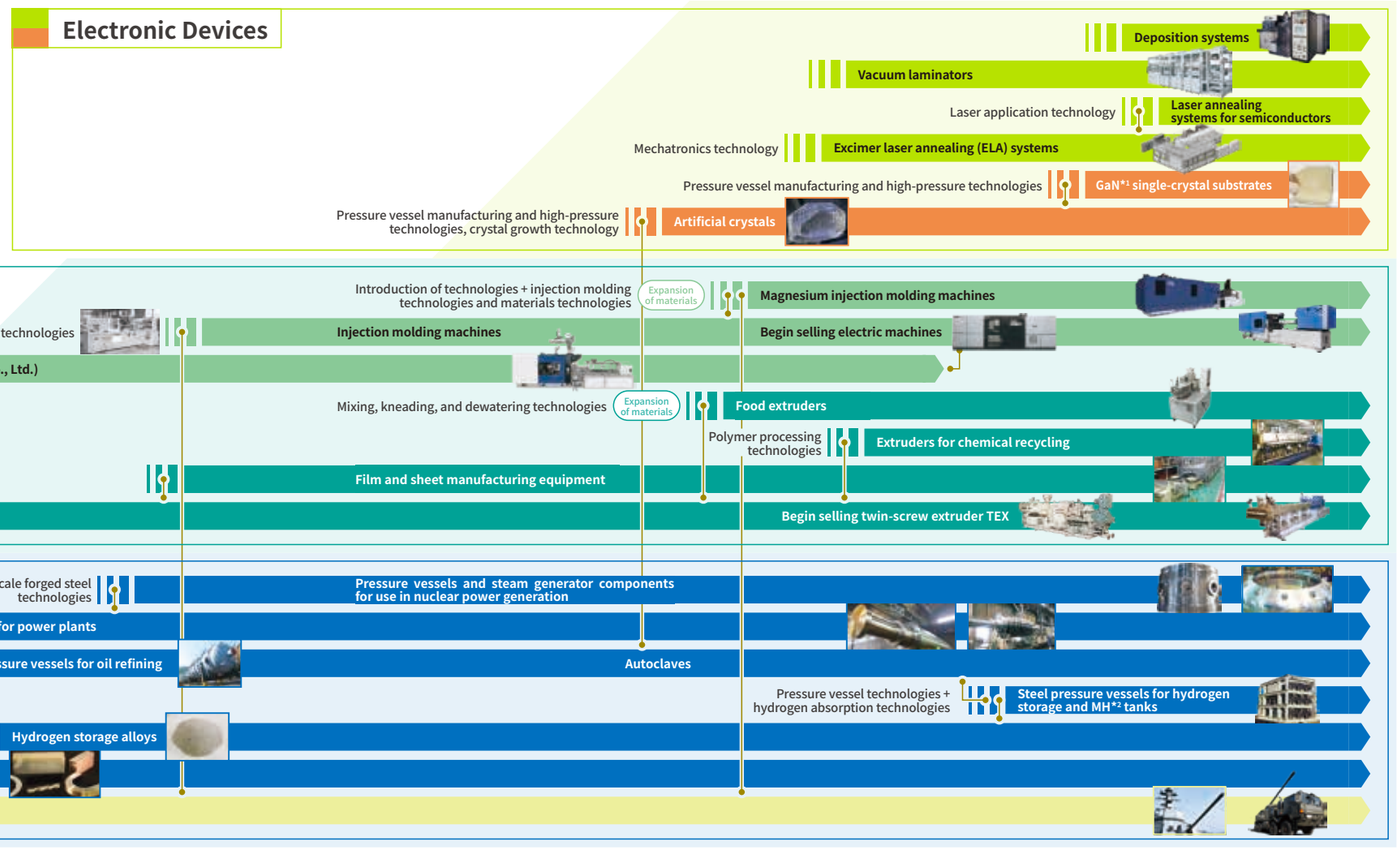
Our History of Creating Value

	1907 Founding (pre-war)	1945 Post-war recovery	1970s Rapid economic growth	2000s Preparation for a new era	2025
Social issues and needs	Development of defense industry	Transition to commercial business	Increasing energy demand Accelerating adoption of electronics in industry	Mitigation of climate change (reduction of CO_2 emissions) Growing demand for recycling of plastic resources Proliferation of AI (artificial intelligence) leading to higher power consumption	
Phases in our history	**Launch as a national project**	**Growth based on a portfolio of technologies**	**Becoming a comprehensive company in materials and mechatronics**	**Toward establishing a new future vision for JSW**	
	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.	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 and various types of drive machinery, we began in earnest to produce large steel castings and forgings, such as large-scale rotor shafts for power plants and pressure vessels for oil refineries, and processing machinery, such as injection molding machines and plastic extruders, focusing on plastics that were not yet in widespread use at the time.	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.	We have identified “realization of a plastic-resource-recycling society,” “contribution to a low-carbon society,” and “contribution to a super-smart society” as materialities, and we are working to enhance corporate value while addressing these issues. In recent years, we have particularly focused on providing, among other products, various types of industrial machinery involved in the manufacture of electronic devices and crystal materials for semiconductors.	

Lineage of technologies and their provision to customers and markets

Material Revolution

Material Revolution, making the world sustainable and prosperous.



*1 Gallium nitride *2 Metal hydride

Core Competence Melting, Mixing, and Solidifying Technologies / Machine Element Technology / Precision Control Technology

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, 2025

Financial capital
- **Shareholders' equity:** ¥177,149 million
- **R&I rating:** A (stable)

Manufacturing capital
- **Capital investment:** ¥18,150 million
- **Domestic plants:** 4 sites
- **Test centers in Japan and overseas:** 2 plastic machine locations, 6 molding machine locations
  Sales locations covering major regions

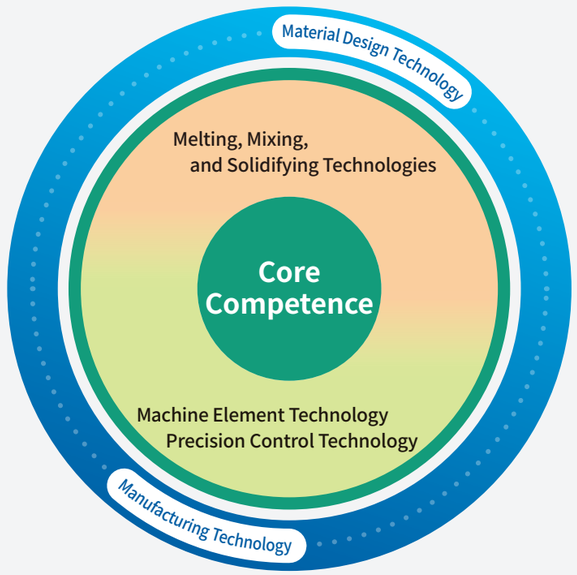
Human capital
- **JSW Group employees:** 5,283
- **Non-consolidated JSW employees:** 1,982
- **Engineering career-track employees (non-consolidated):** 846
- **Training facilities for technology transfer:** 2

Intellectual capital
- **Research and development expenses:** ¥5,682 million
- **Patents held:** 1,024 in Japan, 639 overseas

Social relationship capital
- **JSW: a Brand Built on Quality**
- **Long-term and stable relationships with customers**
- **Good relationships with local communities around plants**

Natural capital
- **Energy consumption:** 1,654 TJ
- **Water intake:** 16.39 million m³

Activity



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 DEI&B*
- Investment in the future with innovation management
- Governance reinforcement of JSW Group

* DEI&B: Diversity, Equity, Inclusion, and Belonging

Outputs

Industrial Machinery and New Materials That Solves Social Issues

- Plastics Machinery

- Injection Molding Machines

- Industrial Machinery

- Material and Engineering Services

- Photonics

- Defense Equipment

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 and conservation of natural resources through our products and businesses

Corporate value

Vision for FY2033

Aim to grow into a corporate group with sales of 500 billion yen

Net sales	¥500 billion
Operating income	¥50 billion
ROE	11-12%

Social value

- **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**

Preserve the safety and security that are foundational to both our business and society

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 non-fossil-fuel-derived plastics
- Growing discussion about maintaining ecosystems and natural capital

Carbon neutrality by 2050
- Advancement of lithium-ion and other storage batteries
- Expansion of renewable energy such as solar power generation
- 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 market and shrinking workforce in developed countries

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

Heightened geopolitical risks
- Disputes between states
- US-China economic frictions

Message from the President

Toshio Matsuo
Representative Director & President
The Japan Steel Works, Ltd.

Continuing to Transform and Take on Challenges with an Unwavering Focus on Growth Toward the Next Stage

Embarking on a New Five-Year Growth Phase

The JSW Group has defined its Vision for FY2033 as simultaneously achieving a sustainability target of "contribute to the realization of a sustainable and prosperous world through the development and implementation of industrial machinery and new materials that solve social issues," and a financial target of "aim to grow into a corporate group with sales of 500 billion yen." In 2024, we formulated and announced a five-year medium-term management plan for achieving these goals, the JGP (**J**SW group **G**rowth **P**lan) 2028.

Our shareholders and investors have asked, "On what basis do you expect to achieve 500 billion yen in net sales?," a challenging target that is roughly double the net sales of fiscal 2023. While favorable business conditions do certainly provide a tailwind, more than anything I have emphasized our strong will to grow. I aspired to achieve dynamic growth by setting clear and ambitious quantitative targets.

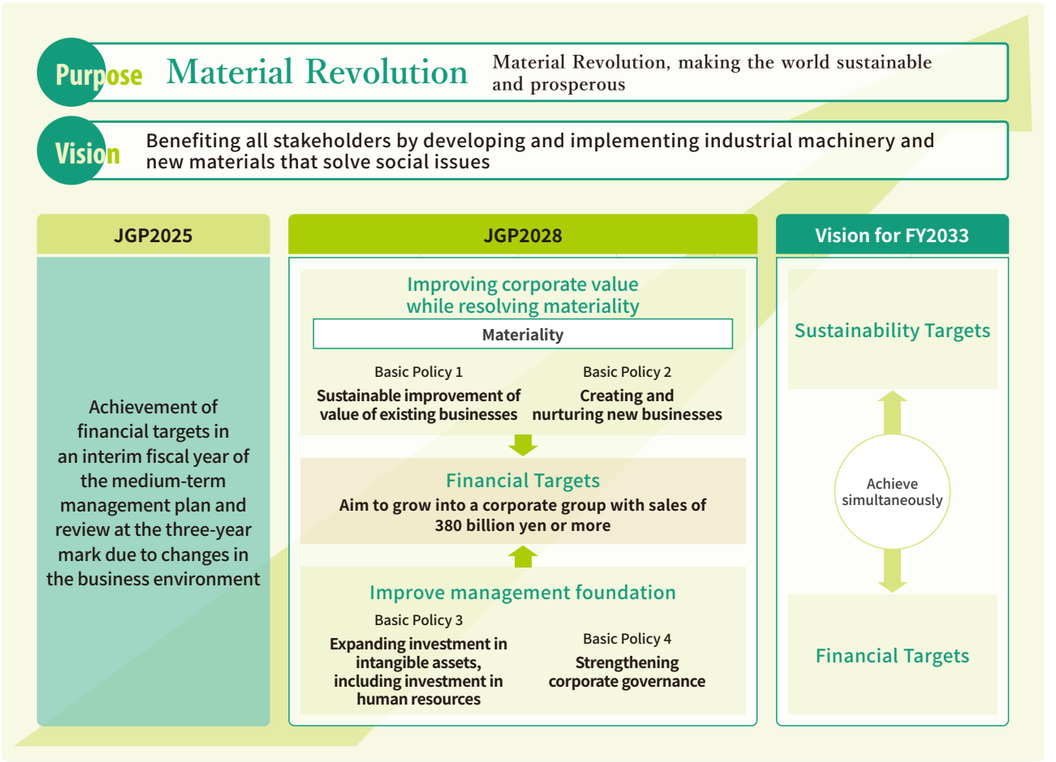
Until then, our Group was much more inclined to pursue stability than growth, with net sales remaining at around 200 billion yen for nearly the past 20 years. The fact that we secured orders exceeding 300 billion yen in fiscal 2023 is, in my view, both an opportunity to propel our Group's scale to the next level and a catalyst for change within JSW Group. I want my employees to feel a sense of fulfillment in their work by witnessing firsthand how striving to grow themselves drives the Company's growth.

In its first year, JGP2028 was launched under the theme of "reforms and challenges for new growth," and saw increased revenue in the Material and Engineering Business from projects related to, among other areas, nuclear and high-efficiency thermal power generation. However, the Plastics Machinery Business faced difficult market conditions due to factors such as slowing EV demand and the delivery of our equipment being carried over into the following fiscal year. As a result, net sales decreased 1.6% year on year to 248.5 billion yen. However, increased revenue in the Material and Engineering Business, together with such factors as higher production across other businesses, brought profit to 22.8 billion yen, a 26.7% increase year on year. Orders rose 7.4% year on year to 310.2 billion yen, while the year-end order backlog reached a record high of 396.9 billion yen.

In the first year, we have made progress on each of the four basic policies set forth in JGP2028.

Under the first basic policy, "sustainable improvement of value of existing businesses," we made investments to increase production capacity for plastic machinery products at the Hiroshima Plant, improved production

Transitions and Vision in the JGP Medium-Term Management Plan



efficiency for large-scale forged steel products for nuclear power generation and other applications at Japan Steel Works M&E, established systems for producing defense equipment at optimal sites, and expanded globally into markets such as India.

Under the second basic policy, “creating and nurturing new businesses,” we are advancing proactive research and development activities, focusing primarily on investments aimed at contribution to a super-smart society. We have also planned the establishment of a new research and development center and proceeded with site selection and other related preparations.

With respect to “expanding investment in intangible assets” and “strengthening corporate governance,” both aimed at fortifying our management foundation, we made steady progress on implementing measures such as raising employee compensation levels and revising the executive remuneration system. In addition, under our Organizational Culture Reform Project, we established the JSW Group Five Guiding Principles for Action to guide employee decision-making and behavior, along with JSW Group company commitments to ensure a psychologically safe environment that encourages employees to take initiative. Through these initiatives, we aim to further foster an organizational culture that allows the value creation process to function more effectively and smoothly.

Thus the results achieved under JGP2028 in its first year and the progress made on our basic policy were both solid, and we feel confident about how the plan is coming along overall.

➡ p.16 JGP2028 Progress

	FY2024	JGP2028 Targets
Net Sales	248.5 billion yen	380 billion yen
Operating income	22.8 billion yen	37.0 billion yen
ROE	9.7%	10–11%

Toward Achieving JGP2028

Understanding of the External Environment

The external environment surrounding our Group continues to change at an ever-accelerating pace, driven by factors such as responses to climate change, the emergence of a society interconnected through the Internet of Things as symbolized by AI, and geopolitical risks. However, over the past three to four years, we recognize that there have been no major changes in the overall trends themselves. One such geopolitical risk, the US tariff policies, has only a limited impact, as exports to the United States account for roughly 3% of our Group’s total net sales. That said, we cannot rule out the possibility of our customers curbing their capital investment. We will continue to monitor the situation closely and take appropriate action as necessary.

Reinforcing “Sustainable Improvement of Value of Existing Businesses”

Expansion and Enhancement of Production Capacity

Improving the in-house production ratio and profitability of plastic machinery products and products for nuclear power plants through enhanced production capacity has been a pressing issue. We intend to carry out roughly half of the 100 billion yen capital investment program under JGP2028 in the first two years of the five-year plan to accelerate production capacity expansion. In fiscal 2025, our investments will include among others new production facilities at the Hiroshima Plant and a new production line at the Muroran Plant. In addition, to meet growing demand for defense equipment, we are continuing to establish systems for production at optimal sites across multiple plants and working to expand production capacity by making our facilities mutually complementary.

➡ p.16 JGP2028 Progress

Global Expansion

Global expansion is another key to sustainably improving the value of our current businesses. Over the past five years, our regional sales composition has been distributed at a ratio of about 4:3:3 for Japan, China, and other overseas markets. A characteristic of our Group is that among our sales overseas, there are many cases of Japanese companies using our products at their sites outside Japan. A closer look shows that the majority of the sales in the China and other overseas markets segments are to the overseas locations of Japanese companies. Viewing this from another angle, we recognize that a substantial number of non-Japanese corporate customers have not yet adopted our Group’s products. This represents significant untapped potential for future revenue growth.

Although we successfully entered the Indian market in fiscal 2024, we recognize that global expansion, including to markets beyond India, has not yet reached the optimal pace. There are still many markets we have not yet developed, and we are acutely aware that we must accelerate our efforts more than ever.

To advance global market development and marketing, we must also transform our traditionally passive approach to sales. It is important to first ensure that our existing Group products achieve broader recognition in overseas markets. Looking across the industry, there are Japanese companies whose product lineups have remained unchanged for years yet have nonetheless achieved impressive global expansion. Taking a cue from these companies, we are urging our sales teams to step out of their comfort zones.

For over a century, our Group has advanced its core competencies in technologies for melting, mixing, and solidifying materials such as steel and plastics, and in mechanical element technology and precision control technology. Today, our portfolio includes several products for which we enjoy strong competitive advantages, including large pelletizers used for producing plastic raw materials. However, consider the example of the ECR deposition system manufactured by JSW AFTY for the semiconductor industry: its performance and film quality surpass those of competing products, and it excels at niche applications, but there remains work to be done so that it is better recognized for its use in other applications. I believe we could further expand our business if, in addition to the performance of our equipment, customers came to recognize our product development capabilities and the technical advisory skills that contribute to final product quality.

We have great confidence in the capabilities and potential of our Group’s businesses. We firmly believe that by first establishing sales bases and from there conducting locally grounded sales activities to elevate the baseline recognition and brand strength of Japan Steel Works, we can develop potential customers and drive further growth.

We are currently putting this sales-base-driven approach to global expansion into practice in the Indian market, which we have designated as a priority region. Under the “Make in India” policy, efforts are underway to

expand capacity for polyolefin plastics and other materials for which India is highly dependent on imports. In addition, investment plans for increased automobile production are also progressing, and demand is expected to grow for pelletizers, extruders, injection molding machines, and other equipment. In view of these trends, our Group has assigned additional sales personnel and engineers to our local subsidiary in India and strengthened local hiring, while also expanding the number of sales and service agents for plastics machines and injection molding machines. In December 2024, we set up an after-sales service facility for plastics machines in collaboration with a local partner company. In 2025, we will establish a new Experience Center near our local subsidiary to showcase actual industrial machinery products from our lineup, and we will assign our Group engineers there so that the center can function as a hub for marketing activities while enhancing recognition of the Japan Steel Works brand.

First, we aim to establish sales bases, then expand to service bases and eventually to production bases, and achieve steady growth in both topline revenue and profitability.

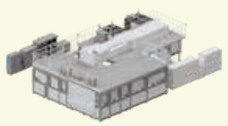
Products for Which JSW Group Enjoys a Strong Competitive Advantage (Excerpt)

Forgings for nuclear power generation equipment

Turbine rotors for high-efficiency natural gas power generation

Electric injection molding machines (clamping force up to 4,000 t)

Large pelletizers



ELA systems for displays

ECR deposition systems for semiconductor lasers

Transition to a Low-Carbon Society

The transition to a low-carbon society represents another important business opportunity for our Group.

Countries and regions around the world are now implementing policies that more actively promote nuclear power generation to strengthen energy security and advance low-carbon and decarbonization goals. To achieve the goal proclaimed at COP28 of increasing global nuclear power generation capacity roughly threefold from its current levels by 2050, strengthening the supply chain for power plant construction will be essential.

Our decision in April 2025 to adopt a policy of aiming for an absorption-type merger of Japan Steel Works M&E into the parent company reflects our determination to effectively address this challenge by allocating managerial capital appropriately and strengthening our supply capacity for products related to nuclear power. We intend to respond to robust demand by investing in a refresh of core production equipment.

At the same time, there is a growing need to address the surge in demand for electricity driven by the widespread adoption of AI and other factors. In this context, natural gas power generation emerges as a compelling option. Natural gas plants have a shorter lead time from the start of construction to the start of operation than nuclear facilities, and they have lower CO_2 emissions compared with coal- and oil-fired power. Within the field of gas power generation, gas turbine combined cycle (GTCC) systems, which offer exceptionally high-power generation efficiency, are attracting particular interest. Rotor shafts with excellent durability under high-temperature conditions are required for GTCC systems, and we are developing this as a product that leverages our Group's strengths. We will continue to reliably fulfill our supply responsibilities amid vigorous demand and contribute to stable energy supply and the transition to a low-carbon society.

We are also working to reduce our own greenhouse gas emissions, and, in line with requirements such as compliance with the Financial Services Agency's SSBJ standards, we have calculated and disclosed Scope 3 CO_2 emissions information in addition to the Scope 1 and Scope 2 emissions we have disclosed to date. We are also working in parallel to investigate and disclose the extent to which and how effectively our Group's products have contributed to the shift toward a low-carbon society. As a corporate group that provides various components and inspection services supporting nuclear power generation infrastructure, we have reaffirmed our understanding that this form of power generation delivers a significant CO_2 reduction effect.

➡ **p.32** Special Feature: Contribution to a Low-Carbon Society

Investing in the Future to Facilitate Creating and Nurturing New Businesses

Contributing to a Super-Smart Society and Creating New Businesses

Creating and developing new businesses will be indispensable for achieving the goals of JGP2028 and the vision for a future that lies beyond it. Over the five years of JGP2028, we plan to allocate a total of 41 billion yen to research and development investment. Given the favorable business environment for the materiality (key issue) of contributing to a super-smart society, these R&D activities will focus especially on electronic devices, AI-related technologies, and related areas. Ultra-high-speed, low-latency communication enabled by 5G and 6G networks, together with reduced power consumption, will be essential requirements for realizing a super-smart society. This in turn will require the next generation of semiconductors. Gallium nitride (GaN) produced by our Group is gaining attention as a next-generation material for power semiconductors. Compared with silicon (Si), the mainstay semiconductor material, GaN may be able to reduce power loss by about 85% — a dramatic improvement in energy-efficiency performance. Reduced heat generation also allows for simpler cooling systems, and the resulting potential for smaller and lighter communication equipment and devices is raising expectations even further. We have now increased GaN provision at the semi-commercial level, with an eye toward meaningfully contributing to performance in the latter half of the JGP2028 period.

➡ **p.34** Special Feature: Contribution to a Super-Smart Society

Looking Beyond our Vision for FY2033

To achieve sustained growth as we look ahead to our Vision for FY2033 and the future that lies beyond it, sowing seeds in new domains and advancing technological development will be indispensable. The magnesium injection molding machines, excimer laser annealing (ELA) system, defense-related railguns, and crystal business that drive our Group's activities today all evolved from research themes investigated at the Research Center for Advanced Technologies, which served as our R&D hub in the 1990s. In the not-too-distant future, robots equipped with AI, for example, may become more familiar and accessible than they are today. Looking even further ahead, space and deep-sea utilization may also become more advanced. We are confident that we can provide products that exceed expectations by combining our Group's strengths: our ability to innovate materials themselves, and our technologies for developing and manufacturing industrial machinery for implementation throughout society. While envisioning the future that lies beyond our Vision for FY2033, we are also planning a new research and development hub that will be tasked with developing innovative technologies. With our Purpose as our guiding compass and with our dream in mind, we will create in this facility an environment in which our technical members can push one another to improve and steadily advance research and development from a long-term perspective.

Accelerating Investment in Human Resources

The most important asset for our Group is our people. To advance to the next stage and sustain transformation and challenges in preparation for the future beyond it, investment in human resources is the most indispensable factor of all.

In 2024, we implemented the largest increase in employee compensation since Japan's postwar period of rapid economic growth, and we are introducing an even greater increase in 2025. We are also steadily implementing improvements to employee treatment, including enhancements to welfare benefits such as constructing new company housing. In addition, with many new employees joining the Company, the average age of our employees is becoming younger, and the atmosphere within the organization is changing as well.

With the rejuvenation of the organization resulting from improvements in compensation levels and welfare, we recognize that our investment in human resources is progressing smoothly. However, we also recognize that continuing these efforts without letting up will be essential for the sustained growth of our Group.

Management That Is Conscious of Cost of Capital and Stock Price

As described above, the business environment is providing a tailwind, and our performance continues to trend upward. Looking at our PBR, we interpret it as an indication that the stock market is factoring in expectations for our Group's future growth.

We recognize that in order to achieve the ROE target of 10–11% set as a financial target of JGP2028, we must consider both further improving profitability and maintaining balance with equity. Of these, we believe that improved profitability can be achieved by following through on the initiatives set out in JGP2028.

Currently, our equity ratio is trending above 45%. During the JGP2028 period, we will accelerate investments in equipment, research and development, DX, and related areas, in addition to increased working capital needs for defense equipment. Consequently, we plan to utilize financial leverage to procure funding, and will continue to discuss financial soundness, including the equity ratio, in greater depth at meetings of the Board of Directors.

➡ **p18** Financial and Capital Strategy: Message from the CFO

Passion and Persistence in Achieving Our Dream

We believe that further advancing initiatives embodying our Material Revolution will be increasingly critical to achieving our sustainability target of "contribute to the realization of a sustainable and prosperous world through the development and implementation of industrial machinery and new materials that solve social issues," and to successfully grow into a corporate group with net sales of 500 billion yen.

Whether as a company or as individuals, surely the driving force behind our actions is our dreams. I consistently convey to employees that I want them to work with dreams, passion, and persistence, and I believe that with the passion to make those dreams come true and the persistence to see things through, anything can be achieved.

Recently, more of our employees have been brimming with confidence built through one successful experience after another, and improvement is also evident in our most recent engagement scores. An atmosphere in which taking on new challenges and difficult issues is viewed positively is steadily emerging within the Company. Going forward, as more employees truly feel their own growth together with the Company's growth, we aim to allow a challenging corporate culture to take hold across the entire Group.

We will continue to refine our Group's core competencies and create innovative industrial machinery and new materials that solve social issues, thereby achieving sustained growth while contributing to a more sustainable society. We ask all our stakeholders for their continued support and encouragement.

Transitions and Vision in the JGP Medium-Term Management Plan

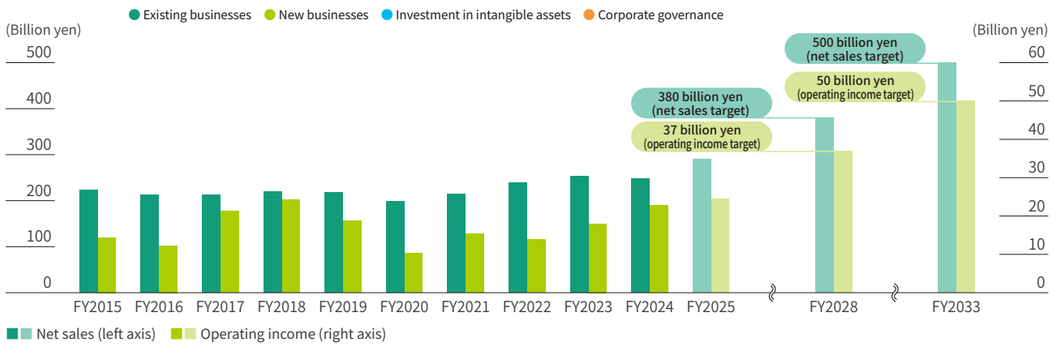
Under JGP2017, JSW employed “aggressive management” in the Industrial Machinery Products Business to actively utilize and invest in alliances and boost production capacity at major plants. JGP2020 aimed to “build a new foundation for growth,” promoting plastic processing machinery complexes in the Industrial Machinery Products Business and establishing Japan Steel Works M&E, Inc. in the Materials Business. JGP2025 set its sights on the long-term vision of becoming “a company where employees are excited to work” and “expanding and growing business to 300 billion yen,” with the goals of growing into the unprecedented general manufacturer of plastic processing machinery in the world and securing consistent profit in the Materials Business. Through these efforts, continuous strengthening of the Industrial Machinery Products Business and improvement in profitability of the Materials Business bore fruit, and we formulated JGP2028 in fiscal 2024, before the final year of JGP2025. JGP2028 is positioned as “reforms and challenges for new growth,” aiming to sustainably increase corporate value while resolving material issues to achieve our vision for fiscal 2033.

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

FY2015 — JGP 2017 — FY2017 | FY2018 — JGP 2020 — FY2020 | FY2021 — JGP 2025 — FY2023 | FY2024 — JGP 2028 — FY2028 | FY2033 Vision

	JGP 2017 (FY2015–FY2017)	JGP 2020 (FY2018–FY2020)	JGP 2025 (FY2021–FY2023)
Position	Great strides to becoming a global & niche top company	Build a foundation to achieve steady growth for the JSW Group over the next decade	Towards the unprecedented general manufacturer of plastic processing machinery in the world
Basic Policy	● Increase profitability of existing businesses ● Foster new businesses and make them competitive as soon as possible ● Reinforce Group management and promote alliances	● Optimization of management resources and strengthening of alliances ● Strengthen service business ● Acceleration in exploration and development of new businesses	● Towards the unprecedented general manufacturer of plastic processing machinery in the world ● Make constant profit in Material and Engineering Business ● Create new core businesses ● Promotion of ESG management
Major Results	● Boosted productivity and improved costs of industrial machinery products (Hiroshima Plant: factory reorganizations) ● Acquired of SM Platek Co., Ltd. in South Korea (extruders) ● Business acquisition from Hitachi Plant Mechanics Co., Ltd. (simultaneous biaxial stretching device) ● Joint development of injection molding machines with Toyo Machinery & Metal Co., Ltd. (platform standardization)	● Merger with Meiki Co., Ltd. ● Made GM Engineering Co., Ltd. A subsidiary (strengthened film and sheet manufacturing equipment) ● Merger with Nichiyu Machinery Co., Ltd. (strengthened film and sheet manufacturing equipment) ● Hiroshima and Europe: commenced operations of service centers	● Strengthened production capacity for film and sheet manufacturing equipment ● Meiki Plant and M&E: strengthened production capacity for industrial machinery products ● Europe: established production base ● Established JSW Aktina System ● Obtained orders for proposal-based development of defense equipment
	● Restructured Muroran Plant (boosted productivity)	● Established Japan Steel Works M&E (“M&E”)	● Improved profitability through proper sales prices ● Increased orders for power generation parts due to transitions in global energy policies
	● Reorganized Research and Development Headquarters into New Business Promotion Headquarters ● Promoted companywide business development projects	● Established Muroran Copper Alloy Co., Ltd. with JX Advanced Metals Corporation ● Commercialized hydrogen-related business ● Focused on photonics, composites, and metals as new businesses to accelerate early-stage profit generation	● Established Innovation Management Headquarters ● Commenced operations of large-scale proof-of-concept equipment for gallium nitride (GaN) substrates ● Established JSW Group corporate philosophy ● Identified material issues
Major Issues Still to Be Addressed	• Delays in developing new businesses • Insufficient efforts to strengthen alliances	• Further promotion of plastic processing machinery complexes • Create new core businesses beyond plastic processing machinery	• Increasing production capacity to meet sharp increases in orders and sales, and maintaining and improving in house production rate • Promoting global expansion • Investing on the aging core production facilities



Reforms and challenges for new growth

Improving corporate value while resolving materiality

Materiality
- Realization of a plastic-resource-recycling society
- Contribution to a low-carbon society
- Contribution to a super-smart society

Solve → Basic Policy 1: **Sustainable improvement of value of existing businesses**

Solve → Basic Policy 2: **Creating and nurturing new businesses**

Financial Targets

Aim to grow into a corporate group with sales of 380 billion yen or more

Net Sales	380 billion yen
Operating income	37 billion yen
ROE	10-11%

Widening Equity Spreads

Improve management foundation

Basic Policy 3: **Expanding investment in intangible assets, including investment in human resources**

Basic Policy 4: **Strengthening corporate governance**

FY2033 Vision

Sustainability Targets

Contribute to the realization of a sustainable and prosperous world through the development and implementation of industrial machinery and new materials that solve social issues.

Achieve simultaneously

Financial Targets

Aim to grow into a corporate group with sales of 500 billion yen

Net Sales	500 billion yen
Operating income	50 billion yen
ROE	11-12%

External environment

Balancing the surge in demand for electricity with reducing CO_2 emissions from power generation

Strengthening digital infrastructure driven by greater adoption of AI

Greater plastic-resource-recycling requirements

Climate-change-driven intensification of extreme weather

Responding to changes and threats in the security environment

- Growing demand for low-carbon (CO_2) power generation (such as high-efficiency thermal power generation and nuclear power generation) to meet increasing electricity demand driven by AI adoption and other factors
- Greater demand for optical communication infrastructure and new semiconductor materials and package substrates to strengthen digital infrastructure (through high-speed computation and energy efficiency)
- Rising demand for diverse plastic-recycling technologies and equipment to meet plastic-resource-recycling requirements
- Reducing CO_2 emissions to mitigate climate change (including low-carbon power generation and reductions in CO_2 emissions achieved through our Group’s products)
- Contributing to ensuring the safety and security that underpin society through defense equipment

JGP2028 Progress

Progress Toward Financial Targets

For fiscal 2024, net sales were 248.5 billion yen and operating income was 22.8 billion yen. Although revenue declined year on year due to the postponement of large projects in the Industrial Machinery Product Business, the Material and Engineering Business recorded a significant increase in profit, resulting in lower revenue but higher profit compared with the previous year.

		FY2023: Results	FY2024: Results	FY2026: Plan	FY2028: Plan
Net sales		252.5 billion yen	248.5 billion yen	320 billion yen	380 billion yen
Operating income		18 billion yen	22.8 billion yen	26 billion yen	37 billion yen
Operating income ratio		7.1%	9.2%	8.1%	9.7%
ROE		8.5%	9.7%	9.0%	10–11%
Capital investment	Results	8.1* billion yen/year	18.1 billion yen/year		
	Plan	9.0 billion yen/year	20 billion yen/year		
R&D investment	Results	5.2* billion yen/year	5.6 billion yen/year		
	Plan	6.0 billion yen/year	8.2 billion yen/year		
Dividend payout ratio	Results	30.4%	35.2%		
	Plan	30%	35%		
DOE	Results	2.7%	3.7%		
	Plan	2.0% lower limit	2.5% lower limit		

* Average of three years from FY2021 to FY2023

4 Basic Policies

Basic Policy	Strategy	Major Results
❶ Sustainable improvement of value of existing businesses	• Expanding production capacity and improving the in-house production rates in the Industrial Machinery Product Business through major capital investments • Capital investment to improve sustainability of the Material and Engineering Business • Responding to defense equipment market needs	• Completed construction of the 10th assembly plant at the Hiroshima Plant, expanding production capacity for plastic machinery products • Made progress on construction of the 3rd and 4th machinery plants at the Hiroshima Plant to enhance machining capacity and production efficiency for machine components • Expanded production capacity by manufacturing in optimal locations to meet surging demand for defense equipment
❷ Creating and nurturing new businesses	• Strengthen existing businesses by developing elemental technologies and create innovative technologies through basic technology research	• Advanced research and development activities centered on focused investments that help contribute to a super-smart society • Moved forward with a plan to establish a new research and development center responsible for developing innovative technologies
❸ Expanding investment in intangible assets, including investment in human resources	• Reform towards an organizational culture that encourages challenge • Spreading the Purpose and promoting DEI&B	• Promoted Organizational Culture Reform Project and established JSW Group Guiding Principles for Action to guide employee decisions and actions • Leveraged engagement surveys and reviewed measures and indexes to contribute to the growth of diverse individuals and maximization of organizational results • Promoted women's careers through positive action • Certified by the Ministry of Economy, Trade and Industry as a DX-certified business • Deployed IoT solution J-WiSe that supports customers in shifting to smart factories
❹ Strengthening corporate governance	• Enhancing incentive effectiveness for medium-to-long-term improvement of corporate value and aligning interests with shareholders • Improving corporate value sustainably while reducing corporate management risks	• Enhanced incentive effectiveness for medium-to-long-term improvement of corporate value through revisions to the executive compensation system • Established a Risk Management Group in the Corporate Planning Office to promote and oversee companywide risk management efforts

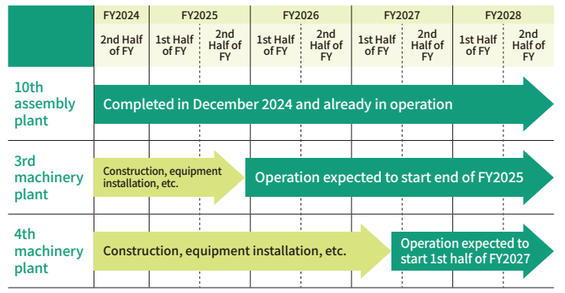
* J-WiSe is a Japanese registered trademark of The Japan Steel Works, Ltd.

Key Strategies | Improving Production Capacity and In-House Production Rates, Capital Investment

Hiroshima Plant: Investment to improve production capacity and in-house production rates

- The 10th assembly plant began operation in December 2024. Investment to enhance assembly capacity for plastic machinery has been completed.
- Construction of the 3rd and 4th machinery plants is progressing to improve machining capacity and production efficiency for machine components.
- We will improve component machining capacity to increase our in-house production rates and improve profitability, and promote growth in the after-sales service business.

Investment Progress and Prospects at Hiroshima Plant




10th assembly plant, which has already begun operation


3rd machinery plant, under construction

Muroran Plant: Investment to improve production efficiency of large-scale forged steel products for thermal and nuclear power generation

- Refresh investments (maintenance and preservation) in various production facilities
- Streamlining through the installation of new equipment in the steelmaking, forging, and inspection processes (manufacturing period optimization and labor savings)
  - Jigs for handling ultra-large steel ingots
  - 3D automated dimensional inspection equipment, automated UT equipment

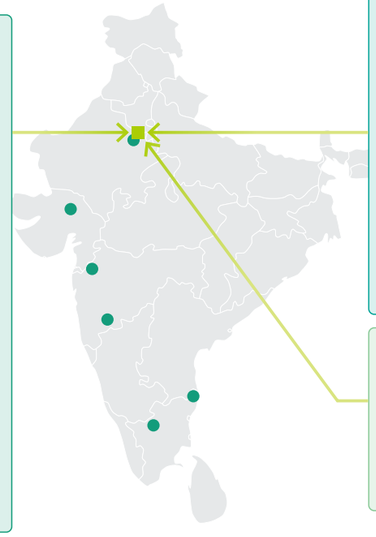
Promoting Global Expansion

To enhance and raise awareness of the brand strength of our Group's industrial machinery products, we are making improvements in areas such as sales and service networks and increasing personnel counts. We would like to introduce our initiatives in India, where the Make in India policy is driving the growth and leveling-up of the manufacturing sector and where demand for plastics is also expected to rise. We will also proactively expand into other regions where growth is anticipated.

Specific Expansion Example: Measures for the Indian Market

- We have increased the number of personnel dispatched to our local subsidiary in Gurgaon, Haryana, adding sales staff and engineers for plastic machinery, molding machines, and other products. We are also strengthening local hiring to reinforce our sales and service systems.
- In 2025, we opened the Experience Centre near this subsidiary. The facility will exhibit actual equipment such as twin-screw extruders and injection molding machines and will be staffed with engineers, thereby creating a stronger presence in India for our industrial machinery products, such as our presses for printed wiring boards.


The Experience Centre



- In December 2024, we collaborated with our partner companies to establish an after-sales service plant for plastic machinery. This facility enabled swift dispatching of engineers and shorter turnaround times for repairs.

After-sales service facility (set up by UTT)

- We are expanding our network of service agents for injection molding machines. We aim to further enhance our presence in the Indian market, including by strengthening our bases and establishing the Experience Centre.
- Injection molding machine sales and service agency location

Financial and Capital Strategy: Message from the CFO

Top Message

Widening Equity Spreads Through Active Investment while Maintaining Financial Soundness

Representative Director & Executive Vice President, CFO, in charge of Export Control Administration, in charge of Finance & Accounting Department, General Manager of Corporate Planning Office, in charge of Material and Engineering Business

Hiroki Kikuchi

Our Vision and the Business Environment

Based on its Purpose of "Material Revolution, making the world sustainable and prosperous," JSW Group has designated the simultaneous achievement of its sustainability target of "contribute to the realization of a sustainable and prosperous world through the development and implementation of industrial machinery and new materials that solve social issues" and its financial target of "aim to grow into a corporate group with sales of 500 billion yen" as its vision for fiscal 2033. In order to realize this vision, we have also positioned the period through fiscal 2028 as a time of "reforms and challenges for new growth" under the medium-term management plan JGP2028, and we are implementing measures based on four basic policies.

From fiscal 2024, the first year of JGP2028, through the present, our immediate business environment has been characterized by strong interest in the Materials Business, driven by factors such as increasing demand for nuclear power and high-efficiency thermal power generation, while orders in the defense equipment business have also grown significantly, helping to drive the Group's growth. Meanwhile, emerging markets offer significant growth potential in the Industrial Machinery Product Business, particularly for plastics machinery and Injection Molding Machinery Business, and we believe it is necessary to accelerate the globalization of the business beyond what was initially envisioned in the JGP2028 plan.

Looking Back on FY2024 and Prospects for FY2025

Our backlog reached an all-time high in fiscal 2024, driven by such factors as growth in the defense equipment business. Net sales declined year on year to 248.5 billion yen due to such factors as the deteriorating market environment for plastic processing machinery in the Industrial Machinery Product Business and the considerable impact of a shift in the timing of revenue recognition for large projects. However, operating income rose year on year to 22.8 billion yen, supported by higher earnings in the Material and Engineering Business.

For fiscal 2025, we expect continued growth in orders in the Material and Engineering Business alongside higher revenue and income in the Industrial Machinery Product Business, with net sales projected at 290 billion yen and operating income at 24.5 billion yen.

Although there are risk factors present that leave no room for complacency, such as continued restraint in capital investment due to the impact of US tariff policy, we recognize that we are making meaningful progress toward achieving the JGP2028 targets of 380 billion yen in net sales, 37 billion yen in operating income, and ROE of 10–11%.

Financial Policy

The Group's basic financial policy is to "widen equity spreads while maintaining financial soundness" as we continue to actively invest in both tangible and intangible assets in order to sustainably enhance corporate value.

We regard the equity ratio and cash and deposits (i.e., ensuring an optimal level of cash and deposits) as especially important indicators for gauging financial soundness.

Investment is concentrated in the first three years of JGP2028, during which interest-bearing debt is expected to increase. Even so, we intend to maintain an equity ratio of at least 45% and preserve an issuer rating of A from R&I.

	FY2024 results	JGP2028 target
Net sales	248.5 billion yen	380 billion yen
Operating income	22.8 billion yen	37 billion yen
ROE	9.7%	10-11%
Equity spread	1.7%	2-3%
Equity ratio	48.5%	45% or more

Management That Is Conscious of Cost of Capital and Stock Price

Widening Equity Spreads

Of the main KPIs the Group has set in JGP2028—net sales, operating income, and ROE—the most important for our financial and capital strategy is ROE. For this reason, we have made it our policy to widen the equity spread (ROE − cost of equity) as a way to maximize shareholder value. The Group recognizes its current cost of equity, as 8.0% based on CAPM.

The Group recognizes that its ROE of 9.7% in fiscal 2024 exceeded its cost of equity; however, through sustainable improvement of value of existing businesses and the creation and nurturing of new businesses, we will achieve ROE of 10–11% in fiscal 2028, the final year of JGP2028, and furthermore aim for 11–12% in fiscal 2033, sustainably widening our equity spread.

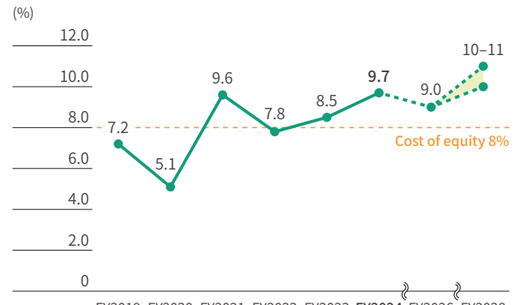
Achieving Further Stock Price Increases

The Group has secured a reasonable PBR level of around three times, but it is important that we continue working to raise it further. Improvement in both ROE and PER is necessary to achieve this, but we are placing particular emphasis on measures to enhance ROE so that we may sustainably widen our equity spread.

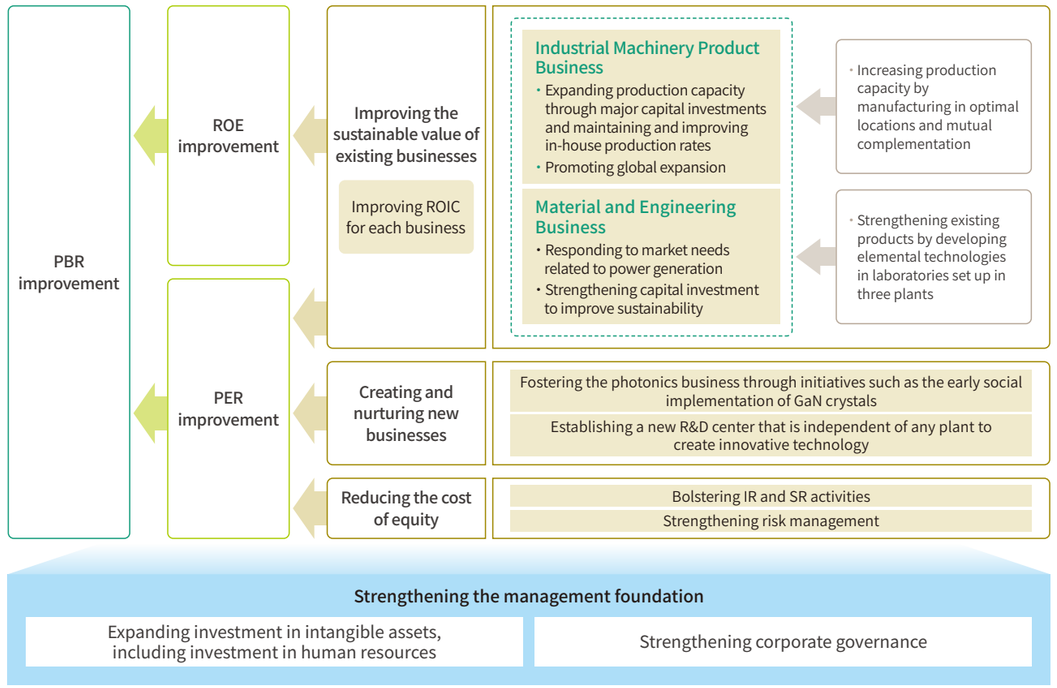
Specifically, in both the Industrial Machinery Product Business and the Material and Engineering Business, we will steadily put our business strategies in action while we increase production capacity by manufacturing in optimal locations and mutual complementation, and strengthen existing products by developing elemental technologies at our laboratories, thereby improving ROIC in each business. In addition, we will create ROIC trees tailored to the characteristics of each business, clarify process KPIs, and work to instill and operate these within the Company.

We recognize that it is important to constantly refine our growth strategies while ensuring that our shareholders and investors understand them by enhancing our information disclosure and our dialogue through IR and SR activities.

ROE/Equity Spread



	FY2019 Results	FY2020 Results	FY2021 Results	FY2022 Results	FY2023 Results	**FY2024 Results**	FY2026 Plan	FY2028 Plan
ROE	7.2%	5.1%	9.6%	7.8%	8.5%	**9.7%**	9.0%	10–11%
Equity Spread	-0.8%	-2.9%	1.6%	-0.2%	0.5%	**1.7%**	1.0%	2–3%

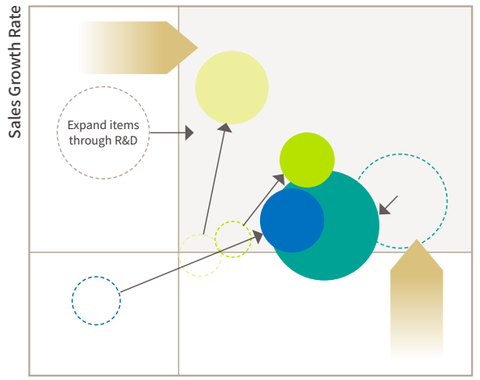


Business Portfolio Strategy

Improving ROIC for each business is necessary to improve ROE. The Group has defined where each business should be positioned in a four-quadrant matrix based on capital profitability (ROIC spread) and sales growth rate by the final fiscal year of JGP2028. Appropriate resource allocation is indispensable when raising ROE by improving the ROIC of each business. Beginning in fiscal 2025, we have been holding discussions on our business portfolio twice a year at meetings of the Board of Directors in which we dynamically review resource allocation.

Business portfolio management, if carried out in isolation, yields only limited effect, so we are continuing our efforts to interweave it into our management processes. As an example of how this is done, the Board of Directors and the Executive Board, taking the view that allocated resources must be recovered, regularly verify the recovery status of funds for large-scale production expansion investments after the investments have been made. We also identify underperforming businesses at an early stage, and have established a rule under which capital investment plans are frozen until a performance improvement plan is approved by the Executive Board. This rule is enforced rigorously.

Business Portfolio Plan (Dotted circles show average from FY2021 to FY2022)



Plastic Machinery Product Group
Industrial machinery product segment (plastic manufacturing and processing machinery, molding machines)

Defense Equipment
Industrial machinery product segment (defense equipment)

Electronic Devices Products Group
Industrial machinery product segment (electronic devices) + other business segments

Material and Engineering
Material and engineering segment

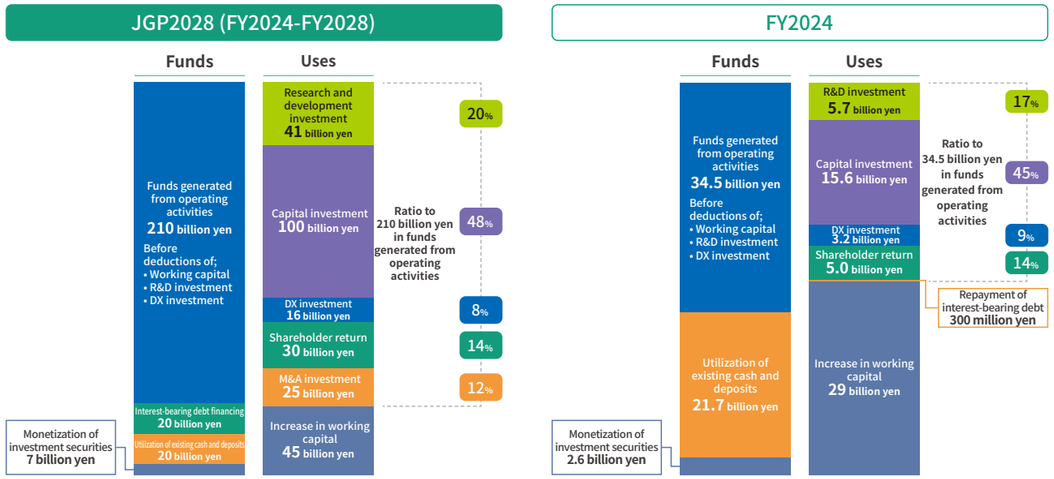
Cash Allocation

The Group's basic approach to cash allocation is to allocate funds generated from operating activities to investment in growth, with a focus on capital investment, as well as to shareholder returns. Our plan is to fund an increase in working capital, mainly for defense equipment, with existing cash and deposits and by monetizing investment securities, with any shortfall covered through additional interest-bearing debt.

The Group considers the optimal level of cash and deposits to be the sum of two months' worth of the following fiscal year's sales plan plus roughly 10 billion yen for unexpected funding needs, and intends to maintain this same level throughout JGP2028.

In fiscal 2024 as well, we allocated most of the funds generated from operating activities to growth investment and shareholder returns. Excluding M&A investment, for which there were no actual expenditures, the allocation was in line with the cumulative allocation under JGP2028. Capital investment aimed at increasing production capacity and improving productivity is also progressing largely as planned.

Looking ahead to fiscal 2025, we expect an increase in working capital for the defense equipment business, as well as an increase stemming from revisions to the Subcontract Act that mandate faster payment to subcontractors. However, our basic approach remains unchanged. Investment in growth consists mainly of capital investment, R&D investment, and DX investment. Of these, we plan to invest roughly three-quarters of the 100 billion yen total allocated for capital investment by the third year of the JGP2028 period. We will carry out investments for the Industrial Machinery Product Business, such as those to increase production, as planned, further accelerate the already solid growth of the Materials and Engineering Business through refresh investments, and also consider investments aimed at strengthening supply capacity. We also plan to accelerate R&D investment in line with the construction of our new research and development center.



* Figures in this graph are rounded and may not match amounts shown elsewhere.

Shareholder Return Policy

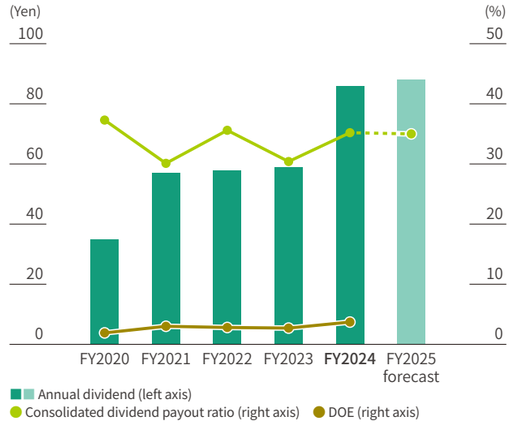
Our basic policy regarding the return of profits to shareholders is to pay stable and continuous dividends and to improve them.

The Group has traditionally used consolidated dividend payout ratio as its performance-linked dividend indicator and DOE (dividend on equity) as its stable dividend indicator and will boost shareholder returns during JGP2028 by raising both ratios.

Specifically, to achieve optimal balance between shareholder returns and proactive investment to increase corporate value, the Group has raised its consolidated dividend payout ratio target from 30% or more to 35% or more and its DOE lower limit from 2.0% to 2.5%.

While the annual dividend per share was 86 yen in fiscal 2024, the Group plans to pay an annual dividend of 88 yen per share in fiscal 2025.

Annual Dividend/Consolidated Dividend Payout Ratio/DOE



Engagement with Shareholders and Investors

In meetings with institutional investors, we received many questions about the long-term outlook for each of our businesses, including inquiries about the status of orders for material products for nuclear power plants and GTCC (gas turbine combined-cycle) power generation. Through these dialogues, we came to recognize that our share price reflects expectations for achieving the targets set out in JGP2028. To meet these expectations, we believe it is necessary to both steadily advance the growth strategies set forth in JGP2028 and continually refine our strategies in pursuit of further growth.

The strong expectations institutional investors have for our long-term growth have also been reported to the Board of Directors, together with summaries of the discussions held in our meetings.

Initiative	Number of Times Implemented
Financial results briefings	2 (middle and end of FY)
Medium-term management plan briefings	1
Individual IR meetings (including overseas)	337
IR media interviews and responding to inquiries	As necessary
Meetings with Japanese institutional investors (ESG, exercise of voting rights)	10
Business briefings	1
General Meeting of Shareholders	1
Individual shareholder surveys	1

To Our Shareholders and Investors

Our Group will continue to make proactive investments aimed at sustainably strengthening our competitive advantage, while adhering to our basic financial policy of "widen equity spreads while maintaining financial soundness."

In fiscal 2025, investment cash flow is expected to exceed operating cash flow due to increased working capital driven mainly by growth in the defense equipment business and the acceleration of investment in growth.

Even so, we will continue to carry out JGP2028 while maintaining a balanced approach to investment in growth, shareholder returns, and financial discipline, and we will also implement early-stage initiatives toward realizing our vision for fiscal 2033. We will actively work to provide information and engage in dialogue with our shareholders and investors, and we ask for your continued support.

Innovation Management Strategy

Top Message

Shigeki Inoue

Director & Senior 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

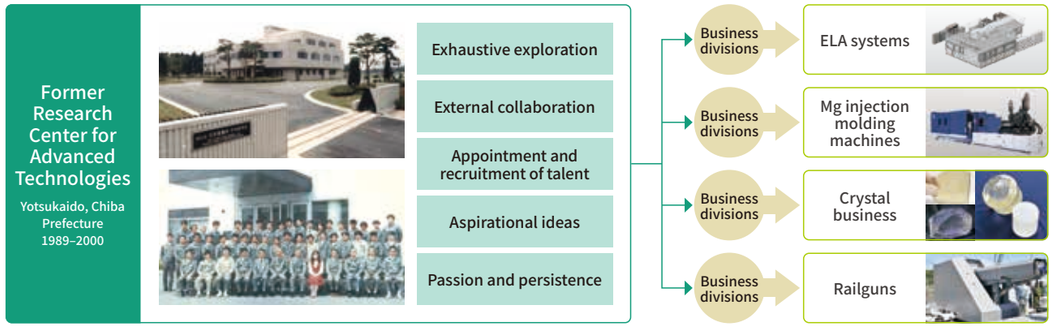
For our Group to embody our Purpose “Material Revolution, making the world sustainable and prosperous” over the long term, we must continually develop and implement industrial machinery and new materials that address social issues. We believe it is essential for the Innovation Management (IM) Headquarters to serve as the vanguard in making this Purpose a reality and to lead the way for an appropriate IM strategy.

Although recent changes in the external environment have created opportunities for several of our Group’s businesses, we will not rest on our laurels despite these advantages. Under JGP2028 and our longer-term vision for fiscal 2033 of achieving net sales of 500 billion yen, we are not only working on the short- and medium-term measures that have been our focus to date, but also expanding measures aimed at creating the products and businesses that will support the Group over the next ten years and well beyond, into our next 100 years. One such measure is the creation of a new research and development hub that we will position as a flagship for the Group. This report introduces part of that effort.

Former Research Center for Advanced Technologies

Our Group previously operated the former Research Center for Advanced Technologies in Yotsukaido, Chiba Prefecture, from 1989 to 2000. Several of the research and development themes pursued there were handed over to the business divisions for potential commercialization, and products and businesses that resulted from these efforts included excimer laser annealing (ELA) systems, magnesium (Mg) injection molding machines, our crystal business, and railguns. Our success rate for innovation exceeded the commonly cited benchmark of “3 successes out of 1,000 attempts,” and we believe this outcome was attributable to exhaustive exploration, collaboration with external partners, appointment and recruitment of talent, aspirational ideas, passion, and persistence. We aim to carry forward these practices and approaches to our new research center as well, where we will further strengthen them to spark innovation.

With the new center, it is vital that we strengthen our innovation management approach to raise efficiency and the likelihood of success of commercializing the R&D themes we undertake. This must include highly ambitious innovation activities in new fields not confined by existing products and businesses or our current core competence.



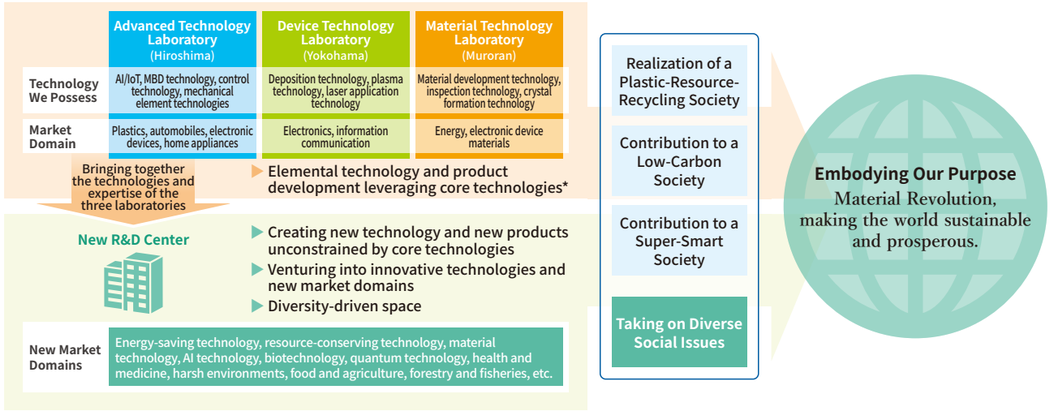
Main Roles of the New Research Center

Within the IM Headquarters, the Advanced Technology Laboratory, the Device Technology Laboratory, and the Material Technology Laboratory each possess distinctive technological strengths, which we continuously work to enhance and advance. These technologies are central to our core competencies and essential to addressing material issues, but creating innovative technologies that go beyond these domains is also a responsibility of the IM Headquarters.

In preparation for opening the new research and development center, each laboratory has formed teams to explore cutting-edge ideas, who are currently undertaking related activities. Through these activities, we will identify new market domains to prioritize and use them as our guiding compass as we take on challenges related to diverse social issues.

Main Roles of New Research Center

- Location environment set apart from our plants to promote the creation of new technologies and new products, unconstrained by our existing products, that will underpin our Group’s future
- Building an environment that enables us to pursue new technology and business domains
  - Environment that facilitates accelerated collaboration with universities, startups, and research institutions / Attractive location that facilitates access to diverse information and talent
- A diversity-driven space that sparks innovation
  - Acquisition of diverse talent (expertise, gender, nationality) / Open innovation with academia and other companies / Development of global talent



* Core technologies: Current core competencies, current products and businesses

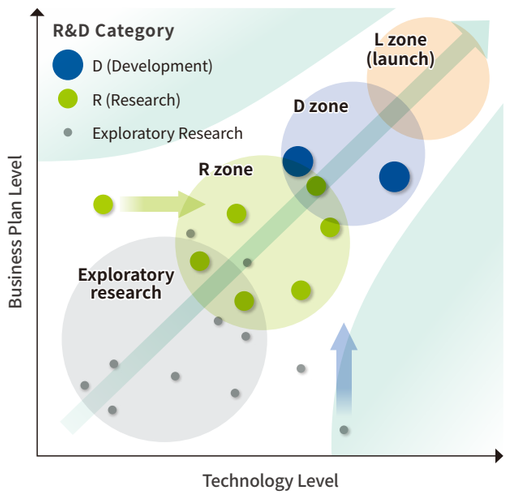
Operation of Research and Development Gates to Improve the Success Rate of Innovation Activities

We have enhanced IP analysis in collaboration with the Intellectual Property Department to refine the planning of research and development themes.

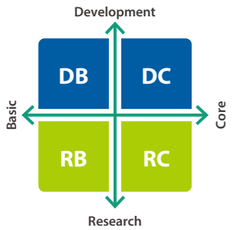
We also established criteria for quantifying each research and development theme, which are assessed at both the technology level and at the business plan level. This allows us to classify research and development themes at the time of initiation into exploratory research, R (Research) levels (RC, RB), or D (Development) levels (DC, DB). In addition, we conduct periodic research and development gate reviews, with business division directors, headquarters directors, and the CTO serving as decision-makers. Research and development themes that pass the R gate, D gate, and L (Launch) gate are then advanced to the next higher research and development category. Decisions are also made regarding reconsideration, discontinuation, or special advancement.

We employ this framework to appropriately identify and evaluate multiple research and development themes at various levels, and to provide criteria for determining how to effectively allocate management resources according to each level.

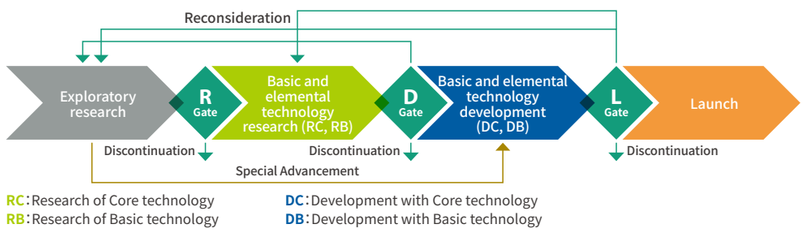
Research and Development Theme Portfolio



R&D Classification



Overview of R&D Gates



RC: Research of Core technology
RB: Research of Basic technology
DC: Development with Core technology
DB: Development with Basic technology

DX Strategy

Top Message

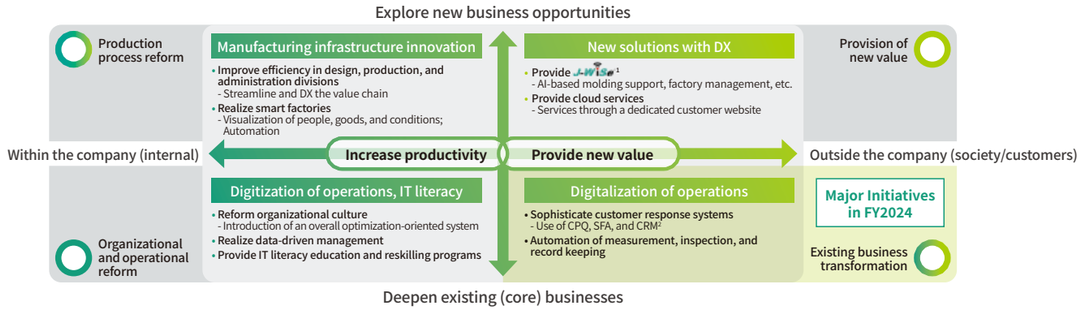
Seiji Umamoto

Director & Senior Managing Executive Officer
CISO
In charge of Office of Information Technology & Office of Digital Transformation, General Manager, Business Development Office,
In charge of Industrial Machinery Products Business Segment

Launched in fiscal 2022, the digitization project D-Pro has steadily unfolded as set out in its roadmap-based action plan, with a focus on rebuilding the core system of head office sales departments and our plants. In fiscal 2024, we built a foundation for reforming our business processes by introducing platforms such as Salesforce for our core sales system and leveling-up our customer-response systems. We are also systematizing everything from test and inspection records to the preparation of results certificates, and sequentially building assurance systems for quality data, starting with those for high-priority products, with the aim of ensuring the reliability of quality data. In addition to steadily advancing reforms to our business processes, we plan to commence full-fledged implementation of initiatives to evolve our business model from fiscal 2025 onward. Specifically, we will contribute to further enhancement of the functioning of our value creation process by pursuing data-driven management through initiatives such as venturing into digital marketing to accelerate global expansion and promoting the leveraging of data.

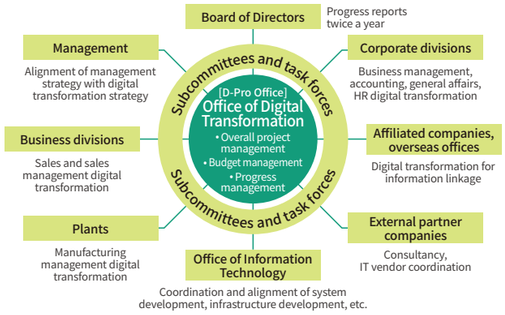
JGP2028 Basic Policy❸: Expanding Investment in Intangible Assets, Including Investment in Human Resources (DX Strategy)

A basic policy closely tied to “improving our management foundation” in the JGP2028 medium-term management plan is “expanding investment in intangible assets, including investment in human resources.” One of the strategies for achieving this is our DX strategy. JGP2028 positions itself as “reforms and challenges for new growth,” and provision of new value and increasing productivity will be indispensable to achieving this. Thus we classify our DX initiatives into four quadrants along two axes—new and existing businesses, and internal and external—and are implementing DX measures aimed at providing new value, transforming existing businesses, reforming production processes, and reforming organization and operations. In fiscal 2024, we mainly worked on transforming our existing businesses.



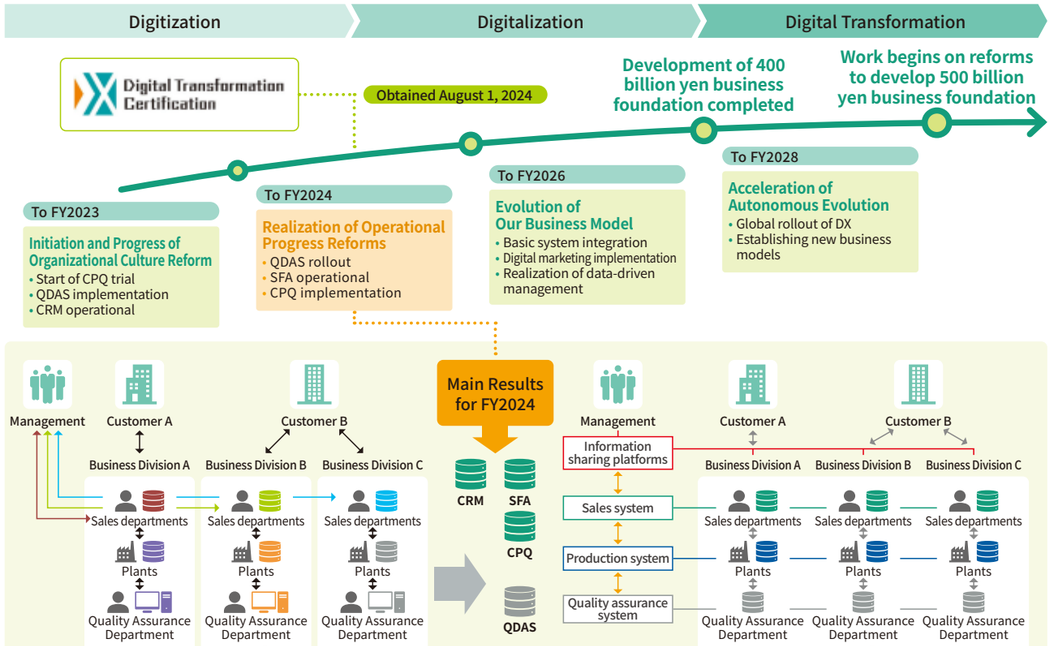
1. J-WiSe is an IoT solution that supports customers in shifting to smart factories. It consists of Production Control, Service/Maintenance, Operation Support, and a Production Automation System.
2. CPQ: Configure Price Quote SFA: Sales Force Automation CRM: Customer Relationship Management

DX Promotion System



We established the Office of Digital Transformation in July 2022 as an organization dedicated to promoting D-Pro in coordination with departments across the entire Company (see figure at left). We also began holding D-Pro General Meetings to review and advance the execution of each project in line with the roadmap. In the General Meeting, we have established subcommittees and smaller working groups for each project, and members from the business units that will benefit from the system implementations participate as subcommittee owners and in other roles. This enables an implementation framework that delivers highly effective results.

DX Roadmap and Main Initiatives for FY2024



QDAS*3: Quality Data Assurance System

We centrally manage manufacturing process quality data (primarily test and inspection records) together with its revision history, and automatically generate and issue highly reliable results certificates to ensure transparency in quality management while simultaneously improving operational efficiency.

*3 QDAS: Quality Data Assurance System

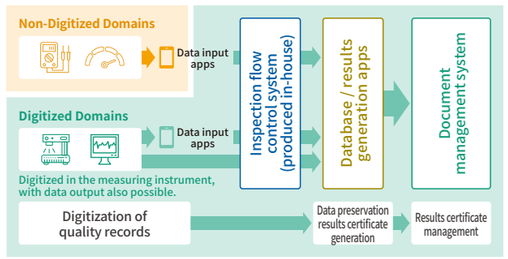
CPQ: Quote Support System

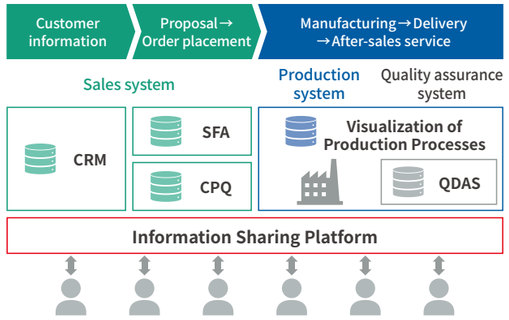
CPQ (configure, price, and quote) is a system for speeding up selection of product configurations and specifications required by customers and proposing quotation amounts. The system promotes standardization in design and pricing and prevents over-reliance on the abilities and expertise of specific individuals, thereby enabling swift customer response and supporting decision-making.

Information Sharing Platform

By operating CRM (customer management), CPQ (quotation support), and SFA (sales force automation) on a single platform, we provide services through an integrated framework covering everything from managing customer information to manufacturing and delivering products after receiving orders.

Conceptual Diagram of Quality Data Assurance System (QDAS)





Human Capital Strategy

Top Message

Tadashi Chimura

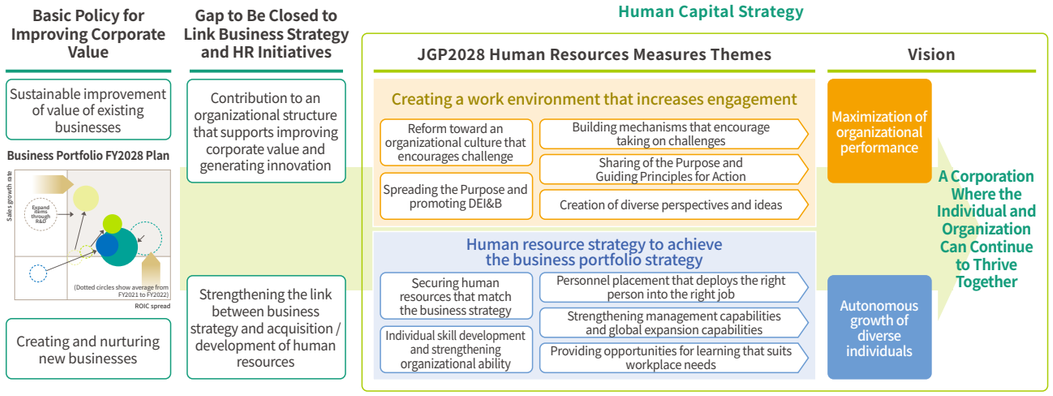
Executive Officer
In charge of Health & Safety Management, in charge of CSR & Risk Management; General Manager, Personnel Department

Based on the belief that human capital is indispensable for our Group to practice sustainability management in embodying our Purpose and achieving our Vision over the long term, we have identified "human capital improvement and DEI&B" as a material issue. With the recognition that the individual and the organization are equals, we have formulated a human capital strategy to address this material issue. While ensuring and improving diversity is the foundation of this approach, value cannot be created merely by bringing together different individuals. We believe that considerations that enable people with different individual characteristics to achieve results, mutual recognition and respect, and a sense of affinity with the organization that inspires employees to make contributions foster diverse perspectives and ideas, which form the groundwork for innovation. Moreover, given that this approach also helps prevent discrimination based on individual differences, we position it as a foundation for respecting human rights.

In addition, to contribute to the achievement of our objectives under JGP2028, we will link our business strategies with our HR initiatives to achieve both the autonomous growth of diverse individuals and the maximization of organizational performance, thereby achieving sustainable enhancement of corporate value. To achieve this, we will create an environment in which diverse individuals can acquire and fully demonstrate the skills needed to execute our business strategies according to their needs, and we will advance organizational transformation by enhancing engagement and fostering a culture that encourages taking on challenges.

Based on a shared foundation of embodying our Purpose through the practice of the Five Guiding Principles for Action of the Japan Steel Works Group and company commitments that ensure psychological safety, all officers and employees with different personalities will maximize and demonstrate their potential and, by stimulating healthy discussion, will use this as a driving force for improving productivity and breeding innovation.

The corporate image we seek is a company where "individual self-realization" and "sustainable growth of the organization" mutually circulate, and the individual and organization continue to thrive together. We will implement a variety of measures so that our daily efforts help solve social problems, so that we remain a company with value to society, and so that we can feel this for ourselves.



Human Capital Strategy Indicators and Targets

In order to quantitatively assess progress on "autonomous growth of diverse individuals" and "maximization of organizational performance," we established the J-IS Index (JSW Ikiiki ("Motivated") Status Index) using selected indicators from our engagement survey. Taking fiscal 2022, the first year of implementation, as a 100 point baseline, the score for fiscal 2024 rose to 104 points, boosted by improvements in organizational culture.

Autonomous growth of diverse individuals + Maximization of organizational performance = **J-IS Index** JSW Ikiiki ("Motivated") Status Index

Our Human Capital Strategy

In formulating our human capital strategy, we identified the gaps that must be addressed to contribute to realizing the basic policies of JGP2028 ("sustainable improvement of value of existing businesses" and "creating and nurturing new businesses") as "strengthening the link between business strategy and human-resource acquisition and development measures" and "contributing to the development of an organizational culture that supports enhancing corporate value and generating innovation," and proposed various measures accordingly.

Creating a Work Environment That Enhances Engagement

Reform toward an organizational culture that encourages challenge

In a rapidly changing business environment full of volatility, achieving sustainable growth for the Group requires us to continuously innovate. To that end, we must transform our organizational culture into one where employees feel encouraged to pursue challenges without fear of failure, backed by a high level of psychological safety.

Starting in fiscal 2023, the Organizational Culture Reform Project Team, comprising employees with a passion for driving change, has been working closely with management as the driving force behind cultural reform efforts, promoting these activities through both bottom-up and top-down approaches. In April 2025, we established the Japan Steel Works Group Five Guiding Principles for Action to encourage employees to take on challenges.

In our human resources system as well, managers are required to set "challenge goals" within their annual targets to drive changes in mindset and promote action.

Spreading the Purpose and promoting DEI&B

Efforts are currently underway to help the Purpose resonate with all officers and employees. At workplaces, organizational managers lead workshops to discuss the connection between the Purpose and daily operations to instill this among workers.

The Group also recognizes that leveraging diverse talent to connect different perspectives and ideas to new value is essential in executing its management strategy. Accordingly, we have identified "promotion of DEI&B" as a materiality and are advancing related initiatives.

Human resource strategy to achieve the business portfolio strategy

Acquisition of human resources that match our business strategy

JSW Group's workforce includes many highly skilled mid-tier personnel in their 30s to 40s who have plenty of experience. In order to execute our business strategy and achieve sustainable growth, we need to maintain and increase the depth of this cohort, and therefore we are working with the business divisions to enhance hiring. In addition, even as we focus on hiring new graduates as young employees who will grow into the middle tier of the future, we actively recruit experienced employees throughout the year.

We are also working to build a system that visualizes the skills our employees possess and are developing an environment enabling personnel placement that deploys the right person into the right job in line with our business strategies.

Developing individual skills and strengthening organizational (management) capabilities

We believe that leveraging diversity and having workers autonomously take on challenges breeds innovation and maximizes organizational results. In our human capital strategy, which aims to achieve this, we focus first on developing the abilities of the individual (portable skills—foundational skills required regardless of role or position—and technical skills—specialized abilities acquired through work experience) and are working to enhance these skills through various initiatives. In particular, for younger employees, we will implement systematic rotations to encourage growth through diverse work experiences.

To connect increased individual skills to organizational success, increasing management ability in the workplace is vital. Starting in fiscal 2024, we have begun implementing training for organizational managers to drive organizational transformation and promote management skills that encourage workers to take on challenges by ensuring psychological safety.

Materiality Management

To simultaneously achieve the sustainability and financial targets that the JSW Group aims to realize by fiscal 2033, we believe that resolving the six key issues (materiality) identified in November 2022 is essential. To help stakeholders understand how the Group's products are positioned within the three materialities for "Creating value and solving social issues through JSW Group's businesses," how we are contributing to their resolution, and how we plan to further enhance our contributions going forward, we have prepared special feature pages for each (see the linked pages below).

Details on the three materialities related to "Bolstering JSW Group's management foundation for sustainable growth" are provided on the corresponding linked pages.

Purpose Material Revolution — Material Revolution, making the world sustainable and prosperous.

Vision for FY2033

Sustainability Targets

Contribute to the realization of a sustainable and prosperous world through the development and implementation of industrial machinery and new materials that solve social issues.

Achieve simultaneously

Financial Targets

Aim to grow into a corporate group with sales of 500 billion yen

Net Sales	Operating income	ROE
500 billion yen	50 billion yen	11-12%

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

Materiality	Reasons why considered to be of high importance	State of major initiatives	Related SDGs
Creating value and solving social issues through JSW Group's businesses			
Realization of a Plastic-Resource-Recycling Society	As a general manufacturer of plastic processing machinery, JSW Group believes it extremely important to supply society with all manner of plastics processing machinery that achieves the 3Rs and is renewable. Leveraging our core competence to the maximum, we can demonstrate our 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.	**Renewable** – Twin-screw extruders (TEX) for biodegradable plastics **Reduce** – Physical foaming injection molding machines (SOFIT, MuCell) – Plastic injection molding machines for ultra-thin molding – TEX for biocomposites such as wood biomass **Recycle** – TEX for chemical and mechanical recycling – Injection molding machines, blow molding machines, and film/sheet production equipment compatible with recycled materials – Twin-screw extrusion dechlorination system – Mono-material film manufacturing equipment	
➡ p.30 Special Feature: Realization of a Plastic-Resource-Recycling Society			
Contribution to a Low-Carbon Society	The realization of a low-carbon society is one of the most important challenges 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, our responsibilities include the reduction of energy consumption of our industrial machinery products and the curbing of CO_2 emissions from the operations of our manufacturing sites.	**Zero CO_2 emissions** – Materials for major nuclear power generation components – Separator film manufacturing equipment for LiB in electric vehicles – Pelletizers for solar panel protection sheet materials – Materials for offshore wind turbine construction **Reduce CO_2 emissions** – All-electric plastic injection molding machines (reduced power consumption) – All-electric rubber injection molding machines (reduced power consumption) – Materials for high-efficiency GTCC power generation key components (GTCC: Gas Turbine Combined Cycle) – Large injection molding machines for large automotive parts (plastic/Mg) – Reduce CO_2 emissions from business activities (Scope 1, 2)	
➡ p.32 Special Feature: Contribution to a Low-Carbon Society			
Contribution to a Super-Smart Society	In a super-smart society, such social issues as environmental problems and declining birthrates are expected to be resolved. JSW Group's industrial machinery and new materials are involved in the manufacturing of electronic devices that make up digital infrastructure. Robotics with AI and intelligent industrial machinery will also play a central role in a super-smart society. That is why the Group's product lines could serve as an essential part of a super-smart society. This is also considered to be a highly important business expansion opportunity for the Group.	**Electronic Devices** – Excimer laser annealing (ELA) systems for displays – Vacuum laminators and vacuum press for electronic circuit boards – 3-stage vacuum laminators for semiconductor package substrates – Laser heat treatment equipment for power semiconductors – Micro LA systems for sensors – Deposition systems for 5G-compatible LCP flexible substrates – Lithium niobate (LN), synthetic quartz materials – Gallium nitride (GaN) crystal materials **Industrial Machinery** – J-WIS* equipped injection molding machines, film and sheet manufacturing equipment – AI robotics and industrial machinery (under development)	
➡ p.34 Special Feature: Contribution to a Super-Smart Society			

* JSW Worldwide IoT Solutions of Enhancement: IoT solutions that support customers in achieving smart factory operations

Materiality	Reasons why considered to be of high importance	State of major initiatives	Related SDGs
Bolstering JSW Group's management foundation for sustainable growth			
Human Capital Improvement and DEI&B	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. It is also important to create a work environment that enhances engagement.	**Human resource strategy to achieve the business portfolio strategy** **Securing human resources that match the business strategy** – Year-round hiring of young employees and experienced workers with different backgrounds and attributes **Developing individual skills and strengthening organizational (management) capabilities** – Management training focused on strengthening organizational ability to promote "taking on challenges" **Creating a work environment that increases engagement** **Reform towards an organizational culture that encourages challenge** – Include challenge targets in managers' annual goals (revision of evaluation system) **Spreading the Purpose and promoting DEI&B** – Strengthen DEI&B initiatives such as creating work environments where workers can demonstrate individuality in work and development measures to accommodate individuality	
p.26 Human Capital Strategy, p.54 Human Capital Management			
Investment in the Future with Innovation Management	In order for JSW Group to continue contributing to society, it is essential to maintain and strengthen its technological superiority by refining its core competence and expanding its business. Innovation is an 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.	**Innovation management** **Established Innovation Management Headquarters (April 2023)** **Strengthen existing businesses through elemental technology development** – Build companywide system for formulating business-specific IP strategies – Partner with domestic and international universities and research institutes, obtain doctoral degrees (develop human resources, strengthen technological ability) **Create innovative technologies through basic technology research** – Formulate plans to establish a new R&D center for developing innovative technologies – Strengthen IP landscape system for efficient new product and market development **Promote DX** – Continue promoting DX strategy following DX certification acquisition in August 2024	
p.22 Innovation Management Strategy, p.24 DX Strategy			
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 stakeholders. And 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.	**Corporate governance** – Review officers' remuneration system – Increase diversity of Board of Directors and Audit & Supervisory Board (outside officers and female officers) – Establish Risk Management Group in Corporate Planning Office – Reduce cross-shareholdings **Strengthen quality assurance system** – Continue implementing measures for quality assurance system reform, organizational culture reform, process reform, and governance reform	
p.60 Corporate Governance, p.52 Quality Management			

Special Feature: Realization of a Plastic-Resource-Recycling Society

Plastics come in a wide variety of raw materials and grades to accommodate the diverse characteristics required for different products. This feature introduces a typical lifecycle of plastics, trends in plastic waste volume, and the technologies held by JSW Group.

Please refer first to the figure on the right, "Flow of Plastic Resource Recycling." In the molding process for components, materials generated during secondary processing, such as scrap and defective parts, are crushed and returned to raw material form. Many of these materials are mechanically (materially) recycled and then remolded into products (① in the figure). For products that cannot undergo mechanical recycling due to the presence of coloring agents, surface treatments, or printed coatings, chemical recycling is an effective alternative. This process thermally decomposes plastics into their chemical components for reuse in the production of new plastic raw materials (②).

After disposal, some items, such as PET bottles for which collection and logistics systems are already established, are mechanically recycled (③). However, the majority are discarded as mixtures of various raw materials, known as mixed waste plastics, which are difficult to recycle because they are not made from a single raw material.

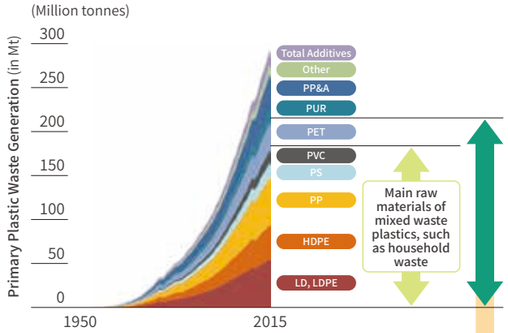
A portion of these mixed waste plastics is effectively utilized as reducing agents in blast furnaces to save energy and reduce CO_2 emissions in steelmaking processes, or as solid fuel in power plants. JSW Group's extrusion technologies play an active role in these processes as well (④).

The table below summarizes JSW Group's track record for representative resins. Beyond these examples, our technologies also contribute to recycling crosslinked rubber and utilizing ASR (automobile shredder residue), among many other initiatives toward bringing about a society that recycles resources of a variety of materials.

In addition to recycling, JSW Group's technologies contribute to "Reduce" efforts—such as lightweighting and volume reduction through thin-film and foam technologies, and waste reduction through automation and predictive control of equipment—as well as to "Renewable" initiatives, including the development and application of biodegradable and biomass plastics.

Going forward, we will continue to pursue technological development and research with unwavering commitment to achieving a stable and sustainable resource-recycling society.

Trends in Global Plastic Waste Volume by Raw Material



Source: Compiled by JSW based on R. Geyer, J. R. Jambeck, K. Lavender Law, *Production, Use, and Fate of All Plastics Ever Made*, Sci. Adv. 2017; 3: e1700782, July 19, 2017

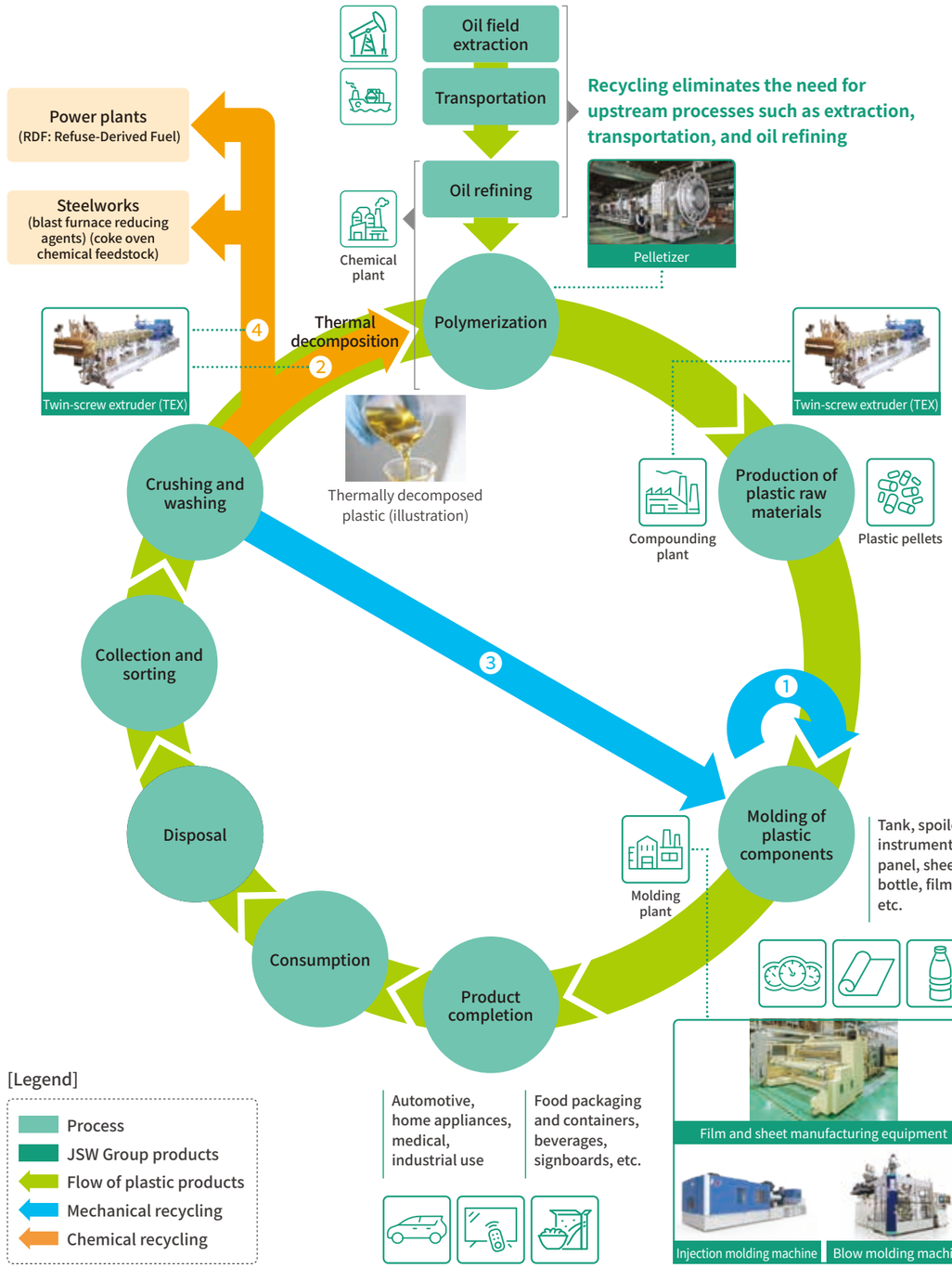
Contributing to most recycling technologies for waste plastics

Overview of JSW Group's contributions to a plastic-resource-recycling society (a summary of representative recycling technologies utilizing extruders)

Resin type	Main applications	Realization of recycling				Realization of reduction	
		Chemical recycling		Mechanical (material) recycling		Reduction in plastic usage	Defect reduction
		②	④	①	③	Thinner films/ foam, etc.	Automation, efficiency improvement
PMMA (Polymethyl methacrylate)	Signboards, lighting covers, water tanks	○	–	○	○	Optimization of equipment such as screw design; new physical foaming technology SOFIT; high-load, high-speed injection specification EHD	J-WiSe, M-Navi., Tela-TEX, Repex, ezDRIVER
PET (Polyethylene terephthalate)	Beverage bottles, food containers						
PS (Polystyrene)	Trays, expanded polystyrene						
PVC (Polyvinyl chloride)	Agricultural films, pipes, hoses	Although these general-purpose resins are used in large volumes, their applications are wide-ranging, and they are discarded in mixed form, so they are not separated					
PP (Polypropylene)	Food containers, electrical appliance components						
PE (Polyethylene)	Plastic bags, containers, pipes						
Mixed waste plastics (various resins mixed)	Mainly PP, PE, and PVC	○	○				

* SOFIT, J-WiSe, M-Navi., Tela-TEX, Repex, and ezDRIVER are Japanese registered trademarks of The Japan Steel Works, Ltd.
Each is an example of an IoT solution for automation and efficiency improvement, or an equipment specification tailored to operating conditions.
For details, please refer to our website or contact us.

Flow of Plastic Resource Recycling

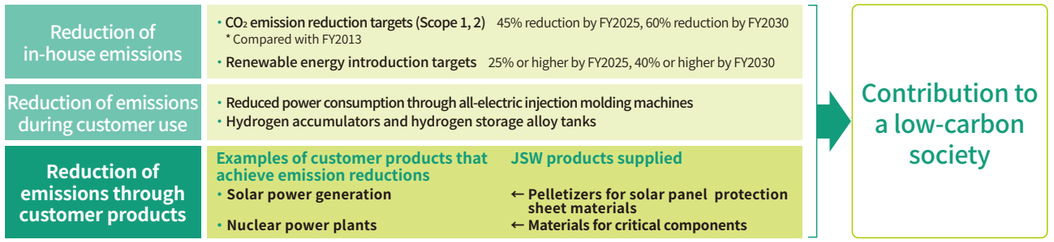


Special Feature: Contribution to a Low-Carbon Society

JSW Group has established CO_2 reduction targets for its own emissions from manufacturing activities for FY2025 and FY2030 and is advancing initiatives in line with these goals, while supporting and disclosing information in accordance with the TCFD.

Many of our industrial machinery and material products operate in the upstream of the supply chain. To accurately understand the value our products deliver to society, we determined that it is necessary to assess not only upstream but also downstream impacts. To ensure fairness and objectivity, we collaborated with The Japan Research Institute, Limited to assess the impact of our products on society and the environment across the entire supply chain, including downstream processes, and organized these findings into a social impact report.

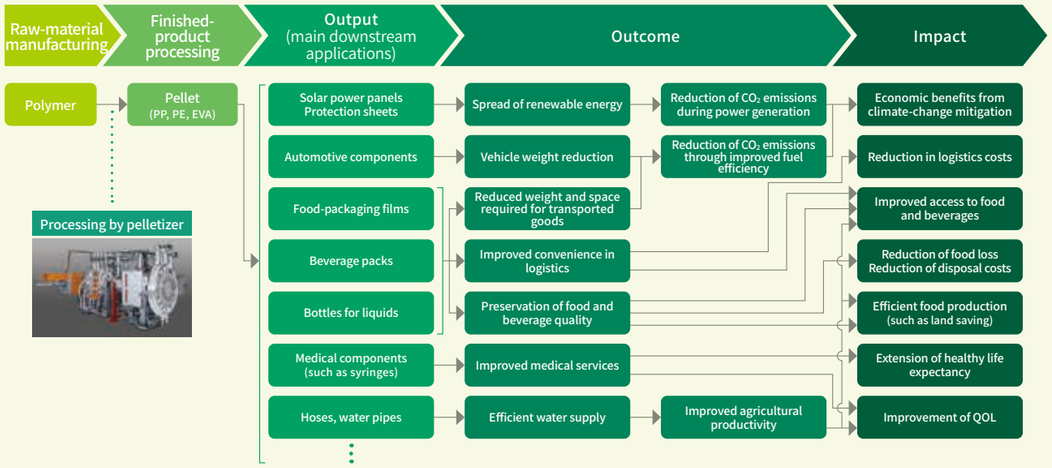
Website https://www.jsw.co.jp/ja/sustainability/environment/socialimpact.html



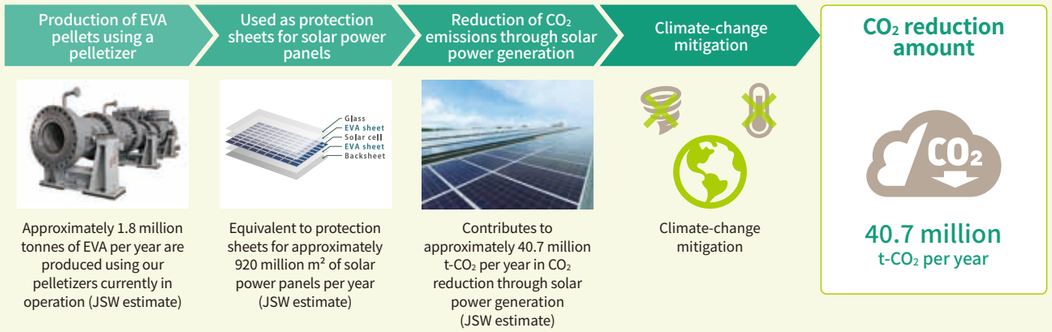
Estimating CO_2 Reduction Effects Through Pelletizers Used for Solar Panel Protection Sheet Materials

Pelletizers are machines used to produce plastic pellets—the raw material for molding plastic products. They are used in the production of polypropylene (PP), polyethylene (PE), ethylene-vinyl acetate (EVA), and other resins.

Plastic pellets produced by pelletizers have a wide range of downstream applications. Key applications that generate social impact include automotive components and food-packaging films. In recent years, demand has been growing for their use in protection sheets for solar power generation panels.



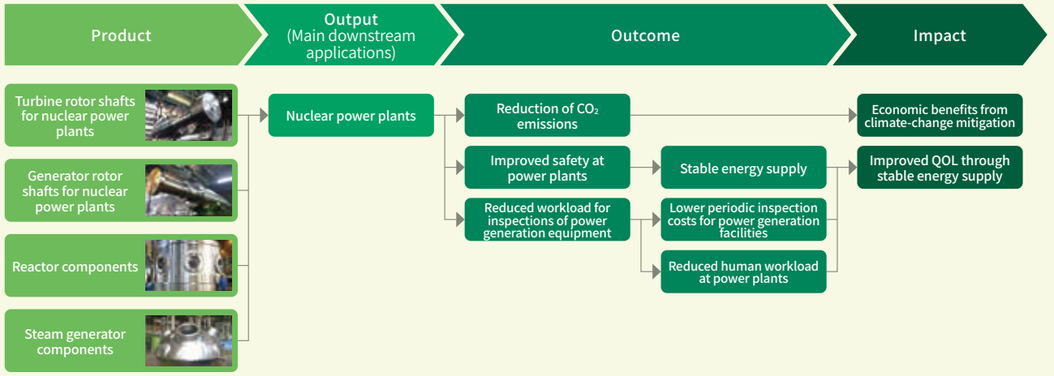
Visualization example
EVA resin material for solar power panels



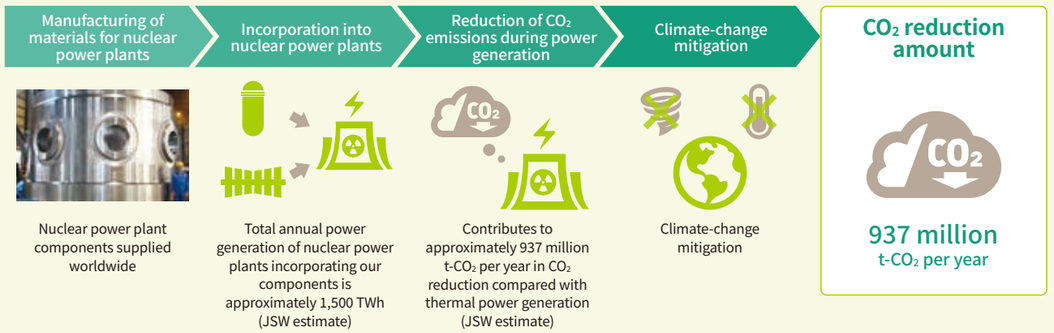
Estimating CO_2 Reduction Effects Through Materials for Nuclear Power Plants

JSW Group supplies materials for major components used in nuclear power plants. Nuclear power generation significantly reduces CO_2 emissions compared with thermal power generation and offers stable energy supply compared with renewable energy sources, which are easily affected by weather and natural conditions.

One of the characteristics of JSW Group's materials for nuclear power plants is the ability to manufacture large, integrated shapes that help reduce the number of welds. Reducing weld points contributes to outcomes such as lower periodic inspection costs and reduced burden on inspectors.



Visualization example
Materials for nuclear power plants



The total annual power generation of nuclear power plants incorporating JSW's materials is approximately 1,500 TWh. When compared with the CO_2 emissions that would be generated by producing the same amount of electricity through thermal power generation, this represents an estimated annual reduction of approximately 937 million t-CO_2.

Special Feature: Contribution to a Super-Smart Society

A super-smart society is built on multiple digital industries. Electronic devices that support each digital industry include user-interface devices such as smartphones, tablets, and wearable devices, as well as mobility applications, industrial machinery, and robots. In addition, digital infrastructure—technologies, equipment, and networks that form the foundation of digital industries—such as data centers and optical communications, incorporates a wide range of electronic devices.

Our Group's industrial machinery and crystal materials contribute to the manufacturing of many of these electronic devices, as well as semiconductors and various substrates that are indispensable for the functioning of digital infrastructure.

By contributing to the realization of a super-smart society, we help address social issues such as environmental challenges and the declining birthrate and aging population, while also supporting improvements in quality of life (QOL) and advances in disaster response, thereby contributing to a safe and secure society and the sustainable enhancement of our Group's corporate value.

Digital industries

- Display → ELA*1 system
- Display → Laser lift-off system
- Sensor → Laser annealing system for semiconductors
- SAW filter → Vacuum laminator

*1 Excimer Laser Annealing

Smartphones and tablets

- Display → ELA system
- Sensor → LA*2 system for semiconductors

*2 Laser Annealing

Wearable devices

- Display → ELA system
- Power semiconductors → Laser annealing system for semiconductors
- Sensor → Laser annealing system for semiconductors

Mobility

- Power semiconductors → Laser annealing system for semiconductors

Industrial machinery and robots

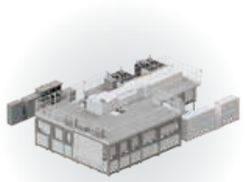
Copper alloys

Digital infrastructure

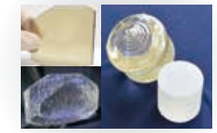
- Optical communications
  - Semiconductor lasers → ECR*3 deposition system
  - Optical waveguides
  - Communication modules → Synthetic quartz
  - Lithium niobate crystals

*3 Electron Cyclotron Resonance

- Data centers (DC)
  - Memory → Laser annealing system for semiconductors
  - Server power supplies
  - Various connectors → Titanium–copper and other copper alloys
  - Package substrates → Vacuum laminator
  - High-frequency devices → Gallium nitride (GaN) crystals
  - Power conversion devices



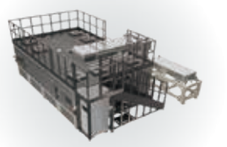
ELA system



GaN crystals and other crystal materials

Semiconductors (integrated circuits)

- Semiconductors
  - Various semiconductors → Laser annealing system for semiconductors
- Various substrates
  - Copper-clad laminates → Large vacuum hot press
  - Multilayer substrates → Medium-sized vacuum hot press
  - Flexible printed circuit boards → Titanium–copper and other copper alloys

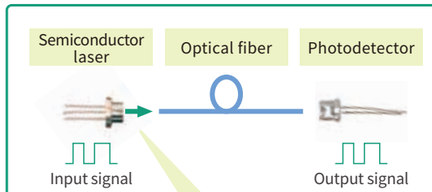


Laser lift-off system

Vacuum laminator

Laser annealing system for semiconductors

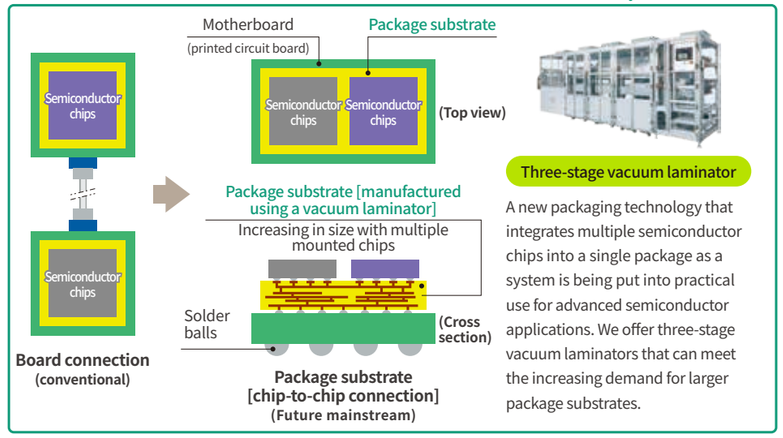
Vacuum hot press



ECR deposition system

The end-face mirrors of a laser are critical surfaces where light is emitted and reflected. Enhancing the smoothness of the end-face coating improves the reflectance characteristics and ultimately enhances the beam quality. ECR deposition systems can achieve extremely smooth coatings.

➡ p.40 Strategy by Business – Industrial Machinery Business



Three-stage vacuum laminator

A new packaging technology that integrates multiple semiconductor chips into a single package as a system is being put into practical use for advanced semiconductor applications. We offer three-stage vacuum laminators that can meet the increasing demand for larger package substrates.

➡ p.40 Strategy by Business – Industrial Machinery Business

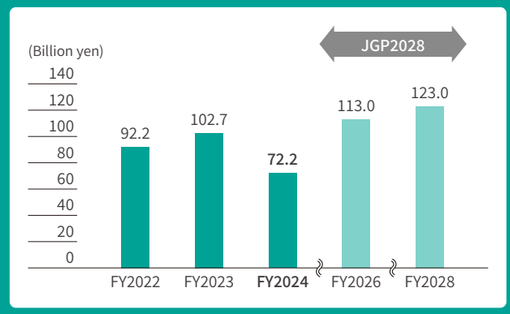
Plastics Machinery Business

Business Overview

The Plastics Machinery Business Division manufactures, sells, and provides maintenance services for plastic production machinery and plastic process machinery. The former includes pelletizers and twin-screw extruders (TEX) that produce plastic pellets used in the primary processing of plastic, as is the latter, which includes film and sheet manufacturing equipment used to heat plastic and turn the malleable material into films. We take pride in our high global market share for pelletizers and other equipment.

Plastics are used in a wide array of products, from IT products like smartphones to electronic devices such as semiconductors, automotive parts, food packaging, medical equipment, and solar cells. Recently, we have expanded our focus to machinery that can recycle used plastics and produce films that can be easily recycled. Through those business activities, we will achieve the realization of a plastic-resources-recycling society and contribute to a low-carbon society (e.g., boosting fuel efficiency through mobility weight reduction and promoting the social implementation of renewable energy power generation), while enhancing social value and increasing corporate value.

Trends in Net Sales



Representative Products and Equipment

Large pelletizer

Film and sheet manufacturing equipment

Twin-screw extruder (TEX)

Recycling Technical Center (Located at Hiroshima Plant)

Analysis of Current State

Strengths
- Ability to respond to customer needs through proprietary technologies accumulated over many years
- Broad product lineup compatible with a wide range of resins
- High capacity for producing high-quality, low-cost products backed by an exceptionally high in-house production rate
- Availability of skilled service technicians with a wealth of experience

Weaknesses
- Longer delivery times resulting from customization
- Global Standard machines were introduced later than at other companies
- The in-house production rate for film manufacturing equipment is low
- Service system in Europe and the United States has room for improvement (film)

Opportunities
- Growth in plastics demand, driven by population growth
- Expansion and revitalization of markets in India and the Middle East
- Growing demand for recycling
- Demand for mono-materialization of packaging films
- Expansion of after-sales service demand

Threats
- The possibility of tighter global restrictions on plastics use
- Slowing Chinese market and promotion of Chinese domestic production
- Growing presence of low-priced machines from China and other countries
- Foreign exchange risks caused by rapid yen appreciation
- Growing geopolitical risks

Sources of Strengths and Challenges

We are proud to possess the world's most advanced melting, mixing, and solidifying technologies for plastics. Our pelletizers handle polypropylene (PP) and polyethylene (PE), while our twin-screw extruders cover a wide range, from general-purpose to high-performance plastics, and various recycling applications. The proprietary technologies for melting, mixing, and molding control that we have developed and accumulated at our technical centers in Japan and overseas enable us to respond flexibly to customer needs.

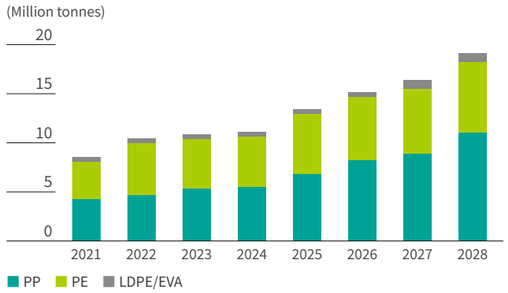
Another strength lies in our ability to design, manufacture, and process all key components of our equipment in-house. By integrating independently developed wear- and corrosion-resistant materials, flow analysis, and AI/IoT technologies into our equipment and processes, we provide highly original products and services tailored to customer requirements.

We are also addressing our weaknesses (W). For our later entry into the Global Standard machine market, we are expanding into new markets by utilizing our company-wide overseas network to deliver rapid sales and service, while strengthening technical development and support in collaboration with other Group companies.

Operating Environment

It is estimated that global plastic consumption will rise from approximately 460 million tonnes in 2019 to around 1.2 billion tonnes by 2060. The regions expected to see the highest growth rates are India and the Middle East. Although China's growth rate is expected to slow somewhat, it is projected to remain the world's largest market. Focusing on these key regions, we will strengthen our sales and service networks to capture customer needs with greater precision.

Outlook for Polyolefin Production in India



Growth Strategies and Initiatives

1. Promoting Globalization

By leveraging our global network of overseas bases and introducing Global Standard models of TEX and sheet manufacturing equipment, we are expanding sales in new global growth markets, including India and the Middle East, in addition to China. To enhance the presence of our Group's products in India, we have established the Experience Centre.

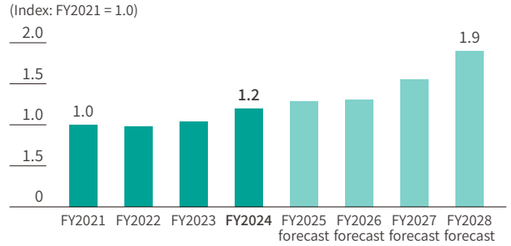
We are also expanding the technologies accumulated at our technical centers to capture the growing demand for plastic recycling.

2. Strengthening After-Sales Service

Leveraging our ability to meet a broad range of customer needs, we aim to expand sales in the increasingly active markets of India and the Middle East.

In addition, we are strengthening our global service network by increasing the number of personnel, including engineers, at our local subsidiary in India, one of our key focus regions, to enhance responsiveness and improve customer satisfaction.

Sales Trends and Forecast for After-Sales Service of Plastic Production and Processing Machinery



Message from the Head of the Division

Kengo Takeya

Executive Officer
Director of Plastics Machinery Business Division

Plastic plays an essential role in our lives due to its ease of processing and versatile properties. In our Plastics Machinery Business, we leverage our world-leading technical center to develop technologies for recycling, energy conservation, and weight reduction, helping with the realization of a plastic-resource-recycling society and contribution to a low-carbon society.

In fiscal 2024, business conditions for separator film manufacturing equipment, one of our main product lines, slowed due to rapid changes in market conditions. However, our service business remained steady not only in China but also in growth markets such as India and the Middle East, allowing us to secure both sales and profits.

In the current fiscal year, we will formulate and swiftly implement new growth strategies in response to changing market conditions to achieve renewed growth. In particular, we will expand our overseas sales and service bases to strengthen our presence in global growth markets. We will also continue proactive capital investment, including the establishment of a new machinery plant at the Hiroshima Plant to handle large and service parts, thereby enhancing the production capacity and in-house production rate of our medium-sized and large extruders—our core strength—while improving profitability and expanding our service business. Furthermore, by strengthening collaboration with affiliated companies, we aim to expand the market share of our existing product lineup and further grow JSW Group's Plastics Machinery Business.

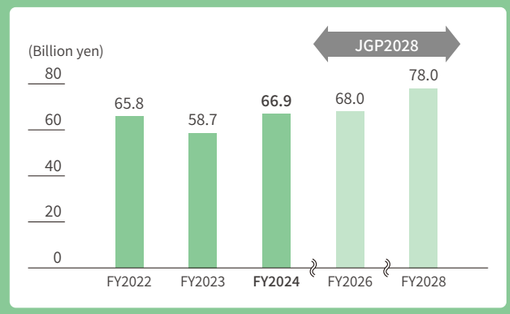
Injection Molding Machinery Business

Business Overview

The Injection Molding Machinery Business Division manufactures, sells, and provides maintenance services for plastic injection molding machines and blow molding machines used for the primary processing of plastic raw materials, as well as magnesium (Mg) injection molding machines used for the primary processing of magnesium alloys, known for being the lightest practical metals with the highest specific strength.

Our plastic injection molding machines feature: (1) electrically powered machines with excellent environmental performance; (2) a range of sizes, from compact models with a mold clamping force of 30 tonnes to extra-large models with a mold clamping force of 4,000 tonnes; and (3) the industry's top lineup, including vertical injection molding machines and special-purpose machines to meet the diverse needs of our customers. Mg injection molding machines utilize the thixomolding method, allowing the molding of high-precision, high-density parts. Both plastics and Mg contribute to the weight reduction of automobiles as in-vehicle parts. We are proud to have the highest shipment value of plastic injection molding machines in Japan. We are the top manufacturer of one-of-a-kind Mg injection molding machines, and blow molding machines with over 80% share of the direct blow molding machine market in Japan.

Trends in Net Sales



Representative Product Lineup

Blow molding machine

Plastic injection molding machine (clamping force: up to 4,000 t)

Mg injection molding machine (clamping force: up to 3,000 t) – THIXOMOLDING (Japanese Registered Trademark No. 2685598)

Analysis of Current State

S Strengths
- In-house development of key components and high in-house production rate
- Mass customization production (technical capabilities to meet customer needs based on extensive experience and proven performance)
- Well-developed domestic and international sales and service network
- Extensive experience and proven track record in magnesium injection molding machines

W Weaknesses
- Low brand recognition in overseas markets
- Later entry into the market for extra-large machines
- Ability to handle large orders
- Lack of experience in supporting overseas standards for some models

O Opportunities
- Expanding demand for magnesium
- Growing market in India
- Increasing demand for larger components in the automotive field
- Rising need for electrification in Europe

T Threats
- Potential tightening of global plastic regulations
- Slowing Chinese market and the promotion of domestic production in China
- Increasing geopolitical risks

Sources of Strengths and Challenges

Building on the material design technology cultivated through our founding Materials Business, we develop and manufacture wear- and corrosion-resistant screws and cylinders, as well as control boards for controllers. We also perform in-house processing and assembly of components. In recent years, the automotive sector has seen further advancements in integrated molding and larger components, aiming to improve productivity. We regard this trend as an opportunity for business expansion, as we excel in large all-electric machines, and we are working to expand our lineup of extra-large models.

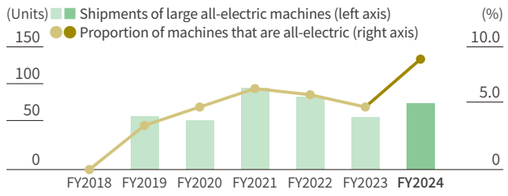
Our plastic and magnesium (Mg) injection molding machines are delivered through a global network consisting of 22 locations—10 in Japan and 12 overseas—supported by sales companies and distributors that provide both products and after-sales service. In Europe, which we position as a growth region, we are strengthening information dissemination for large all-electric machines capable of integrated molding and producing large components, and that also offer superior energy efficiency. As a result, the electrification rate improved in FY2024 (see the figure on the right). In another key growth region, India, we are enhancing our visibility through proactive information outreach, including the establishment of the Experience Centre.

Operating Environment

All plastic injection molding machines in our Group have been converted to fully electric models. Still, in Europe, hydraulic machines remain prevalent, with the electrification rate for large machines being only a few percent. However, the recent increase in electricity prices and the growing imperative to reduce CO_2 emissions are expected to drive demand for updating and replacing hydraulic machines with more energy-efficient electric injection molding machines.

In addition, as the need to reduce vehicle weight—including for battery electric vehicles (BEVs)—continues to grow, the number of plastic and magnesium (Mg) components is increasing. At the same time, further weight reduction is promoting the use of larger components.

Shipments by Japanese Manufacturers to Europe and Proportion of All-Electric Machines There



Growth Strategies and Initiatives

In addition to our Group's strength in mass customization, we are leveraging our world unified service system supported by IoT solution J-WiSe to enhance our presence in the Indian market, where medium-to-long-term growth in demand is expected. To this end, we have expanded our service network and opened the Experience Centre. The center regularly hosts seminars to attract new customers, strengthen our brand image, and drive sales growth.

In the automotive sector, demand for integrated and larger components is expected to increase for both plastic and magnesium (Mg) molded parts. In June 2025, we launched the industry's first 4,000-tonne clamping force all-electric plastic injection molding machine. For Mg injection molding machines as well, we have expanded our lineup to include models equipped with electric clamping units that deliver an industry-leading clamping force of 3,000 tonnes, further strengthening our presence in the large-machine segment.

On the production side, our ability to develop and manufacture key components in-house enables us to respond flexibly even amid global supply-chain disruptions and to address customer customization requests promptly, thereby improving customer satisfaction. This flexibility is made possible by our high rate of in-house production, which is a crucial factor in our business operations. We will continue to further strengthen this capability.

* J-WiSe is a Japanese registered trademark of The Japan Steel Works, Ltd.

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 FY2024, as supply shortages of components were resolved, automobile production recovered, and the year began with a gradual rebound led by the domestic market. However, production cuts due to automobile certification inspection irregularities caused capital investment to stagnate once again. In FY2025, the pace of investment recovery is expected to remain slow due to the deceleration of electric vehicle (EV) adoption and the impact of tariff policies in the United States.

Amid such conditions, in FY2024, we worked to secure sales while improving profitability, achieving certain progress such as an improved profit margin. We will continue pursuing further improvement in FY2025.

Our division's products contribute to the realization of a low-carbon society by enabling both lighter components and enhanced energy efficiency and productivity of manufacturing equipment. As demand for integrated molding of larger components increases, we are advancing the development of even larger machines to complement our existing, which spans from small to large models. In FY2024, we added an ultra-large Mg injection molding machine, followed by an ultra-large plastic injection molding machine in FY2025.

We are also accelerating the global rollout of our products by advancing remote maintenance using IoT and launching products that comply with international standards. Building on our proven track record as Japan's No. 1 manufacturer, we will further expand our global business operations and continue to contribute to the realization of a low-carbon society.

Industrial Machinery Business

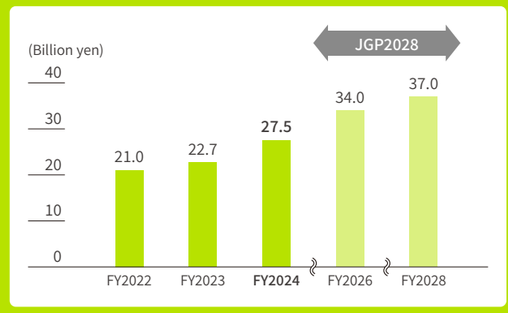
Business Overview

The Industrial Machinery Business Division contributes to the realization of a sustainable and prosperous smart society through the manufacture, sales, and after-sales service of electronic-device-related equipment, including laser application systems, ECR (Electron Cyclotron Resonance) deposition systems, vacuum presses, and vacuum laminators, and infrastructure-related equipment such as couplers, draft gears, and starting gates.

In particular, our electronic-device-related equipment is used in the production of high-definition flat panel displays (FPDs), power semiconductors, semiconductor lasers, SAW filters, electronic circuit boards, and package substrates, thereby contributing to the creation of digital social infrastructure and improved energy efficiency in a super-smart society.

Each of our electronic-device-related equipment lines possesses unique strengths. In this report, we focus on analyzing two businesses with increasingly active market environments—ECR deposition systems and vacuum laminators—as examples of how we are contributing to a super-smart society.

Trends in Net Sales



Representative Product Lineup

Vacuum laminator for package substrates

ECR deposition system for semiconductor lasers

Excimer laser annealing (ELA) system for displays

Laser annealing (LA) system for semiconductors

Analysis of Current State
(ECR Deposition System Business for Semiconductor Lasers)

➡ p.34 Special Feature —Contribution to a Super-Smart Society

Strengths
- Product performance that enables low-damage, dense, and flat film deposition
- Extensive knowledge and proven track record in process development
- Possession of a demonstration unit for ECR systems for optical waveguides
- Abundant personnel well-versed in cleanroom operations and clean assembly

Weaknesses
- Low productivity due to slow deposition rate
- Limited recognition of ECR deposition technology in Europe
- Higher equipment cost compared with alternative process systems

Opportunities
- Growing demand for semiconductor lasers and laser diodes (LDs) for data centers, driven by the expansion of high-speed, high-capacity communications
- Increasing adoption of photonics-electronics convergence devices and rising demand for optical waveguides

Threats
- Emergence of new deposition systems and alternative processes offering higher productivity at lower cost
- Export restrictions arising from trade frictions

Analysis of Current State
(Vacuum Laminator Equipment Business for Package Substrates)

➡ p.34 Special Feature —Contribution to a Super-Smart Society

Strengths
- Extensive experience and proven delivery record
- Product lineup tailored to diverse customer requirements
- Customer development support through the Technical Center (demo facility)

Weaknesses
- Late entry into the high-end package market
- High dependence on outsourcing

Opportunities
- Transition to next-generation products (larger sizes, higher density, new base materials and films, etc.)
- Government subsidies for the semiconductor industry

Threats
- Market volatility (high degree of fluctuation)
- Intense competition in product development and cost reduction
- Export restrictions arising from trade frictions

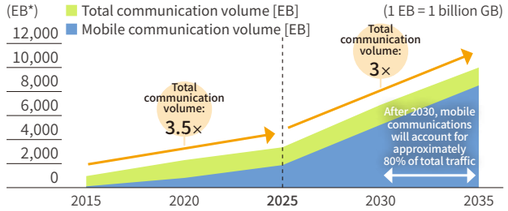
Sources of Strengths

JSW Group possesses extensive expertise in ECR deposition processes and provides products capable of diverse film deposition. In recent years, by responding to robust demand from laser diode (LD) manufacturers, the Group has established itself as the world's only manufacturer of ECR deposition systems capable of high-end film formation.

In the vacuum laminator business for package substrates, we leverage our demonstration facilities to support customers' development aimed at producing high-end substrates.

Operating Environment

Global Data Communication Volume (Forecast)



Source: Compiled by JSW based on various materials

Growth Strategies and Initiatives

With the rapid increase in data traffic, demand for optical communications, which offer far higher frequency bands than electronic signals and enable the ultra-high-speed transmission of massive volumes of data, is expected to expand. Optical communications are also utilized in data centers that handle large volume data storage, processing, and distribution, where semiconductor lasers play a key role. Since ECR deposition systems are used in manufacturing these semiconductor lasers, we are strengthening our production framework to capture this growing demand. In addition, to prepare for the future spread of photonics-electronics convergence technology, we are developing ECR-based equipment for optical waveguides, where demand is expected to increase, and will work to expand sales.

In the electronic circuit board business, which is experiencing brisk demand driven by the growth of AI servers, we are capturing demand for vacuum presses used in manufacturing multilayer substrates, while leveraging our strength in providing development support through demonstration facilities. By delivering laminators for next-generation high-end package substrate development and providing subsequent customer support, we aim to expand our presence in this market.

Message from the Head of the Division

Miki Sawai

Executive Officer
Director of Industrial Machinery Business Division

Net sales in the Industrial Machinery Business for FY2024 were nearly in line with our initial plan. Operating profit fell short of plan due to the weaker-than-expected performance of high-margin products. However, we successfully delivered the first mass-production model of a laser heat treatment system for SiC (silicon carbide) power semiconductors, a key step toward entering the power semiconductor market, to a leading SiC device manufacturer as scheduled. The system achieved productivity exceeding customer expectations and received high evaluations.

Regarding key initiatives under JGP2028, we shipped the world's first F-ELA* system for G8 (8th-generation) substrates for FPD applications and successfully brought it into operation. While the vacuum press business remains active, the vacuum laminator business has slowed due to market weakness. Despite these differences among products, the business is performing steadily overall.

In fiscal 2025, we will leverage our track record with the world's first G8 F-ELA shipment to secure major investment projects for new G8 plants and drive significant growth in this business. We will also advance the growth strategies and initiatives outlined above for deposition systems and electronic circuit boards.

Within infrastructure-related equipment, we will work to capture demand for overseas projects from Japanese railway car manufacturers, building on our strong track record in the railway business.

Through these initiatives, we will steadily implement our FY2025 measures toward achieving JGP2028.

* F-ELA: Float-type ELA

Material and Engineering Business

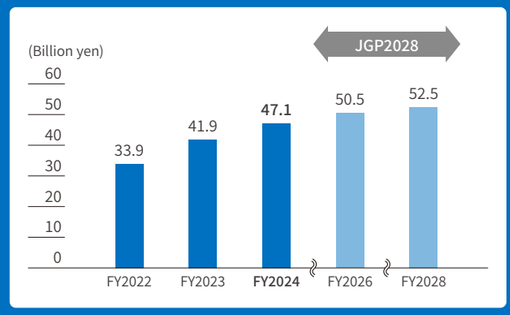
Business Overview

Japan Steel Works M&E (hereinafter referred to as M&E) engages in the development and manufacture of a wide range of products as a materials manufacturer (M: Materials), including large components for power plants, where it holds the world's top market share (primary and secondary nuclear system components (nuclear reactor components, steam generator components, rotor shafts, generator shafts, etc.), high-efficiency gas turbine power generation (GTCC* and other) rotor shafts). As for renewable energy, the company also supplies components for offshore wind power construction (anvils, ram weights, etc.), and various forged products for general industrial applications, such as rolls for rolling mills and forged steel pipes, as well as clad steel plates used in pressure vessels. Additionally, M&E develops and manufactures non-ferrous metals and carbon-fiber-reinforced plastic (CFRP) materials.

In the Engineering Business (E: Engineering), the company leverages its expertise in welding, construction, non-destructive testing, hydrogen storage, and high-temperature/high-pressure technologies to provide a range of plant maintenance services, develop hydrogen utilization technologies, and advance new technology development, thereby contributing to social safety and progress.

* GTCC: Gas turbine combined cycle power generation plant

Trends in Net Sales



Representative Products and Equipment

Primary components for nuclear power generation

Rotor shafts for power generation

14,000-tonne hydraulic presses

Analysis of Current State

Strengths
- Large-scale mono-block forging manufacturing equipment and manufacturing technology
- Capacity to develop materials and manufacturing technologies for special steels such as high-strength alloy steel
- High quality and safety honed in electric power and nuclear power products
- Development technology for high-temperature-, high-pressure-, and hydrogen-embrittlement-resistant materials
- Capacity to respond to global market demand

Weaknesses
- Limits to in-house machining capabilities due to constraints on large-scale machining facilities
- Difficulties with production leveling due to our build-to-order system
- Not enough automation of tasks
- Capacity to accommodate new demand for small and medium-sized products and small lot production (compared to the large-sized products handled by M&E)

Opportunities
- Increasing importance of high-efficiency thermal power generation (including GTCC) as an adjustable power source to address global warming countermeasures and growing power demand
- Expansion of the hydrogen economy as well as the renewable energy power generation market toward carbon neutrality
- Changes in the external environment relating to nuclear power generation
- Withdrawal/downsizing of competitors, industry reorganization trend

Threats
- Difficulty in securing personnel due to decrease in the local population and falling birthrate
- A sudden slowdown in demand due to tighter regulations related to the environment and such
- Shrinking market for oil- and gas-related products (rapid shift to renewable energy generation)

Sources of Strengths and Challenges

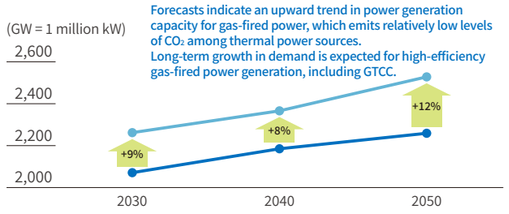
Our greatest strength lies in the development capabilities, expertise, and achievements we have cultivated and refined for over 110 years in the processes of melting, mixing, and solidifying steel. At the Muroran Plant, we can produce steel ingots weighing up to 670 tonnes—the largest in the world—and manufacture ultra-large products such as primary and secondary components for nuclear power generation and components for high-efficiency thermal power generation using a 14,000-tonne large press and ultra-large machine tools capable of handling workpieces up to 400 tonnes. These technologies are among the most advanced in the world. In addition, the safety and quality of our products, established through many years of experience, are highly regarded by customers. Our quality assurance system, which enables the stable supply of high-quality products, is another major strength of the company.

On the other hand, leveling production capacity and automating operations are key challenges for improving productivity at the Muroran Plant going forward, and we are continuously examining various improvement measures. We are also pursuing new demand opportunities, including for small and medium-sized products, as part of our forward-looking initiatives.

Operating Environment

Global energy demand is projected to increase under all climate change scenarios anticipated by the International Energy Agency (IEA). During the transition toward a carbon-neutral society, natural gas (LNG) thermal power generation, which emits relatively low levels of CO_2, is expected to play an increasingly important role as an adjustable power source. Accordingly, further growth in LNG and high-efficiency thermal power generation, including GTCC, is anticipated.

Power Generation Capacity from Natural Gas (Forecast)



* Assuming Stated Policies Scenario, without CCUS (carbon capture, utilization, and storage) measures

Source: Compiled by JSW based on IEA World Energy Outlook (WEO)

Growth Strategies and Initiatives

Leveraging our long-cultivated manufacturing facilities and technologies for large, integrated forged products, together with our high-level quality assurance system, we aim to capture demand to the greatest extent possible for the construction and refurbishment of nuclear power plants supporting the transition to a carbon-neutral society, as well as for LNG and high-efficiency thermal power generation (including GTCC), which play an increasingly important role during this transition period. As an immediate initiative, we will make refresh investments to replace aging equipment and upgrade facilities with low productivity, further capitalizing on our strengths. Given the globally strong demand for electric power, including data centers for generative AI, we have already begun studies to expand production and improve productivity. With a focus on leveling our production system and automating operations, we will systematically invest in capital to eliminate bottlenecks, expand our outsourcing partners, and promote labor savings through digital transformation (DX) investment and the introduction of automated measuring instruments and the automation of inspection and documentation processes.

In addition, we are tackling technological challenges to achieve a carbon-neutral society, such as the development of hydrogen utilization technologies and autoclaves (pressure vessels) for gallium nitride (GaN) growth, which enable ultra-high-efficiency devices and contribute to reducing CO_2 emissions. Through these initiatives, we aim to create social value and achieve sustainable enhancement of corporate value.

Message from the Head of the Division

Sou Ueda

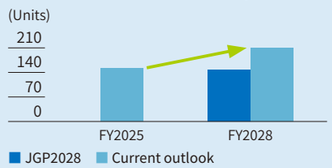
Specialist Managing Senior Councilor
President, Japan Steel Works M&E Co., Ltd.

Leveraging our extensive manufacturing expertise, particularly in steel for over 110 years, our company delivered high-quality, reliable products worldwide. In response to the growing global initiatives to secure stable energy and achieve carbon neutrality, there is a huge demand for us to play a significant role in supporting the world's energy supply and advancing a decarbonized society. Under our medium-term management plan, JGP2028, launched in fiscal 2024, we are focusing on stabilizing quality and improving productivity for our core large forged products. In addition, we are implementing refresh investments to maintain and enhance equipment integrity, allowing us to flexibly respond to a wide variety of customer needs. Construction work related to these capital investments is progressing smoothly, and we expect to see the effects begin to materialize in earnest by the end of the current fiscal year.

A year has passed since the formulation of this medium-term plan, during which time the market environment for the electric power and nuclear power sectors has remained firm, with upward trends in demand. Customer requests for increased production continue to grow, particularly for components used in GTCC, where significant expansion in demand is anticipated. We have begun discussions on how much to increase production capacity at our manufacturing facilities to meet this demand.

As demand rises for large forged components and forged parts designed to withstand high temperatures and pressures—areas of strength for our company—we are steadily improving both productivity and profitability.

Demand Outlook for Rotors for Power Plants Forecast of Rotor Shipments



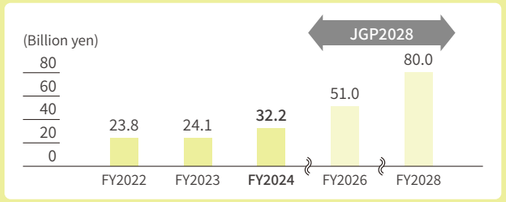
Defense Equipment Business

Business Overview

The Defense Equipment Business is JSW's founding business, and today we remain Japan's only manufacturer of artillery. We manufacture and supply a range of defense equipment, including howitzers, tank guns, main guns for escort vessels, and automatic cannon, as well as missile canisters. These products are delivered to the Japan Ground Self-Defense Force, the Japan Maritime Self-Defense Force, and the Japan Coast Guard.

By utilizing the Muroran Plant's unique material development and manufacturing technologies, and through an integrated system at the Hiroshima Plant that encompasses everything from equipment system development and design to manufacturing and final product assurance, we have established a comprehensive structure for defense production. In addition, our Group companies design and manufacture electrical equipment, while also providing maintenance and repair services after delivery. Through this integrated process, from material development to product manufacturing and after-sales service, we contribute to the safety and security of Japan.

Trend in Net Sales



Recent Initiatives

Next Wheeled Armored Vehicle (AMV): Production system being established smoothly

- **December 2022:** AMV selected as the successor to the Type 96 Wheeled Armored Personnel Carrier (Ministry of Defense)
- **August 2023:** License agreement concluded between Patria and JSW
- **2024:** Delivery contract for 26 AMVs concluded
- **2025:** Delivery contract for 28 AMVs concluded

The establishment of an optimal production structure utilizing the Muroran Plant is progressing steadily, and we are working toward delivering the contracted units.

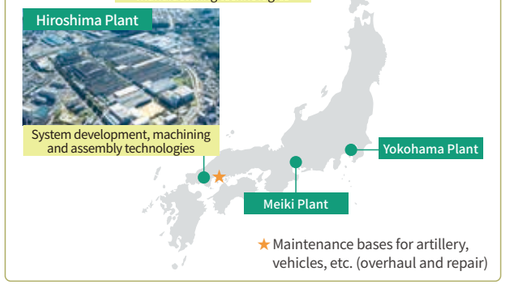
Response to research and prototyping of future equipment

Contract record
- **2022:** Research and prototype contract for Future Railgun (Phase 1)
- **2023:** Research and prototype contract for Future Railgun (Phase 2)
- **2024:** Research and prototype contract for Future Railgun (Phase 3)

Research and prototyping are progressing smoothly, and we will continue to respond by leveraging the knowledge and technologies we have cultivated to date.

Production Bases

Defense equipment is produced mainly at the Hiroshima and Muroran plants. Other sites are utilized as needed.




Next Wheeled Armored Vehicle (personnel carrier type) Image (Photo: Ministry of Defense website)


Prototype railgun installed on the test ship Asuka (Photo: Self-Defense Fleet website)


Type 19 Wheeled Self-Propelled 155 mm Howitzer


120 mm Tank Gun for Type 10 Main Battle Tank Photo: Japan Ground Self-Defense Force website


62-caliber 5-inch Naval Gun Photo: Provided by Japan Maritime Self-Defense Force

Message from the Head of the Division

Amid the increasingly severe security environment surrounding Japan, efforts to fundamentally strengthen the nation's defense capabilities are advancing. In the Defense Equipment Business, we are expanding our operations beyond artillery systems to include armored vehicles, future railguns, and other research and development programs. Going forward, we will continue to contribute to Japan's safety and security by providing equipment that meets current requirements and supports the enhancement of Japan's deterrence capabilities.

Takeshi Shinmoto
Managing Executive Officer
Director of Ordinance Business Headquarters

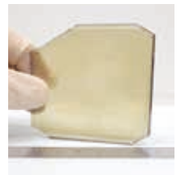
Photonics Business

Business Overview

The Photonics Business focuses on the growth and processing of functional crystal materials, including synthetic quartz, lithium niobate (LN), and gallium nitride (GaN). Synthetic quartz represents the origin of JSW's crystal technology, boasting a history of nearly 40 years. Over the years, we have developed a diverse lineup of products, including optical low-pass filters, quartz wafers, and wave plates, while building up advanced expertise in both crystal growth and processing. Drawing on this accumulated knowledge, we are now also focusing on crystal businesses involving new materials such as LN and GaN. For GaN in particular, the New Business Promotion Headquarters is collaborating with various partners to develop technologies for the mass production of large, low-defect single crystals. We are currently moving forward with mass-production verification and providing sample substrates to customers in preparation for future market expansion. Synthetic quartz is manufactured by Fine Crystal Co., Ltd. (FCC), while LN is produced by Fine Crystal Iwaki Co., Ltd. In recent years, we have also focused on bonding technologies that join dissimilar materials, expanding into the field of bonded substrates for optical communications and advanced electronics applications.

Analysis of Current State: Source of Strengths and Challenges

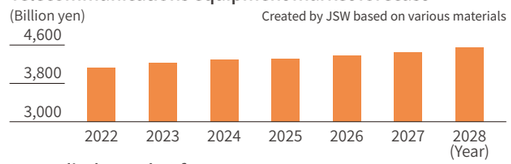
Our core competencies in the crystal growth process lie in the fundamental operations of melting and solidifying. Alongside the growth and processing technologies developed over many years, we possess a unique strength in designing and manufacturing autoclaves, a crucial component of crystal growth, utilizing our own proprietary high-heat-resistant and high-corrosion-resistant alloys. In addition to manufacturing our own crystal materials, such as synthetic quartz and LN, we are also preparing to establish an integrated in-house system that covers all processes, from cutting and polishing to bonding dissimilar materials. This capability enables us to provide high-value-added solutions, from improving crystal quality and ensuring stable production to securing optimal performance in the final product according to application needs. It will serve as a significant competitive advantage going forward.


GaN crystal material

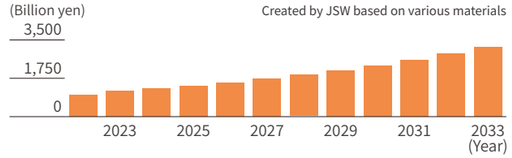
Analysis of Current State: Operating Environment

With the advancement of digital infrastructure, there is an increasing demand in the communications sector for both higher speeds and lower power consumption in optical communication and optical modulator substrates, as well as high-radiofrequency (RF) devices. This, in turn, heightens the importance of ensuring a stable supply of high-quality crystal materials and substrates. GaN, in particular, offers characteristics that cannot easily be replicated by other materials in laser diode (LD) applications and is also attracting growing attention in advanced lighting fields. The ammonothermal method employed by JSW Group offers a significant competitive advantage in terms of both crystal quality and productivity, positioning us well to respond to future market growth.

Telecommunications equipment market forecast



Laser diode market forecast



Message from the Head of the Division

Our Photonics Business originated with the manufacturing and processing of synthetic quartz crystals by Fine Crystal, established in 1988. Until the 2010s, we focused on products that made use of the birefringent properties of quartz and LN. In recent years, we have been developing products that leverage diverse electrical and optical characteristics. With our lineup of three crystal materials—quartz, LN, and GaN—we aim to provide optimal solutions in the fields of optical devices, optical communication devices, and power electronics.

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