1920, JSW established a Hiroshima factory (now known as the Hiroshima Plant) to expand the armaments business.

Growth based on a portfolio of technologies

After the Second World War, the focus of our business underwent a major shift to commercial products. Utilizing the technology cultivated through the manufacture of armaments, we began in earnest to produce large steel castings and forgings, such as rotor shafts for power generation and pressure vessels for oil refineries, and plastic processing machinery, such as injection molding machines and plastic extruders.

Becoming a comprehensive company in materials and mechatronics

We focused on creating new added value in response to market changes such as increasing energy demand and the accelerating adoption of electronics. Among the actions taken were the manufacture of ultra-large components (pressure vessels and rotor shafts) for nuclear power plants, a switch from hydraulic to electric injection molding machines, and the introduction of magnesium molding technology.

Toward establishing a new future vision for JSW

To contribute to a society that is demanding products that are friendly to the global environment, we manufacture and supply separator film manufacturing equipment for lithium-ion batteries, molding machines for large plastic parts for automobiles that excel in weight reduction, all manner of resin processing machines adapted to serving a plastic-resource-recycling society, and pressure vessels for hydrogen storage to support the hydrogen economy.

Lineage of technologies and their provision to customers and markets









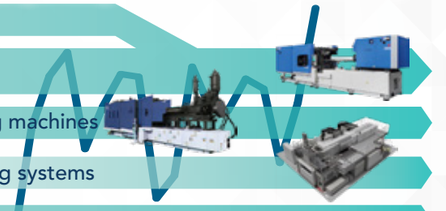












Meiki Co., Ltd.

Plastic injection molding machines

Expansion of materials

Magnesium injection molding machines

Mechatronics technology

Excimer laser annealing systems

Expansion of product range

Separator film manufacturing equipment for lithium-ion batteries

Expansion to secondary processing equipment

Film and sheet manufacturing equipment

Plastic extruders

Barrel processing technologies

Extruders for material and chemical recycling

Artillery production technologies

Material manufacturing technologies

Manufacturing technologies

Rotor shafts for power generation

High-pressure cylinders, reaction towers (e.g., for fertilizer)

Pressure vessels for oil refining

Manufacturing technologies

Pressure vessel manufacturing and high-pressure technologies

Pressure vessel technologies

Pressure vessels for use in nuclear power generation

Artificial crystals

Pressure vessel manufacturing and high-pressure technologies

Gallium nitride (GaN) single-crystal substrates

Hydrogen handling technologies

Hydrogen pressure vessels

Research on hydrogen in steel

Hydrogen storage alloys

Special steel technologies

Material manufacturing technologies

Thick plate rolling

Clad steel plates and pipes

Net sales

Message from the President



Fiscal 2023: A year for new beginnings toward greater growth. A year for continued transformation and challenge.

Toshio Matsuo

Representative Director & President
The Japan Steel Works, Ltd.

Striving Forward with a Single Vector under a Corporate Philosophy Starting with Purpose

Since our founding in 1907, The Japan Steel Works has contributed to advancement around the world through our development of various materials and their implementation in society. On our founding, we contributed to the manufacturing of the high-quality and cutting-edge steel required for Japan's modernization. After the Second World War, starting with the development of plastic extruders in 1950, we continued to develop technology and equipment for pelletizers and injection molding machines, supporting Japan's post-war reconstruction and rapid economic growth through the social implementation of plastics. In 1994, we became the first company in the world to commercialize an injection molding machine for magnesium, a lightweight and highly recyclable material. In 1995, we developed the world's first excimer laser annealing (ELA) system, which is essential for the manufacturing process of high-definition displays. Today, we are advancing the development of new materials such as gallium nitride (GaN), which significantly reduces the power consumption of semiconductors.

In this way, we have developed and manufactured a diverse range of products. In April 2022, when I took office as president, the thought occurred to me that we may be able to use a single key phrase, unique to The Japan Steel Works, to express all of these diverse businesses.

In November of the same year, we established our new corporate philosophy, starting with our Purpose defined as the Material Revolution™. By using the term Material Revolution™, I feel that all employees now share a common understanding that we have created value through the social implementation of new materials, such as high-quality steel and plastic, and that we can now work together along the same vector.

"Material Revolution™, making the world sustainable and prosperous." This is the Purpose that guides us in our research and development activities to create new business domains, enabling us to march forward with unerring direction. Going forward, we believe it is important to support the development of a resource-recycling and low-carbon society and contribute to the creation of a society that is not only sustainable but also prosperous. Plastic packaging, for example, preserves freshness and allows for long-term storage, which is essential for safe and secure food. In addition, the lighter weight of the packaging helps to reduce CO_2 emissions during distribution. In order to aid in the reduction of CO_2 emissions without compromising this kind of richness in lifestyles, we will work to develop devices and materials that excel in energy conservation and help solve the problem of waste plastics.

Record-high Net Sales and Orders in Fiscal 2022; Profit Improvement Remains an Issue to Tackle

In fiscal 2022, the second year of the medium-term management plan JGP2025 covering from fiscal 2021 to fiscal 2025, both consolidated net sales and orders received reached record highs, with the former increasing 11.7% year-on-year to ¥238.7 billion, mainly due to increased sales of plastic production and processing machinery, and the latter increasing 2.9% to ¥276 billion. In the past 15 years, our net sales and orders have remained steady around ¥200 billion. We consider it an epoch-making event to be able to break through this barrier with the expansion of sales in the Industrial Machinery Products Business to a scale exceeding ¥200 billion with this business alone. The fact that we are on track to achieve the final year net sales target of ¥270 billion under JGP2025 in fiscal 2023, two years ahead of schedule, demonstrates significant fruits from our labors to date.

As for profits, however, we revised our forecast downward in February 2023, and our operating income fell 10.4% to ¥13.8 billion and net profit attributable to shareholders of the parent company fell 14.1% to ¥11.9 billion. We see declines in profit margins as a major issue to be addressed. There were two factors that contributed to the decrease in profit. One is the rise in variable expenses such as procurement and subcontracting costs, raw material costs, and fuel costs. Despite progress in negotiations with our customers regarding sales price improvement, these negotiations had not fully manifested results as of the end of fiscal 2022. As we enter fiscal 2023, we have gained further understanding from our customers and are making progress in improving profitability. The second factor hindering profit margins came from the impact of inappropriate conduct in manufacturing inspections, which resulted in an operating loss of ¥800 million (versus an operating income of ¥1.3 billion in the same period last year) in the Material and Engineering Business. In fiscal 2023, this business is expected to return to profitability as a result of growing sales thanks to greater customer understanding regarding measures to prevent recurrence of similar issues. Given considerations like these, we have already begun the process of formulating the new medium-term management plan JGP2028, to begin from fiscal 2024 despite JGP2025 still being in progress.

Ongoing Four-way Reform Efforts to Restore Trust

Four Perspectives on Measures to Prevent Recurrences

Quality assurance system reform	Established a new Quality Management Office at the Head Office to monitor and supervise quality assurance management at divisions and plants. Rectified overconcentrated authority at Japan Steel Works M&E's product division.
Corporate culture reform	In order to strengthen and improve awareness of quality compliance, messages from top management and executives and dialogues with employees have been held on several occasions. As a result, we have worked to continuously update our corporate culture to be one of openness and in which the act of taking on challenges is valued (employees can openly report failures after taking on challenges and overcome them to achieve further growth) and in which employees can call out things that do not make sense to them.
Process reform	We have been conducting reforms to make business processes less prone to inappropriate behavior. These include establishing a digitalized inspection operation system, including automatic measurement to prevent falsified or erroneous entries in product inspection records.
Governance reform	We have strengthened our internal audit function and whistleblowing system. In addition, to strengthen the effectiveness of the Board of Directors, we increased the number of outside directors from three to four to raise the percentage of outside directors and appointed female officers for the first time at JSW to ensure diversity.

In May 2022, we announced that our subsidiary, Japan Steel Works M&E, Inc. ("M&E"), had committed inappropriate acts such as falsification, fabrication, and misstatement of product inspection results. Subsequently, in sincere response to the findings and recommendations of the special investigation committee of outside attorneys, JSW announced in November 2022 that it would be taking initiatives to prevent recurrence of this issue. Since then, the Group as a whole has been engaged in reforms from four perspectives: quality assurance system reform, corporate culture reform, process reform, and governance reform. First, as immediate measures, we have used the past year to make steady reforms in the areas of quality assurance system reform and process reform, as well as to take some actions within governance reform.

As for corporate culture reform, we are working to reform awareness through video messages from management to all employees, implementation of our own educational curriculum and tests, establishment of Quality Compliance Month, and enhancement of education and training related to quality compliance. The fact that this occurred at our Muroran Plant means that we must consider the possibility that problems like this may occur at other locations. By spreading the awareness change that is underway at M&E to other places of business and ensuring that all officers and employees maintain ownership of the issues involved, we will establish a corporate culture that will ensure that no further problems like these shall ever happen again.

To this end, we believe it is necessary for management to engage in two-way communication with as many employees as possible to instill an awareness of the issues and reform our corporate culture. I personally travel to several locations, including M&E, each month to hold town hall meetings with front-line foreman-level employees and lunch meetings to talk with section-manager-level employees. Since January 2023, these have been monthly activities. At town hall meetings, I exchange opinions with attendees on issues faced on-site, discuss their thoughts on improper conduct in manufacturing inspections, and tackle how we should address these issues in the future. I have heard M&E employees say that they are facing their work and interacting with customers with a renewed spirit, and I feel that awareness is changing dramatically.

In addition, we launched the Organizational Culture Reform Project Team in August 2023. This team brings together about 30 young employees from all locations and business domains via open recruitment, where they are tasked with expressing their opinions on what they think about the Group's culture and corporate culture, and what needs to be changed. Their opinions are taken seriously and used as drivers for further reform. This information is then double-checked through our employee engagement survey as we run our PDCA cycle.

The key to preventing recurrence of any given issue is to not allow the memory of that issue to fade away. There is an old proverb that says, "he who will travel a hundred miles is only halfway done at ninety." With this in mind, all of our officers and employees will work together to prevent recurrence of the issues we have faced by remaining vigilant toward reform.



Our Growth Strategy to Achieve Net Sales of ¥500 Billion in 10 Years

Our group's goal for fiscal 2033, 10 years from now, is to achieve net sales of ¥500 billion, approximately double the current level. We believe that this level must be achieved in order for our richly historic Group to continue to sustainably increase its corporate value. In basic approach toward this goal is to increase corporate value by expanding profits through sales growth. As for our strategies to achieve this sales growth, we will focus on increasing production capacity in growth areas, promoting global expansion, creating new business domains through innovation, and investing in human resources.

Increasing Production Capacity in Growth Areas

The areas that the Group considers particularly important for growth are those that contribute to the realization of a plastic-resource-recycling society and a low-carbon society.

Global plastic production has increased approximately 20-fold in the past 50 years and is currently at 400 million tons per year. Plastic offers superior functionality, including light weight and heat insulation, contributing to energy conservation. Furthermore, its gas barrier properties help solve social issues such as reducing food loss. For these reasons, plastic is considered one of the four major materials essential to modern society, along with cement, steel, and ammonia. Demand is expected to continue increasing for plastic, driven by economic and population growth. By 2040, the world is expected to require 800 million tons per year, and 1.2 billion tons per year by 2060. Under such circumstances, demand is expected to grow over the medium to long term for pelletizers and twin-screw extruders, necessary equipment the Group offers for mass production of various plastic materials, as well as for film and sheet manufacturing equipment, which form plastic materials into films and 3D shaped parts, and furthermore for plastic injection molding machines. We will strive to increase our production capacity to capture this demand.

Today's linear society based on mass production and mass consumption (disposal) is causing significant problems such as waste generation, resource depletion, and destruction of the ecosystem. It is now necessary to support the pivot to a circular economy, and as a manufacturer of comprehensive plastics processing machinery, we hope to contribute to the recycling of plastic resources to realize a sustainable society. Currently, we mainly provide equipment for production and molding of plastics, but in the future we will also focus on providing equipment for recycling. In addition to twin-screw extruders directly involved in recycling plastic raw materials, we will also expand our lineup of injection molding machines and film and sheet manufacturing equipment for molding recycled plastic raw materials.

Furthermore, we will focus on creating social value in the field of recycling to contribute to solving problems such as waste plastics, and to ensure the sustainable growth of the Company.

▶ **For details, see p. 18-19.**

Meanwhile, in order to realize a low-carbon society, we are working on products that contribute to the spread of electric vehicles (EVs), for example, as well as those that contribute to energy saving through weight reduction and insulation from use of plastics, which we see as offering great opportunity for growth. In particular, demand for separator film manufacturing equipment for lithium-ion batteries is expected to increase along with the medium- to long-term expansion of EVs, and we plan to increase sales by approximately 3.5 times here in fiscal 2025 compared to fiscal 2021. Upgrading our production lines is progressing as planned, and by March 31, 2024 we intend to have completed the construction of a system capable of handling 60 lines per year. Furthermore, we will advance R&D related to next-generation lithium-ion battery mass-production technology. In addition, the use of magnesium, which is lightweight, heat resistant, and has properties to prevent electromagnetic radiation, is increasing as a component used in EVs. As a result, orders for magnesium injection molding machines, an area dominated by our proprietary technology, reached a record high in fiscal 2022 and are expected to exceed this level in fiscal 2023.

To meet this growing demand for plastics, to contribute to the recycling of plastic resources, and to help realize a low-carbon society, we will increase the production capacity of the Hiroshima Plant. Specifically, its 9th assembly plant will begin operations in the second half of fiscal 2023, with the 10th assembly plant to go online in the second half of fiscal 2024. Furthermore, we plan to launch a new smart factory machine plant in fiscal 2024. Product lines from the Hiroshima Plant have a high in-house production rate, leading to a high profit margin. By increasing production capacity, we will respond to strong demand and improve variable expenses.

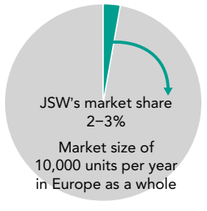
Our Products and Businesses	Contributions to a Low-Carbon Society
Separator film manufacturing equipment for lithium-ion batteries	Spread of EVs
Magnesium injection molding machines	
Replacement of hydraulic plastic injection molding machines with electric plastic injection molding machines	Reduction of power consumption and hydraulic oil use

Promoting Global Expansion

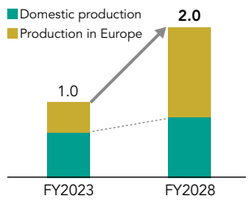
In the Injection Molding Machinery Business, we are promoting global expansion in parallel with increasing production capacity in Japan, where we have a large market share. In fact, we have already established local production systems in China and North America. As part of our efforts to expand market share in the European market, an area with enormous untapped potential, we completed construction of a new plant in Poland in fiscal 2022. Though hydraulic injection molding machines are widely used in the European market, demand is rising for their electric counterparts, which consume 60% less electricity (based on our calculations assuming large machines) and use significantly less hydraulic fluid. This has come amid moves toward decarbonization and soaring electricity prices, and companies are switching to electric injection molding machines as a result. Production at the new plant in Poland will enable us to shorten lead times, meet the diverse needs of our customers, and capitalize on growing demand.

In the Plastics Machinery Business, we will further expand the scale of our operations and strengthen our business not only in China but also in India. As part of this effort, we aim to strengthen our after-sales services and have established a maintenance system, including assignment of personnel to these countries. This will help us provide a stable supply of products to our customers around the world and a high-quality after-sales service that responds promptly to their needs.

Market Share in Europe



Number of Molding Machines for Europe (index)



Creating New Business Domains through Innovation

Along with strengthening and expanding existing businesses, it is also important to leverage the Group's core competencies to plant seeds for the creation of businesses in areas that offer the potential of both growth and addressing social issues going forward. Today, some of our core products, such as plastic extruders and injection molding machines, have found their prime after as long as 40 to 50 years from their initial stages. It is important to conduct R&D mindful of the future in a way that is consistent with our Purpose based on our core competencies, without being obsessed with the need to immediately commercialize. To strengthen these efforts, we established the Innovation Management (IM) Headquarters in April 2023. In the past, research activities divided by plant tended to focus on innovation efforts that were an extension of existing businesses. However, in my conversations with Group employees, I have relayed to them that the primary mission of research at the IM Headquarters is to create new things with open thinking.

As an example, we are conducting research and development so that our manufacturing equipment can take advantage of our core competencies of melting, mixing, and solidifying and make contributions when next-generation batteries such as solid-state batteries reach the mass production stage. In addition, we are also working with the Mitsubishi Chemical Group to demonstrate crystal growth ahead of mass production of gallium nitride (GaN) substrates. We are aiming to increase productivity and reduce the cost of GaN substrates through new manufacturing technologies where we are leveraging our core competencies. GaN's qualities include low power loss and low heat generation compared to the current mainstream material of silicon. Furthermore, it offers higher-speed operation. These qualities are expected to be utilized in EV power converters, in-vehicle chargers, and 5th generation mobile communication systems (5G). These are all R&D efforts that will make the world more sustainable and prosperous by contributing to a low-carbon and super-smart society.

Looking further into the future, we are encouraging free research for young engineers who will be responsible for that future. Listening directly to them and their comments has generated many interesting ideas.

All technologies share common bonds, and research for the future can surely offer benefits in the evolution of current products. While we will of course practice research and development utilizing our current core technical competencies of melting, mixing, and solidifying technologies and machine element and precision control technologies, we will also generate new innovative technologies. Furthermore, we will develop elemental technologies that apply the aforementioned technologies, with the aim of creating new customers and business domains.

▶ **For details, see p. 14-15.**

Investing in Human Resources

In order to expand our scale to become a ¥500 billion company, it is essential that we strengthen our human capital in addition to our capital investment and R&D. In conjunction with the next medium-term management plan JGP2028, we will continue to develop a medium-term plan for our human resources strategy as well. In addition, in order to move to the next stage as a company, it is important to become an organization that continuously generates innovation. To create a rewarding and attractive work environment and to attract and develop a diverse workforce and enable each individual to demonstrate their maximum potential, we will accelerate our investment in human resources in a range of areas. These include improvements to the working environment, including how it provides psychological safety, work style reforms, and improved compensation. In our factories, we are also working to achieve automation and aiming to make new plants smart factories that place even greater emphasis on ease of work.

Since we have a low percentage of female employees and, as a result, a low percentage of female managers, we believe that we need to work even harder than before to empower women. The percentage of women among new graduate hires, which had been around 10%, has increased to about 15% for new hires in fiscal 2023, but we recognize that this is still not enough. We will focus on recruiting female employees through active external communication of our ongoing efforts to improve environments so that women can play an active role in our organization.

With respect to our officers, in June 2023, the Company appointed its first female outside director and Audit & Supervisory Board member. In town hall meetings with female employees, we successfully stimulated greater motivation among them, and furthermore were able to identify and capture new issues during various exchanges. Going forward, we will continue to listen to our employees and place further efforts in improving working environments and systems.

In addition, within new business areas such as digital transformation (DX), intellectual property, and those related to electronic devices, we are actively recruiting non-Japanese talent and experienced mid-career personnel. By utilizing their outside ways of thinking and approaches, they have brought us a great deal of new insights. I feel that we, as a corporate organization, are changing from this fusion of knowledge from a wide range of personnel and the creation of new ideas. Going forward, we will continue to encourage diversity in our human resources and make The Japan Steel Works a place where those who join us can realize their dreams and feel truly happy to have joined us.



Fiscal 2023: A Fresh Start, Continuing Transformation and Challenge to Become a Sustainable Company

I would like to take a moment to once again offer my sincere and heartfelt apologies to our customers and all other stakeholders for any inconvenience and concern we may have caused in fiscal 2022 as a result of our inappropriate actions regarding product inspections.

In fiscal 2023, under our new structure, we will continue our efforts to prevent recurrence of such issues and accelerate investment in facilities, R&D, and human resources to achieve further growth. I feel that I, as well as my colleagues at the officer and employee levels of the Group, have a very strong desire to drive change. Looking ahead, we intend to sustain our efforts to transform and take on challenges in the interest of becoming a sustainable company that delivers both social and economic value.

As we take these steps forward, I ask you, our stakeholders, for your continued understanding and for your support as we transform and grow JSW Group.

JSW Group Value Creation Process

Purpose

Material Revolution™

Material Revolution™,
making the world sustainable and prosperous.

Vision

Benefiting all stakeholders by developing and implementing industrial machinery and new materials that solve social issues.

Capital

As of March 31, 2023

Financial capital
- Shareholders' equity: ¥154,108 million
- R&I rating: A (stable)

Manufactured capital
- Capital investment: ¥7,346 million (FY2022)
- Plants: 3 locations
- Test centers: 3 plastic machine locations, 6 molding machine locations
- Sales locations and Group companies covering major market regions in Asia, North America and Europe

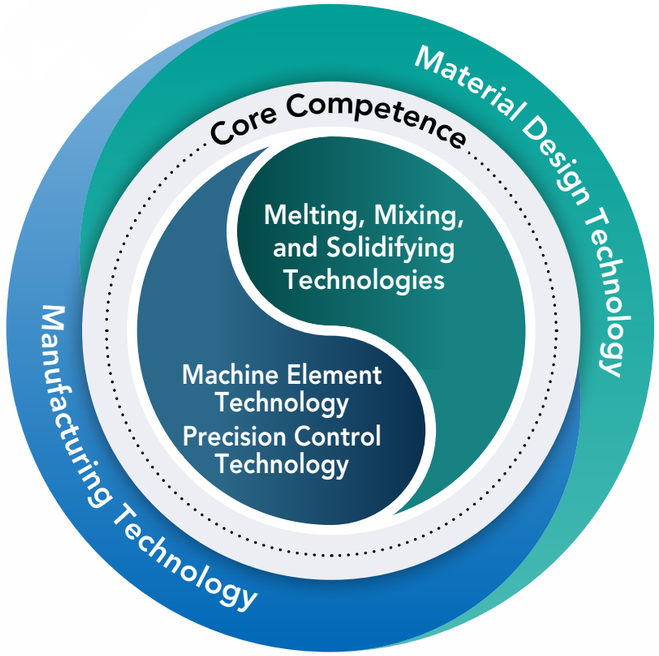
Human capital
- JSW Group employees: 4,966
- Non-consolidated JSW employees: 1,758
- Engineering career-track employees (non-consolidated): 817
- Training facilities for skills transfer: 2

Intellectual capital
- Research and development expenses: ¥5,020 million (FY2022)
- Patents held: 928 in Japan, 508 overseas

Social relationship capital
- Long-term and stable relationships with customers
- Good relationships with local communities around plants

Natural capital (FY2022)
- Energy consumption: 2,728 TJ
- Water intake: 16.16 million m^3

Business Model



Materiality

Creating value and solving social issues through JSW Group's businesses
- Realization of a plastic-resource-recycling society
- Contribution to a low-carbon society
- Contribution to a super-smart society

Bolstering JSW Group's management foundation for sustainable growth
- Human capital improvement and diversity and inclusion
- Investment in the future with innovation management
- Governance reinforcement of JSW Group

Outputs

Resolution of Social Issues
- Industrial Machinery
- New Materials



Outcomes

Customers
- Contribute to the expansion of our customers' business opportunities
- Resolve issues faced by our customers
- Contribute to reducing environmental impact

Employees
- A work environment with job satisfaction and excitement
- Growth as a highly skilled professional

Business partners
- Treat all business partners fairly and impartially, and always conduct transactions in good faith
- Build partnerships to create corporate value

Shareholders and investors
- Medium-to-long-term enhancement of corporate value
- Stable shareholder returns

Local communities
- Contribution to the local economy through employment and procurement

Global environment
- Energy and resource conservation in production activities (reduction of CO_2 emissions)
- Reduction of CO_2 emissions through our products and businesses

Sustainable society
(Particularly, realizing a plastic-resource-recycling society and controlling plastic pollution)

Prosperous society
(Resolution of social issues such as the health of people, medical care, food, and energy)

Mitigating climate change

Creation of social value



Sustainable enhancement of corporate value



The Environment in Which JSW Operates

The waste plastic problem
- Development of recycling and waste treatment businesses
- Reduction of fossil-fuel-derived plastics
- Conversion to biodegradable plastics
- Growing discussion about maintaining ecosystems and natural capital

Carbon neutrality by 2050
- Advancement of lithium-ion and other storage batteries
- Expansion of nature-derived energy
- Expansion of hydrogen and ammonia businesses
- Phase-out of fossil fuels
- Renewed popularity of nuclear power generation

Advancement toward digital transformation, AI, and IoT
- Transformation of our business models and work styles
- Full-scale investment in related infrastructure
- Economies emphasizing intangible assets and human capital

Low birthrates and aging populations in developed countries
- Shrinking domestic market, shrinking workforce

Global population growth
- Expansion and diversification of consumption, especially in emerging countries
- Food supply problems

Special Feature: Innovation Strategy for Value Creation

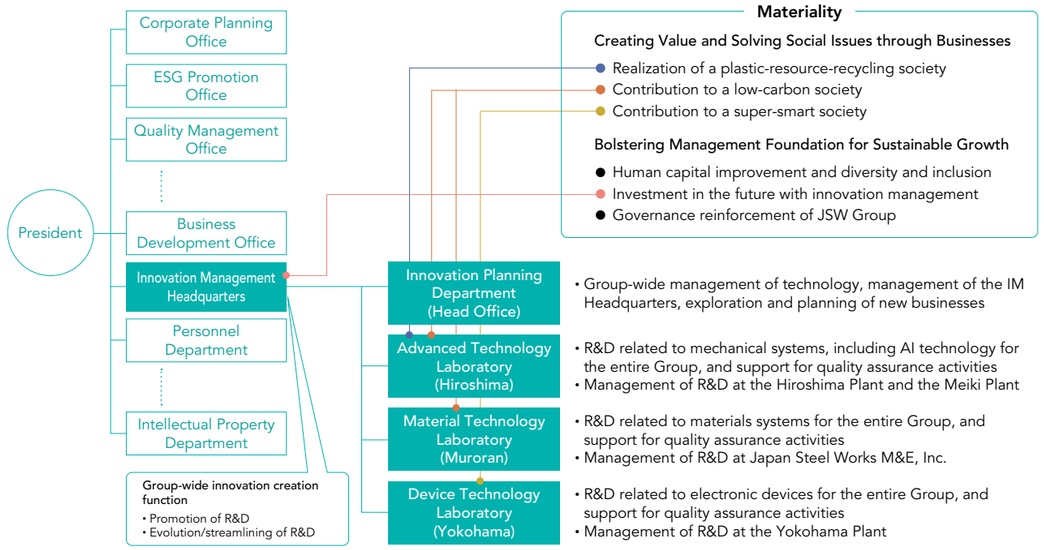
JSW Group's vision for the next 10 years is to grow into a ¥500 billion business group through the resolution of social issues. To achieve this, it is essential not only to strengthen the competitiveness of existing products, but also to develop new markets and innovate technologies, capturing opportunities to help realize a plastic-resource-recycling society, a low-carbon society, and a super-smart society. Therefore, in April 2023, we established the Innovation Management (IM) Headquarters, an organization for creating group-wide innovations. This creation includes the discovery and planning of new themes as well as research and development of fundamental technologies in accordance with the corporate philosophy and Materiality of Japan Steel Works Group. In addition, the R&D organizations of the Company and Japan Steel Works M&E, Inc. were restructured, leading to the creation of the Advanced Technology Laboratory (Aki Ward, Hiroshima City), the Material Technology Laboratory (Muroran City, Hokkaido), and the Device Technology Laboratory (Kanazawa Ward, Yokohama City).



Shigeki Inoue

Director & Managing Executive Officer
CTO, in charge of Quality Management, in charge of Intellectual Property Department, in charge of New Business Promotion Headquarters, General Manager of Quality Management Office, General Manager of Innovation Management Headquarters

Organizational Structure and Main Duties



Category	Function	Details
Promotion of R&D	**Basic technology research:** Creating new technologies, products, and businesses (Medium- to long-term research)	• R&D to create new technologies, products, and businesses based on core competencies (RC) • R&D to create new technologies (innovative technologies) (RB)
	Elemental technology development: Strengthening competitiveness of existing products and businesses (Short- to medium-term development)	• Elemental technology development through application of core competence (DC) • Elemental technology development through application of newly created innovative technologies (DB)
Evolution and streamlining of R&D	Increasing R&D success rates	• Formulation of strategies based on intellectual property (IP) analysis and market research • Formulation and implementation of R&D plans in accordance with the relevant strategies
	Strengthening investment in research facility environments	• Creation of diversity environments facilitating innovation
	Cultivating R&D engineers	• Improvement of environments to evolve basic research (e.g., strengthening collaboration with academia in Japan and overseas) • Systematic development of technical personnel (e.g., encouraging degree acquisition and inter-departmental job rotation)
	Improving technology presence	• Enhancement and coordination of external activities, e.g., conference presentations, paper submissions, and publication of technical reports

Mechanisms for Creating and Cultivating New Businesses and Products

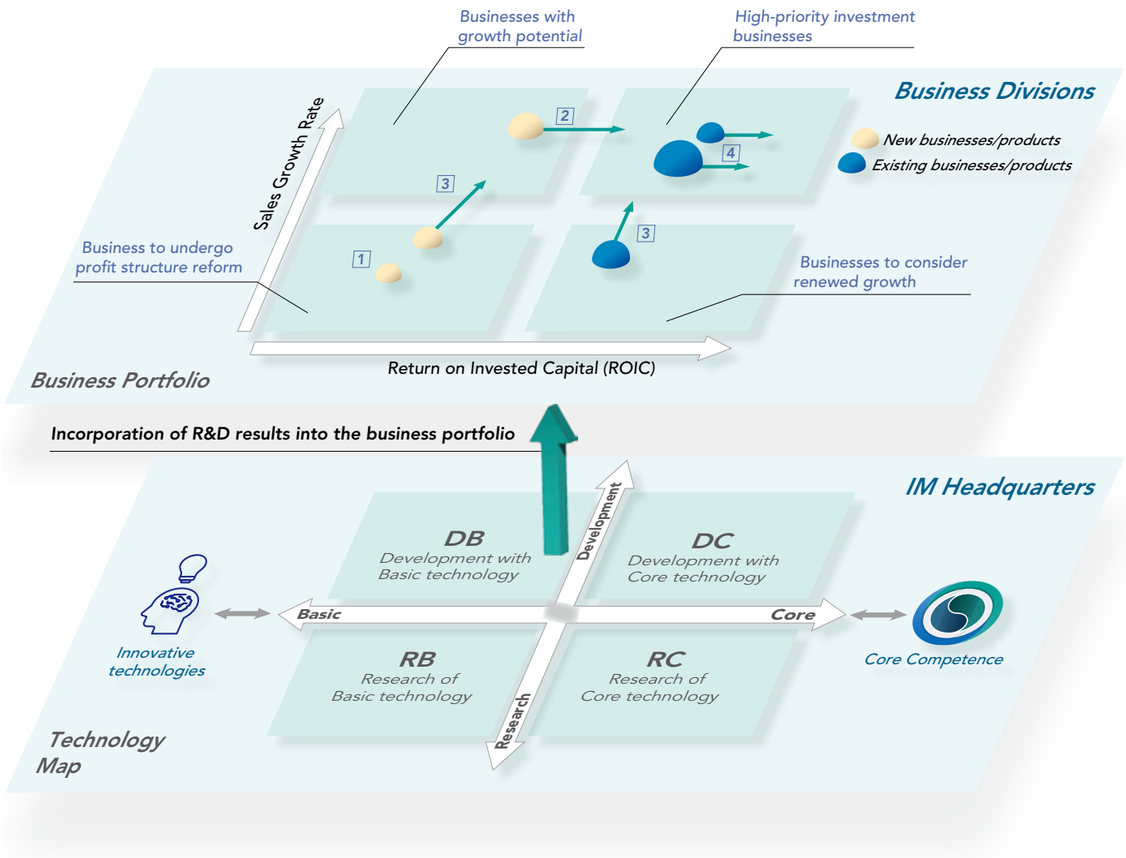
The IM Headquarters focuses on advancing research and development and evolving and streamlining R&D processes to create innovation. Research and development is divided into two major categories: basic technology research, which is conducted over the medium to long term with the main objective of creating new technologies, products, and businesses, and elemental technology development, which is conducted over the short to medium term to enhance the competitiveness of existing products and businesses.

In particular, we recognize that basic technology research is essential for the continued growth of the Group and for our progress toward becoming a business group with net sales of ¥500 billion. While research and development for new products and businesses will mainly focus on our core competencies, we will also conduct basic technology research to create innovative technologies not bound by the scope of our existing core competencies. Specifically, we encourage and make use of exploratory research conducted with a more unrestricted mindset. Through these activities, we will create and nurture both hard aspects (device-related equipment, additive manufacturing, robotics, etc.) and soft aspects (AI, IoT, big data, design engineering, quality engineering [service platforms], etc.) that have the potential to solve issues posed in our Materiality and play a key role in the future. In particular, we are working to foster young researchers and reform our culture to one that encourages them to take on new challenges.

The results of research and development will be used to create, nurture, and strengthen businesses and products in collaboration with the business divisions, with the following four main pillars for integration into the business portfolio.

1. Incorporation of R&D products as-is into the business portfolio, making them candidates for new businesses and products
2. Improvement of profitability by permeating new businesses and products in markets
3. Increasing sales growth potential by transforming existing or new products in line with market trends through performance improvements, new feature additions, etc.
4. Improvement of profitability by strengthening differentiating technologies in existing businesses, products, and services

Through these activities, this headquarters will, while embodying JSW Group's corporate philosophy, play a role in carrying out the Group's management strategies.



Materiality Management

In November 2022, the Company's Board of Directors, in order to make the world sustainable and prosperous, identified six key issues (Materiality) defining actions for us to take in order to achieve our Purpose. These were identified based on two priority themes: "Creating value and solving social issues through JSW Group's businesses" and "bolstering JSW Group's management foundation for sustainable growth."

Recognizing the importance of the identified Materiality, JSW Group practices effective management and business activities in order to resolve the issues.

In conjunction with the next medium-term management plan (JGP2028), which we have begun formulating, we are also considering targets and indicators with respect to two areas: "creating value and solving social issues" with respect to our impact on both society and the environment and effects on long-term corporate value, and "bolstering management foundation" mindful of what capital we need to bolster to realize medium- to long-term growth.

Identification Process

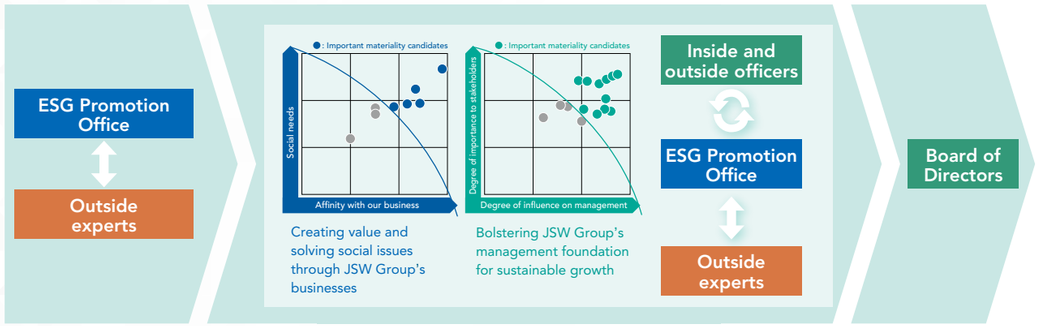
STEP 1
Identifying potential issues
After exhaustively identifying potential social issues from megatrends, international guidelines, etc., a short list was compiled based on an importance assessment.

STEP 2
Refining the candidate list
Using the short list, internal discussions were held to narrow down important candidates for Materiality.

STEP 3
Grouping
Similar important Materiality were grouped after being broadly categorized as either "creating value and solving social issues" or "bolstering management foundation."

STEP 4
Discussion by management
Over a period of six months, several discussions were held at the upper management level to check candidate issues' importance to the Group's businesses and management foundation.

STEP 5
Finalization
Finalized the Materiality and received approval from the Board of Directors.



Assumed External Environment and Related Risks and Opportunities

External environment
- Global plastic pollution
- Worldwide climate change (CO_2 emissions)
- Japan's 2025 digital cliff
- Japan's declining birthrate and aging population
- Economic and population growth in emerging countries
- Evolution of governance

Risks
- Decline in demand for plastics
- Difficulty in making products more energy-efficient, rising product costs
- Decrease in the Group's market competitiveness due to delayed action
- Difficulty in maintaining and strengthening human capital
- Degradation of trust and reputation among stakeholders due to delayed action

Opportunities
- Demands for recycling and lesser use of plastic resources
- Global spread of electric vehicles (EVs)
- Spread of power generation from renewable energy
- Digital infrastructure development for 5G and 6G communications, demand for energy-saving infrastructure overall
- Activation and diversification of markets

Materiality	Reasons why considered to be of high importance	Examples of initiatives	Related SDGs
Creating Value and Solving Social Issues through JSW Group's Businesses			
Realization of a Plastic Resource-Recycling Society	As JSW Group aims to be an unprecedented general manufacturer of plastic processing machinery in the world, it is extremely important to supply society with all manner of plastics processing machinery that not only makes plastics but also realizes 3Rs + Renewable, a goal which is indispensable for resource recycling. Since JSW Group can leverage its core competence to the maximum, it can demonstrate its strengths in the development and creation of plastic processing machinery that meets the demand of society. This is also a high-priority business expansion opportunity for JSW Group.	Renewable • Contribution to the greater use of non-fossil-fuel-derived plastics – Twin-screw extruder (TEX) Reduce • Reduce the amount of plastic used – Plastics processing machinery for cellulose nanofiber reinforced plastics – Injection molding machinery for foamed plastics • Contribution to the reduction of marine plastic waste – All manner of plastics processing machinery for biodegradable plastics Recycle • Contribution to the spread of recycling as a practice – TEX for material and chemical recycling – Injection and blow molding machines for recycled plastics	9, 12, 14
Contribution to a Low-Carbon Society	The realization of a low-carbon society is one of the most important challenges faced worldwide. Products created by JSW Group's industrial machinery and products featuring its new materials have contributed to the reduction of CO_2 emissions. Demand for such products is expected to increase in the future, which makes it a matter of high importance for the Group. In addition, responsibilities of the Group include the reduction of energy consumption of its industrial machinery products and the curbing of CO_2 emissions from the operations of its manufacturing sites.	Zero CO_2 emissions • Contributions to the popularization of electric vehicles (EVs) – Film manufacturing equipment for use in lithium-ion battery separators – Lightweight on-vehicle parts (e.g., magnesium injection molding machines, etc.) Reduction of CO_2 emissions • Reduction of energy consumption by industrial machinery products • Reduction of CO_2 emissions resulting from business activities	7, 13
Contribution to a Super-Smart Society	The super-smart society is expected to resolve social issues in all fields, including medical care, food, the environment, energy, and disaster preparedness. In order to realize a super-smart society, it will be essential to build a 5G/6G-compatible digital infrastructure capable of processing massive amounts of data at high speeds and with low energy consumption. The industrial machinery and new materials of JSW Group are incorporated into the key components of the devices that make up the infrastructure, and could potentially be indispensable to the realization of a super-smart society. This is also considered to be a highly important business expansion opportunity for the Group.	Infrastructure equipment that is higher performance and more energy saving • Higher performance and more energy-saving of arithmetic and memory devices – Equipment involved in the manufacture of electronic devices – Gallium nitride (GaN) substrates Input/output terminals that offer higher performance • Increased performance of smartphones, tablets, PCs, etc. – Equipment involved in the manufacture of displays and electronic components – Substrates for SAW devices	11
Bolstering JSW Group's Management Foundation for Sustainable Growth			
Human Capital Improvement and Diversity and Inclusion	The diversification and expansion of our human capital, including the human resources capable of driving the Group's growth, generating innovation, and creating value, is a matter of the highest priority and importance for strengthening JSW Group's management foundation.	• Promotion of the acquisition and development of diverse human resources Acquisition: Proactive recruitment of core human resources, including executive-level personnel Improvement of compensation to acquire human resources with strong expertise Development: Early identification and selection of young high-performers	5, 8
Investment in the Future with Innovation Management	In order for JSW Group to continue contributing to society in the future, it is essential to maintain and strengthen its technological superiority by refining its core competence and expanding its business. Innovation is another essential factor for sustainable growth. It is important to promote digital transformation which supports data-based, rapid decision-making, business model innovation, and the creation of new value.	• Strengthen core competence by boosting R&D systems • Increase production capacity and expand business through M&A • Completion of goals of the digital transformation promotion plan	12, 17
Governance Reinforcement of JSW Group	For the sustained growth of JSW Group, it is important not only to further strengthen compliance and governance, but also to engage in dialogue with customers and investors as well as employees, business partners, and other stakeholders. In addition, supplying society with industrial machinery and new materials of high quality and superior reliability is the very foundation of JSW Group's business and important to the further strengthening of its quality assurance structure and system.	• Strengthening compliance – Expansion of compliance lines in Japan and overseas • Strengthening of Group governance – Review of reporting lines • Promotion of stakeholder engagement • Strengthening of quality assurance structure and systems	10, 16

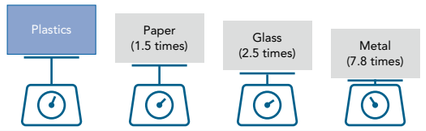
Realization of a Plastic-Resource-Recycling Society

Plastics Supporting an Energy-efficient Society and Contributing to CO_2 Emissions Reduction

Plastic is known as an indispensable material for modern society because of its usefulness in solving social and environmental problems, such as the reduction of CO_2 emissions when its qualities are properly utilized. The amount of plastic used in the world continues to increase and is forecast to reach 800 million tons by 2040, about double the current level, and then 1.2 billion tons by 2060.

Lightness

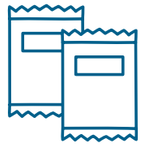
Plastic is a considerably lighter material than paper, glass, or metal. It contributes to lower fuel consumption of automobiles and reduces the weight of food packaging, and it takes up less space. It has been suggested that if logistics were to not use plastic packaging, its CO_2 emissions would be approximately 50% higher.



Gas barrier properties

Plastic food packaging shields food from air and water vapor. This maintains freshness, extends shelf life, and helps reduce food loss.

Reducing the amount of meat that is discarded also contributes to the reduction of CO_2 emissions during livestock production.



Moldable with low energy use

Plastic softens like syrup when heated. In this state, it can be pulled or poured into a metal mold, requiring little energy to mold it into a form. For example, estimates suggest that replacing plastic in the fields of automobiles, transportation, packaging, and construction with alternative materials to plastic would increase CO_2 emissions during the component manufacturing process by about 60%.



Thermal insulating properties

In our homes and buildings, plastics protect us from the heat and cold. For example, plastic window sashes are effective in reducing the amount of heat entering and exiting through windows, with thermal insulation performance about 2.6 times better than their aluminum counterparts.



Contribution to the spread of renewable energy

Photovoltaic panels and wind turbine blades cannot be made without plastic.

Thanks to an efficient production rate for these panels and blades, the benefits of renewable energy can be rapidly captured.



Insulation

Plastic acts as an electrical insulator. Plastic film several tens of micrometers thick is used in lithium-ion batteries to insulate the positive and negative electrodes. Plastics are also essential for batteries, which are the beating heart of EVs.



Social and Environmental Issues Posed by Plastic

Continued use of fossil-fuel-derived plastics in a linear economy based on mass production, mass consumption, and mass disposal presents a great deal of problems for our world. This process depletes natural resources (fossil fuels), consumes large amounts of energy (from distillation, cracking, polymerization, etc.) in producing these plastics from fossil fuels (resulting in CO_2 emissions), generates large amounts of CO_2 from incinerating used-up plastics, injures and kills marine animals when plastics are dumped into the ocean, infiltrates our bodies in the form of microplastics in the food chain, and causes many other problems.

The transition to a circular economy promises a solution to these issues. In a circular economy, the goal is to balance the enrichment of people's lives (well-being) and reduction of environmental impact with economic growth by designing products and services that reduce waste generation and depletion of natural resources, and by designing products and services that reduce raw material usage, and by continuing to circulate raw materials and products in the market while maintaining their value at the highest possible level. Achieving this kind of economy would allow society to avoid the aforementioned depletion of natural resources and help reduce society's CO_2 emissions (decarbonization). It is also expected that as the circulation of marketed raw materials and products takes root, there will be a significant reduction in the amount of plastic dumped into the ocean.

Efforts to Realize a Plastic-Resource-Recycling Society

At JSW Group, we recognize that achieving a circular economy for plastic resources, that is, a society that recycles plastic resources, is both a responsibility and an opportunity for the Group, which aims to be an unprecedented general manufacturer of plastic processing machinery in the world.

In the cycle of plastic-resource recycling, JSW Group provides various types of plastic processing machinery at all stages, except for resource recovery.

In particular, we are going beyond simply manufacturing and commercializing virgin plastics derived from fossil fuels, working to realize a plastic-resource-recycling society by strengthening our product lines that can contribute to the recycling (especially chemical recycling) stage for plastics.

We believe that this action will contribute to maintaining high value for marketed raw materials and products, and to their ongoing circulation.

In addition, we offer products that contribute to reducing the amount of plastic used itself, such as mixing biomass filler with plastic, foaming, thinning material walls, and devising smart equipment to reduce the amount of waste plastic generated during plastic molding.

We are also working to provide products and services that reduce waste generation and the depletion of natural resources, such as the production of plastic materials derived from biomass and other non-fossil fuels, and including technologies and equipment that make previously unrecyclable films recyclable.

Maintaining high value of marketed raw materials and products and ensuring their ongoing circulation

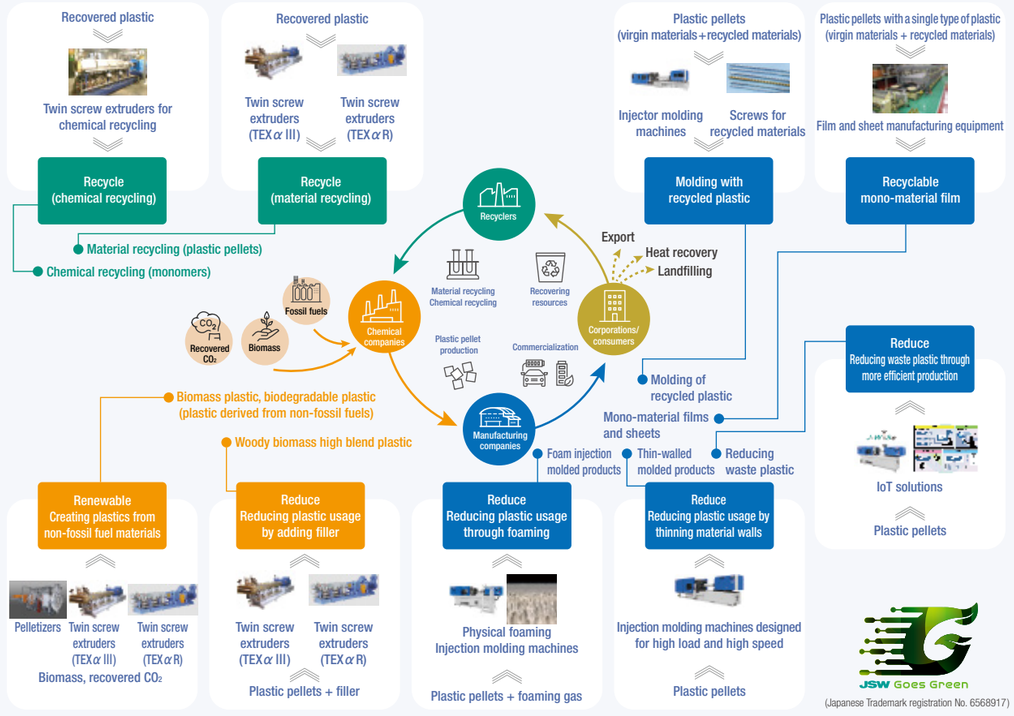
- Providing equipment that is capable of molding components utilizing recycled plastic raw materials
- Providing equipment for material recycling of used plastic components back into plastic pellets
- Providing equipment for chemical recycling of used plastic components back to the raw material level (monomers)

Reducing plastic usage

- Providing equipment for production of raw materials with reduced plastic usage by blending non-plastic fillers such as woody biomass
- Providing equipment capable of molding components with less plastic used through foaming
- Providing equipment capable of molding components with less plastic used by thinning material walls
- Providing equipment capable of reducing the amount of waste plastic generated during molding by devising smart equipment (IoT solutions)

Reducing waste generation and depletion of natural resources

- Providing equipment for production of plastic raw materials derived from non-fossil fuels such as biomass and CO_2 recovered from power plants, etc.
- Providing equipment for production of mono-material films laminated with a single type of plastic to enable recycling



(Japanese Trademark registration No. 6568917)

Progress of the Medium-Term Management Plan JGP2025

With our current medium-term management plan JGP2025 as a period for laying the foundation for "growing to a business scale of ¥300 billion" from fiscal 2026 onward, we are promoting activities that move us "towards the unprecedented general manufacturer of plastic processing machinery in the world," the first of our basic policies.

Fiscal 2022 was marked by a number of historic events, including Russia's invasion of Ukraine, accelerating inflation on a global scale, economic sanctions against Russia, and an economic downturn in China, all amid ongoing impact from the COVID-19 pandemic. On top of that, inappropriate conduct was discovered at our subsidiary, M&E. Despite a rocky environment, our consolidated net sales for the fiscal year reached record highs, at ¥238.7 billion. In particular, sales growth was driven by manufacturing equipment for lithium-ion battery separator films and sheets thanks to progress in pivoting toward electric vehicles, as well as by large pelletizers, backed by growing demand for plastics in China and India. The most pressing market trends include growing demand for plastics in emerging countries and increasing demand for resin raw materials for protective films used in photovoltaic panels. By leveraging our core competencies, we are able to rapidly capture these demands and win orders for plastic processing machinery in each of our business areas.

For fiscal 2023, we project that net sales will reach a level putting us on track to achieve our goal of ¥270 billion in the final year (fiscal 2025) of the current JGP2025 medium-term management plan. In addition, JGP2025 calls for ¥300 billion beyond fiscal 2025, and we are seeking to elevate our net sales even further to meet this aspiration.

In contrast, our profit levels are not in alignment with our plan, requiring reassessment of our strategies. It is in this context that we have begun formulating our next medium-term management plan, JGP2028.

JGP2017

From April 2015 to March 2018

Advancing toward top global & niche corporate group

Basic Policy/Achievements [○] and Issues [×]

Increase profitability of existing businesses

- ○ Improved productivity and reduced cost of industrial machinery products through capital investment
- ○ Advanced the Muroran Plant restructuring project

Foster new products and businesses and make them competitive as soon as possible

- ○ Reorganized the Research and Development Headquarters
- × General delays in fostering new businesses

Reinforce Group management and promote alliances

- × Although progress made in small-scale business acquisitions, further need to strengthen alliances

	FY2015	FY2016	FY2017	JGP2017 Final year targets
Net sales (Billions of yen)	223.3	212.4	212.9	220.0
Operating income (Billions of yen)	14.4	12.3	21.3	13.0
Operating income ratio	6.5%	5.8%	10.0%	6.0%
ROE	–13.5%	–4.6%	9.6%	8.0%

JGP2020

From April 2018 to March 2021

Building foundations for the solid growth of JSW Group in the next ten years

Basic Policy/Achievements [○] and Issues [×]

Optimization of management resources and strengthening of alliances

- ○ Expanded plastic processing machine complex (absorption type merger of Meiki Co., Ltd.; acquired GM Engineering Co., Ltd. as a subsidiary)
- ○ Establishment of Japan Steel Works M&E, Inc. (spun off the Material and Engineering Business Division)
- ○ Began collaboration with Tsukishima Kikai Co., Ltd. and established a joint venture with JX Nippon Mining & Metals Corporation

Strengthening of after-sales services (stock-based business)

- ○ Establishment of parts centers in Japan and Europe, construction of dedicated service center
- ○ Start operation of remote maintenance system

Acceleration in exploration and development of new businesses

- ○ Commercialized hydrogen-related business and transferred to Japan Steel M&E, Inc.
- ○ Promoted early commercialization of profitable businesses by focusing on photonics, composite materials, and metal materials
- × Yet to create new core businesses
- × Insufficient for further expansion of plastic processing machinery complex

	FY2018	FY2019	FY2020	JGP2020 Final year targets
Net sales (Billions of yen)	220.1	217.5	198.0	260.0
Operating income (Billions of yen)	24.2	18.7	10.2	30.0
Operating income ratio	11.0%	8.6%	5.2%	11.5%
ROE	16.3%	7.2%	5.1%	14.0%

JGP2025

From April 2021 to March 2026

Towards the unprecedented general manufacturer of plastic processing machinery in the world

Basic Policy/Status of Major Initiatives

Towards the unprecedented general manufacturer of plastic processing machinery in the world

- Continuing to expand production capacity (60 lines/year) of film and sheet production equipment for manufacturing separators for automotive batteries in accordance with the advance of electric vehicles (EVs)
- Expanding the target market for film and sheet production equipment for capacitors (electronic components) and other applications
- Opened the Recycling Technical Center at the Hiroshima Plant
- Developed a world-standard twin-screw extruder launched in Chinese and Southeast Asian markets
- Completed development of and launched large magnesium injection molding machines (clamping force of 3,000 tons), for which demand is expected to increase with rising demand for lighter weight automobiles
- Established a production and service base for injection molding machines in Europe

Make constant profit in Material and Engineering Business

- Reviewing product portfolio for high profitability in cast and forged steel products

Create new core businesses

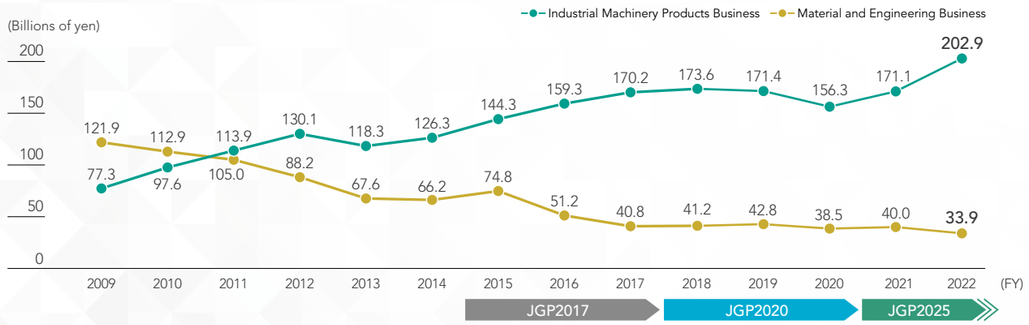
- Further enhancing the product lineup in the electronic device-related equipment business by developing and launching products such as next-generation semiconductor-related equipment
- Began operation of large-scale demonstration equipment for the mass production of gallium nitride (GaN) substrates
- Completed and started operation of one of the world's most advanced copper alloy material production facilities (currently in stable operation)

Promotion of ESG management

- Announced endorsement of the TCFD (Task Force on Climate-related Financial Disclosures)
- Established the Human Rights Policy
- Expanded and revised the Basic Procurement Policy
- Established JSW Group corporate philosophy, starting with Purpose
- Identified Materiality
- Established the Basic Sustainability Policy
- Strengthening governance related to quality assurance (newly established the Quality Management Office at the Head Office)
- Stimulating exchange of opinions on the supervisory side, such as at meetings of the Board of Directors (introduction of the Liaison Council of Outside Officers)

	FY2022 Results	FY2025 Plan	Change from FY2019
Net sales (Billions of yen)	238.7	270.0	+24%
Operating income (Billions of yen)	13.8	27.0	+44%
Operating income ratio	5.8%	10.0%	+1.4PP
ROE	7.8%	10.0%	+2.8PP

Business Weighting (Net Sales by Segment)



Highlights

Completed a production facility for injection molding machines in Europe

In July 2022, we established JSW Plastics Machinery Europe Sp. Z o.o. in Poland, completing this production facility in March 2023.

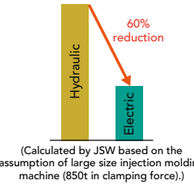


Demand is expected to grow for electric injection molding machines, which excel in energy efficiency, thanks to the shift toward a decarbonized and energy-efficient environment. Compared to their hydraulic counterparts, which are mainstream in Europe, electric injection molding machines offer significantly reduced power consumption. We intend to capture growing demand by shortening lead times through local production and responding to diverse needs.

European market share



Power consumption (kWh/h)



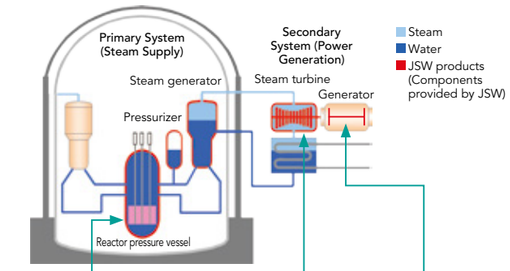
(Calculated by JSW based on the assumption of large size injection molding machine (850t in clamping force).)

Expected growth in demand for large cast and forged steel components for electric power and nuclear power applications

Due to government policy changes toward energy security and decarbonization, we expect nuclear power capacity to increase in the medium to long term.

In response, we will provide large cast and forged steel components by leveraging our extensive development and manufacturing technologies for electric power and nuclear power applications and our knowledge of nuclear power standards in various countries. Quality assurance requirements for nuclear-power-related products have increased dramatically. To address these, we will further strengthen our quality assurance system and production management functions in contributing to the realization of a low-carbon society as a company that can provide a stable supply of safe and reliable products.

Power Generation System and JSW's Products





Reactor pressure vessel components



Turbine rotor shaft



Generator rotor shaft

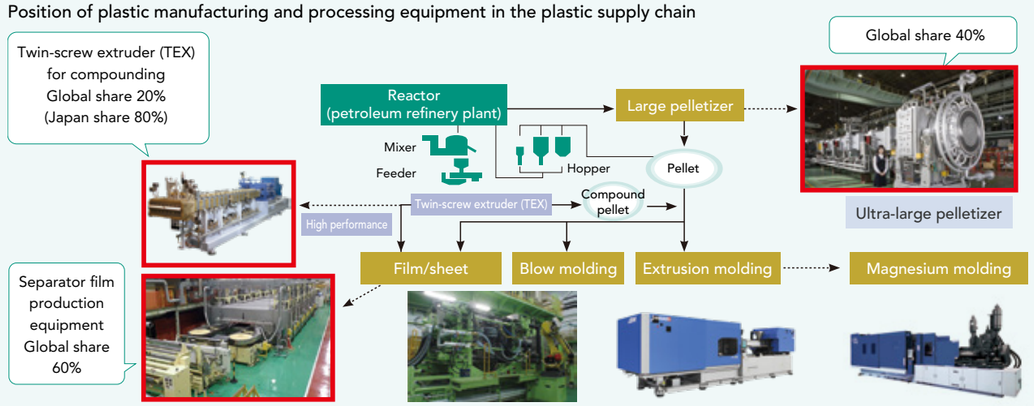
Plastics Machinery Business

Business Overview

The Plastics Machinery Business Division manufactures, sells and provides maintenance services for an array of plastic production and processing machinery (pelletizers, twin-screw extruders, and film and sheet manufacturing equipment, spinning extruders, etc.) used in various upstream and downstream processes in the manufacture of plastic products. The plastic raw materials and film and sheet products produced by these machines are used in a variety of products supporting our daily lives: IT equipment including smartphones, PCs, tablets, and keyboards; electronic materials such as capacitors and semiconductor products; home appliances; lithium-ion batteries; automotive parts; food packaging films and containers; and medical devices such as catheters; and more.

We aim to become the world's leading manufacturer of comprehensive plastics processing machinery, and our products account for a significant share of the global market.

Position of plastic manufacturing and processing equipment in the plastic supply chain



Message from the Head of the Division



Seiji Umamoto
Managing Executive Officer
Director of Plastics Machinery Business Division

Plastics possess many excellent functions and are indispensable materials for addressing a wide range of social issues, such as energy conservation (CO_2 emission reduction) thanks to its light weight. Moreover, we believe demand for plastics will continue to increase due to a variety of background factors, including global economic and population growth. The Plastics Machinery Business Division deploys a broad equipment lineup globally. In addition, several products, such as separator film production equipment, are in use by the world's top companies. As such, we are able to quickly identify market needs and collaborate with customers to develop products possessing enhanced functionality, productivity, and labor efficiency. Against this backdrop, in fiscal 2022, we received orders in excess of ¥100 billion, in line with the previous term, and expect even more orders in fiscal 2023. We are also conducting aggressive capital investment in anticipation of further future demand growth.

At the same time, we believe that the ongoing shift away from mass production, mass consumption, and mass disposal of plastics, represents both a responsibility and an opportunity for our company. The realization of a plastic-resource-recycling society is a priority Materiality. We have been working on this issue since the 1970s, earlier than our competitors, and have been developing chemical as well as material recycling process technologies for decades. In 2022, we opened the Recycling Technical Center (RTC) at our Hiroshima Plant, and continue to innovate our technology on a daily basis while conducting testing requested by a large number of customers.

SWOT Analysis

S Strengths
- Unique melting, kneading, and molding control technologies accumulated at domestic and overseas technical centers equipped with one of the world's largest testing facilities
- With a globally unmatched lineup of upstream (raw material production) to downstream (molding and processing) plastics equipment, we can meet any customer need
- The Group possesses technologies ranging from production of special metal materials to machining and assembly, and maintains production facilities equipped for integrated production of large machines

W Weaknesses
- Long delivery times due to production of small-quantity orders with a high emphasis on large machines

O Opportunities
- Sustained growth in plastics demand, driven by rising living standards and population growth, particularly in emerging nations
- Growing demand for EVs (lithium-ion batteries), plastics recycling, 5G/6G-compatible infrastructure
- After-sales service market based on long track record of deliveries

T Threats
- Tighter global restrictions on plastics use
- Increasing use of solid-state and other new types of storage batteries that do not utilize separators
- Growing decoupling of geopolitical risk

Sources of Our Strength

We are proud to possess the world's most advanced melting, mixing, and solidifying technologies for plastics. In addition, our lineup of machinery, with a global top market share in the plastics product value chain, allows us to meet the diverse needs of our customers and has earned their trust. By combining several of the products we offer, even higher-performance and higher-efficiency production lines are possible.

Through our relationships with the biggest customers in the industry, experts at our three technical centers around the world quickly pinpoint the latest needs in plastics processing, and strive to meet them through product development. We also maintain large processing facilities and specialized machining equipment, making us able to carry out integrated production of large equipment, which helps ensure quality and reduce costs, among other benefits.

The ability to manufacture and process all main equipment components in-house is another of our strengths. In particular, we are working with Japan Steel Works M&E to develop metal materials with excellent wear and corrosion resistance to manufacture screws and cylinders, which are core equipment components. This advantage is what drives our high market share.

Furthermore, in addition to our world-first commercialization of machines equipped with plastics extrusion simulation technology, out production management, operations support, service and maintenance, and production automation systems, based on AI and IoT technologies, are making significant contributions to energy and labor saving as well as production efficiency.

Operating Environment

The accelerating shift to EVs, and the pursuit of the carbon-neutral society, are driving demand for lithium-ion batteries. This in turn is a tailwind for our separator film production equipment. We maintain the largest market share of such equipment in the world, and to expand that share even further, we are planning to boost production capacity. We are also enhancing the energy efficiency of our production facilities, to reduce CO_2 emissions generated during manufacturing.

At the same time, it is predicted that more plastics will be needed due to rising living standards and population growth, especially in emerging nations. As such, promotion of a resource-recycling society is indispensable. In response, by leveraging the capabilities of our lineup, we will promote the application, as required, of both chemical and material recycling in the plastics recycling field. We believe that our core competence (melting, kneading, and molding control technology) can be applied to the realization of a plastic-resource-recycling society.

Strategy and Measures for Growth

In our medium-term management plan JGP2025, we have positioned the plastic machinery business as one that is creating profit and driving growth. Specifically, we will further strengthen the competitiveness of our equipment and expand our business through aggressive capital investment of approximately ¥10 billion, and collaborations and alliances. At present, we are also working to optimize sales prices.

To prepare for further demand growth, we are using our highly evaluated separator film production equipment in a key role and developing plastics processing equipment suitable for production of liquid crystal polymer (LCP) film, which is 5G/6G-compatible, and for increasingly mono-materialized packaging materials.

We are also working actively to reduce automobile weight with plastics, and on chemical recycling for plastics. Through collaboration with customers, we will expand the value of our business by restricting waste plastic generated when equipment is started and stopped.

To cope with the increasing size machinery as well as rising demand, we are making major capital investments at our main Hiroshima Plant. We are also promoting a smart factory shift to further improve the efficiency of our production system.

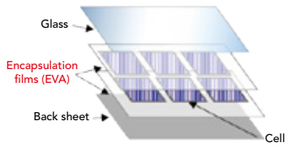
Furthermore, to strengthen after-sales service following delivery, we have been increasing the number of service engineers in Europe and China since 2022. In 2022, we received an order for a twin-screw extruder for chemical recycling. Going forward, we will continue working to reduce our environmental impact and identify more business opportunities.

Highlights

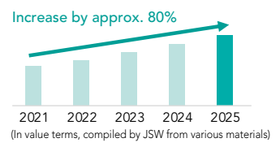
Contributions of single-screw extruder to solar power generation

Demand for EVA (ethylene-vinyl acetate copolymer), used as a cell protector for photovoltaic panels, is rising, and order volume is showing marked growth. Our single-screw extruders are used in EVA plants, and our share of the global market exceeds 70%.

Photovoltaic Panel Structure and Encapsulation Film



EVA Demand for Photovoltaic Panels



(In value terms, compiled by JSW from various materials)

Injection Molding Machinery Business

Business Overview

The Injection Molding Machinery Business Division manufactures, sells, and provides maintenance services for plastic injection molding machines, magnesium injection molding machines, and blow molding machines.

Our plastic injection molding machines cover most injection molding needs, and feature electrically powered machines with excellent environmental performance. We offer a wide range of machine sizes, from 30 to 3,000 tons of clamping force, and an extensive lineup to meet the diverse needs of our customers, which include vertical injection molding and special molding.

We are developing higher-power magnesium injection machines to perform integrated molding for larger magnesium parts, which are attracting attention for their effectiveness in reducing EV weight.

We boast the No. 1 spot in term of shipment amount of plastic injection molding machines in Japan and the third largest market share in terms of number of units. We are the top manufacturer with magnesium injection molding machines that are one of kind and blow molding machines that maintain an over 80% share of the direct blow molding machine market in Japan.

TOP Message

Message from the Head of the Division



Shoji Nunoshita
Managing Executive Officer
In charge of Meiki Plant
Director of Injection Molding Machinery Business Division

In the march toward realizing our Purpose, we are prioritizing engagement in the Materiality of "realization of a plastic-resource-recycling society" and "contribution to a low-carbon society." While we already provide electric injection molding machines with low power consumption and injection molding machines compatible with recycled and biodegradable plastics, we are expanding the scope of our contributions. In addition, by stepping up our global reach, we will make the world sustainable and prosperous.

In fiscal 2022, we established a domestic inventory facility for small machines and a European production facility for large machines, to shorten supply time. As for ultra-large machines, we expanded our product lineup and started sales of new products. In technology development, we are working to achieve Material Revolution™, our group Purpose, by commercializing the foam molding process on ultra-large machines and growing sales of large magnesium injection molding machines for large parts.

Going forward, we will maintain efforts to offer products in line with our Purpose. In a progressively maturing market, we will leverage our broad product lineup and in-house component production to deploy energy-efficient products globally. We will also leverage our environmentally friendly technologies, including weight and material reduction technologies. Our aim is to further grow net sales, to at least ¥100 billion within 10 years, and become one of the top five global companies in our industry.

SWOT Analysis

S Strengths
- Production system with in-house development and manufacturing of numerous key components and materials
- Ability to respond and offer recommendations with medium and large machines, backed by extensive experience, especially in the automotive field
- Well-developed domestic and international sales and service network

W Weaknesses
- Limited sales track record for small precision molding and ultra-large machines

O Opportunities
- Increase in new capital investment with the shift to electric vehicles
- Rising demand for energy-saving equipment due to soaring global energy costs
- Expansion of needs for eco-friendly technologies (bioplastics, plastic reduction, effective use of electric power)

T Threats
- Tightening global regulation of plastics use
- Improving performance of Chinese manufacturers with high production capacity

Sources of Our Strength

Backed by the strength of our comprehensive product lineup, we also maintain a wide variety of equipment at our technical centers. Our system solves customer problems and promotes our technological development.

Our advantage in the equipment arena lies in our ability to develop, design, and manufacture key components, including wear- and corrosion-resistant metal materials, highly responsive control devices, servo amps critical to motor performance, and even special servomotors. This enhances the performance of the equipment while ensuring safe and reliable machines.

We assume customization from the basic design, which is a design advantage. We also have extensive expertise in medium and large machines for automotive manufacturers, and our flexibility is a strength.

In addition, through collaboration with the Hiroshima and Meiki plants and our overseas production locations, we have established a production system to provide molding machines that answer customer needs.

We were first in the world to commercialize American Thixomolding technology for magnesium alloys using magnesium injection molding machines. Then, to meet the demand for larger magnesium automotive parts, including for EVs, we were first to develop and commercialize a magnesium injection molding machine with a 3,000-ton mold clamping force.

Our products are offered through a well-developed, directly controlled sales network and through sales companies at 22 locations (10 in Japan, 12 overseas). After-sales service is provided through a global service network, ensuring responsiveness to customer needs.

Operating Environment

In the middle-high to high-end market for plastic injection molding machines, it is important to grasp market needs accurately, since investments are made for customers according to the components to be produced. Integration and scaling up of components, as typified by giga-press and mega-casting advocated by leading EV manufacturer Tesla, is a major trend. In response, we began selling our J-F series of ultra-large injection molding machines in 2021, and are developing other products, including larger opposed two-color molding machines. With respect to small machines, we have positioned electronic devices as a priority field to secure a rock-solid industry position in small injection molding machines, since major demand for mass production is expected. We are working to enhance performance and reinforce supply capabilities to expand market share.

Large automotive components are increasingly made by magnesium injection molding machines. For this reason, we are working to expand our lineup of large machines.

We are also expanding our J-WiSe™ AI/IoT solution, to realize smart factories with the aim of improving the efficiency, not only of individual molding machines, but the entire molding factory.

(Japanese Trademark Registration Number 6311727)

Strategy and Measures for Growth

We aim to expand the scale of our plastic injection molding machine business by strengthening our lineup of small and ultra-large machines, based on our industry-leading medium and large machines. Following on our expansion of sales in China, we have increased our small machine inventory at our European bases, and established a structure for stable supply of injection molding machines globally. In the ultra-large machine category, we have expanded our lineup of space-saving two-platen machines by launching a well-received 2,500-ton model, following our popular 3,000-ton and 1,800-ton machines. In conjunction, we have begun to market such options as foam injection molding, to facilitate difficult molding tasks.

In the booming automotive field, demand is growing for larger components and the ultra-large injection molding machines required to make EVs. We will meet this demand with equipment that has a small environmental impact.

At the same time, the use of magnesium for automotive components is increasing, since it is highly suited for recycling. Thixomolding, which is appropriate for large, thin-walled casings when rigidity and light weight are required, and magnesium injection molding machines with low environmental impact relative to die casting methods, are attracting particular attention. The 1,300-ton and 3,000-ton machines we launched last year have been well received.

Highlights

Injection molding machine operation with renewable-power assist

This stabilizer stores power from natural sources and act as an assist in injection molding machine operation. It is useful for reducing CO_2 emissions. In addition, operation can be maintained temporarily in the event of a sudden power outage, allowing the system to transition safely to stop mode. Injection molding machines may require large, transient increases in the power supplied to the servo motors. The stabilizer batteries can also be used to offset peak requirements, reducing peak power demand at the plant.



Dedicated molding machine power stabilizer

Industrial Machinery Business

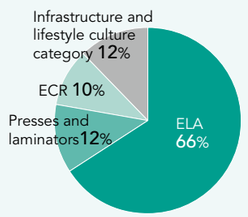
Business Overview

The Industrial Machinery Business Division manufactures, sells, and provides maintenance services for industrial machines that address social challenges in the fields of electronic devices, and infrastructure and lifestyle culture.

The electronic devices category, which accounts for about 90% of sales, includes excimer laser annealing (ELA) systems, vacuum hot presses, vacuum laminators, and electron cyclotron resonance (ECR) deposition equipment, with demand driven by DX, AI, and EVs. Market demands change rapidly in this field. As required, we can translate customer ideas into equipment proposals quickly.

Industrial machinery in the infrastructure and lifestyle culture sector includes couplers and draft gear for passenger and freight rolling stock, racetrack starting gates, and food extruders that are also used in alternative meat production. Though not accounting for a large percentage of sales, many of our products are leaders in their respective niches. They are highly regarded by customers for quality, performance, and service, and have consistently produced stable earnings over many years.

FY2022 Sales



Message from the Head of the Division

Electronic device manufacturing equipment is used to produce key components for infrastructure devices that contribute to realization of the super smart society, and business is projected to expand. With respect to ELA equipment for manufacturing high-definition displays, our principal product, we undertook to strengthen profitability by integrating equipment manufacture and sale with maintenance services. We are also expanding sales of new ELA models with new functions, with the aim of becoming the industry leader.

At the same time, our ELA core competence lies in the technology to use lasers to melt and solidify (from the amorphous to the crystalline state) the surface of display substrates; operational precision control technology; and machine element technology required to make the equipment possible. We will also expand our business by applying our ELA core competences to manufacturing other products, and by entering new markets through M&A.



Miki Sawai
Specialist
Managing Senior Councilor
In charge of Yokohama Plant
Director of Industrial Machinery Business Division

SWOT Analysis (Electronic Devices)

S Strengths
- Thanks to our track record of mass manufacturing, which has been proven at major manufacturers globally, and the reputation of our after-sales service, we maintain a high share in specific areas of electronic device manufacturing equipment
- Equipment development and design capabilities to realize solutions to diverse customer needs through new equipment
- Cutting-edge test facilities and process engineers with a wealth of experience and expertise Support system based on the foregoing, and capacity to solve customer issues

W Weaknesses
- Many niche-leading products, but proven markets are limited in size

O Opportunities
- Growth in demand for electronic device products to realize the super smart society
- Growth in demand for large, high-definition, lightweight displays

T Threats
- Market entry barriers due to national industry protection policies
- Price competition

Operating Environment

Demand for electronic devices is growing as digital infrastructure development accelerates toward the super smart society.

Electronic device manufacturing equipment is expected to handle increasingly advanced manufacturing processes. Display manufacturing is driven by quality enhancement in tandem with reduced manufacturing costs, while in semiconductors, manufacturing is demanded for the package substrates that are indispensable for mounting high-end CPUs. In this environment, our development and design capabilities are an advantage.

Demand for electronic device manufacturing equipment has shifted from Japan to China and other East Asian countries. While the Chinese economic slowdown has had a negative influence in the short term, we expect long-term demand growth to be driven by DX, AI, and EVs. Investment in Southeast Asia and India is also projected to grow.

Strategy and Measures for Growth

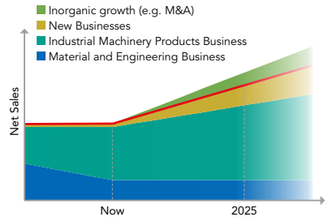
With respect to ELA equipment for high-definition display manufacturing, we will undertake to further expand our market share and bolster our maintenance services. We undertook to differentiate ourselves from the competition by introducing new ELA equipment and verifying its performance in mass production, simultaneously achieving higher productivity, yields, and energy efficiency. Going forward, we will pursue further development of larger machines. With respect to maintenance services, we will focus on China, where approximately 70% of ELA equipment is in operation, and enhance the capabilities of local service engineers. We will also pursue a customer retention strategy built around servicing and maintenance contracts.

New Businesses

Message from the Head of the Division

The New Business Promotion Headquarters will contribute to realizing a low-carbon, super smart society through early commercialization of three businesses: Photonics, whose core products are crystal growth and processing of synthetic quartz, gallium nitride, and lithium niobate; Composite Materials, which includes lightweight, high-strength, carbon fiber reinforced plastic (CFRP) products for aviation, defense, and space; and finally, Metallic Materials, which includes copper alloy materials for advanced copper foil used in connector and other components.

Growth Outlook for New Businesses





Takumi Hanamura
Specialist
Managing Senior Councilor
Director of New Business Promotion Headquarters
General Manager, Photonics Office, New Business Promotion Headquarters (concurrently)

Photonics Business

Business Overview

Synthetic quartz and gallium nitride crystals are produced in the high-temperature, high-pressure environments created by our large pressure vessels (autoclaves), using melting and solidifying technologies. In addition to pressure vessel design technology we have accumulated over years, our autoclaves for gallium nitride crystal manufacturing utilize proprietary, Ni-Fe-based large-ingot superalloy manufacturing technology, which confers excellent high-temperature strength.

In addition to these single-crystal production technologies, we are engaged in manufacture and sale of optical application products and device materials, based on our strength in high-precision processing technologies that include cutting and polishing.

Operating Environment

With the further propagation of 5G/6G communications and IoT devices offering high speed and capacity, low latency, and multiple connections, there is a growing need for power-saving solutions in an expanding communications infrastructure. As such, the related-device market is expected to see annual growth of 10% or more. Applications for gallium nitride in particular are expected to be found in various fields, including high-brightness, high-power lasers for energy conservation, high-speed switching devices, and high-energy-efficiency power semiconductors.



Composite Materials Business

Business Overview

In the aircraft field, use of CFRP is increasingly preferred to reduce CO_2 emissions by reducing weight and boosting fuel efficiency. To service this trend, our Composite Materials Business is developing molding and processing technology for CFRP products, acquiring material design technology, and upgrading its systems including quality assurance.



Strategy and Measures for Realizing Profitability

Along with the capabilities relating to standards compliance and quality control that we have developed through the production defense and related equipment, we will leverage the expertise in manufacturing wind turbine blades, which are large composite products, that we have cultivated through our wind power generator business, in order to expand our business as a supplier of composite structural parts for aircraft. Our aim is to make commercialization profitable while realizing a sustainable society by offering composite-material products that promote weight and energy efficiency for a range of mobility categories.

Metallic Materials Business

Business Overview

As communication speeds and capacities increase, there is a rising demand for titanium copper foils and other copper alloys used in various electronic devices to be thinner and more functional. In order to produce copper alloy slabs of unprecedented cleanliness and quality, JX Nippon Mining & Metals Corporation and JSW have jointly established Muroran Copper Alloy, Co., Ltd., and are engaged in business.



Strategy and Measures for Realizing Profitability

By applying our melting and solidifying technologies to copper alloy, we can produce extremely pure, high-performance metal that remains free of defects even when rolled as thin as copper foil. By manufacturing such products as titanium copper foil of unsurpassed quality, we will contribute to realizing a super smart society in which high-speed, large-capacity communications will be indispensable, and create a profitable business.

Material and Engineering Business

Business Overview

In the material and engineering business, Japan Steel Works M&E focuses on—and is the world's sole manufacturer of—large cast and forged steel products for power plants. The company also manufactures pressure vessels, thick plates, and clad steel plates for social infrastructure and a wide range of facilities.

In response to major shifts in our operating environment toward a low-carbon society, we are further expanding our lineup of products related to nuclear power and offshore wind power generation, and are exploring clad product applications.

Furthermore, we will continue to reform our product portfolio and offer a wide variety of materials, (M: materials) not only steel, but also non-ferrous metals and composite materials.

Based on our welding, non-destructive testing, hydrogen, and composite material product technologies, our engineering services business (E: engineering) will undertake to expand sales of hydrogen tanks for large-building construction and of other products.

TOP Message

Message from the Business Segment Head

As a principal means of realizing a low-carbon society, we will reinforce our materials business manufacturing (facilities and personnel) and quality assurance systems to respond to new nuclear power plant construction projects under way in Europe. We will also contribute to restarting Japan's nuclear power plants by providing needed replacement components. In the renewable energy area, demand for offshore wind power is growing, with wind turbine size becoming increasingly large. In response to this trend, we will boost production capacity for large forgings, which is one of our strengths. This will include forgings for monopile pile driver equipment for wind turbine tower foundations, and we will explore additional applications.

In our engineering services business, we will develop a system to enable us to flexibly adapt to trends in demand for large hydrogen tanks utilizing hydrogen storage alloys, and for pressure vessels used in production of gallium nitride crystals, a next-generation semiconductor material.

To boost profitability, we are reviewing our product portfolio and restructuring our production system. Specifically, by redeploying management resources to the large forgings business and reorganizing our manufacturing system for enhanced efficiency, we will secure a profit structure under which we can continue to offer high-quality products.

We deeply regret the problems caused by inappropriate conduct in product quality inspections, disclosed in 2022, relating to product inspections. We are implementing measures to prevent recurrence, engaging in ongoing education and training, and creating a system to ensure that such conduct will not be repeated. All ISO and other certifications revoked in fiscal 2022 have been re-certified. We will strive to regain the trust of our customers in particular and all stakeholders in general.



Kengo Takeya

Specialist
Managing Senior Councilor
Representative Director and President, Japan Steel Works M&E, Inc.
General Plant Manager, Muroran Plant (concurrently)

SWOT Analysis

Strengths
- Facilities and technology to manufacture large steel castings, forgings, and thick-plate products
- High quality and safety honed in electric power and nuclear power products
- Development technology for high temperature-, high pressure-, and hydrogen-embrittlement-resistant materials

Weaknesses
- Fluctuations in facility operation and operational changeovers (difficult to level) caused by our individual-order production system
- Capacity to accommodate new demand for small and medium-sized products and small lot production

Opportunities
- Expand the hydrogen economy as well as the renewable energy power generation market in the direction of carbon neutrality
- Changes in the external environment relating to nuclear power generation
- Withdrawal/downsizing of competitors, industry reorganization trend

Threats
- Securing personnel (especially at Muroran Plant) due to decrease in the local population and falling birthrate
- Shrinking market for oil- and gas-related products (rapid shift to renewable energy generation)

Sources of Our Strength

We combine core competences in melting, mixing, and solidifying technologies with facilities capable of producing steel ingots up to 670 tons in weight, which are the world's largest. Ingots of the correct size for the product being produced are forged and heat-treated in a large, 14,000-ton press, and final-finished by ultra-large machine tools with a maximum processing weight of 400 tons.

In recent years, we have responded to demand for larger pile-driving equipment for offshore wind turbines by applying technology developed to satisfy the stringent standards of the thermal and nuclear power generation industries.

Furthermore, technology cultivated over many years through design, manufacturing, construction, and inspection services for pressure vessels such as oil refinery reaction towers, is serving as a foundation for new product creation. Examples include hydrogen-related businesses with excellent growth potential, and pressure vessels to manufacture gallium nitride crystals, a next-generation semiconductor material.

Operating Environment

Global energy demand is projected to increase under all climate change scenarios anticipated by the International Energy Agency (IEA), including the Net Zero Emissions (NZE) scenario. However, energy generation from fossil fuels (coal, oil, and LNG) is projected to decrease, with increased reliance on renewable energy, such as wind power.

With respect to potential business impact, new construction projects for large-scale, coal-fired power plants will decrease. At the same time, we expect persistent demand growth for gas turbine and combined-cycle power generation, which is also effective in load leveling for renewable energy generation, as well as growth in replacement demand for services. In addition, we project that we will secure a steady level of operation and sales of power generation products amid the withdrawal of some competitors and a restructuring trend in the industry.

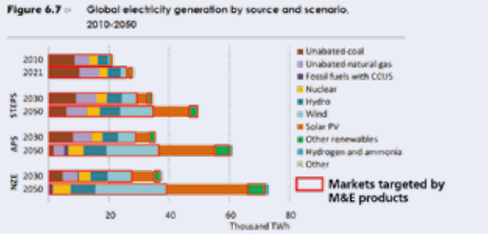
Fossil fuel power generation will decline as we approach NZE. At the same time, renewable and nuclear power generation will grow significantly. As such, markets for JSW Group products are projected to see continued growth under either scenario.

In our engineering services business, we are installing and renovating manufacturing equipment and renovating public infrastructure facilities. As part of our activities to achieve a hydrogen economy toward becoming carbon neutral, we expect sales growth in products utilizing our hydrogen storage technology.

Changing nuclear energy policy in Europe can be regarded as one of the most pressing shifts in our business environment. A production system is required that can meet the demand for primary components in new nuclear power plants.

With material and energy costs remaining high since 2022, we are continuing efforts to optimize selling prices and boost productivity to realize a stable profit structure.

Figure 6.7 Global electricity generation by source and scenario, 2010-2050



Source: Compiled by JSW using data from World Energy Outlook 2022, International Energy Agency (IEA)

Strategy and Measures for Growth

We project strong demand for large components where production involves ultra-large steel ingots, one of our areas of strength. Such components include those for nuclear power generation, offshore wind power-related components, and back up rolls for heavy plate mills. In response, we will work to strengthen our production system.

Furthermore, we will expand niche product areas by responding actively to market needs where our core competencies can be leveraged, without being limited by existing materials or the size of existing products.

In our engineering services business, we will undertake to strengthen our infrastructure-related product lineup for hydrogen, a promising next-generation energy source. We will also work with The Japan Steel Works to reinforce our defense-related production capabilities.

Highlights Nuclear product demand outlook

Changing energy security policies in Europe have stimulated planning and new construction of nuclear power plants in EU nations. Customers expect us to provide principal components for nuclear power plants in conformance with agreed-upon delivery schedules, and we are playing an important role in realizing the timelines for new power plant construction.

To ensure we succeed, we will boost production capacity and reinforce our quality assurance and production control systems.

EU Nuclear Energy Policy Trends

Country	Policy, new plant construction
UK	• Construction of up to eight large reactors planned. • Two European Pressurized Reactors (EPRs) under construction. • Construction of two additional reactors planned.
France	• One EPR under construction. • Construction of six EPR2 (improved EPR) reactors received government approval. • Eight additional reactors under consideration.
Poland	• Government approved construction of three AP1000 reactors, an advanced pressurized water design. • The reactors are on course to enter service in 2030s.
Netherlands	• Government plans two large reactors.
Czech Republic	• Up to four large reactors are planned.

(Source: internal company research)

Financial and Capital Strategy: Message from the CFO

We will increase our corporate value through investment carried out with an eye to portfolio management and the cost of capital



Hiroki Kikuchi
Director & Managing Executive Officer
CFO, in charge of Finance & Accounting Department,
General Manager of Corporate Planning Office,
General Manager of Business Development Office

Perception of Business Environment

In fiscal 2022, the Company reported higher sales and lower profits. Net sales amounted to ¥238.7 billion, up ¥25.0 billion year-on-year. Operating income was ¥13.8 billion, down ¥1.6 billion year-on-year. Net profit attributable to shareholders of the parent company was ¥11.9 billion, down ¥2.0 billion year-on-year.

The Industrial Machinery Products Business Segment posted higher sales and profit, mostly due to sales growth of film and sheet equipment for separators. At the same time, the Material and Engineering Business Segment reported lower sales and profit, largely due to product inspection delays stemming from inappropriate actions.

In fiscal 2022, the Company achieved record high net sales. At the same time, the year-on-year decrease in profit translated into an ROE of 7.8%, below the minimum 8% expected by shareholders. This raised the challenge of closing the operating income ratio gap through optimized selling prices and other measures.

In fiscal 2023, we anticipate an increase in sales and profit over the preceding term. Net sales are projected at ¥280 billion, up ¥41.3 billion year-on-year; operating income is projected at ¥18.5 billion, up ¥4.7 billion year-on-year; and net profit attributable to shareholders of the parent company is expected to be ¥14 billion, up ¥2.1 billion year-on-year. We also anticipate an ROE of 8.5%.

We expect an increase in sales and profits in the Industrial Machinery Products Business Segment due to expanding sales in each product lineup. In the Material and Engineering Business Segment, we expect sales and profits to rise due to higher sales of nuclear power products, etc., once we have established a thoroughly revamped product inspection system.

With respect to progress toward the goals of the JGP2025 medium-term management plan, we first of all expect to reach our fiscal 2025 net sales target of ¥270 billion two years ahead of schedule, in fiscal 2023. However, our same-year operating income forecast is ¥18.5 billion, which represents a significant difference from the fiscal 2025 target, which is ¥27 billion.

JGP2025 was established with the long-term goal of growing sales to ¥300 billion. However, we currently expect orders of ¥338 billion in fiscal 2023. We anticipate reaching our long-term goal of ¥300 billion in sales in fiscal 2024.

As noted, while we are on track to achieve not only our final-year sales goal of JGP2025, but also our long-term goal for net sales, projected profit nevertheless remains far from the JGP2025 target. We therefore believe it is appropriate to review our corporate value enhancement strategy from top to bottom. We are currently drawing up the next medium-term management plan JGP2028 (fiscal 2024–2028) while JGP2025 is still in effect. In formulating JGP2028, we will set a net sales target of ¥500 billion in fiscal 2033, which will be the final year of the medium-term management plan that comes after JGP2028. We will also clarify specific details during the formulation process, including efforts to address Materiality and enhance business value sustainably through fiscal 2028.

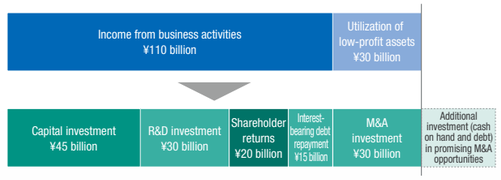
Basic Financial Policy

JSW Group's basic stance to enhancing corporate value is to do so by increasing profits through sales growth. Sales expansion involves aggressive investment, including the capital investment required to increase production capacity. However, we believe that in making such investments, it is incumbent upon us to direct careful attention to the cost of capital and our financial soundness. For this reason, JSW Group's basic financial policy is "based on the premise of ensuring sound finances, to proactively invest for sustainable growth to realize the enhancement of corporate value while always maintaining an awareness of the cost of capital."

Based on this policy, our group uses sales, operating income, and ROE as KPIs, and we strive to manage our business not only for quantitative expansion, but also with an eye to the cost of capital. In addition, to ensure our financial soundness, we have set an equity ratio target of 40% or more to maintain our current creditor rating (R&I) of A or higher.

To continue creating social value and enhance corporate value sustainably to realize our Purpose and Vision, it is important to sustain the smooth functioning of the Value Creation Process. Enhancement of various categories of capital is indispensable for this goal, and efforts to this end are progressing in general in accordance with the cash allocation plan. To cite an example, with regard to manufactured capital, JGP2025 plans capital investment of ¥45 billion, of which a cumulative total of ¥27.8 billion (62% of the total investment target) is planned to be carried out through fiscal 2023. With respect to R&D investment, we plan to invest ¥30 billion under JGP2025, with a cumulative total of ¥16.7 billion through fiscal 2023 (56% of target). In April 2023, we undertook to strengthen our R&D structure by establishing a new Innovation Management Headquarters. Going forward, we plan to further increase our overall R&D investment.

M&A remains a challenge, and though we have set an investment target of ¥30 billion, we have yet to make any use of these funds. We continuously seek opportunities to acquire companies and businesses that can drive further growth by utilizing our core competence of melting, mixing, and solidifying technologies combined with machine element and precision control technologies.



Mechanisms to Realize the Basic Financial Policy

Business portfolio management

The Board of Directors has reviewed and approved basic policies relating to the business portfolio on an annual basis since fiscal 2021.

After ascertaining the state of each business by plotting it on a four-quadrant matrix encompassing return on invested capital (ROIC-WACC spread) and sales growth rate, the market potential and competitive advantage of each business are factored in to bring its respective ten-year vision, as well as the basic policies required to realize the vision, into focus. In addition, beginning in fiscal 2022, we are deepening our grasp of the current situation by formulating a risk-appropriate WACC for each business.

Regarding businesses with large net sales, we are positioning plastic production and processing machinery as well as injection molding machinery as high-priority investment businesses. Their markets are expected to grow, and we should be able to secure competitive advantage. As such, we will invest aggressively to maintain or increase the sales growth rate and return on invested capital.

We are currently positioning the material business as a profit structure reform business. However, because we maintain competitive advantages backed by a strong technological foundation—for example because demand for electric power is projected to have limited downside due to a global shortage of electric power, and because there are numerous products that only our group is capable of manufacturing, among other factors—we are reviewing our product portfolio and optimizing selling prices to enhance our return on invested capital.

Investment adoption criteria formulated with awareness of the cost of capital

The Group is making capital investments aggressively to expand sales. To consider carefully whether or not our investments truly contribute to enhancing shareholder value, we use the NPV method* to verify the true benefit of such investments. The WACC specific to each business is also used as the discount rate when using the NPV method.

Our business portfolio management and investment adoption criteria function in tandem. We aim to improve the equity spread of the entire group by enhancing the return on invested capital in each of our businesses.

* NPV (Net Present Value) method: an indicator for showing how much value can be derived from a given investment.

Optimal level cash and deposits

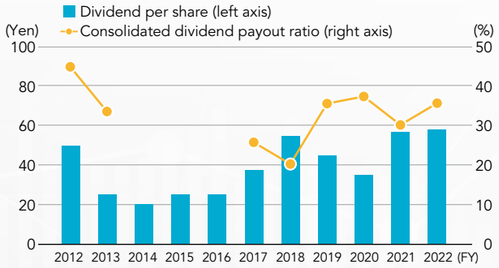
To maintain financial soundness while engaged in aggressive investment, the Group maintains a floor of cash and deposits. Specifically, the level of cash and deposits will be maintained at ¥60 billion, equivalent to two months of sales plus additional funds to cover short-term peaks in capital demand.

Shareholder Return Policy

Our basic policy regarding the return of profits to shareholders is to pay stable and continuous dividends and to improve the dividend payout ratio. In addition, in order to increase both corporate value and shareholder value, we will continue to ensure the stable profitability of our current businesses while promoting capital investment and R&D investment for the growth of new businesses and products, while also striving to improve the financial basics of the Company.

Under JGP2025, we will aim for a consolidated dividend payout ratio of 30% or more and to pay consolidated dividends based on a dividend on equity (DOE) ratio of 2% or higher. In fiscal 2022, we paid an annual dividend of ¥58 per share, and the dividend planned for fiscal 2023 is also ¥58.

In formulating JGP2028, we will ensure financial soundness as we consider the optimal balance between investments for growth on the one hand and shareholder returns on the other, from the perspective of whether it may be possible to boost shareholder returns without impacting corporate growth.



To Our Shareholders

The Group aims to realize its Purpose and Vision by continuing to create value for society and enhance sustainable corporate value. To gain the understanding and support of shareholders and investors with respect to our diverse efforts to achieve these goals, it is essential that we provide information in a timely and appropriate manner, and that we apply the input we receive through active dialogue to our management. We also believe that our active efforts to disclose information and engage in dialogue with shareholders and investors will reduce our cost of capital and contribute to enhancing corporate value.

We will continue striving to realize our Purpose and Vision by undertaking to enhance the capital sources that permit the Value Creation Process to function smoothly at all times under our basic financial policy. As such, we look forward to the continued support of our shareholders.

DX Strategy

As Is vs. To Be

Based on its corporate philosophy—which includes our Vision and the Value Creation Process that starts with our Purpose—JSW Group recognizes that to become a business group with net sales in the ¥500 billion range, we must boost operational efficiency and develop a system environment that enables speedy, data-driven decision making. First, we must promote digitization and digitalization while resolving the maintenance and management challenges of increasingly complex and aging business support systems, and tie this to DX (Digital Transformation) to bring about continuous business process reform and to transform products, services, and business models. To achieve this, the Digital Transformation Promotion Project (D-Pro) is promoting a wide range of measures to realize the To-Be State.

To Be

- Restructure information network into data lake, realize data-driven management
- Encourage maintenance cost reduction and value-added investment through core system integration and renewal
- Enhance operational efficiency of routine work through digitization, paperless work, and remote work
- Hire a fully sufficient number of DX personnel and enhanced IT literacy
- Promote DX to help lay the foundation for a business group with net sales in the ¥500 billion range, through corporate culture renewal, business process reform, and business model evolution

Roadmap and Promotion Structure for Digital Transformation Promotion Project (D-Pro)

To structure the overall D-Pro vision, we collaborated with third-party consultants to characterize the As Is, formulate the To Be, and create a promotion policy and roadmap to realize it. First, in Phase 1: One JSW, we are undertaking to move from discrete optimization to overall optimization. We are aiming to strengthen individual businesses in Phase 2: Value Added JSW. Furthermore, in Phase 3: New JSW Model, we will coordinate to strengthen synergies between businesses (All JSW structure).

To promote D-Pro, the Office of Digital Transformation (diagram on the right) was launched in July 2022 as a dedicated organization to manage collaboration between all corporate divisions. Further, a D-Pro Plenum was launched to confirm and promote the implementation of each project based on a roadmap. The plenum established committees and subcommittees for each project. Members of business divisions benefitting from system implementation were encouraged to participate as' committee owners and in other capacities, to achieve a promotion system that can achieve highly effective results.

D-Pro/Promotion Structure



D-Pro/Roadmap

	FY2022		FY2025		FY2028
	Phase 1 | One JSW (Digitization)		Phase 2 | Value Added JSW (Digitalization)		Phase 3 | New JSW Model (Digital Transformation)
	Partial digitalization of operational flow → Enhanced value chain value-added		Overall digitalization of specific business processes → New value creation		Digitalize the Company's overall business → Transform business model and corporate culture itself
Concept To-Be state	**From discrete optimization to overall optimization** • Appreciation of IT-ification merits by all employees ⇒ DX buy-in ⇒ Strength promotion structure, accelerate promotion		**Strengthen individual businesses** • "Information-ize" existing products and services ⇒ Strengthen profitability of products and services • Realize data-driven management		**Strengthen inter-business synergy (All JSW structure)** • Establish new business model ⇒ Jump to manufacturer-based service business
Specific measure example	• System consolidation and reform ⇒ Standardization • Visualization ⇒ Share value and challenges • IT education and awareness raising ⇒ Enhance employee productivity		• Adopt global web catalog • Adopt e-commerce system • Adopt digital marketing • Deploy services utilizing IoT/AI		• Strengthen smart factory capabilities • Expand business through digital marketing • Develop new services that use IoT/AI • Deploy global DX

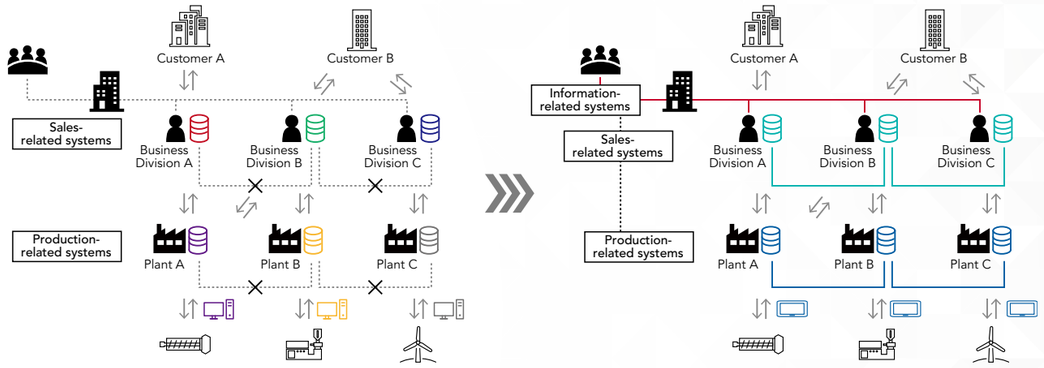
D-Pro Implementation Plan

We are launching projects according to the roadmap, with activities according to the implementation plan for each project. The PDCA cycle is applied to each activity through the D-Pro Plenum.

The framework of implementation plans can be broken down broadly in (1) sales-related systems, (2) production-related systems, and (3) information-related systems.

Consolidation and renewal of legacy systems in sales- and production-related systems to lower operating costs and promote data collaboration. Eliminating the time and effort required for data conversion will greatly enhance reporting speed. Furthermore, strengthen such sales-related systems functions as customer, competitor, and market information management, and market forecasting. We will strengthen the cost and production control as well as quality assurance functions of production-related systems, and promote standardization of products and manufacturing.

To manage risk, we will launch these systems on a small scale in selected business divisions, then roll out successful models to the Company as a whole. We will promote the structuring of a foundation for data-driven management by processing the data produced by these systems to make possible its use in management decision making, and presenting it through information-related systems. To advance this action plan on a steady basis, we will maximize effective use of internal resources. Where resources are insufficient, we will collaborate with third parties to strengthen inter-business synergies and realize an All JSW structure.



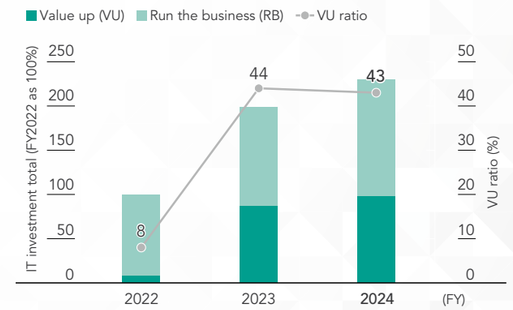
Information System, Investment Plan and Personnel Plan

By promoting D-Pro, we aim to boost the ratio of Value Up (VU; value-added creation in the business) relative to Run the Business (RB; the investment in facilities required to maintain and manage existing data systems). In fiscal 2023-2024, we plan to boost the ratio of VU information system investment to at least 43%, which exceeds the minimum ratio of 40% recommended by the Ministry of Economy, Trade and Industry. We are also planning to expand investment in information systems to 0.8% of net sales.

Improving IT literacy for all employees is another important D-Pro theme. We will conduct basic IT education to boost the level of IT literacy systematically. We are also providing special reskilling training to employees who are interested in, or otherwise have high potential to learn digital technology, to expand the number of those using and spreading the technology.

We must also expand the number of system developers and security management engineers in the Information Technology Division, and project managers in the Office of Digital Transformation, through education and hiring. We will shift our emphasis from RB to VU personnel through various types of training, internal recruitment, rotation, and invitations to external collaborators.

Information Systems Investment Plan



D-Pro Progress Evaluation

Using the DX promotion index recommended by the Ministry of Economy, Trade and Industry, we will periodically and quantitatively evaluate DX progress in comparison with global trends. As necessary, we will make corrections to appropriate activities to promote the improvement of the DX level efficiently.



Message from the Director in Charge of Promoting ESG

In November 2022, we established a new corporate philosophy for JSW Group, starting with the Purpose, and identified six key issues, or Materiality, as priority items to be addressed to realize the Purpose. By clarifying these, we were able to reaffirm the challenges that need to be undertaken to realize the future and mission we would like to realize, as well as the very reason for the Group's existence.

Furthermore, we are making steady efforts to organize and build a framework for sustainability management, including by expressing our support for the recommendations of the TCFD, establishing our Human Rights Policy, and enhancing our Basic Procurement Policy.

Amid ongoing environmental changes for our business, we will use this framework as a basis for speedy action going forward. In addition, we intend to set KPIs related to our Materiality in our next medium-term management plan, JGP2028, which is currently being formulated.

Looking ahead, we aim to further enhance our corporate value by leveraging our core competencies to solve social issues through products, technologies, and services relied upon by all.



Junichiro Deguchi

Representative Director & Executive Vice President
In charge of Export Control Administration; In charge of CSR & Risk Management,
In charge of Promoting ESG, In charge of Environmental Management,
In charge of General Affairs Department,
In charge of Material and Engineering Products Business

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The Japan Steel Works Group Basic Sustainability Policy

Based on its Purpose, "Material Revolution™, making the world sustainable and prosperous," JSW Group will contribute to stakeholders as follows through the development and implementation of industrial machinery and new materials that solve social issues, and simultaneously realize the creation of social value and the sustainable enhancing of corporate value.

For our customer and society
Through our supply of highly reliable products that emphasize quality, we aim to solve the problems faced by customers and society, and to realize a sustainable and prosperous society.

For the global environment
We will strive to reduce the environmental impact of our business activities and the entire supply chain and contribute to enhancing a circular economy and curbing a climate change.

For our people working together
We respect human rights and provide a healthy, safe, and open working environment where everyone can find their work rewarding.

For our business partners
Through fair and equitable transactions, we create social value together and build partnerships for co-existence and co-prosperity.

For local communities
We engage actively in community involvement activities and contribute to community development as a good corporate citizen.

For shareholders and investors
We will ensure the transparency, soundness, and efficiency of management, and strive to continuously improve corporate value. In addition, we will strive to disclose appropriate corporate information in a timely and appropriate manner.

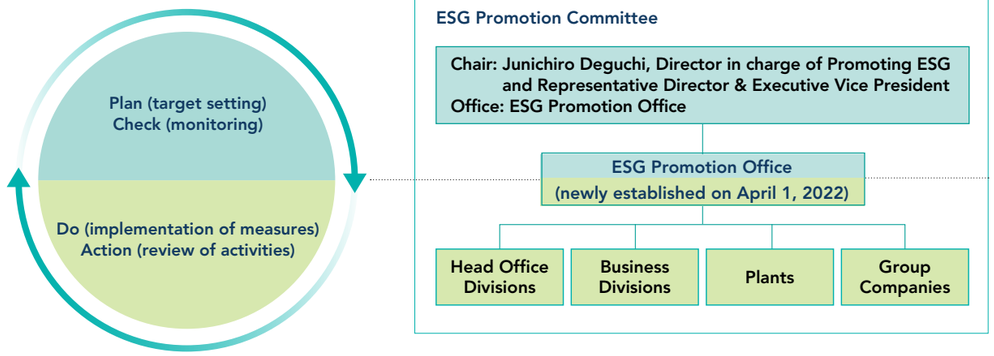
In putting the above into practice, we will strive to ensure compliance and work to enhance corporate governance.

Governance and Promotion System for Sustainability

Sustainability promotion activities are carried out by the ESG Promotion Committee, which was established in April 2021 and chaired by the Director in charge of Promoting ESG. In addition to considering strategies related to climate change, the committee also discusses all manner of ESG-related issues. The Board of Directors exercises appropriate oversight on the basis of input such as reports on the ESG Promotion Committee's activities.

In April 2022, the Company established the ESG Promotion Office as an organization dedicated to promoting ESG activities on a company-wide basis. The ESG Promotion Committee plays a central role in the Group's climate change response and ESG-related activities, which are promoted through the ESG Promotion Office in cooperation with head office divisions, business divisions, plants and Group companies.

ESG Activities Promotion Organization Chart



Environmental Management

Environmental Policy

JSW Group is committed to being an environmentally responsible corporate citizen. We emphasize environmentally responsible production and technology as means to support sustainable social development in harmony with ecosystems.

Action Plan

1. Systematically implement environmental initiatives and continuously promote environmental conservation.
2. Set appropriate objectives and targets to reduce environmental impact, including on biodiversity.
3. Provide society with products and services that contribute to environmental conservation.
   - (1) Improve the social value of our products in terms of the environment, health and safety.
   - (2) Provide products and services that reduce environmental impact by understanding environmental needs and developing technologies.

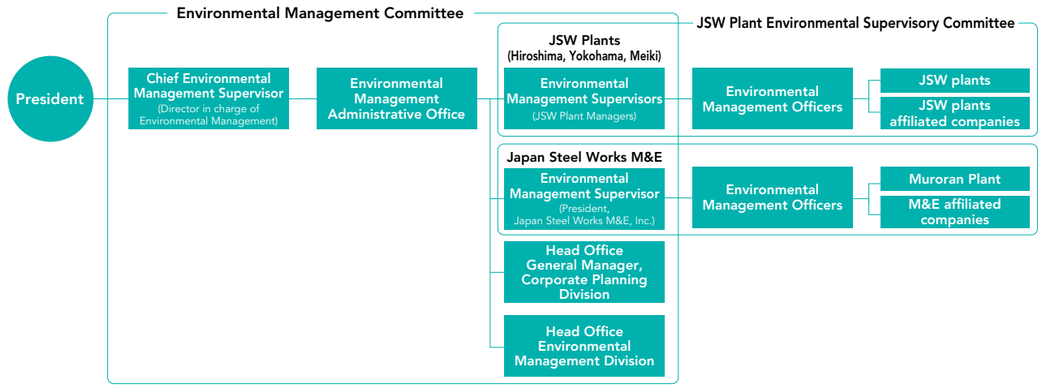
Shared Business Site Policies

Business sites set environmental policies, objectives and goals in accordance with international standards with due consideration of their operations and nearby communities.

- (1) Comply with laws, regulations and JSW Group agreements with external entities.
- (2) Prevent pollution and reduce and properly process waste with due consideration for impact on ecosystems.
- (3) Use resources more productively by saving energy and by saving and recycling resources.
- (4) Require employees and on-site companies to understand and abide by business site policies.

Environmental Management Structure

Recognizing the importance of conducting its business activities in harmony with both the international and local communities, JSW Group has been promoting environmental management activities throughout the Group since 1997. The Environmental Management Committee, headed by the director in charge of environmental management, formulates group-wide annual environmental management policies and action plans, and monitors and evaluates the progress of environmental management activities. Each plant has its own environmental supervisory committee and works to promote environmental management activities, as part of JSW Group's unified approach to reducing its environmental impact.



JSW's Hiroshima, Yokohama and Meiki plants and Group companies Japan Steel Works M&E, Inc. and Nikko-YPK Shoji Co., Ltd. have obtained ISO 14001 certification, an international standard for environmental management systems.

Business Site ISO 14001 Certification

Business Site	Original Certification Date	Current Certification Body
Hiroshima Plant	December 18, 1998	JQA
Yokohama Plant	September 4, 2006	JQA
Meiki Plant	March 4, 2005	JQA
Japan Steel Works M&E	December 18, 1998	LRQA
Nikko-YPK Shoji	February 7, 2005	JQA

* Certification bodies: LRQA (Lloyd's Register Quality Assurance Limited), JQA (Japan Quality Assurance Organization)

Targets and Progress of the Medium-Term Environmental Plan

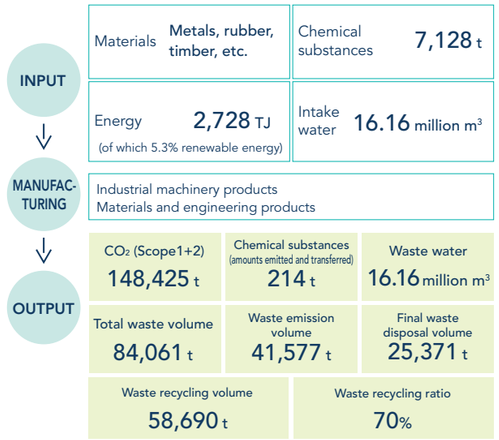
Achievement Level: ◎ Fully achieved ○ 80% or more achieved △ Less than 80% achieved

Priority Issues	Fiscal 2022 Targets	Fiscal 2022 Actual Results	Achievement Level	Medium-Term Environmental Plan (under JGP2025) Fiscal 2025 Targets
Environmental Management	Maintain ISO 14001 certification of plants and Nikko-YPK Shoji	Maintained ISO 14001 certification of plants and Nikko-YPK Shoji	◎	Maintain existing ISO 14001 certifications Obtain new ISO 14001 certification of domestic manufacturing Group companies
Climate Change Measures	33.75% reduction in CO_2 emissions (compared with fiscal 2013)	41.9% reduction in CO_2 emissions (compared with fiscal 2013)	◎	60% reduction in CO_2 emissions by the end of fiscal 2030 (compared with fiscal 2013) 45% reduction in CO_2 emissions by the end of fiscal 2025 (compared with fiscal 2013)
	Improvement of 1% or more in energy usage intensity (year-on-year and average change in intensity over 5 fiscal years)	15.5% improvement over the previous year 3.0% improvement over average change in intensity over 5 fiscal years	◎	Improvement of 1% or more in energy usage intensity (year-on-year and average change in intensity over 5 fiscal years)
Promotion of Resource Conservation and Recycling	Recycling rate of 95% or higher (excluding slag and refractories)	Recycling rate of 95.2% (excluding slag and refractories)	◎	Recycling rate of 95% or higher (excluding slag and refractories)
Management of Chemical Substances	Improvement of 1% or more emissions and transfers intensity of chemical substances subject to the PRTR* law (year-on-year and average change in intensity over 5 fiscal years)	15.5% improvement over the previous year Improvement of 1.9% in the average change in intensity over 5 fiscal years	◎	Improvement of 1% or more emissions and transfers intensity of chemical substances subject to the PRTR law (year-on-year and average change in intensity over 5 fiscal years)
Compliance	Legal or regulatory violations: 0	Legal or regulatory violations: 0	◎	Legal or regulatory violations: 0
	Treat low-concentration PCB waste by the legal deadline (March 2027)	Progressing appropriately	◎	Treat low-concentration PCB waste by the legal deadline (March 2027)
Raising Environmental Awareness	Issuance of integrated report	Issuance of integrated report	◎	Disclose environmental management activities in an integrated report Conduct training for employees

* PRTR: Pollutant Release and Transfer Register

Business Activities and Environmental Impact

The fiscal 2022 environmental impact of the manufacturing processes of the Industrial Machinery Products Business and the Material and Engineering Business is as indicated below. JSW Group carries out quantitative assessments of inputs, such as energy and intake water, and outputs, such as waste generated in manufacturing processes, carbon dioxide and waste water, and applies those in its environmental improvement activities.



Renewable Energy Use Initiatives

In terms of the percentage of renewable energy sources in all energy used, the Group has set the target at 25% or more by the end of fiscal 2025 and 40% or more by the end of fiscal 2030.

Not only do we conduct solar power generation at the Hiroshima Plant, but a portion of the electricity purchased at the Hiroshima Plant, Yokohama Plant, and Meiki Plant is derived from renewable energy sources. Use of renewable energy sources covered 5.3% of the Group's total energy use in fiscal 2022.

In addition, there is active rebuilding and expanding of buildings at the Hiroshima Plant with an aim to achieve JGP2025, and plans are in place to install solar power generation equipment in all new buildings. The total capacity of all installations as of fiscal 2022 is 400 kW.

We will continue initiatives toward increasing the use of renewable energy sources.

Response to Climate Change

Support for the TCFD recommendations

JWS Group considers climate change as one of the important management issues, and in June 2022, we have expressed our endorsement for the recommendations of the TCFD (Task Force on Climate-related Financial Disclosures). In the same year, we completed a scenario analysis and impact assessment. In accordance with the TCFD's disclosure framework, we analyze and consider the impact of climate change-related risks and opportunities on the Group's business activities and earnings, and disclose the resulting information.

Please refer to our website for details.

Climate change response: https://www.jsw.co.jp/en/sustainability/environment/climatechange.html

TCFD TASK FORCE ON CLIMATE-RELATED FINANCIAL DISCLOSURES

Strategy

Financial "Risk" Impact Assumed for FY2030

Impact on operating income: Minor: less than ¥100 million/year; Moderate: ¥100-1,000 million/year; Major: ¥1,000 million/year or more

Category	Type	Details	Degree of Impact	
			2℃	4℃
Transition risks	Policies and regulations	Imposition of a carbon tax	Major	–
		Introduction of border adjustment tax	–	Moderate
	Technology	Cost of switching fuels at production facilities and R&D	Moderate	Moderate
	Markets	Decrease in demand for the products due to the reduction in the construction of conventional thermal power plants	Minor	–
		Increased procurement costs due to increased demand for steel-making raw materials as a result of the shift from blast furnaces to electric furnaces	Moderate	Moderate
	Reputation	Damage to our ESG evaluation and reputation due to delays in CO_2 emission reduction measures at the product manufacturing stage	Moderate	Moderate

Financial "Opportunity" Impact Assumed for FY2030

Category	Type	Details	Degree of Impact	
			2℃	4℃
Opportunities	Markets	Expansion of the EV market	Major	Major
		Expansion of power electronics market and 5G infrastructure market	Moderate	Moderate
	Energy sources	Increased demand for renewable energy power generation	Moderate	Moderate
	Resource efficiency	Tax relief after the introduction of carbon pricing on CO_2 emissions from production facilities	Major	–
	Products and services	Expansion of products and services that contribute to the demand for the reduction of CO_2 emissions	Major	Major
		Response to the demand for plastic recycling, contribution to social implementation of non-fossil-fuel-derived plastics	Minor	Minor
		Response to the demand for nuclear power plants	Moderate	Moderate

Specific Initiatives to Address Risks

・Response to carbon taxes

In the 2℃ scenario, we assume a carbon tax of 120 USD/t-CO_2. In order to reduce the financial impact of taxation, the Group is working to introduce electricity generated from renewable energy and install solar power generation facilities, in addition to taking various energy conservation measures.

In fiscal 2022, we have increased the percentage of electricity generated from renewable energy sources to 30% of Scope 2 at the Hiroshima Plant, 16.3% at the Yokohama Plant, and 20% at the Meiki Plant. Furthermore, the Hiroshima Plant once again expanded its solar power generation facilities in fiscal 2022, following expansion in fiscal 2021.

・Response to decreasing demand for thermal power-related products due to the reduction in the construction of conventional thermal power plants

The market is shifting to prefer power generation facilities with technologies that curb CO_2 emissions. Specifically, this power generation takes place in ultra-supercritical and ultra-high-temperature environments, and the requirements on these are ever-evolving. The Group has been consistently pursuing research and development to address these requirements. These efforts have resulted in ongoing strong orders for products related to power generation, following the shift to higher-efficiency gas turbine combined cycle power generation.

Specific Initiatives to Address Opportunities

・Initiatives for increased demand for renewable energy power generation

With greater introduction of renewable energy around the world, there has been a marked increase in demand for resins used for encapsulation of photovoltaic panels, such as ethylene vinyl acetate resin. Demand for pelletizers, the mass production equipment used for this kind of resin material, is expected to remain at a high level going forward.

To meet demand, we will advance our investment plan at the Hiroshima Plant to increase the production capacity and efficiency of these large pelletizers and to improve the assembly capacity of large pelletizers.

▶ For details, please refer to p. 22-23.

・Response to the demand for nuclear power plants

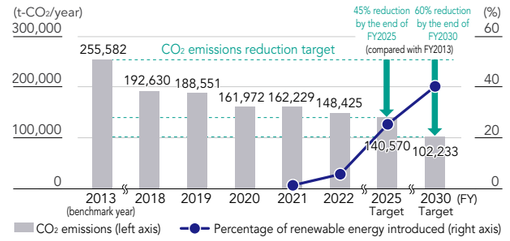
Nuclear power capacity is expected to trend upward in the medium to long term as nations transition toward policies emphasizing energy security and decarbonization. We will provide the appropriate products to the market by leveraging our extensive development and manufacturing technologies in large cast and forged steel components for nuclear power plants (reactor pressure vessel components, turbine rotor shafts, and generator shafts) and our knowledge of nuclear power standards in various countries.

▶ For details, please refer to p. 28-29.

Indicators and Targets

The "Indicators and Targets" that measure and manage risks and opportunities related to climate change have set the following targets for a carbon-neutral decarbonized society. We are engaged in environmentally friendly business activities that aim for improvement in terms of both "decarbonization by products" and "decarbonization of production processes." Regarding the CO_2 emission reduction target, we have initiatives underway from Scope 1 and Scope 2. As Scope 3 emissions are being calculated, we are proceeding with efforts toward setting publication and management indicators.

CO_2 Emission (Scope 1, 2) Reduction Plan and Renewable Energy Introduction Plan



* In terms of the scope covered, the CO_2 emissions calculation includes the total of the head office and the Group's main manufacturing sites (Hiroshima Plant, Yokohama Plant, Meiki Plant, Japan Steel Works M&E, JSW Aktina System).

Classification	Management Indicator	Target (by end of year)	
		2025	2030
Reduction of CO_2 emissions in production activities (Scope 1, 2)	CO_2 emissions reduction rate (compared with FY2013)	45% reduction	60% reduction
Promotion of the introduction of renewable energy	Percentage of renewable energy among all energy used (Scope 1, 2)	25% or more	40% or more

Reduction of Environmental Impact

Policy and Initiatives for Water Resources

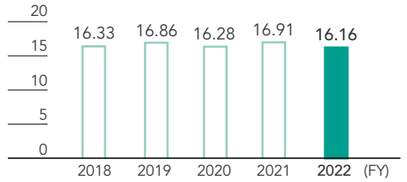
JSW Group recognizes that climate change and population growth are causing water resource shortage problems in regions all over the world.

The Group utilizes the World Resources Institute's (WRI) Aqueduct assessment tool and other tools to check water stress at its manufacturing sites. As of July 2023, our assessment indicates that the Group has no manufacturing sites in water-stressed areas.* Japan Steel Works M&E, which accounts for more than 99% of the Group's water withdrawals, is located in Japan's Hokkaido Prefecture, where water stress is rated as Low in both Aqueduct's current assessment and future projections. At Japan Steel Works M&E, we are working to reduce freshwater intake by recycling cooling water after use and utilizing sea water, and are also practicing water source management for some industrial water used. We will continue to regularly check the water stress at Group manufacturing sites and strive to use water resources appropriately considering the water stress level.

In terms of waste water quality, we will continue to conduct strict water quality management based on government ordinances.

*Areas rated with High or Extremely High water stress by Aqueduct

Intake Water Consumption



Proper Management of Chemical Substances

At JSW Group, we manage chemical substances and other substances with environmental impact and are working to reduce emissions of hazardous substances. Based on the PRTR Law, we report to local governments annually about our release and transfer of the substances that are subject to that law. Substances that are subject to the PRTR law are used primarily in manufacturing processes, such as steel manufacturing, welding, galvanization, cleaning and coating.

Release and Transfer of PRTR Substances

	FY2021	FY2022
Amount released (t)	65.1	59.2
Amount transferred (t)	161.0	154.3
Total (t)	226.1	213.5

Initiatives to Reduce Waste

JSW Group is working to reduce waste volumes founded in 3Rs of waste: Reduce, Reuse, and Recycle. Our Industrial Machinery Products Business is maintaining a high recycling rate through thorough implementation of 3Rs of waste. Our Material and Engineering Business is contributing to the realization of a recycling-oriented society by utilizing internal and external steel scrap as raw materials.

		FY2021	FY2022
Industrial Machinery Products Business	Waste final disposal volume (t)	124	101
	Recycling rate (%)	98.7	99.2
Material and Engineering Business	Waste final disposal volume (t)	20,943	25,270
	Recycling rate (%)	72.2	64.7

Quality Management

Summary of Circumstances Surrounding Inappropriate Conduct in Product Quality Inspections

In May 2022, the Company announced that a subsidiary, Japan Steel Works M&E (hereinafter, M&E) had engaged in inappropriate conduct, including falsifications, fabrications, and misstatements of product inspection results. Subsequently, we have taken with the utmost seriousness the findings and recommendations of a special investigation committee, consisting of outside attorneys, and are continuing efforts to prevent recurrence. Please refer to the URL below for details of the inappropriate conduct and the findings and recommendations of the Special Investigation Committee.

In Response to Inappropriate Conduct in Quality Inspections by Our Subsidiary
https://www.jsw.co.jp/news/news_file/file/20230509_news_en.pdf

Roadmap to Prevent Recurrence, and Progress Status

Based on analysis of the causes of the inappropriate conduct, and after considering the recommendations of the Special Investigation Committee, JSW Group formulated measures to prevent recurrence, and is implementing them following overall approval by the Board of Directors. From the four standpoints of System, Culture, Process, and Governance, we are working diligently to develop specific measures to prevent recurrence, some to be carried out by the Group as a whole and some by M&E. Regarding implementation, the Quality Management Office as the second line leading, directing, and supervising, and the Internal Auditors Office as the third line is auditing progress periodically and reporting results to the Board of Directors.

Category	Measures to Prevent Recurrence	From May 2022 to September 2023	From October 2023 to March 2024	FY2024	Situation (as of October 2023)
Quality assurance system reform	Establish company-wide quality assurance system	▽ Established Quality Management Office (September 2022)			Complete
		Plant quality audits (biannual) and affiliated companies audits (annual) by the Quality Management Office			Ongoing
	Strengthen the independence of the quality assurance function	▽ Established Quality Assurance Division reporting directly to the President, M&E (June 2022)			Complete
		▽ Consolidated product division delivery and cost control functions in the Production Management Department (January 2023)			Complete
		Quality audits by the Quality Management Office (minimum biannually)			Ongoing
Organizational culture reform	Strengthen and raise awareness of the need for quality compliance	▽ Established Quality Policy and Quality Code of Conduct (September 2022)			Complete
		President's employee lunch meeting (monthly)			Ongoing
		President's site inspection and town hall meetings with employees (monthly)			Ongoing
		Quality Compliance Month (annually, May)			Ongoing
		(Senior management message distribution, compliance education/training)			
		National Product Quality Month (annually, November)			Ongoing
		M&E management get-togethers with frontline employees and young managers (monthly)			Ongoing
		Subdivide M&E regular meetings (completed) to stimulate discussion with wider range of young employees			Ongoing
		Self-assessment to foster a culture of product safety (annually, February)			Ongoing
	Organizational culture reform	▽ Established Purpose (November 2022)			Complete
		Promote Organizational Culture Reform Project			Ongoing
Process reform	Digitize inspection work	Establish an inspection operation system to digitize inspection and test record preparation			Ongoing
		Partial system launch → Enlarge scope of application (deploy across Company)			Ongoing
	Appropriate investment of management resources in quality control	Increase quality control personnel, promote personnel mobility (multi-skills training, promote rotation)			Ongoing
		Capital investment to enhance inspection operations efficiency (renew inspection equipment, consolidate inspection stations, automate and digitize inspections)			Ongoing
	Revision of standards for the storage of quality-related documents and data	Quality Assurance Group reconciliation of inspection/test source data with final results			Ongoing
		Define retention period of inspection records (original data and submitted rating form) in Quality Manual			Complete (in operation)
	Strengthen quality assurance process	Strengthen in-production monitoring by Quality Assurance Division (e.g., unannounced inspections, monitoring, etc.)			Complete (in operation)
		Review internal quality audit procedures (e.g., random sampling of construction documents on day of audit)			Complete (in operation)
		Strengthen involvement of Quality Assurance Group (approval and review at each stage of nonconformity reporting, action orders, outcome confirmations)			Complete (in operation)
		Permanent posting of Quality Management Office member to M&E			Ongoing
		Management evaluation/approval of order acceptance/rejection (order acceptance/rejection based on appropriate judgment)			Ongoing
	Upgrade communication with customers	Clarify characteristics of customer requirements (concerns about requirements, if any, to be discussed with customer through to resolution)			Ongoing
		Review internal pre-inspection and testing operations (such pre-inspection and testing to be described clearly in specifications, with records disclosure upon request)			Complete (in operation)
Governance reform	Strengthen internal controls	Strengthen internal audit function (timely operational status audits of the Quality Management Office by head office Internal Auditors Office)			Complete (in operation)
		Strengthen internal whistleblower system (further publicize system, etc.)			Complete (in operation)
	Strengthen Board of Directors monitoring function	Strengthen board structure (perform more monitoring, boost proportion of outside directors, ensure diversity)			Complete (in operation)

▽ : Overall JSW Group measures ▽ : M&E-specific measures

Progress to Date

1 Customer relations and acquisition of certifications at M&E

- M&E temporarily suspended manufacturing, shipment, and new order acceptance for principal products where inappropriate conduct was confirmed in fiscal 2022, prioritizing its response to customers, but resumed manufacturing, shipment, and new order acceptance for products where quality and manufacturing processes were successively confirmed as sound (substantially remedied as of the end of fiscal 2022). Nuclear products are undergoing quality assurance verification processes by certain customers, and manufacturing has resumed for products approved by customers.
- Suspended ISO manufacturing certifications were reinstated in March 2023. Revoked certifications were re-certified to ISO 9001 in August 2023, and re-certified by a testing laboratory under ISO/IEC 17025 in September 2023.

2 Disposition of officers and others

- May 2022: Non-reappointment of one director with past experience as an executive director of the Material & Engineering Products Business, and resignation of one Audit & Supervisory Board member were accepted.
- November 2022: Monthly salaries of the eight executive directors and executive officers serving when inappropriate conduct occurred were reduced in line with their responsibilities.
  To clarify management and supervision responsibility, the Company reduced monthly salaries or took disciplinary action (including demotion) against officer- and manager-level employees (including those seconded from the Company to M&E) in line with their responsibilities, and publicly announced the disciplinary action internally and on M&E's website.

3 Strengthening governance

- The Board of Directors undertook to ensure diversity by increasing the number of outside directors (independent officers). Going forward, we will continue to shift the functions of the Board of Directors toward a greater monitoring role, to prevent the recurrence of misconduct in general.
- To strengthen our internal control functions, we established a company-wide Quality Management Office in September 2022 and appointed a director in charge of quality management. In conjunction with separation of business execution from business division supervisory functions, the second line function in the three-line of risk defense in risk management model was clarified, and personnel were deployed to ensure effectiveness.

Pending Issues and Future Response

Culture reform initiatives

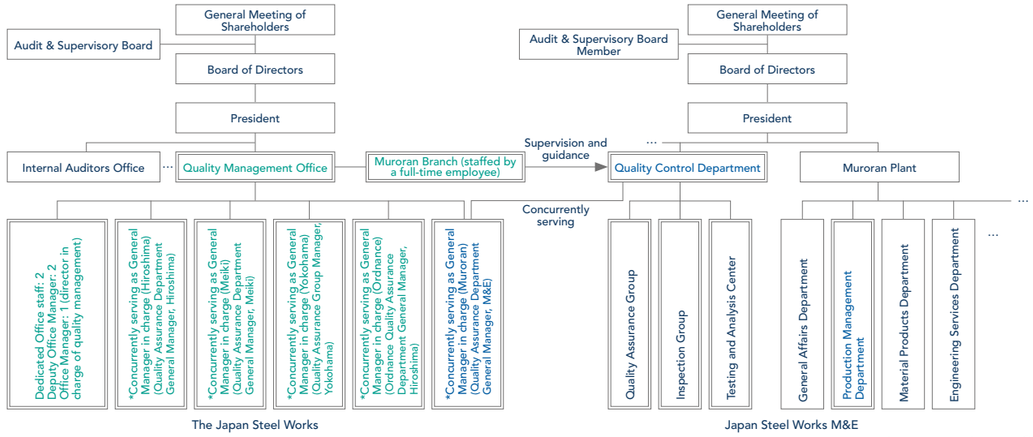
The Special Investigation Committee found a culture of discouraging free expression of opinions, a lack of communication between departments, and a corporate culture that did not encourage or value taking on challenges. We recognize that this is an important challenge, not only for enhancing quality compliance, but for innovation and corporate growth. In response, the Board of Directors has approved a fundamental policy of pursuing initiatives to cultivate high ethical standards and a spirit of taking on challenges, as well as psychological safety in all operations and situations.

With respect to corporate culture reform, we are formulating and pursuing measures at multiple levels, with ongoing followup through employee surveys, engagement surveys, etc., the results of which are reported to the Board of Directors as appropriate.

In addition, we have launched an Organizational Culture Reform Project Team made up of internally recruited young employees with a passionate desire to reform the Group's organizational culture. This team commenced activities in August 2023.

Quality Control Framework

In June 2022, a Quality Control Department was established, reporting directly to the president, M&E. In September 2022, to strengthen corporate monitoring and supervisory functions, the Quality Management Office was established to oversee quality assurance at each business division and manufacturing plant. To ensure personnel control, the managers in charge of quality control at each manufacturing plant, including M&E, are incorporated as concurrently serving in the Quality Management Office. In January 2023, delivery and cost control functions were separated from M&E's product departments and brought under Production Management Department. A Muroran Branch of the Quality Management Office (staffed by a full-time employee) was established to further strengthen supervision, guidance, and mutual monitoring.



Human Resources Strategy

Human Resource Strategies to Realize Our Purpose



Motoyuki Shibata
Director, Executive Officer
In charge of Export Control Administration,
In charge of Health & Safety Management,
General Manager, Personnel Department

To realize its Purpose while enhancing corporate value and creating social value, JSW Group must formulate and pursue a human resource strategy contributing to strengthening human capital improvement and diversity and inclusion, which we have established as a Materiality. Based on our shared Purpose and Vision, we will pursue our human resource strategy by promoting policies that focus on the organization as a whole as well as on individuals, respectively.

While organizational performance is first and foremost a function of the sum total of individual abilities, we have defined the skills we want our personnel to acquire in the course of their careers to execute our business, and are undertaking to promote individual growth through a variety of human resource policies.

Through skills development, employees will help realize our Purpose, and by promoting an organizational culture that encourages diverse personnel to grow and play active roles autonomously, we will generate synergy between organizational performance and individual growth.

Maximizing organizational performance

To realize our Purpose, society must continue to need us. To this end, it is necessary to maintain the JSW Group Value Creation Process, and to enhance sustainable corporate value while simultaneously creating social value. We recognize that to create these types of value, we must undertake to grow as an organization that can generate innovation and link it to value, thereby maximizing performance. Therefore, based on the results of our group's workforce composition analysis and engagement survey, we are furthering a wide range of measures and Organizational Culture Reform projects.

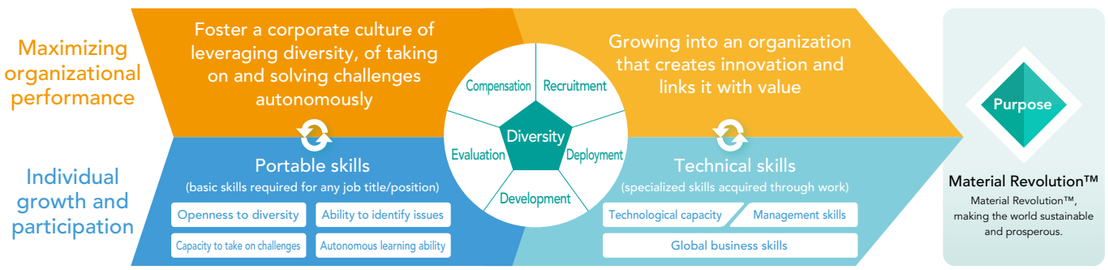
Individual growth and participation

We believe that leveraging diversity and fostering a culture of autonomous problem-solving is essential if an organization is to create innovation and link it to value. The most important factor among those that determine culture is the individual abilities of the people making up an organization. In terms of individual abilities, we define portable skills as basic skills that are required for any job title or position, and technical skills as specialized skills acquired through work.

Our human resource strategy emphasizes individual growth and participation, and we collaborate with individuals at each stage—recruitment, deployment, development, evaluation, and compensation—to develop their skills and link them to organizational performance.

Portable skills (basic skills required for any job title/position)	
Openness to diversity	Openness to diverse values and ideas, capable of leveraging them to boost team performance
Ability to identify issues	Capable of identifying and raising issues proactively to keep the organization's awareness of issues current
Capacity to take on challenges	Able to take on challenges without being constrained by precedent, and capable of involving others in the process
Autonomous learning ability	Capable of adapting flexibly and promptly to changes in the environment, of learning autonomously, and of growing throughout their career

Technical skills (specialized skills acquired through work)	
Technological capacity	High-level specialist knowledge that reinforces the Company's core competences (melting, mixing, and solidifying technologies)
Management skills	Ability to maximize organizational performance and support management strategies and corporate foundations
Global business skills	Skills that enable the individual to extend and grow the Company's business on a global scale



Recruitment

The portable skills that should be acquired by personnel who contribute to the realization of our Purpose, are defined as: openness to diversity, ability to identify issues, capacity to take on challenges, and autonomous learning ability. In our recruiting activities, we are engaged in a range of efforts to hire a diverse workforce that possesses these portable skills.

• Hiring of new university graduates

To obtain contact with a broad range of people from across the country, we are engaged in in-person and online recruiting activities. When recruiting personnel with a technical background, we conduct on-site tours and interviews at our manufacturing sites. When recruiting personnel with a humanities background, we provide opportunities for roundtable discussions with young employees, particularly in sales positions. We also offer internships as an opportunity for interns to gain work experience, and a deeper understanding of our work environment and corporate culture.

• Hiring of experienced personnel

To continue attracting an even larger and more diverse workforce, we strive to hire experienced personnel. We are also working on a new compensation system that will help us secure core personnel with high-level expertise who can become the leaders of the future.

In addition to general recruitment routes, we also use a wide range of targeted recruiting in our search for diverse personnel, such as employee referrals and proactively approaching prospective candidates.

Development

• Level-specific training and self-development support

We provide level-specific training for all employees, from new hires to managers. Furthermore, to support self-development, we make online learning platforms available, and strive to create an environment where people can acquire the skills they are seeking.

• Growth support for middle-level managers

Based on the results of the engagement survey, we believe that to raise the level of performance for the organization as a whole, it is important to enhance the skills of middle-level employees who drive the workplace as well as business strategy execution, in order to enable them to boost the level of job satisfaction and desire to take on challenges felt by employees at each workplace. As such, by designing educational content for middle-level employees that takes into consideration the needs of each workplace, we will support these employees in enhancing their guidance and development skills, and this will in turn vitalize our workplaces. We also promote the development of personnel who are capable of leading strategy execution without being constrained by precedent. Consequently, we actively fast-track young high performers into management in anticipation of future advancement to senior management. We task these individuals with critical missions involving significant responsibility, and actively conduct development programs through internal recruitment and rotation.

• IT skills education

All employees will be categorized into levels according to responsibilities and IT skills, and the target percentage of employees at each level will be set. As we work to achieve these percentages, we will formulate a system to provide appropriate educational content to each employee, thereby undertaking to maximize the effectiveness of efforts to improve IT literacy throughout JSW Group. In addition to the foregoing, we will also work to develop department leaders, familiar with business as well as IT, who will promote digitization of business operations to derive concrete results from DX activities.

• Support and monetary incentive programs for technology and skills transfer, and acquisition of official certifications

We have established in-house training environments such as Ginou-Dojo (Technical Skills Dojo) (Hiroshima Plant) and Hagane-Juku (Steel Academy) (Japan Steel Works M&E Muroran Plant). We are transmitting skills that have been passed down by generations of skilled technicians to younger employees, and broadening the base of employees with technical backgrounds.

We also encourage employees to obtain official certifications and reward them when they do, and have introduced a skills certification system to promote autonomous learning and growth.





• Global business skills

We offer employees educational opportunities to acquire global business skills. In addition to improving skills such as negotiating and presenting in English, this training also gives participants the opportunity to learn styles of thinking that have global resonance. Moreover, we provide the basic and specialized education required for global business, such as language training including study abroad, and flexible rotation for personnel development, including to the Company's international locations. These efforts are fostering the human resources who will lead the development of our business on a global scale.

Going forward, we will begin to structure an educational system to effect management skills acquisition, including the expertise to formulate and execute growth strategies and establish corresponding management structures, and knowledge of M&A.

Deployment

To deploy the right person into the right job, we assign employees to the most suitable positions for business execution, after consideration of their individual aptitudes and personalities. This will ensure that all employees can exercise their abilities and acquire technical skills (specialized abilities) through their work.

In addition, in fiscal 2023, we are embarking on initiatives that will promote autonomous career development, including implementing planned internal open recruitment in certain divisions, with the aim of developing personnel by encouraging them to take on the challenge of developing new businesses.

Indicators	FY2020	FY2021	FY2022
Training cost per employee (thousands of yen)	29.8	28.5	42.9
Number of participants in job level-specific training	285	277	266
Completion rate of job level-specific training (%)	98.6	98.9	98.1
Number of employees newly certified under The National Trade Skill Test & Certification (NTSTC)	47	111	100

Evaluation and Compensation

Separate systems established for general employees and managers. Evaluation of general employees focuses on job performance. Upon advancement to assistant manager level, the highest general employee level, the Company sets goals based on the individual's scope of responsibility, and evaluates based on achievement of those goals.

Management-level employees set goals autonomously with respect to problem solving and organizational development linked to business objectives, and work autonomously to achieve them. Communication with supervisors is mandatory in setting goals for managers and assistant managers. Such communication reinforces the link between management and individual goals, and ensures that all employees can exercise their individual abilities and play an active role in furthering the organization's pursuit of management strategy.

Going forward, we will further clarify our goal-setting priorities, and aim to make the system even more conducive to the achievement of the medium-term management plan.

Workplace Success for Diverse Human Resources

The Group recognizes that the execution of its management strategy hinges on the active participation of diverse human resources that can bring about new added value through a variety of thinking styles and ideas.

Activities to promote diversity and inclusion

We provide onboarding training for experienced hires, to ensure smooth integration and participation. We provide advance training to departments hiring persons with disabilities, to ensure smooth personnel integration and departmental understanding of the nature of the disability. We are also developing educational content addressing female health issues, and working to obtain support and understanding at each workplace.

JSW Group's relatively low percentage of female employees overall, and female managers in particular, presents a challenge. We have women in management positions—at the general manager level in sales, and at the section manager level in technical and corporate departments. However, to place women in leadership positions, we will hire more career-track women and, through retention measures, steadily expand the number of assistant manager-level women who aspire to become managers. In parallel, we will actively promote general-level individuals with demonstrated competence, and make more experienced-female hires. In conjunction, we will provide support that is attentive specifically to women's needs, such as training and networking.

Support for work-life balance

In addition to establishing a childcare and family care leave system and ensuring that it conforms with current law, we are working to create an environment that facilitates a balance of work with childcare and family care, with telecommuting, staggered work hours, and an hourly paid leave system.

In terms of education, we are promoting measures to support self-development, so that employees can upgrade their skills in line with their motivation.

Employee benefits

To accommodate the diverse values and needs of our employees, we are undertaking to enhance our system by offering them a cafeteria (benefit) plan from which they can select the benefits that fit their needs.

Indicators	FY2020	FY2021	FY2022
Percentage of female new graduate hires for career-track positions (%)[1]	10.0	15.0	15.6
Percentage of women among assistant managers (%)	7.8	8.7	10.2
Number of employees who took childcare leave	11	16	34
Percentage of employees with disabilities (%)[2]	1.90	2.21	2.46

1. The percentage of female new graduate hires for career-track positions is based on the number of women who were offered employment during the fiscal year in question and who joined the Company on April 1 of the next fiscal year.
2. As of June 1 of each fiscal year

Occupational Health and Safety

Policy for Health and Safety Activities

In JSW Group, which operates primarily in manufacturing, ensuring the health and safety of employees has always been a top priority. We consider our health and safety initiatives to be part of a corporate foundation and corporate culture rooted in an emphasis on human capital and respect for human rights.

We are carrying out these activities in accordance with the policy below, with the aim of maintaining and improving the health of employees and preventing occupational accidents.

1 Basic Philosophy

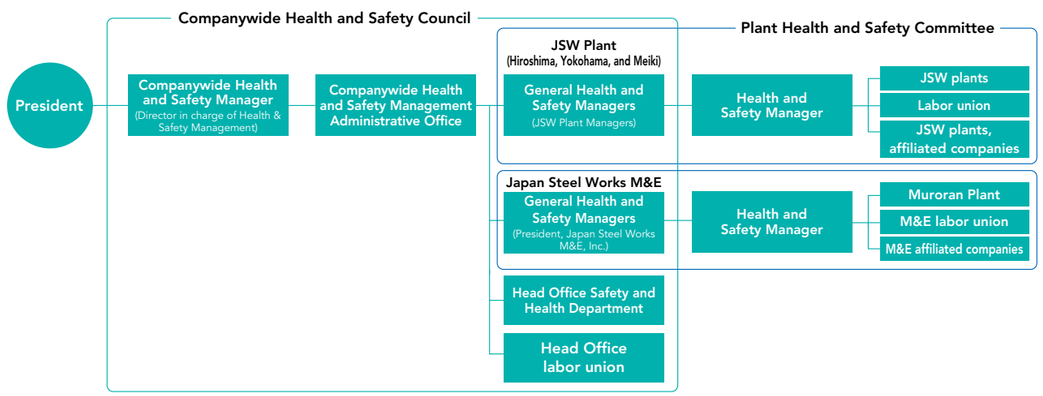
- To fulfill our social responsibility, we have positioned health and safety as a vital part of our management policy, and work to ensure the health and safety of everyone involved in our business.
- We have established and operate an occupational health and safety management system, and prioritize health and safety in all of our business activities to foster workplaces where employees can work safely and with peace of mind.

2 Basic Policy

(1) We will comply with health- and safety-related laws and regulations, as well as internal standards, and steadily promote their establishment as rules, customs, and culture.
(2) Based on strong leadership from top management, employees, the labor union, and JSW Group will work in unison to establish a safety management system to prevent occupational accidents and health hazards.
(3) We will invest the resources necessary for effective workplace improvements.

Health and Safety Promotion Structure

The promotion structure for health and safety activities in JSW Group is as follows.



Health and Safety Initiatives and Results

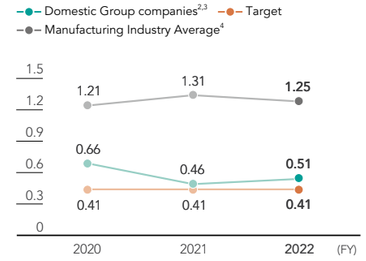
In JSW Group, we specify priority items for health and safety activities each fiscal year, and the Group (as well as the labor union) and suppliers of each plant work together on activities aimed at achieving zero occupational accidents.

Our major sites have acquired certification for their occupational health and safety management systems, and are enhancing the effectiveness of their activities.

To promote employee health, including mental health care, the Group conducts periodic stress checks and strives to properly manage working hours, among other activities.

Site	Certification	Date Acquired/Renewed
Hiroshima Plant	ISO 45001	August 12, 2022
Japan Steel Works M&E	OSHMS	June 5, 2021

Frequency Rate of Accidents per Million Workhours[1]



1. Frequency rate of accidents calculated from lost-worktime, serious and fatal accidents during the fiscal year
2. Including partner companies on Company premises
3. Excluding certain Group companies
4. Manufacturing industry averages are from the survey of occupational accident trends (Ministry of Health, Labour and Welfare).

Human Rights

Respect for Human Rights

JSW Group respects internationally recognized codes such as the International Bill of Human Rights and the ILO Declaration on Fundamental Principles and Rights at Work. We also promote efforts to respect human rights based on international guidelines such as the United Nations' Guiding Principles on Business and Human Rights.

In accordance with these, we have established The Japan Steel Works Group Human Rights Policy, which clearly prohibits discrimination, harassment, child labor, and forced labor; indicates our respect for basic labor rights; and expresses our commitment to respecting all human rights in all aspects of our business activities. To ensure that this policy is propagated throughout the Group's business activities, we use in-house newsletters, bulletin boards, portal sites, e-learning programs and other means to disseminate the policy and educate employees.

In this context, JSW Group has focused on health and safety activities and harassment prevention, with the primary aim of ensuring that each and every employee can perform their work in a healthy and pleasant environment where they are respected as individuals and their human rights are not violated. We have established internal and external consultation hotlines and a resolution process through the Harassment Countermeasures Committee. We conduct fair hiring practices that respect the human rights of all individuals, and have also established systems that support a favorable work-life balance, foster a workplace environment that is inclusive of diverse personnel, and strive to provide equal opportunities so that individuals can excel.

In building our supply chain, we request, as appropriate, that suppliers understand and respect human rights and comply with relevant laws and regulations. In an effort to build human rights due diligence, we began conducting CSR Procurement Survey in fiscal 2023.

Recognizing that its business activities are extremely vast in terms of the fields covered, involving a wide variety of individuals, JSW Group will engage in dialogue with labor unions and all other stakeholders, set priorities and address them appropriately, and step up the monitoring of human-rights-related risks to prevent any direct or indirect negative impacts on human rights. For details concerning The Japan Steel Works Group Human Rights Policy, please refer to our website.

The Japan Steel Works Group Human Rights Policy, please refer to our website.
Respect for human rights:
https://www.jsw.co.jp/en/sustainability/social/diversity.html

Local Communities

The Group believes that companies are members of society, and that they progress in collaboration with various communities, including local communities. In addition to contributing to society through its business, JSW Group also engages in socially responsible activities with the aim of realizing a better society and becoming a company that is rooted in the local community. Please refer to our website for details regarding the activities we engage in, such as cleanups, education, and community exchange.

Social Contribution Activities: https://www.jsw.co.jp/en/sustainability/social/socialcontribution.html



Work experience activities



Sponsor and exhibitor at Hiroshima Skill Fair

Supply Chain Management

Our Perspective and Basic Procurement Policy

JSW Group has established The Japan Steel Works Group Standards of Business Conduct, which states, among other things, that the Group will respect the human rights of all people, conduct business transactions properly as based on fair and free competition, and engage in responsible procurement. In September 2022, The Japan Steel Works Group Human Rights Policy was established to promote respect for human rights in accordance with international norms. Furthermore, in September 2022, we revised the existing The Japan Steel Works Group Basic Procurement Policy to have our suppliers achieve an understanding of and cooperate with the above standards and policies, and to facilitate product procurement that takes into consideration matters such as human rights, labor, health and safety, the environment, and information management in a manner consistent with the move toward a sustainable society. We also formulated our Request to Business Partners, a document that outlines the specifics regarding our vision of how we hope suppliers conduct business. The Japan Steel Works Group Policies and Request to Business Partners are published on our website, and we are requesting confirmation of agreement.

Going forward, we will work to comprehensively disseminate these Policies and Request, strive to monitor the sustainability initiatives of our major suppliers, conduct dialogue and other interactions with suppliers as needed, and continue to strengthen our supply chain risk management and its sustainability. To ensure that all suppliers in our supply chain can continue to play indispensable roles within society, we will share with them the Group's policies and work together to promote sustainable procurement practices that sustain sound growth together through our business dealings.

For details concerning The Japan Steel Works Group Basic Procurement Policy and Request to Business Partners, please refer to our website.
Supply Chain: https://www.jsw.co.jp/en/sustainability/social/supplychain.html

Supplier Survey

Since fiscal 2023, we have been soliciting participation in a CSR Procurement Survey of our major suppliers, to monitor the status of their sustainability initiatives. The survey is divided into nine major sections, based on such themes as Request to Business Partners and The Ten Principles of the UN Global Compact. Representative survey topics include child labor and forced labor prevention (Labor), respect for human rights and discrimination prevention (Human Rights), and initiatives to prohibit conflict minerals (Supply Chain). In addition, in conjunction with soliciting response to the CSR Procurement Survey, we also request that suppliers confirm their agreement with The Japan Steel Works Group Human Rights Policy, The Japan Steel Works Group Basic Procurement Policy, and Request to Business Partners.

Suppliers whose response was requested to the CSR Procurement Survey for fiscal 2023 were selected based on the actual value of procurement made by each of the Group's major manufacturing locations. We are currently collecting the survey responses. Once we have completed this process, we will analyze the responses and provide feedback to suppliers. If our analysis reveals the presence of high-risk challenges, we will seek to grasp the actual situation in more detail and encourage improvement through dialogue with suppliers.

Beginning with the next fiscal year, we will strive to establish a periodic survey system, updating its content as needed based on our analyses and the latest social trends.

CSR Procurement Survey Items

1. Corporate Governance Relating to CSR
2. Human Rights
3. Labor
4. Environment
5. Fair Corporate Activities
6. Product Quality and Safety
7. Information Security
8. Supply Chain
9. Co-existence with Local Communities

Survey System (first-time initiatives in parentheses)

1. Initiative request
(In 2022, published The Japan Steel Works Group Human Rights Policy, The Japan Steel Works Group Basic Procurement Policy, and Request to Business Partners on our website)

↓

2. Monitoring status of initiatives
(In 2023, requested response to CSR Procurement Survey from major suppliers. Responses currently being collected)

↓

3. Analysis of initiatives
(Planned)

↓

4. Feedback to suppliers
(Planned)

Corporate Governance

Basic Approach

Based on our Philosophy and the Standards of Business Conduct, the Group recognizes that it is essential to earn the trust of all stakeholders, including shareholders, customers, business partners and employees, in order to simultaneously create social value and enhance sustainable corporate value. We therefore continue to strengthen corporate governance to ensure the transparency, soundness and effectiveness of management.

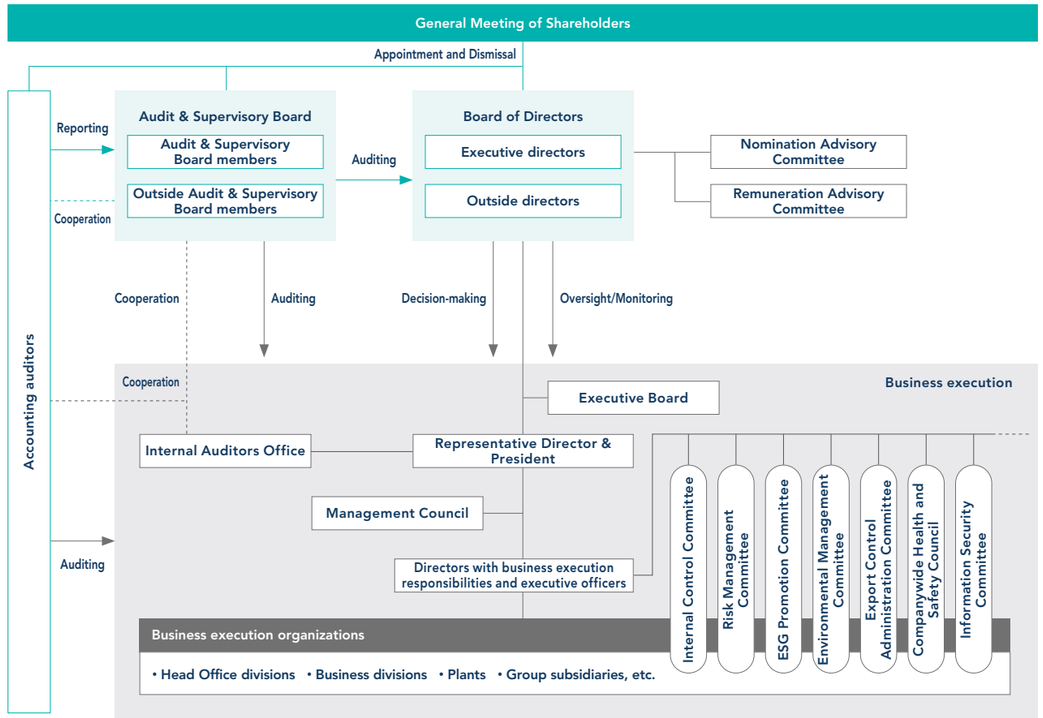
Overview of Corporate Governance Structure

The Japan Steel Works, Ltd. ("the Company") has adopted the structure of a company with an audit and supervisory board. The Board of Directors consists of nine directors (four of whom are outside directors) and the Audit & Supervisory Board consists of four Audit & Supervisory Board members (two of whom are outside Audit & Supervisory Board members).

The term of office for directors is set at one year. The Company has also introduced an executive officer system that separates management decision-making and supervisory functions from business execution functions conducted by executive officers, thereby speeding up decision-making, strengthening supervision and improving business execution. Since April 1, 2023, the Company has implemented a system that, in principle, ensures that in the case of head office divisions directors and executive officers, and for business divisions executive officers and other employees, are each responsible for oversight and business execution for the tasks they are delegated or assigned by the Board of Directors. This clearly delineates business execution of the business divisions from supervision by the Board of Directors.

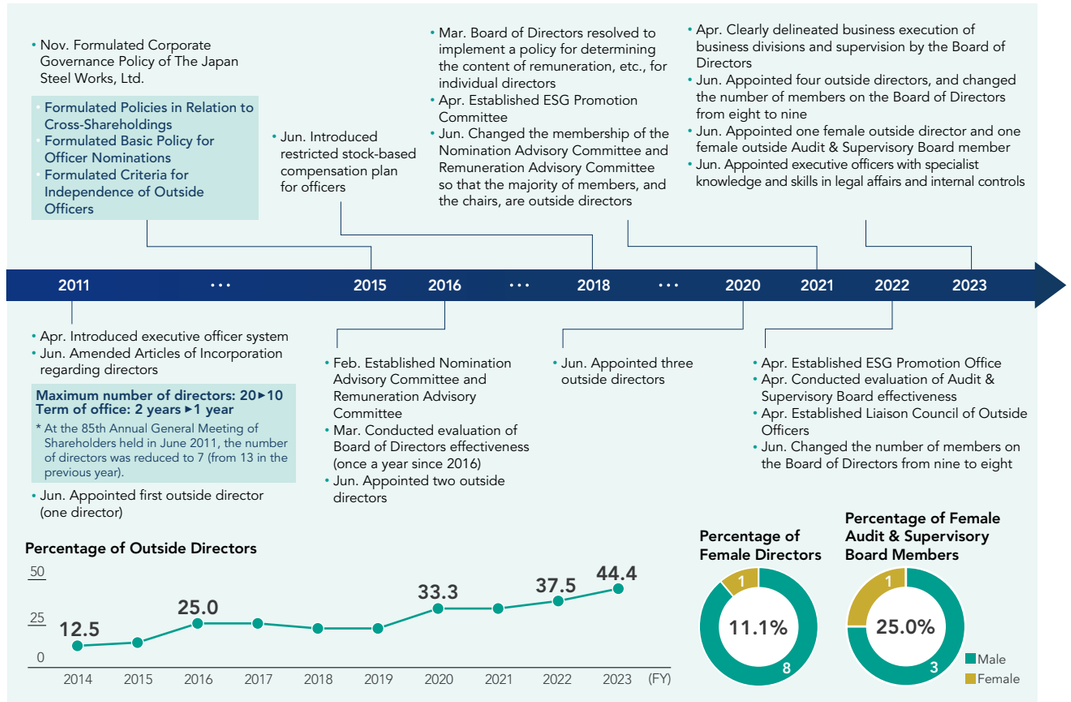
Audit & Supervisory Board members attend important meetings including those of the Board of Directors, the Executive Board and the Management Council. Once every fiscal half in principle they visit plants, sales locations and Group companies, and receive reports on necessary information from each division. They also exchange opinions with directors, executive officers and other keypersons, and based on these exchanges, advise management from an objective and impartial standpoint, while strictly monitoring the execution of duties by directors.

Corporate Governance Structure



* The Liaison Council of Outside Officers was established as a venue to provide outside officers with advance explanations about the agenda for Board of Directors meetings, and as a forum for outside directors and executive officers to verify, report on, and exchange opinions about business execution.

Building a Stronger Governance System



Role and Composition of Governance Bodies

		Board of Directors	Executive Board	Remuneration Advisory Committee	Nomination Advisory Committee
Composition	Attendees (with voting right)	Directors (5 inside, 4 outside)	Inside directors (5) Non-director executive officers (5)	President (1) Director in charge of Personnel Department and Secretary Office (1) Outside directors (4)	
	Observers/ Advisors (no voting rights)	Audit & Supervisory Board members (2 inside, 2 outside)	Inside Audit & Supervisory Board member (1)	–	
	Chairperson/ Committee Chair	President	President	Outside director	
Objectives and Areas of Authority		Decides and reports on basic management policies, matters stipulated by laws and regulations, and other important management matters, and monitors the execution of duties by directors and executive officers	• Deliberates and decides on important management matters and matters that have a significant impact on the Company's profit and loss • Discusses and reports on basic management policies and matters relating to overall management	As an advisory body to the Board of Directors, deliberates on matters relating to the remuneration of directors and executive officers, and reports the results to the Board of Directors	• As an advisory body to the Board of Directors, deliberates on matters relating to the nomination and dismissal of directors, Audit & Supervisory Board members and executive officers, and reports the results to the Board of Directors • Consult on the succession planning for the president, and report the results to the Board of Directors
Meetings in FY2022		18	39	4	3

		Management Council	Audit & Supervisory Board	Liaison Council of Outside Officers
Composition	Attendees	Inside directors (5) Inside Audit & Supervisory Board members (2) Non-director executive officers (5) Business division directors and business division deputy directors, general plant managers, Head Office division managers	Audit & Supervisory Board members (2 inside, 2 outside)	Directors (3 inside, 4 outside) Audit & Supervisory Board members (2 inside, 2 outside)
	Chairperson	President	Inside Audit & Supervisory Board member	President
Objectives and Areas of Authority		Coordinates and reports on the following important management matters and shares management information 1. Analysis of business environment, progress of business plans 2. Important matters relating to research and development 3. Matters relating to Group companies 4. Matters that have a significant impact on management including those relating to sales, production, funding, profit and loss 5. Other important management matters	Reports, discusses and makes resolutions on important matters relating to auditing; this does not preclude the exercise of individual Audit & Supervisory Board members' authority	Advance explanation of the resolution matters and deliberation matters of the Board of Directors, and report on the status of operations and important management matters of the Company and the Group
Meetings in FY2022		12	13	12

Major Matters Discussed at the Board of Directors Meetings in FY2022

- Medium-term management plan JGP2025
- Evaluation of the effectiveness of the Board of Directors
- Agreement with the TCFD's recommendations and disclosure of information
- Business portfolio
- Review of the rationality of cross-shareholdings
- Digital Transformation Promotion
- Measures to prevent recurrence of inappropriate conduct
- Feedback on IR/SR activities
- Formulation of the Purpose
- Report on the status of compliance line operations
- Executive structure
- R&D Framework
- Quality Control Framework
- Talent development strategy
- Identification of Materiality
- Status of operations of internal control systems
- Risk Management

Skill Matrix

We identified six issues (i.e., Materiality) as themes that should be prioritized in order to realize our Purpose at the Board of Directors meeting in November 2022. After verifying the importance of the Materiality identified, we selected the skills needed to implement effective management initiatives aimed at resolving these issues.

Moreover, during the selection of candidates for roles as directors or Audit & Supervisory Board members at the Annual General Meeting of Shareholders held in June 2023, with consideration to responding to inappropriate conduct—and preventing its recurrence—we increased and strengthened human resources with skills and knowledge in the areas of legal affairs and internal controls. We also undertook a partial revision of quality-related skills, separating the previous category of "Manufacturing, Quality Control, Technology and R&D" into two: "Quality" and "Manufacturing, Technology and R&D."

For information on the skill matrix, please refer to p. 54-55.

Reasons for Appointment of Outside Directors

JSW believes that the function and role of outside directors in corporate governance is to strictly supervise the execution of duties by directors and to make management judgments and decision-making from a neutral and objective standpoint with no conflict of interest with the Company, and from an independent standpoint with no risk of conflict of interest with general shareholders. To that end, the Company has appointed four outside directors.

The roles expected of outside directors are stipulated in the Corporate Governance Policy.

▶For information on the Corporate Governance Policy of The Japan Steel Works, Ltd., please refer to the following.
https://www.jsw.co.jp/pdf/sustainability/governance/governance/GovernancePolicy_en.pdf

Succession Planning for the President and Procedures for Appointment and Dismissal

1 Formulation and Implementation of Succession Plan for the President

With respect to the formulation and implementation of the succession plan for the president, the Nomination Advisory Committee holds appropriate discussions, considering the qualities of the candidate, such as experience, ability and character, based on the corporate philosophy of JSW Group and management strategies, and reports to the Board of Directors as necessary.

2 Appointment Criteria and Procedures

The appointment of the president is decided by the Board of Directors after receiving a report from the Nomination Advisory Committee based on the succession plan.

3 Dismissal Criteria and Procedures

Dismissal of the president is decided by the Board of Directors if circumstances make it difficult for the president to carry out his or her duties, or if his or her suitability comes into question, after receiving this recommendation from the Nomination Advisory Committee.

Evaluation of Board of Directors' Effectiveness

The Board of Directors continues to enhance its functions by conducting an annual questionnaire-based analysis and evaluation. The following is a summary of the analysis and evaluation for fiscal 2022.

1 Analysis and Evaluation Methodology

(1) During February 2023, an anonymous questionnaire was administered to all directors and Audit & Supervisory Board members. As well as reorganizing and revising the questions of the questionnaire around strengthening monitoring functions, we plan to identify issues from the comments we receive, and so we increased the number of open-ended questions. The planning of the subjects covered and the collection and tabulation of the survey results were outsourced to a third-party organization.

(2) The Board of Directors Secretariat compared the results of the questionnaire with previous evaluations, and recompiled and analyzed the results, including identifying subjects given low evaluations and extracting important comments from the open-ended responses. In addition, the secretariat compiled and analyzed data on discussion times in fiscal 2022 and verified differences between annual activity plans and actual results.

(3) At the April and May 2023 Board of Directors meetings, the board discussed its effectiveness from the perspective of improving the medium-to-long-term corporate value of the entire Group, based on the compiled results of the questionnaire, the re-tabulation and analysis of those results by the Board of Directors Secretariat, and advice from a third-party organization.

Questionnaire content
- I. Purpose of the Board of Directors
- II. Composition, discussion, and monitoring functions of the Board of Directors
- III. Performance of inside and outside directors
- IV. Management of the Nomination Advisory Committee and Remuneration Advisory Committee
- V. Miscellaneous (pertaining to the Board of Directors in general)

2 Results of the FY2021 Analysis and Evaluation Results and an Overview of the Resultant FY2022 Initiatives

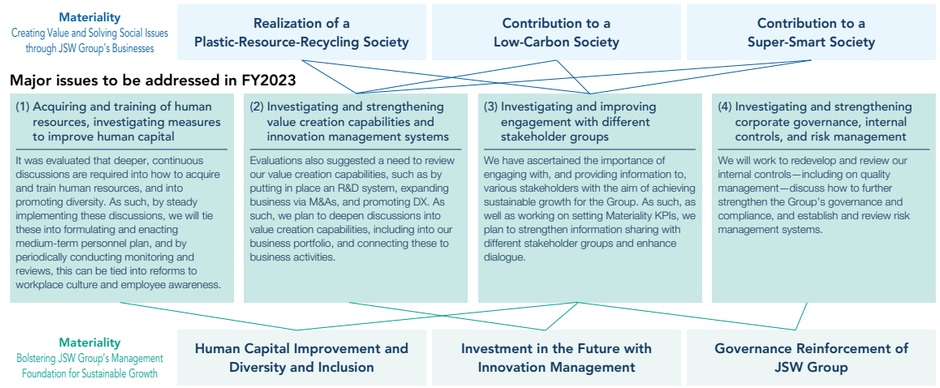
In response to the three issues identified in the fiscal 2021 effectiveness evaluation, the Board of Directors proceeded forward with the following actions in fiscal 2022. As a result, the effectiveness evaluation for fiscal 2022 confirmed that improvements have been steadily made for each of the issues and that effectiveness has been generally ensured.

Issues identified in FY2021	FY2022 initiatives
Deeper discussions at the Board of Directors meetings to work toward sustainable growth for the Group	(1) We systematically provided multiple opportunities for discussions, and made decisions on TCFD-related disclosure, the formulation of the Purpose, and identifying Materiality. (2) During discussions on important topics such as the business portfolio and the R&D system (including the establishment of the Innovation Management Headquarters), there were repeated deliberations about the approach the Group should take to achieve sustainable growth.
Close scrutiny of the progress being made by the medium-term management plan JGP2025 amid changes in the business environment	(1) As the business environment undergoes dramatic changes, in order to adjust the medium-term management plan as necessary, we looked carefully at the progress of business-specific strategies in Q1. (2) When discussing individual resolutions (important investments, etc.), members exchanged opinions with a focus on the next medium-term management plan.
Upgrading of risk management that includes a review of the quality control system	(1) Responding to the inappropriate conduct, and preventing recurrence, has been set as a highest-level priority, and a company-wide quality assurance system. (2) We have developed a mechanism (the Liaison Council of Outside Officers) to reflect the opinions of outside officers in agenda items put before the Board of Directors. We have also worked to improve awareness and sensitivity toward risk-taking, and while not perfect some progress has been made.

Governance initiatives related to our response to the inappropriate conduct
For the 97th Annual General Meeting of Shareholders held in June 2023, we strove to provide shareholders with information to help guide them in exercising their voting rights with due care in advance (publishing information on the website, by posting out letters, etc.).

3 Future Initiatives Based on the FY2022 Analysis and Evaluation Results

Based on the fiscal 2022 effectiveness evaluation and the Group's Materiality, we identified the following as major issues to be addressed in fiscal 2023.



Evaluation of the Audit & Supervisory Board's Effectiveness

The Audit & Supervisory Board evaluates its own effectiveness so as to clarify areas of its activities that require consideration or improvement. These are then reflected in audit plans for the following fiscal year. By doing so, the board aims to improve the quality of its audits and its effectiveness overall.

As part of the evaluation, the four Audit & Supervisory Board members, the president, one outside director, and the general manager of the Internal Auditors Office, answer a questionnaire about the effectiveness of the board's responsibilities, composition, and operations; Group audits; interaction with the Board of Directors; its three-way audits; and internal controls.

The evaluation for fiscal 2022 showed that improvements had been made in areas identified in the previous fiscal year as needing improvement namely, (1) greater diversity in the selection of Audit & Supervisory Board members, (2) cooperation with outside directors, (3) cooperation with the Internal Auditors Office, and (4) involvement in company-wide risk management—and was determined to be largely carrying out its auditing activities appropriately and functioning effectively. The following four areas of improvement were identified for the following fiscal year: (1) more effective operations through a more suitable composition for the Audit & Supervisory Board, (2) stronger cooperation with auditors at subsidiaries for better Group governance, (3) opportunities for periodic discussions with outside directors, and (4) enhanced auditing with regards to company-wide risk management activities and compliance.

To reflect these, the fiscal 2023 auditing policy that the board follows in its auditing activities is as follows: (1) carrying out audits of the Group's internal controls from the perspective of Group governance; (2) auditing the status of appropriate risk controls, that follow the three lines of defense model, in company-wide risk management activities; and (3) placing greater importance on internal controls audits during the fiscal year and year-end follow-up audits to achieve more effective auditing activities.

Officers' Remuneration

The Company's policy for determining the directors' remuneration (the "policy for determining") was resolved at the Board of Directors meeting held on March 16, 2021, and was partially revised at the Board of Directors meeting held on March 23, 2022, with the aim of improving incentives for achieving the medium-term management plan JGP2025. In accordance with the revision, the Company revised a part of the officers' remuneration system, focusing on the evaluation method related to variable remuneration.

(Outline of the revision of the policy for determining and review of the officers' remuneration system)
As a result of the revision of the policy for determining and the review of the officers' remuneration system, the variable remuneration portion of annual remuneration, which previously consisted solely of remuneration linked to divisional performance and results, was partially changed to be linked to company-wide performance. In addition to this move to clarify the responsibility all inside directors hold for company-wide performance, the portion of the bonus evaluation linked to dividends was changed to reflect individual performance results. The percentage of fixed remuneration was reduced for representative directors. These changes were designed to increase performance-linked incentives.

1 Basic Policy for Directors' Remuneration

The maximum amount of directors' remuneration is decided by resolution of the General Meeting of Shareholders. The basic policy is to set remuneration that provides sound incentives for sustainably enhancing corporate value, at a level corresponding to respective roles and responsibilities, and that ensures fairness and transparency in remuneration-related decision processes.

2 Procedures for Determining Directors' Remuneration

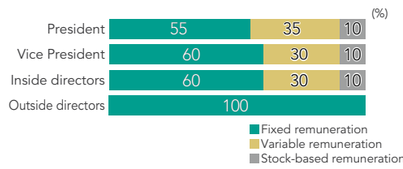
The directors' remuneration is determined by the Board of Directors after receiving a report from the Remuneration Advisory Committee. However, the allocation of annual remuneration by position and by individual and the allocation of bonuses by individual may be delegated to the president by resolution of the Board of Directors.
In this case, the president makes decisions in accordance with the content of the report.

3 Composition of Directors' Remuneration

The composition and percentage breakdown of directors' remuneration are as follows

(1) Representative director & president and representative director & executive vice president
The composition shall be annual remuneration ((1) base portion, (2) company-wide performance-linked portion) and stock-based remuneration.
The president's remuneration comprises an approximate 55:35:10 ratio of fixed remuneration ((1) base portion): variable remuneration ((2) company-wide performance-linked portion): stock-based remuneration. For the vice president, the approximate ratio is 60:30:10 of fixed remuneration ((1) base portion): variable remuneration ((2) company-wide performance-linked portion): stock-based remuneration.

(2) Inside directors
The composition shall be annual remuneration ((1) base portion, (2) company-wide performance-linked portion, (3) divisional performance/results-linked portion), bonuses, and stock-based remuneration.
The approximate ratio of fixed remuneration ((1) base portion) to variable remuneration ((2) company-wide performance-linked portion, (3) divisional performance/results-linked portion, and bonus) to stock-based remuneration is 60:30:10.



(3) Outside directors
Outside directors, who are responsible for supervisory functions, shall be paid only fixed remuneration (base portion of annual remuneration) in consideration of their independence from management, objectivity, and in light of their supervisory duties, which include mutual checks on directors.

4 Matters Relating to the Method of Calculation of Directors' Remuneration, Etc.

The summary of each type of remuneration is as follows. Variable remuneration is calculated by comparing actual performance against the consolidated operating income, net profit attributable to shareholders of the parent company, and other indicators set forth in JGP2025 as targets for fiscal 2022, and multiplying the percentage of achievement by the base amount of remuneration for each position.

(1) Annual remuneration

1) Base portion
The base portion is fixed remuneration determined on the basis of the particular position and the number of years the position has been held by the individual.

2) Company-wide performance-linked portion
The company-wide performance-linked portion is variable remuneration that is determined on the basis of consolidated performance during each fiscal year. It consists of a net profit attributable to shareholders of the parent company and a consolidated operating income portion.
This indicator was selected because of its importance in terms of indicating how performance directly links to the company-wide performance targets in the medium-term management plan.

3) Divisional performance- and results-linked portion
The portion linked to divisional performance and results is determined as variable remuneration based on the performance evaluation of the division for which the director is in charge.

(2) Bonuses
Bonuses are variable remuneration determined on the basis of the performance evaluation of the division for which the director is in charge and the performance results of each individual.
The ratio of the performance evaluation portion for each division and the performance evaluation portion for each individual is 50:50.
However, directors in charge of head office divisions receive only the individual performance portion.

(3) Stock-based remuneration
Stock-based remuneration is granted in the form of restricted transferable shares as remuneration for the purpose of providing medium-to-long-term incentives to increase corporate value and to further the sharing of value with shareholders. The number of shares to be allocated shall be the number of shares obtained by dividing the standard amount by position according to the director's position by the closing price of the Company's shares on the Tokyo Stock Exchange on the day before the date of resolution by the Board of Directors regarding the execution of the restricted stock remuneration allocation agreement. Moreover, in consideration of the period of time it takes management measures to contribute to business performance, the restricted transfer period is five years in accordance with the five-year length of the medium-term management plan JGP2025.

5 Remuneration for Audit & Supervisory Board Members, Etc.

The remuneration of each Audit & Supervisory Board member shall consist only of fixed remuneration (base portion of annual remuneration) from the viewpoint of emphasizing independence and objectivity with respect to management.

Group Governance

JSW Group consists of The Japan Steel Works, Ltd. and 45 subsidiaries (33 consolidated, 12 non-consolidated). The Group operates the Industrial Machinery Products Business, Material and Engineering Business, and other businesses in Japan and around the world.

For Group companies, the JSW business division with primary responsibility leads the formulation of management policies and short- and medium-term management plans, and monitors their progress. In order to enhance the effectiveness of these efforts, we assign full-time or part-time directors or Audit & Supervisory Board members with the responsibility of supervising and auditing the execution of duties at Group companies, in principle, thereby ensuring that the execution of duties by directors, etc., and employees at Group companies comply with laws and regulations and the Articles of Incorporation. In addition, regarding risks relating to specific functions, such as health and safety, environmental management, and export control administration, each Group company participates in the various committees formed by the relevant divisions of the Company, or follows the regulations developed by the Company, and appropriately manages these risks.

Each company in the Group also appoints individuals to be in charge of general affairs, accounting, and IT matters related to internal control. The appointed individuals receive guidance and training from the Internal Control Committee Office and conduct self-assessment of implementation and operation of internal control in step with risk assessment.
The status and results of the self-assessment of internal control operations are reported to the Office and each company.
In response, the Internal Audit Division of the Company, which also serves as the Office of the Internal Control Committee, monitors the governance and risk management status of each company by directly or indirectly auditing the status of each company and the methods and results of self-assessments.

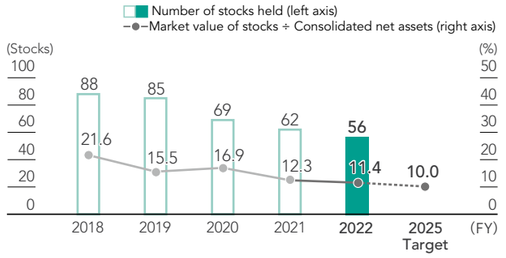
With regard to internal control over quality assurance processes at Japan Steel Works M&E, Inc., the Company is promptly implementing its reorganization, including organizational reforms to strengthen mutual checks and balances among divisions and eliminate the concentration of authority, moving ahead with operations and assessments under the guidance and management of the Company.

Cross-Shareholdings

1	**Policy on Cross-Shareholdings**	The Company holds shares that it judges, through regular confirmation and review, to be necessary for policy purposes, and that contribute to the Company's businesses over the medium to long term in ways such as maintaining and strengthening sound, ongoing relationships with business partners, forming business alliances, and supporting the sound development of investee companies.
2	**Regular Confirmation and Review of Shareholdings**	Each year, the Company confirms the purpose of individual cross-shareholdings and current transaction status, etc., and the Board of Directors verifies whether shareholdings are appropriate by comprehensively considering the significance and purpose of the Company's acquisition and holding of the shares, as well as the safety, profitability, economic viability, risks and other factors associated with the shareholdings.
3	**Policy on Exercise of Voting Rights**	The Company makes decisions on the exercise of voting rights based on factors including the business conditions of the investee company and its business relationship with the Company, having confirmed the details of each proposal from the standpoint of increasing the investee company's corporate value over the medium to long term and fulfilling that company's social responsibilities.

Status of Holdings

Number of listed and unlisted stocks held; Market value of cross-shareholdings on balance sheet ÷ Consolidated net assets



Based on the Corporate Governance Policy of The Japan Steel Works, Ltd., we regularly confirm and review the significance of our policy cross-shareholdings, and we are gradually selling shares whose significance has diminished.

In addition, setting forth in our medium-term management plan JGP2025 the financial strategy of ensuring an appropriate balance between investment in growth and shareholder returns in order to sustainably increase corporate value, the Company plans to reduce its cross-shareholdings to less than 10% of net assets by the end of fiscal 2024, and to allocate the funds obtained from the sale of cross-shareholdings into areas such as investment growth and shareholder returns.

Management Team (As of June 30, 2023)

Directors / Audit & Supervisory Board Members



Toshio Matsuo
Representative Director & President

Apr. 1984 Joined the Company
Apr. 2013 Deputy General Plant Manager, Hiroshima Plant
Apr. 2015 General Plant Manager, Hiroshima Plant
Apr. 2016 Executive Officer
Apr. 2017 Managing Executive Officer; Director of Injection Molding Machinery Business Division; In charge of Hiroshima Plant
Jun. 2017 Director & Managing Executive Officer
Apr. 2020 Representative Director & Executive Vice President; In charge of Export Control Administration; In charge of Plastics Machinery Business Division, Injection Molding Machinery Business Division, Industrial Machinery Business Division; In charge of Meiki Plant
Apr. 2021 In charge of Ordnance Business Headquarters;
In charge of Business Development Office; In charge of Hiroshima Plant and Yokohama Plant
Apr. 2022 Representative Director & President (current position)



Junichiro Deguchi
Representative Director & Executive Vice President

Apr. 1981 Joined the Company
Apr. 2013 Deputy General Plant Manager, Muroran Plant
Apr. 2015 Executive Officer; Deputy Director of Steel Business Division
Oct. 2017 General Manager, Personnel Department
Apr. 2018 In charge of CSR & Risk Management (current position); In charge of Export Control Administration; In charge of Health & Safety Management; In charge of Environmental Management (current position); In charge of Secretary Office and General Affairs Department
Jun. 2018 Director & Executive Officer
Jul. 2018 In charge of General Affairs Department (current position); General Manager, Secretary Office
Apr. 2019 Director & Managing Executive Officer
Apr. 2020 Chief Information Security Officer; In charge of Office of Information Technology; In charge of Personnel Department
Apr. 2021 In charge of Promoting ESG (current position)
Apr. 2022 Representative Director & Executive Vice President (current position); In charge of Export Control Administration (current position); In charge of Personnel Department
Jun. 2022 In charge of Material and Engineering Products Business (current position)



Hiroki Kikuchi
Director & Managing Executive Officer

Apr. 1985 Joined Mitsui Bank (currently Sumitomo Mitsui Banking Corporation)
Apr. 2012 General Manager, Nihonbashi-higashi Corporate Business Office, Sumitomo Mitsui Banking Corporation
Apr. 2015 Joined the Company
Jul. 2015 General Manager, General Affairs Department
Apr. 2016 General Manager, Secretary Office
Apr. 2018 Executive Officer
Jul. 2018 General Manager, Corporate Planning Office (current position)
Apr. 2020 Chief Financial Officer (current position), In charge of Finance & Accounting Department (current position); General Manager, Business Development Office
Jun. 2020 Director & Executive Officer
Apr. 2021 Director & Managing Executive Officer (current position)
Apr. 2022 In charge of Plastics Machinery Business Division, Injection Molding Machinery Business Division, Industrial Machinery Business Division and Ordnance Business Headquarters; In charge of Business Development Office
Apr. 2023 General Manager, Business Development Office (current position)



Shigeki Inoue
Director & Managing Executive Officer

Apr. 1986 Joined the Company
Apr. 2015 Deputy General Plant Manager, Hiroshima Plant
Apr. 2017 General Plant Manager,
Hiroshima Plant
Apr. 2018 Executive Officer
Apr. 2021 Managing Executive Officer; Director of Industrial Machinery Business Division, General Manager, Business Development Office
Apr. 2022 Chief Technology Officer (current position); In charge of Quality Management (current position); In charge of Intellectual Property Department (current position); In charge of Yokohama Plant
Jun. 2022 Director & Managing Executive Officer (current position)
Sep. 2022 General Manager, Quality Management Office (current position)
Apr. 2023 In charge of New Business Promotion Headquarters (current position); General Manager, Innovation Management Headquarters (current position)



Motoyuki Shibata
Director & Executive Officer

Apr. 1986 Joined the Company
Jun. 2015 Deputy General Plant Manager, Hiroshima Plant
Apr. 2018 General Manager, Finance & Accounting Department
Apr. 2020 Director, Japan Steel Works M&E, Inc. General Manager, Business Promotion Office
Apr. 2022 Executive Officer, the Company; In charge of Export Control Administration (current position); General Manager, Personnel Department (current position)
Apr. 2023 In charge of Health & Safety Management (current position)
Jun. 2023 Director & Executive Officer (current position)



Yoshiyuki Nakanishi
Director

Apr. 1978 Joined Dainippon Ink and Chemicals, Incorporated (currently DIC Corporation)
Apr. 2010 Executive Officer, DIC Corporation
Jun. 2011 Director and Executive Officer, DIC Corporation
Apr. 2012 Representative Director, President and CEO, DIC Corporation (retired in December 2017)
Jan. 2018 Chairman of the Board of Directors, DIC Corporation (retired in January 2021)
Jun. 2020 Director, the Company (current position)
Jun. 2020 Outside Director, IHI Corporation (current position)
Jan. 2021 Director, DIC Corporation (retired in March 2021)
Mar. 2021 Executive Advisor, DIC Corporation (retired in March 2023)
Jun. 2021 Outside Director, Shimadzu Corporation (current position)



Hisao Mitsui
Director

Apr. 1978 Joined Kao Soap Co., Ltd. (currently Kao Corporation)
Jun. 2006 Executive Officer, Kao Corporation
Jun. 2010 Director and Executive Officer, Kao Corporation
Jun. 2012 Director and Managing Executive Officer, Kao Corporation (retired in March 2014)
Apr. 2015 Auditor, National Institute of Technology and Evaluation (retired in June 2019)
Jun. 2020 Director, the Company (current position)
Jun. 2020 Outside Auditor, LiveDo Corporation (current position)



Yasuyuki Kuriki
Director

Apr. 1979 Joined Tokyo Electron Ltd.
Apr. 1999 Executive Officer, Tokyo Electron Ltd. (retired in March 2005)
Apr. 2005 President & Representative Director, Tokyo Electron Korea Ltd. (retired in May 2010)
Jun. 2010 President & Representative Director, TOKYO ELECTRON DEVICE LIMITED (retired in December 2014)
Jan. 2015 Corporate Director, TOKYO ELECTRON DEVICE LIMITED (retired in June 2015)
Jul. 2015 Representative Chairman, Tokyo Electron Korea Ltd. (retired in June 2018)
Jul. 2018 Chairman, Tokyo Electron Korea Ltd. (retired in June 2019)
Jul. 2019 Senior Advisor, Tokyo Electron Korea Ltd. (retired in March 2020)
Jun. 2023 Director, the Company (current position)



Junko Kawamura
Director

Apr. 1979 Joined the Ministry of Education (currently Ministry of Education, Culture, Sports, Science and Technology, Japan)
Aug. 1988 Councilor, Legislative Bureau of the House of Representatives
Apr. 2006 Board Member, National Institute of Technology
Jul. 2008 Director of Private Education Institution Department, Higher Education Bureau, Ministry of Education, Culture, Sports, Science and Technology
Sep. 2011 General Manager, Department of Facilities Planning, Minister's Secretariat, Ministry of Education, Culture, Sports, Science and Technology
Jan. 2012 Deputy Commissioner, Agency for Cultural Affairs
Jul. 2014 Director-General, Lifelong Learning Policy Bureau, Ministry of Education, Culture, Sports, Science and Technology
Jan. 2016 Director General, National Institute for Educational Policy Research
Jun. 2016 Counsellor, Cabinet Secretariat (retired in September 2017)
Apr. 2018 President, Japan Arts Council (retired in March 2023)
Jun. 2023 Director, the Company (current position)



Shingo Mito
Audit & Supervisory Board Member (Full-Time)

Apr. 1984 Joined the Company
Jul. 2006 General Manager, Personnel Department
Jul. 2011 Deputy General Plant Manager, Hiroshima Plant
Apr. 2014 Deputy Director of Machinery Business Division
Apr. 2016 Deputy Director of Research and Development Headquarters
Apr. 2017 Executive Officer
Oct. 2017 Deputy Director of New Business Promotion Headquarters
Apr. 2021 Director of New Business Promotion Headquarters
Jun. 2021 Director & Executive Officer
Apr. 2022 Director & Managing Executive Officer
Apr. 2023 Director, the Company
Jun. 2023 Audit & Supervisory Board Member (Full-Time) (current position)



Hiroyuki Shimizu
Audit & Supervisory Board Member (Full-Time)

Apr. 1984 Joined the Company
Oct. 1998 Houston Office Manager
Jun. 2008 Nagoya Branch Manager
Sep. 2015 Deputy General Manager, Corporate Planning Office
Apr. 2017 Kansai Branch Manager
Apr. 2019 Deputy Director of Machinery Business Division (Sales Management Supervisor)
Apr. 2020 Representative Director, President and CEO of GM Engineering Co., Ltd.
Jun. 2022 Audit & Supervisory Board Member (Full-Time) (current position)



Hiroshi Misawa
Audit & Supervisory Board Member

Apr. 1981 Joined The Mitsui Trust and Banking Company, Ltd. (currently Sumitomo Mitsui Trust Bank, Limited)
Jul. 2008 Executive Officer, Chuo Mitsui Asset Trust and Banking Company, Limited. (currently Sumitomo Mitsui Trust Bank, Limited)
Feb. 2011 Managing Executive Officer, Chuo Mitsui Asset Trust and Banking Company, Limited.
Apr. 2012 Managing Executive Officer, Sumitomo Mitsui Trust Bank, Limited
Jul. 2012 Advisor, Sumitomo Mitsui Trust Bank, Limited (retired in September 2012)
Oct. 2012 Director and Vice President, Sumitomo Mitsui Trust Asset Management Co., Ltd. (retired in March 2016)
Apr. 2016 Audit & Supervisory Board Member, Sumitomo Mitsui Trust Bank, Limited (retired in March 2017)
Apr. 2017 Advisor, Sumitomo Mitsui Trust Bank, Limited (retired in June 2017)
Jun. 2017 Deputy Chairman of the Board of Directors, Director and Audit & Supervisory Committee Member, Sumitomo Mitsui Trust Holdings, Inc. (retired in June 2019)
Jun. 2019 Audit & Supervisory Board Member, Sumitomo Mitsui Trust Business Service Co., Ltd. (retired in March 2021)
Jun. 2020 Audit & Supervisory Board Member, the Company (current position)
Apr. 2021 Advisor, Sumitomo Mitsui Trust Business Service Co., Ltd. (current position)



Saori Yamaguchi
Audit & Supervisory Board Member

Apr. 1982 Joined MITSUBISHI GAS CHEMICAL COMPANY, INC. (retired in July 1985)
Oct. 1986 Joined Tohmatsu Awoki & Sanwa (currently Deloitte Touche Tohmatsu LLC)
Aug. 1990 Registered as a Certified Public Accountant
Jun. 2005 Appointed Partner at Deloitte Touche Tohmatsu LLC (retired in December 2019)
Jan. 2009 Member of the Defense Equipment Procurement Council, Ministry of Defense (retired in December 2018)
Dec. 2019 Established Yamaguchi Saori Certified Public Accountant Firm
Representative (current position)
Jun. 2023 Audit & Supervisory Board Member, the Company (current position)

Number of shares of the Company held		21,778 shares	18,775 shares	11,570 shares	11,209 shares	4,327 shares	0 shares	461 shares	0 shares	0 shares	15,232 shares	2,961 shares	1,488 shares	0 shares
Record of attendance at Board of Directors meetings (FY2022)		100% (18/18)	100% (18/18)	100% (18/18)	100% (12/12)	—	100% (18/18)	100% (18/18)	—	—	100% (18/18)	100% (12/12)	100% (18/18)	—
Committee	Nomination Advisory Committee	○	○				○ (Chair)	○	○	○				
	Remuneration Advisory Committee	○	○				○ (Chair)	○	○	○				
Skill Matrix	Corporate Management and Governance	○	○	○			○	○	○				○	
	Finance and Accounting			○		○						○	○	○
	Legal Affairs, Internal Controls, and Risk Management		○	○			○			○			○	○
	Personnel, Labor Administration, and Human Capital		○			○	○			○	○		○	
	Information Systems and Digital Transformation								○				○	
	Sales and Marketing	○			○		○		○		○	○		
	Quality	○			○			○						
	Manufacturing, Technology, and R&D	○			○			○	○		○			
	Environment	○	○		○	○		○						

Executive Officers

Takashi Iwamoto
Managing Executive Officer

Seiji Umamoto
Managing Executive Officer

Shoji Nunoshita
Managing Executive Officer

Yoshitaka Sato
Executive Officer

Takeshi Shinmoto
Executive Officer

Masayuki Aoyama
Executive Officer

Message from an Outside Director

Expectations for Steady Reforms and Efforts Focused on Meeting Long-term Targets



Strengthen Our Governance System and Enhance Its Effectiveness

As an outside director, I recognize that my role is to monitor management, and so while ensuring I remain objective as I oversee the executive side (those in charge of business execution), I must also look at things from their perspective and be careful to neither watch on as a passive bystander nor to criticize needlessly. During communication with the executive side, I utilize my experiences from my own time in management and take care so that they can make use of my knowledge as an outside director. Also, throughout revisions to the Corporate Governance Code, we outside directors had more opportunities for direct dialogue, whether it be Q&A sessions at general meetings of shareholders or small meetings with investors. I think our role in this area is growing.

Three years have now passed since I was appointed back in 2020, and in that time the Company's governance structure has steadily been strengthened. In April 2022, the Liaison Council of Outside Officers was established. At its meetings, we receive advance explanations of items on the Board of Directors' agenda, and can check the content of discussions by the Executive Board and the Management Council. Then, in 2023, we went for a system that clearly separates oversight by the Board of Directors from business execution of business divisions. In the same year, we saw the Company appoint its first female outside director and outside Audit & Supervisory Committee member. As well as enhancing diversity, this change has resulted in four of the nine directors (44.4%) being outside directors, and as such the Board of Directors is shifting to more of a monitoring role.

On the other hand, if there is one issue that stands in the way of strengthening the effectiveness of the Board of Directors, it is a sense of urgency. I do feel that this is somewhat lacking when it comes to implementing the PDCA cycle for instructions and advice at the Board of Directors. We need to further strengthen monitoring if we are to speed up the "check" and "action" steps of the cycle. Another problem to address is strengthening Group governance at overseas subsidiaries. As overseas sales increase, governance at the subsidiaries will become increasingly important, and the Company will need a system in place that can lead the entire Group. Looking to the future, there is also a need for more full-on discussions into CEO succession plans. It is a topic that requires time, and one I hope we will cover properly.

Need for Steadfast Publicization of Reforms by Top Management

In response to the inappropriate conduct by one of our subsidiaries, Japan Steel Works M&E, with regard to product checks, JSW Group is working to ensure it does not happen again and these measures have been evaluated as appropriate. We are making steady progress, first with framework and system reforms, such as organizational changes and systemization. That said, the corporate culture is something that has taken root, formed as it was over many years of the Company's history. It is therefore not something that can be transformed overnight, but top management needs to continue promoting that message. President Matsuo is frequently visiting M&E and different plants, and we are working hard to take up opinions from those on the frontlines wherever possible.

The Group's plants have impressive frontline capabilities, and seem to have discretion in how they act. Firstly, M&E should have a sense of urgency in promoting reforms and rolling these out within the Group to other plants too, and I hope that through these and similar measures, the Group will continue to work on these in earnest. It is important that information on this progress is also communicated to stakeholders on a regular basis. I too will play my part in offering proper advice and oversight to management so that the Group can once again earn the trust of society as soon as possible.

Tackling Issues with an Eye on Long-term Targets

The Group has challenged itself, as an ideal for where it wants to be in 10 years' time, to achieve net sales of ¥500 billion in fiscal 2033. To achieve that I think that improving human capital and managing the business portfolio will be key points.

For the former, in addition to securing demographic diversity, we also need to secure task-based diversity so as to enhance the Group's strengths in R&D, marketing, and global expansion. In recent years, there has been greater recruitment of external experts or individuals with experience at other companies, and I hope that the Group will continue to actively push forward with this.

In the case of the latter key point, this is something we have only just started to work on and so discussions are currently underway. For product groups in which the business divisions have strengths, it is vital that instead of just changing business portfolios, we consider how to manage these going forward. To that end, we need to set KPIs for business evaluations, for ROIC for instance.

Toward future growth, a Materiality that has been identified is the realization of a plastic-resource-recycling society. We must look at both the risks and opportunities associated with this, but I think that it will present us with many business chances. In addition to the above, there is a need to focus on expanding the business into new regions globally. I want the Group to have more in-depth regional strategies that take into account geopolitical risks.

JSW Group has been continuously striving for material innovation and solving social issues. The role that we fulfill as outside directors is to make the public more aware of the Group's strengths and appeal as it works to develop and fabricate the industrial machinery and new materials able to address society's issues. This is the part I will do my best to play.

Risk Management

Basic Approach

The Company and other companies in the Group work to avoid and mitigate different types of risk, and manages these to keep their impact to a permissible amount. In this way, the Group recognizes that working on continuous development and sufficiently fulfilling its social responsibilities are important management issues.

In selecting Materiality, the Group considers two perspectives: creating value and solving social issues through JSW Group's businesses, and bolstering JSW Group's management foundation for sustainable growth. Based on these, we will encourage awareness that there are both risks for the sake of sustainable growth that should be taken actively and risks that should never be taken, even if for the sake of making profits. We will also carry out appropriate and efficient risk management.

Framework

The Group has established JSW Group Risk Management Regulations, which clearly stipulate that the Company and Group companies manage risks in accordance with their respective management structures and division of duties, and that all employees, from officers to general employees, are responsible for implementing appropriate and effective risk management in accordance with their respective roles.
In addition, the Company has appointed a director in charge of risk management (CRO), who oversees risk management of the Company and Group companies. The Operations Management Division acts as the risk management secretariat, and the Company has constructed a risk management framework based on the three lines of defense model. The Company is pushing forward with risk management for the entire Company by strengthening the risk management divisions, which forms the second of those lines. Also, to deal with risks by divisional function, divisions such as those in charge of health and safety, environmental management and export control management are each conducting appropriate operations through steps such as forming committees or putting in place regulations from a company-wide, cross-sectional perspective.

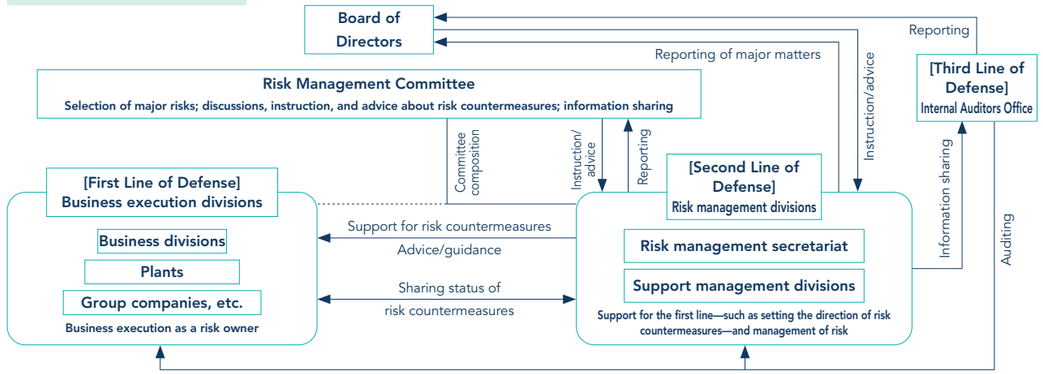
With regard to company-wide risk management, the Risk Management Committee (chaired by the CRO) endeavors to share information on role-specific risks and on evaluations, for important issues, whether potential or apparent problems in different management organizations. Where necessary, the committee responds to these and discusses specific efforts and as needed utilizes the lines of reporting shown in the risk management framework diagram to guide or instruct relevant divisions.

As the third line of defense, the Internal Audit Division monitors risk management, and reports to the Board of Directors and the Executive Board. Information on major risks and related efforts are suitably announced via the annual financial reports and the website.

In the event of a major accident, disaster or any other risk that could cause serious damage to JSW Group, the Crisis Management Headquarters, led by the director in charge of risk management, is promptly established to offer response. As the COVID-19 virus spread during the period from fiscal 2020 to fiscal 2022, a Crisis Management Headquarters was set up to provide functions such as ascertaining the health status of employees, establishing a telecommuting system and offering response to those infected.

In fiscal 2021, it was revealed that inappropriate conduct in quality inspections by Japan Steel Works M&E, Inc. had taken place (see p. 40–41 of this report) and this was the case of an operational misconduct risk that manifested itself in the quality assurance process. After this discovery, in September 2022, the Group set up the Quality Management Office to control quality assurance functions and by as clarifying the functions of the second line of risk defense in risk management (under the three lines of defense model), it has strengthened the work processes and the management framework to secure work suitability and efficiency. In these ways, the Group is striving to prevent recurrence.

Risk Management Framework



Compliance

JSW Group has established its Standards of Business Conduct and engages in business activities in compliance with ethics, laws and regulations, and international rules in both letter and spirit. In particular, the Group will continue to conduct business activities based on the understanding that compliance is not only legal compliance, but also includes adherence to internal rules and contracts, and is an important element for building a relationship of trust with society as well as a fundamental driver for increasing employee engagement.

In addition, the Board of Directors has decided on the Basic Policy on Internal Control and is developing internal control systems. Recognizing the importance of the proper operation of these systems, the Internal Control Committee regularly reports on matters relating to internal control and its progress to the Board of Directors. The Group will also review its Basic Policy on Internal Control to ensure quality compliance and prevent the recurrence of inappropriate conduct.

Regarding compliance with codes such as laws and regulations, and internal rules, on a regular or as-needed basis, the Internal Auditors Office audits the overall operations of JSW, and reports the results to the Board of Directors and Audit & Supervisory Board, as well as the representative director & president and, the Executive Board or the Management Council, or other relevant parties, as necessary. In fiscal 2022, there were no violations of relevant laws and regulations* that resulted in fines or penalties.

*Relevant laws and regulations: Laws and regulations regarding the environment, Industrial Safety and Health Act, Financial Instruments and Exchange Act, laws and regulations regarding export control administration, laws and regulations regarding competition, laws and regulations regarding bribery, and Whistleblower Protection Act

Promotion of Compliance Training

The Company is implementing the following measures to further enhance compliance awareness.

- E-learning for JSW employees and Group company officers and employees was offered to enhance compliance awareness and ensure thorough risk management. (In fiscal 2022, the participation rate was 97%)
- Harassment awareness videos, which are required viewing by managers are streamed on the company intranet. (Can also be viewed by general employees)
- Information and articles are posted on the in-house portal site launched in October 2022, intranet noticeboard, posters, and newsletters to help raise awareness of compliance.
- E-learning was provided for employees of the Company and Group companies to ensure compliance with laws, regulations and internal rules on export control administration. (In fiscal 2022, the participation rate was 100%)
- Internal mock examinations, preparatory courses for examinations and e-learning were provided to increase the number of current employees who have passed the export control administration practical skills certification examination.
- Intellectual property education seminars were held online for managers of technical divisions to learn more about the technical scope of patented inventions and their application.
- Information security training was enacted for all employees.
- The president and director in charge of quality throughout the Company posted video messages on the company intranet. As part of Quality Compliance Month in May 2023 and the National Quality Month in November 2023, the Company implemented e-learning and quality compliance training via educational videos.

Whistleblowing System

JSW Group has formulated and operates whistleblowing rules for the purpose of strengthening and promoting compliance management, and has established a system for the proper handling of reports and consultations from employees and others regarding potential organizational or individual violations of laws and regulations that may have been committed by employees or others associated with JSW or Group companies. This enables JSW Group to promptly detect potential violations of laws and regulations and take corrective action, thereby minimizing risk and damage to the Group that would otherwise arise from such a violation. This system brought about events such as the discovery of inappropriate conduct in quality inspections by Japan Steel Works M&E, Inc. (see p. 40–41 of this report) and the system is functioning effectively in line with these goals.

Anonymous reports and consultations are accepted and disadvantageous treatment of persons who make reports or seek consultation is prohibited. In the event of disadvantageous treatment received, the Company will respond with appropriate measures, including disciplinary action. In October 2021, the whistleblowing rules were amended so that the contact point for whistleblowing was changed to external specialists in order to ensure greater protection for the confidentiality of whistleblowers and individuals with whom they consult, while also reducing the psychological burden of whistleblowing. Furthermore, in order to facilitate further awareness of the whistleblowing system to reach even Group subsidiaries as well, we display the manual on internal workplace bulletin boards and have distributed a pocket version of the manual that employees and others can refer to at any time.

The Whistleblowing Committee, chaired by the director in charge of risk management, investigates reported cases, and if a problem is identified, the committee will take appropriate action and implement corrective measures. During this process, the office of the Whistleblowing Committee and Audit & Supervisory Board members share information as appropriate, while the Audit & Supervisory Board members monitor the progress made in individual cases and the status of operation of this system. In principle, the Board of Directors confirms proper operations of the whistleblowing system twice a year, as based on reports from the Committee.

The number of reports made was 16 in fiscal 2021 and 42 in fiscal 2022, most of which were consultations about workplace environment, including instances of harassment. As a result of changing the contact point for whistleblowing to external specialists, and efforts to raise awareness of the system, the number of reports—which includes those from Group subsidiaries—is increasing. Reports were investigated by the Committee and appropriately addressed.

Information Security

Basic Approach

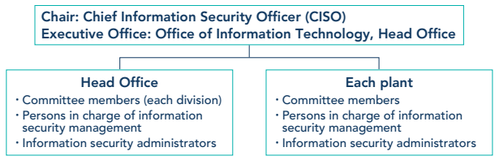
There is a continued increase in the importance of information and information systems in improving the efficiency of office work and production technology, as well as speeding up decision-making. At the same time, threats such as information destruction, leaks, and tampering and system destruction due to cyberattacks are increasing, and the risks associated with information and information systems are on the rise. In this environment, in order to continue to maintain the satisfaction and trust of customers and to fully fulfill our role, we recognize that an important management challenge is to accurately identify information-associated risks and protect both the information entrusted to us by customers and the information and systems necessary for us to do business.

Framework

The Chief Information Security Officer (CISO), appointed by resolution of the Board of Directors, oversees information security measures at JSW. Persons in charge of information security management and information security administrators are assigned at the Head Office and each plant. The Information Security Committee, chaired by the CISO, comprehensively discusses the status of information security incidents, recent threats to information systems, the environment in which the Company operates, and opinions and requests regarding the usability of various security measures, and conducts detailed verification on a regular basis.

In addition, we are constantly working to maintain and improve security while continuously evaluating the adequacy of countermeasures against various cyber-attacks based on detailed analysis results from continuous monitoring data from one of Japan's leading security vendors.

Structure of the Information Security Committee



Training

We conduct information security training (e-learning) for JSW officers and employees to improve their security awareness and literacy.

Participation Rate in Information Security Training (E-Learning)

	FY2020	FY2021	FY2022
Participation rate	99.3%	100%	100.0%

Evaluation by Third-Party Organizations

Diagnostic Assessments in FY2022

Assessment*	Results of evaluation
Information security risk assessment	– (Implemented with every major system change)
Information leakage communications assessment	Information leakage communications assessment overall rating: A (no communications corresponding to information leakage)

* Assessments consist of intrusion inspections and vulnerability assessments of company network systems, based on information security benchmarks and carried out by security vendors with information security management system (ISO/IEC 27001) certification.

Key Data

11-Year Summary

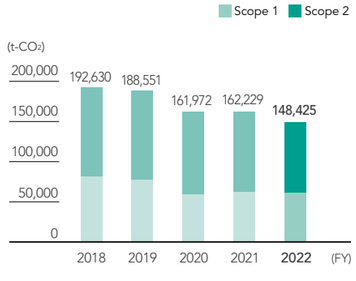
(Millions of yen)

(FY)	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Net sales (consolidated)	220,653	188,719	194,674	223,301	212,469	211,700	220,153	217,527	198,041	213,790	238,721
Operating income	16,680	8,864	7,517	14,423	12,340	20,578	24,290	18,709	10,226	15,460	13,846
Profit before income taxes	14,802	9,504	(5,523)	(22,049)	(5,841)	14,892	29,317	14,154	12,960	19,736	18,518
Profit attributable to owners of parent	8,281	5,527	(5,327)	(16,600)	(4,968)	10,712	19,966	9,310	6,893	13,948	11,974
Total assets	303,970	293,139	319,667	293,138	275,315	297,365	305,471	297,173	316,249	339,729	348,358
Net assets	134,368	139,268	138,234	111,340	107,587	118,600	129,827	132,492	141,985	151,083	160,636
Net D/E ratio	0.02	0.00	(0.06)	(0.10)	(0.07)	(0.23)	(0.17)	(0.18)	(0.22)	(0.32)	(0.28)
Operating cash flow	23,735	11,549	11,580	19,721	12,023	26,712	1,092	18,959	14,712	22,325	(986)
Investing cash flow	(5,832)	(5,719)	(2,675)	(12,135)	(13,580)	(5,077)	(1,334)	(13,172)	(3,243)	(2,976)	947
Financing cash flow	(15,259)	(15,007)	(2,964)	4,788	(1,203)	(2,457)	(3,758)	(6,164)	2,767	(2,860)	(20,112)
Cash and cash equivalents at end of the period	50,972	42,297	49,152	61,458	58,671	77,879	73,820	74,477	88,759	105,799	86,400
R&D expenses	4,054	3,836	4,104	4,292	4,237	4,369	4,506	4,708	4,586	4,909	5,020
Capital investment	5,570	5,242	7,992	14,010	9,502	6,436	9,945	10,585	12,592	4,903	7,346
Depreciation	16,061	12,950	11,008	10,669	7,858	4,097	4,424	5,733	6,040	6,183	6,572
Earnings per share (Yen)	22.33	14.92	(14.39)	(45.32)	(67.61)[1]	145.77	271.69	126.66	93.76	189.63	162.75
Dividend per share (Yen)	10.0	5.0	4.0	5.0	15.0[2]	37.5	55.0	45.0	35.0	57.0	58.0
Consolidated dividend payout ratio (%)	44.8	33.5	—	—	—	25.7	20.2	35.5	37.3	30.1	35.6
Operating income ratio (%)	7.6	4.7	3.9	6.5	5.8	9.7	11.0	8.6	5.2	7.2	5.8
ROE (%)	6.3	4.1	(3.9)	(13.5)	(4.6)	9.6	16.3	7.2	5.1	9.6	7.8
ROA (%)	2.6	1.9	(1.7)	(5.4)	(1.7)	3.7	6.6	3.1	2.2	4.3	3.5

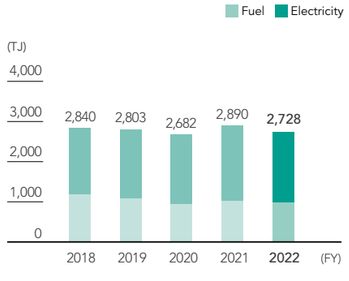
1. The Company conducted a 1-for-5 reverse common stock split effective October 1, 2016. Earnings per share for fiscal 2016 is calculated on the assumption that the reverse stock split occurred at start of the fiscal year.
2. The Company conducted a 1-for-5 reverse common stock split effective October 1, 2016. Dividend per share for fiscal 2016 in the table above is the total of the interim dividend of ¥2.5 and the year-end dividend of ¥12.5. Taking into consideration the effects of the reverse stock split, the interim dividend would have been ¥12.5, resulting in a total annual dividend per share of ¥25.

Key Non-Financial Data

CO_2 Emissions

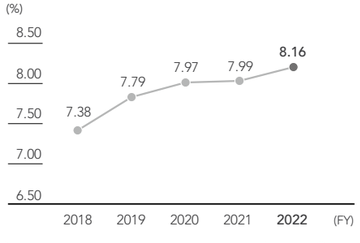


Energy Usage



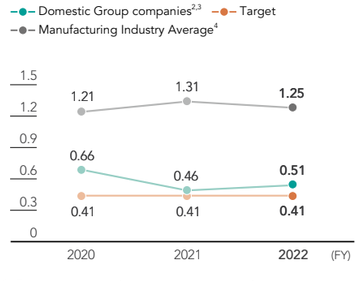
* Terajoule

Female Employee Ratio (Non-Consolidated)



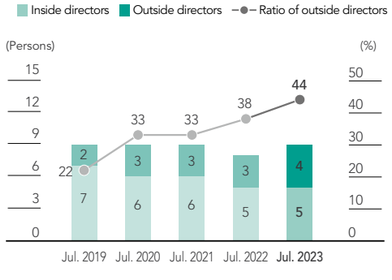
Note: Including employees seconded away from the Company; not including employees seconded to the Company.

Frequency Rate of Accidents per Million Workhours[1]



1. Frequency rate of accidents calculated from lost-worktime, serious and fatal accidents during the fiscal year.
2. Including partner companies on Company premises
3. Excluding certain Group companies
4. Manufacturing industry averages are from the survey of occupational accident trends (Ministry of Health, Labour and Welfare).

Composition of the Board of Directors



Corporate Data (As of March 31, 2023)

Company Information

Company Name	The Japan Steel Works, Ltd.
Founded	November 1, 1907
Incorporated	December 11, 1950
Head Office	Gate City Ohsaki-West Tower, 11-1, Osaki 1-chome, Shinagawa-ku, Tokyo 141-0032, Japan
Share Capital	¥19,799 million (As of March 31, 2023)
Number of Employees	4,966 (consolidated) 1,758 (non-consolidated)

Main Group Companies (As of March 31, 2023)

Domestic

Consolidated subsidiaries

Nikko-YPK Shoji Co., Ltd.
10F, Gate City Ohsaki-West Tower, 11-1, Osaki 1-chome, Shinagawa-ku, Tokyo 141-0032, Japan
Phone: +81-3-5745-2131

Nikko Kosan Co., Ltd.
23F, Gate City Ohsaki-West Tower, 11-1, Osaki 1-chome, Shinagawa-ku, Tokyo 141-0032, Japan
Phone: +81-3-5745-2130

Nikko Tokki Co., Ltd.
1005 Gate City Ohsaki-West Tower, 11-1, Osaki 1-chome, Shinagawa-ku, Tokyo 141-0032, Japan
Phone: +81-3-5745-2093

Nikko Sekkei Co., Ltd.
6-1, Funakoshi-Minami 1-chome, Aki-ku, Hiroshima-shi, Hiroshima 736-0082, Japan
Phone: +81-82-822-7653

Nikko Techno Co., Ltd.
6-1, Funakoshi-Minami 1-chome, Aki-ku, Hiroshima-shi, Hiroshima 736-0082, Japan
Phone: +81-82-822-3232

Nippla Inc.
6-1, Funakoshi-Minami 1-chome, Aki-ku, Hiroshima-shi, Hiroshima 736-0082, Japan
Phone: +81-82-847-5510

MG Precision Co., Ltd.
6-1, Funakoshi-Minami 1-chome, Aki-ku, Hiroshima-shi, Hiroshima 736-0082, Japan
Phone: +81-82-822-1305

Sun-Tectro, Ltd.
6-1, Funakoshi-Minami 1-chome, Aki-ku, Hiroshima-shi, Hiroshima 736-0082, Japan
Phone: +81-82-824-3881

Just Co., Ltd.
2-1, Horikoshi 3-chome, Minami-ku, Hiroshima-shi, Hiroshima 734-0052, Japan
Phone: +81-82-820-0123

Nikko Kouki Co., Ltd.
2-1, Fukuura 2-chome, Kanazawa-ku, Yokohama-shi, Kanagawa 236-0004, Japan
Phone: +81-45-701-7841

JSW Aktina System Co., Ltd.
2-1, Fukuura 2-chome, Kanazawa-ku, Yokohama-shi, Kanagawa 236-0004, Japan
Phone: +81-45-787-8462

Japan Steel Works M&E, Inc.
4, Chatsucho, Muroran-shi, Hokkaido 051-8505, Japan
Phone: +81-143-22-0143

Nikko Unyu Co., Ltd.
4-1, Chatsucho, Muroran-shi, Hokkaido 051-8505, Japan
Phone: +81-143-22-7923

Nikko Truck Co., Ltd.
4-1, Chatsucho, Muroran-shi, Hokkaido 051-8505, Japan
Phone: +81-143-22-7923

Nikkou Muroran Service Co., Ltd.
4, Chatsucho, Muroran-shi, Hokkaido 051-8505, Japan
Phone: +81-143-24-2553

MNED Co., Ltd.
4, Chatsu-cho, Muroran-shi, Hokkaido 051-8505, Japan
Phone: +81-143-22-0620

Muroran Environmental Plant Service, Ltd.
3F, JESCO, 14-7, Nakamachi, Muroran-shi, Hokkaido 050-0087, Japan
Phone: +81-143-22-0005

Fine Crystal Co., Ltd.
9-1, Chatsucho, Muroran-shi, Hokkaido 051-8505, Japan
Phone: +81-143-22-7401

Muroran Copper Alloy, Co., Ltd.
9-1, Chatsucho, Muroran-shi, Hokkaido 051-0006, Japan
Phone: +81-143-22-0690

Tahara Machinery Ltd.
2-1, Kagurominami, Inzai-shi, Chiba 270-1369, Japan
Phone: +81-476-21-1991

GM Engineering Co., Ltd.
Shin-Yokohama No.1 Building, 14-27, Shinyokohama 2-chome, Kohoku-ku, Yokohama-shi, Kanagawa 222-0033, Japan
Phone: +81-45-472-6819

JSW AFTY Corporation
35-2, Hyoe 2-chome, Hachioji-shi, Tokyo 192-0918, Japan
Phone: +81-42-632-8840

Non-consolidated subsidiary

Fine Crystal Iwaki Co., Ltd.
2-6, Chubukogyodanchi, Iwaki-shi, Fukushima 972-8338, Japan
Phone: +81-246-68-6858

Yamato Rebuilt Co., Ltd.
4882-1, Kimagase, Noda-shi, Chiba 270-0222, Japan
Phone: +81-4-7198-4556

Overseas

Consolidated subsidiaries

SM Platek Co., Ltd.
687-2, Seonggok-dong, Ansan-si, Kyeonggi-do, Korea
Phone: +82-31-488-3401

Japan Steel Works America, Inc.
1251 Avenue of the Americas, Suite 2390, New York, NY 10020, U.S.A.
Phone: +1-212-490-2630

The Japan Steel Works (Singapore) Pte. Ltd.
17 Gul Lane, Singapore 629413
Phone: +65-6861-4511

JSW Electromechanical Trading (Shanghai) Co., Ltd.
304, Metro Plaza, 555 Loushanguan Road, Changning District, Shanghai, China
Phone: +86-021-5206-7031

Non-consolidated subsidiaries

Japan Steel Works Europe GmbH
Friedrichstr.19,40217 Düsseldorf, Germany
Phone: +49-211-3116660

Japan Steel Works India Private Limited
611 Time Tower, MG Road, Sector 28, Gurgaon, Haryana 122002, India
Phone: +91-124-469-4444

Stock Information (As of March 31, 2023)

Stock Status

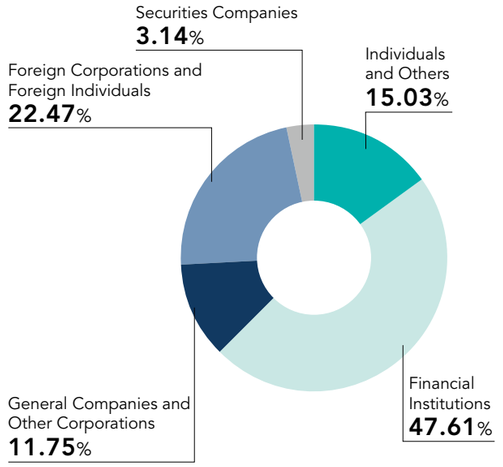
Authorized Shares	**200,000,000 shares**
Issued and Outstanding Shares	**74,387,779 shares**
Shareholders	**24,118**

Major Shareholders

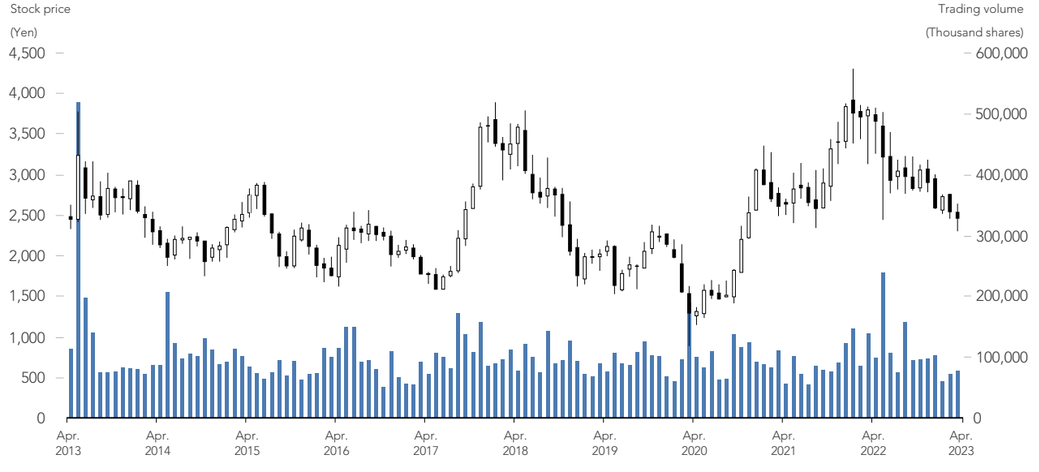
	Shares Held	Shareholding Ratio
The Master Trust Bank of Japan, Ltd. (Trust Account)	13,603,400	18.49
Custody Bank of Japan, Ltd. (Trust Account)	9,302,900	12.64
TAIJU LIFE INSURANCE COMPANY	2,827,600	3.84
BNY GCM CLIENT ACCOUNT JPRD AC ISG (FE-AC)	2,741,170	3.73
Sumitomo Mitsui Banking Corp.	2,200,032	2.99
Sumitomo Mitsui Trust Bank, Ltd.	1,630,400	2.22
Mitsui Sumitomo Insurance Co., Ltd.	1,564,800	2.13
STATE STREET BANK AND TRUST COMPANY 505012	1,314,769	1.79
JUNIPER	1,127,200	1.53
Mitsubishi Heavy Industries, Ltd.	1,006,200	1.37

Note: Shareholding ratios are calculated after deducting 804,399 treasury shares from the total number of shares issued.

Classification of Shareholders by Percentage of Shares Held



Stock Price and Trading Volume



Note: The Company conducted a 1-for-5 reverse common stock split and changed the number of shares per stock unit from 1,000 shares to 100 shares, effective October 1, 2016. All stock prices and trading volumes in the graph above are shown taking into consideration the effects of the reverse stock split.