

Nippon Steel Integrated Report 2024



Corporate Vision

> Potential of Steel

Nippon Steel's Challenge

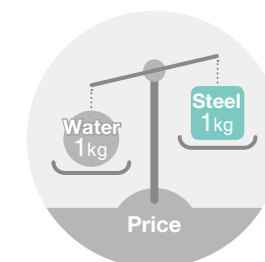
Corporate Vision **Potential of Steel**

Steel is an essential material in our daily lives, thanks to its diverse properties including abundance, affordability, strength, and excellent workability. It is also a sustainable material that retains much of its quality even after the recycling process. In addition, it is the material that has been continuing to evolve with the addition of various properties through technology, and has limitless potential for the future.

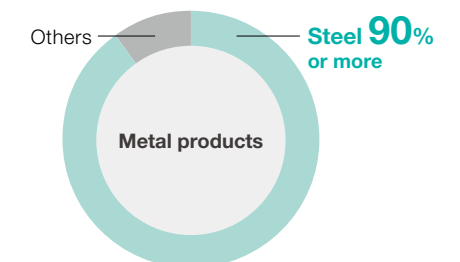
Iron is believed to constitute
one-third
of the Earth's weight.



Steel is an **affordable material** and is cheaper than water in a plastic bottle (in comparing price per unit weight).



Steel represents **90% or more** of metal products, as steel being abundant, cheap, and having good workability, and has a wide range of applications.





Corporate Vision

> Potential of Steel

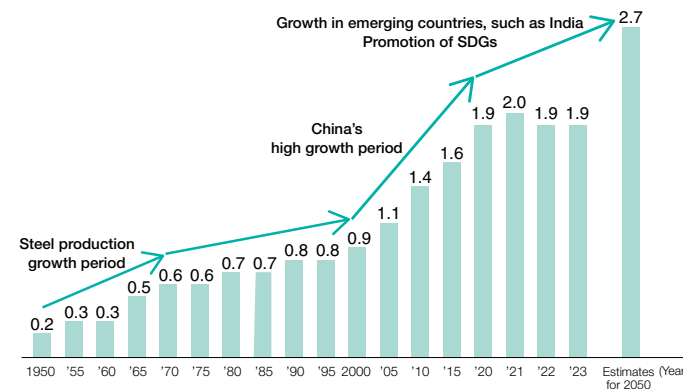
Nippon Steel's Challenge

Corporate Vision **Potential of Steel**

Steel is accumulated in our society in a wide variety of forms including buildings, bridges, automobiles, and household appliances and is supporting infrastructure and affluent lives. Driven by steel accumulation associated with economic and population growth in emerging countries, global steel demand will continue to increase.

“High-grade steel” contributes to solving climate change issues and other diverse social issues with its material capability. Its functionality will be increasingly improved, and its demand will continue to grow worldwide as well.

[Global crude steel production (billion tons/year)]



[Ways in which high-grade steel can contribute to resolving social issues]

Diverse properties and infinite potential of steel

Positive impact on resolving social issues

Carbon
neutralityReduction of
environmental
impactSafe living in
sound healthDisaster
prevention and
reduction
National
resilience

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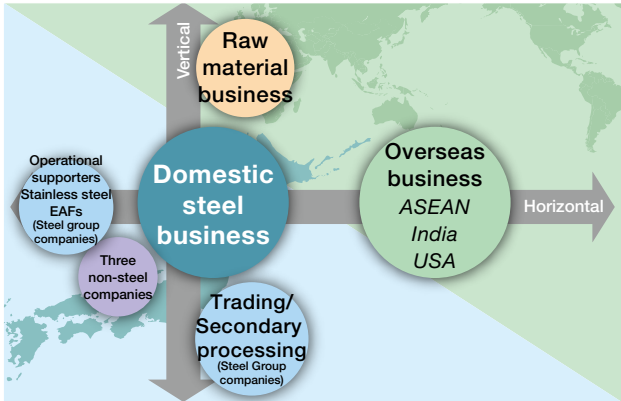
Corporate Vision

Nippon Steel's Challenges



We will rebuild the domestic steel business As mother mills that efficiently produce high-grade steel, an optimal production system will be established, and the breakeven point will be drastically improved. Overseas, we will expand our integrated production capacity in the regions of demand in “areas where demand is surely expected to grow” and in “sectors in which our technological and product capabilities can be utilized.” Our target is to realize 100 million tons/year in global crude steel production capacity. As shown in the diagram, with the domestic steel business at the origin, namely, as the core, we will expand our overseas business along the horizontal axis showing the width of overseas growth, and make upstream raw materials business and downstream distribution business our own business along the vertical axis showing the growing depth of business domains. We will thus evolve into a more robust business structure and strive to realize an earnings structure that can stably secure 1 trillion yen in business profit regardless of the external environment.

[Nippon Steel's Strategy for Growth]



[Vision of 100 million tons in global crude steel production capacity]

		2014	2023	After acquisition of U. S. Steel	Future Vision
Global crude steel production capacity (Million tons/year)	Japan	52	47	47	
	Overseas	6	19	39	> 60
	Total	58	66	86	> 100



Corporate Vision

Potential of Steel

> Nippon Steel's Challenge

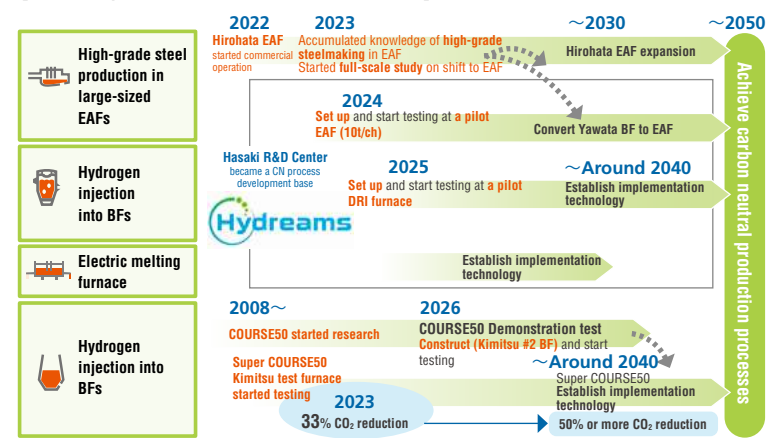
Corporate Vision Nippon Steel's Challenges



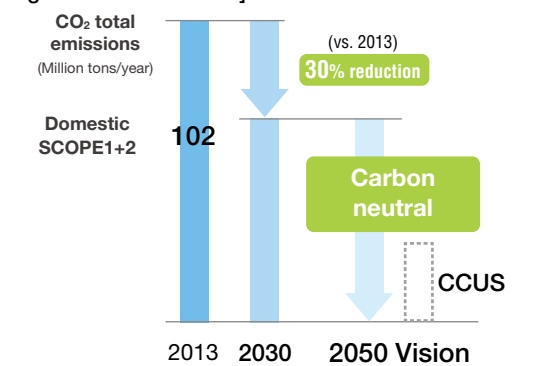
Nippon Steel aims to attain carbon neutrality through a fundamental transformation of the steel production process, which has relied on coal for reduction for as long as three centuries.

Our goal is to achieve net-zero CO₂ emissions from the steel production process by 2050 through a multi-track approach of developing three breakthrough technologies: "hydrogen injection into blast furnaces," "high-grade steel production in large size electric arc furnaces" and "hydrogen direct reduction of iron." Furthermore, we will lead the steel industry's efforts to achieve a carbon-neutral society.

[Roadmap to achieve the Carbon Neutral]



[Development of three super innovative technologies to lead the world]





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Editorial Policy

- In preparing the Integrated Report 2024, the following changes have been made from the 2023 version.
- 1. Integrated Report and Sustainability Report have been integrated to produce a single report.
 - 2. It is produced in a format suitable for viewing on the website.

In 2019, we began publishing Integrated Reports that integrate financial and non-financial information based on the previously-published Annual Report. Also in 2019, the Environmental Report – the first of its kind published in the domestic steel industry – issued by the former Nippon Steel Corporation in 1998, had its name changed to Sustainability Report. Since then, both reports have been published annually. For this year onward, we have decided to publish a new “Integrated Report” which consolidates financial and non-financial information that are inter-related and is aimed at improving access to the increasing amount of disclosure information.

We sincerely hope that this Integrated Report helps stakeholders better understand Nippon Steel. Your comments and feedback are welcome as we intend to continue to improve the Integrated Report to make it easier to read and richer in content.

Period covered

Fiscal 2023 (April 1, 2023 – March 31, 2024)
Some of our activities are also based on the results of our efforts since April 2024.

Organizations covered

Nippon Steel Corporation and Nippon Steel Group companies
547 companies as of March 31, 2024
(434 consolidated subsidiaries and 113 equity-method affiliates)

Publication date

October 2024

Reference for guidelines

- The International Integrated Reporting Council (IIRC) International Integrated Reporting Framework
- The Guidance for Collaborative Value Creation (the Ministry of Economy, Trade and Industry)
- Environmental Reporting Guidelines 2018 (the Ministry of the Environment)
- The Task Force on Climate-related Financial Disclosures (TCFD) (The Financial Stability Board)
- Global Reporting Initiative (GRI) Standards
- ISO 26000
- Various ESG ratings and evaluations

How to use the navigation buttons

Each page of this report has navigation buttons to make it easier to navigate between pages

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Nippon Steel Group's Values

Corporate Philosophy

Our Values

Nippon Steel Corporation Group will pursue world-leading technologies and manufacturing capabilities, and contribute to society by providing excellent products and services.

Management Principles

- 1 We continue to emphasize the importance of integrity and reliability in our actions.
- 2 We provide products and services that benefit society, and grow in partnership with our customers.
- 3 We pursue world-leading technologies and manufacturing capabilities.
- 4 We continually anticipate and address future changes, innovate from within, and pursue unending progress.
- 5 We develop and bring out the best in our people to make our Group rich with energy and enthusiasm.

The Nippon Steel Group's Corporate Philosophy consists of "Our Values," which are our most precious values representing our raison d'être, and "Management Principles," which put down in writing the attitude and policy we emphasize in realizing Our Values.

Steel is one of the most familiar materials of which things are made and is indispensable for our daily life. Because of its diverse properties, such as strength and easiness to work with, steel has been chosen as the most superb material for creating social infrastructure. Steel is for here for all of us now and will be with us in the future.

We have been leading the world as a steelmaker for many decades, and have supported growth and development of society, by providing this indispensable basic material for all industries and infrastructure building.

Along with global population growth and associated economic growth, the world's crude steel production is expected to continue increasing. At the same time, significant long-term structural changes in society and industries are certain to increase demand for steel to provide more advanced performance. This includes advanced functions as material as well as considerations to the environment and society.

We are pledged to maximize the potential of steel and enhance its competitiveness as a material. On this basis we intend to deploy our accumulated technology and integrated power, by means such as in combining steel with other materials in new ways, and develop and provide total solutions, which incorporate utilization and processing technology in addition to supply of materials. By doing so, we are determined to contribute to a sustainable development of society – a commitment of us, engaged in steelmaking.



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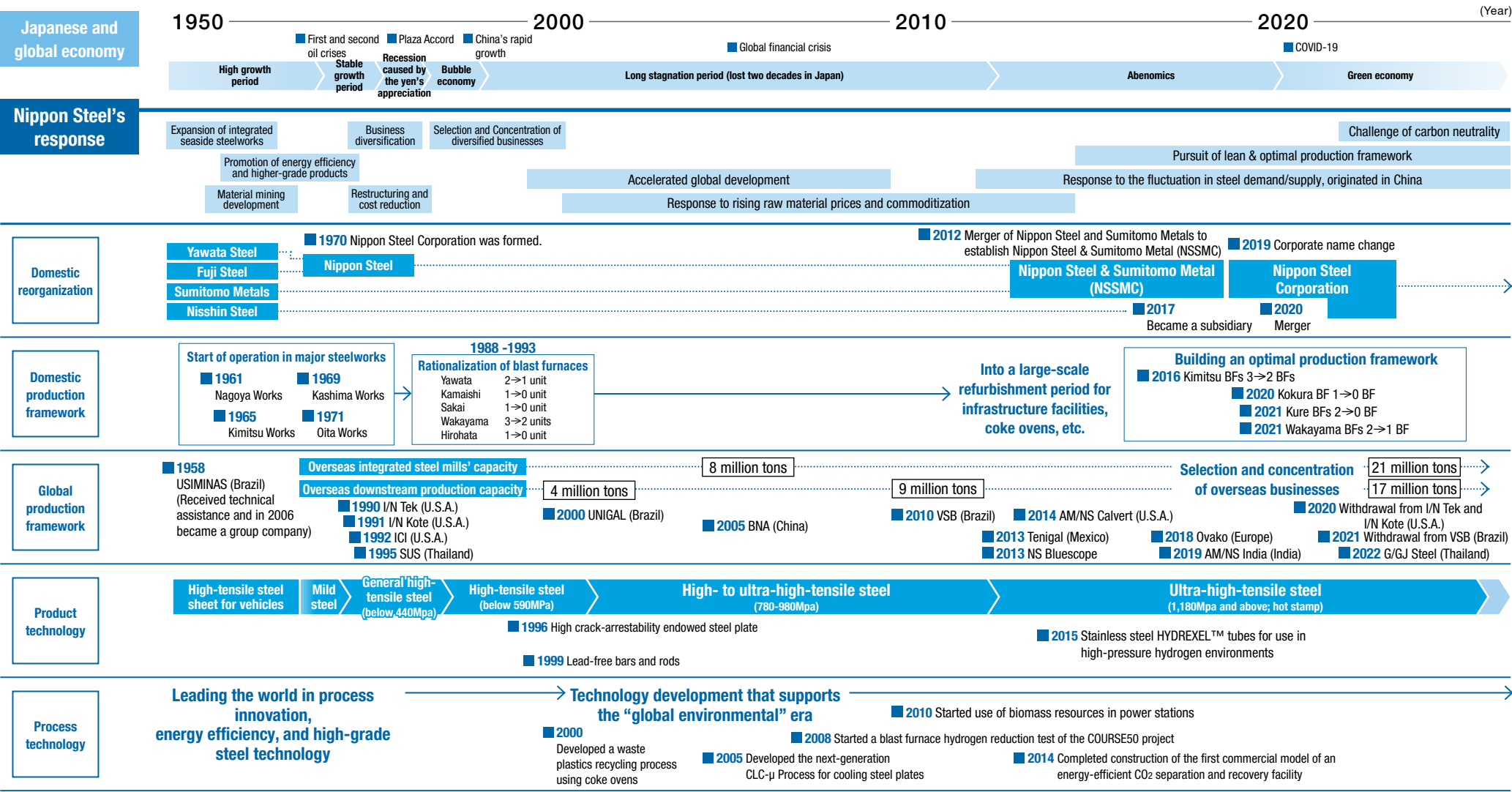
Non-Financial Highlights

History of Our Development

The Nippon Steel Group has realized its growth by aligning with the expanding applications and demand for steel, a foundational material that is essential to people’s lives.

Dedicated to overcoming crises caused by recent changes in the external environment, we proactively anticipate changes and initiate self-reform.

As the world’s leading steelmaker, we are committed to pioneering the future of steel while striving to maximize our corporate value.

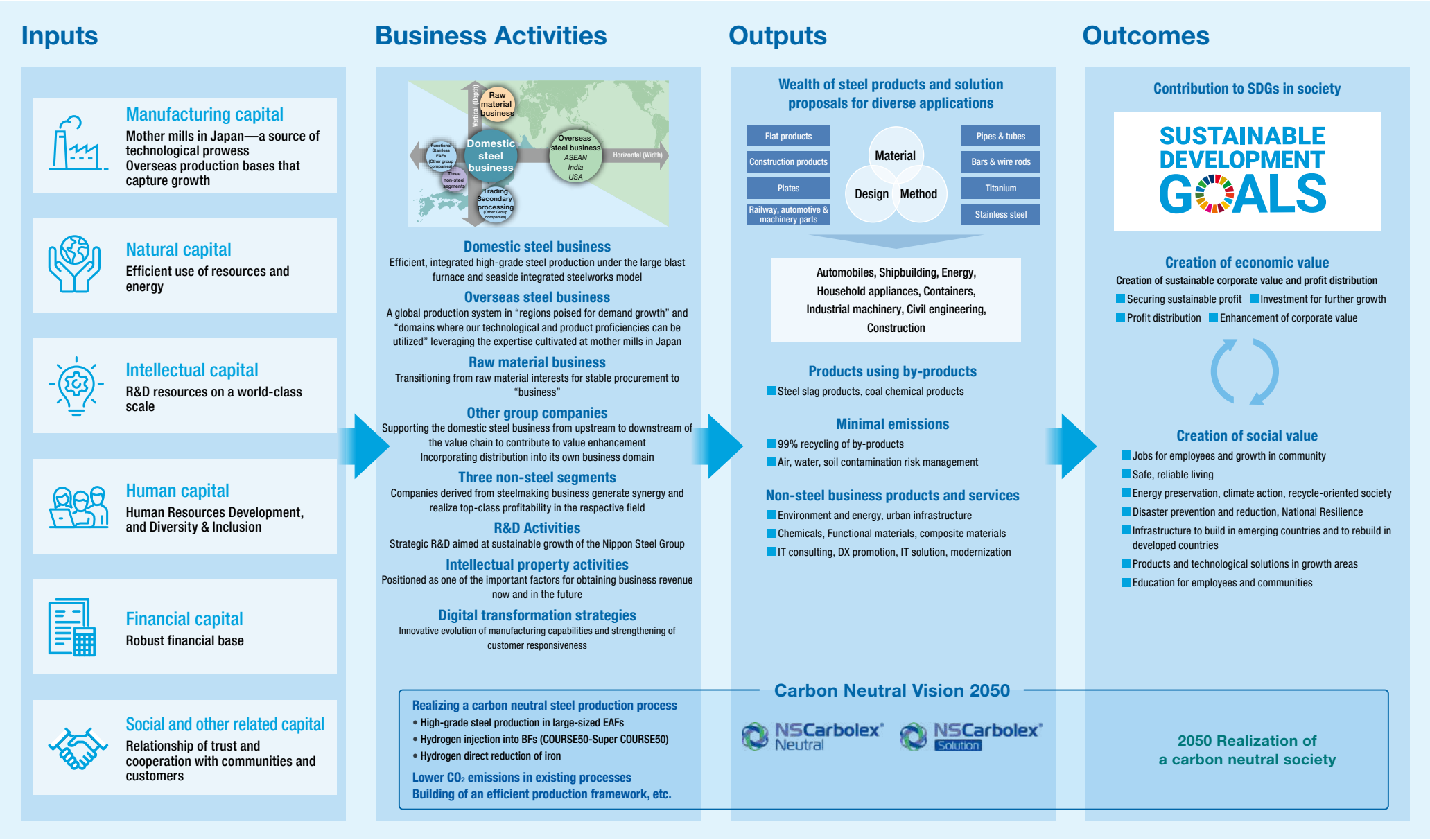




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The Value Creation Process





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Six Types of Capital

As the global economy has evolved, we have built a distinctive, outstanding capital base that includes diverse human resources filled with pride and fulfillment, research resources and intellectual property that rank among the world’s best steelmakers, a production structure that enables global supply, and robust customer relationships built on a foundation of trust. At the Nippon Steel Group, these components are organically integrated to create economic and social value through our business activities.

Manufacturing capital

Mother mills in Japan that cultivate high levels of technology, overseas production bases that capture growth



In Japan, we have six steelworks with 13 manufacturing bases, which we call areas, as well as group companies' bases of electric arc furnace steelmaking and secondary processing of steel products. They are “mother mills,” cultivating operation, equipment and product technologies—our strength. Beyond Japan’s borders, we have been establishing manufacturing bases in “regions poised for secure demand growth” and “domains where our technological and product capabilities can be utilized.” Our global capacity for crude steel production currently stands at around 66 million tons per year, and is on track to expand to 100 million tons.

Global crude steel production capacity approx. **66** mn tons/yr (consol.)
Domestic **47** mn tons + Overseas **19** mn tons

Property, plant and equipment
¥3.3 tn (consol.)

Natural capital

Efficient use of resources and energy



We use iron ore mined overseas, coking coal used as a raw material of coke to reduce iron ore, and steel scrap as main raw materials. We also use energy such as electricity and fuel and industrial water in producing steel products. Nippon Steel's steelworks use 100% of by-product gases generated within the steelworks as energy sources for reheating steel or as energy sources for on-site power plants, while 90% of water used in cooling and cleaning of products and manufacturing facilities are recycled. These are examples of our efforts to use limited resources and energy without waste.

Iron ore
51.59 mn tons/yr (non-consol.)

Coking coal
24.87 mn tons/yr (non-consol.)

Industrial water
Approx. **600** mn m³/yr (non-consol.)

Rate of water recycling: 90%

Intellectual capital

R&D resources boasting of the world's largest scale



Our R&D resources are among the most extensive in the global steel industry. We are actively contributing to societal progress through the development of high value-added products and products that contribute to making society carbon-neutral. Furthermore, we carefully select applications of domestic and international patents that support our business strategies. We also continue to improve and accumulate patents in both quality and quantity, thereby increasing our valuable patent assets, which contribute to business revenues and society.

R&D expenses
¥72.7 bn/yr (consol.)

R&D personnel
Approx. **800** (non-consol.)

Number of patents we hold
Japan approx. **15,000** (non-consol.)
Overseas approx. **18,000** (non-consol.)

Human capital

Human resources development and diversity & inclusion



We work on human resources development, recognizing that the source of competitiveness is the power of people, and as Nippon Steel's Management Principles state that “we develop our employees and bring out the best in them to make our Group rich with energy and enthusiasm.” From the perspective of creating a company where diverse employees can be productive, perform at their best, and play active roles with pride and fulfillment, we are reinforcing our diversity & inclusion efforts as one of the important management issues.

Number of employees
113,639 (consol.) **28,543** (non-consol.)

Number of female employees in management positions
70 (non-consol.)

Number of education and training hours
0.99 mn hours/year (non-consol.)

Financial capital

Robust financial base



The steel industry is a gigantic process industry, which uses a massive amount of fixed assets, including machinery and equipment and other tangible fixed assets, in its business. Procurement of funds equivalent to tangible fixed assets is covered by shareholders' equity and long-term borrowings, and thus financial stability is ensured. Nippon Steel considers its D/E ratio to be a key measure in the management of its financial strength. We aim at securing a D/E ratio of approximately 0.7 or less even in the deteriorating environment. We remain committed to securing robust financial strength and financial flexibility.

Equity attributable to owners of parent
¥4.7 tn

Interest-bearing debt
Approx. **¥2.7** tn

Debt/Equity ratio
0.45

Social capital

Trusted and cooperative relationships with local communities and customers



Having many manufacturing bases across Japan, Nippon Steel has a long history of being engaged in business activities rooted in local communities and supported by local residents. Our steel products help our customers create value in a wide range of industry sectors, including manufacturing, resources and energy, and civil engineering and construction. These trusted and cooperative relationships that we cultivate with our neighbors and customers are invaluable assets that serve as the source of our competitiveness.

Trusted and cooperative relationships with customers
Approx. **6,000** customers in Japan (non-consol.)

Coexisting with local communities
Hosting steelworks tours, and others.
Approx. **70,000** (non-consol.)

Alliances with leading steelmakers
ArcelorMittal, and others



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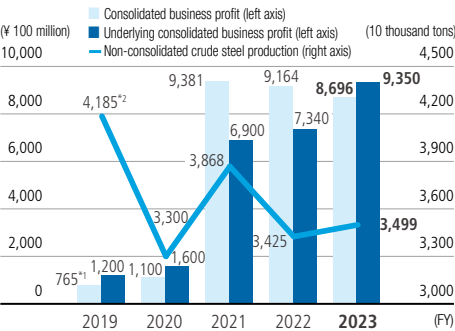
Regarding financial indices, Nippon Steel focuses on the earnings generated by its business activities (business profit, ROS) and capital efficiency (ROE), which are critical to achieving its medium- and long-term growth objectives.

Business profit (consol.)

We have successfully established a resilient business structure that stably ensures underlying business profit of 600 billion yen or more regardless of the external environment. This was achieved by implementing the structural measures for production facilities, improving margins in direct contract-based sales, refining the order mix, seizing growth opportunities in emerging markets with a focus on India. We also achieved a V-shaped recovery in business performance after the COVID-19 pandemic.

In fiscal 2023, we posted a record-high in underlying business profit, though we had one-off gains. We will make further efforts to realize the “1 Trillion Yen Vision.”

In recent years, volatility in raw materials markets and exchange rates has expanded one-off gains and losses, including inventory valuation differences. We are therefore disclosing underlying business profit excluding these items.



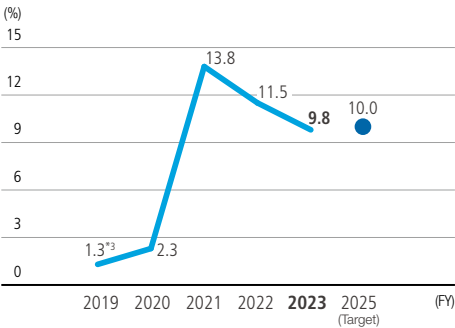
^{*1} FY2019 consolidated business profit excludes the impact of impairments and other items

^{*2} Non-consolidated crude steel production for FY2019 includes former Nippon Steel Nisshin (Kure, Japan)

ROS

We have almost achieved the target ROS level for three consecutive years.

Recently, however, the trend is downward, being significantly affected by a turnaround in inventory valuation from gains in fiscal 2021 and 2022 to losses in fiscal 2023. The ROS was also affected by a significant increase in consolidated revenues mainly due to the acquisition of Nippon Steel Trading as a subsidiary.



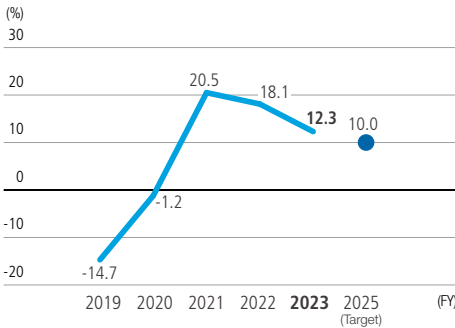
^{*3} FY2019 ROS excludes the impact of impairment and other items

ROE

ROE has exceeded the 10% target for fiscal 2025 in the Medium- to Long-Term Management Plan for three consecutive years.

Profit growth that exceeded the accumulation of equity capital and improvement of capital efficiency through efforts to reduce assets and other measures resulted in achieving a high-level ROE.

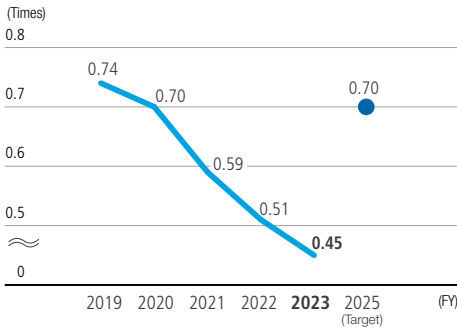
We will continue to strive to improve ROE.



D/E ratio

The existing Medium- to Long-Term Management Plan has a target of not exceeding the D/E ratio of 0.7 even in a deteriorating environment. Thanks to the substantial profits achieved in recent years, the company's financial strength has significantly improved to achieve a D/E ratio of 0.45.

Down the road, the acquisition of U. S. Steel is expected, which is assumed to temporarily raise the D/E ratio. We, however, aim at bringing it down to the target ratio of 0.7 or less as early as possible.





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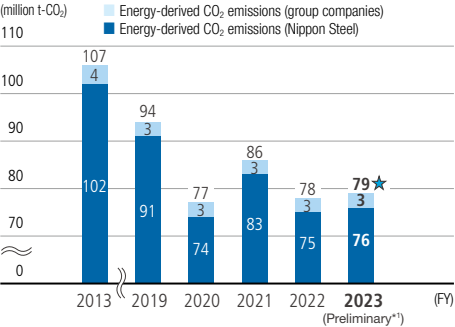
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Non-Financial Highlights

Among non-financial indices, Nippon Steel places significant emphasis on CO2 emissions, safety and diversity.

Energy-derived CO2 emissions

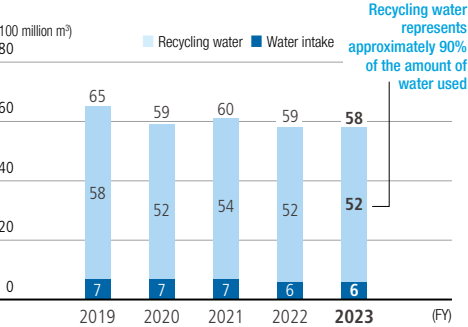
Nippon Steel has been working at energy conservation as follows: improving effective use of energy generated in the steel manufacturing process (i.e., power generation from recovered by-product gases and exhaust heat); making operational improvements in each process; renewal of aging facilities; introduction of high-efficiency power generation facilities and oxygen plants; and conversion to regenerative burners in the reheating furnaces. In fiscal 2023, by implementing those measures, energy use and energy-derived CO2 emissions were 936 PJ and 79 million tons (provisional values), respectively, while production increased slightly.



*1 Preliminary figure: The amount of CO₂ per unit of purchased electricity from each of general power companies in Japan in fiscal 2023 is assumed to be the same amount as in fiscal 2022.
*2 Excluding energy used and CO₂ emitted for the IPP operation by the steelworks
*3 The amounts of energy used and CO₂ emitted for production of coke purchased by Nippon Steel are included in the aggregate.
*4 Concerning the three Sanso Center companies, the amounts of energy used and CO₂ emitted for production of oxygen purchased by Nippon Steel Group are included in the aggregate.
★ mark: Items assured by the third party

Amount of industrial water used

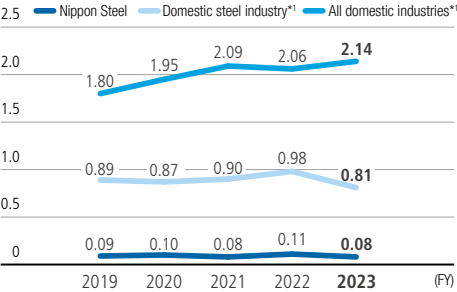
We use about 6.0 billion m3 of industrial water a year at all of our steelworks, of which approximately 90% is recycling water. We seek to effectively use precious water resources, and control water discharge volume.
We have confirmed that none of our operational bases in Japan are exposed to high stress in the water stress evaluation with WRI Aqueduct. Nevertheless, in preparation for water intake restrictions, some of our steelworks have their own water reservoir to secure water sources.



Recycling water represents approximately 90% of the amount of water used

Lost time injury frequency rate

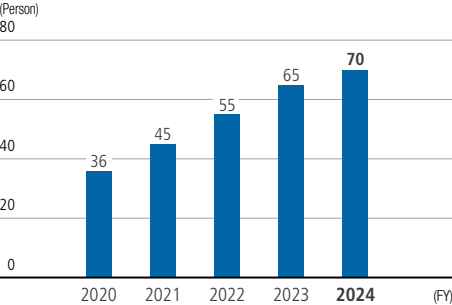
We set a target of 0.10 or lower for the lost time injury frequency rate. In 2023, this rate was 0.08 (compared to an industry average of 0.81 in the domestic steel sector).
We promote risk assessment activities to prevent accidents and mitigate risks, improve the intrinsic safety of our facilities, introduce technology such as surveillance cameras, and enhance various safety and health education programs.
We have obtained ISO (JIS Q) 45001 certification for all our business locations to strengthen management of safety and health.



*1 JISF "Safety Management Overview, 2023"

Number of female employees in management positions

We intend to support female employees in continuing to demonstrate their abilities through their careers, and to promote their active participation in all workplaces and levels, including the enhancement of promotion to managerial positions. For this purpose, we have set up a target which is to aim to triple, at least double, the number of female employees in management positions in 2025 from 36 in 2020, and to increase by seven times, at least four times, by 2030.



* As of April



Message from the President

Message from the President and COO

Message from the President and COO



Message from the
President

> Message from the President and COO

Message from the President and COO



Nippon Steel's Management Strategies and Policy on
Future Initiatives

My name is Tadashi Imai. I have been appointed President and COO as of April 1, 2024.

Considering the many management challenges we face today, the next few years will significantly determine our future, and I am humbled to assume the duties. To use a relay analogy, I received the baton of our growth strategy to achieve the 100 Million Tons/1 Trillion Yen vision set by former President Hashimoto, and I have just begun to run at full speed.

I would now like to explain our management strategies and future policies.

Tadashi Imai
Representative Director, President and COO



Message from the President

> Message from the President and COO

Message from the President and COO

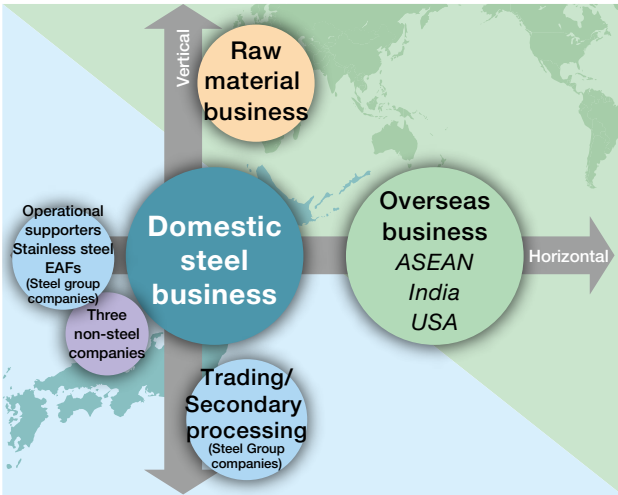
Progress of the Medium- to Long-Term Management Plan

We have carried out group-wide management reforms such as the consolidation of production lines through structural measures in Japan, a significant margin improvement in direct contract-based sales, and the selection and concentration of overseas businesses. Our efforts have paid off and we are coming close to reaching the target of 1 trillion yen in underlying consolidated business profit, far exceeding the initial target of 600 billion yen.

We will continue to implement the existing profit structure measures. At the same time, we will steadily promote measures to evolve into a further robust business structure, and to advance toward achieving the Group's future vision of 1 trillion yen in business profit, while building a foundation that enables us to record even higher revenues regardless of the external environment. We will also make investments in forward-looking initiatives to recruit human resources and promote their active engagement.

Specifically, we aim to create a more robust business structure by expanding horizontally from the core domestic business and increasing the depth of our business domains vertically. The horizontal axis shows the global expansion of steel production itself, and we are working to expand our integrated steelmaking bases that start with upstream processes overseas such as in the ASEAN countries, India, and the United States. The vertical axes show the expansion in upstream and downstream business domains such as raw materials and distribution/processing. We have already completed investment in a Canadian coking coal business and the consolidation of Nippon Steel Trading, which is engaged in distribution. We will continue such initiatives. By evolving the procurement of raw materials into a "business" and making distribution a part of our own business domains, we aim to build an integrated business structure and strengthen our competitiveness throughout the supply chain. At the same time, we will create a more resilient business structure to achieve carbon neutrality.

Details of the progress of the medium-term management plan will be explained separately in the "Strategy" section of this report.



- Rebuild domestic steel business
- Deepen and expand overseas business
- Procure and earn profit in raw materials business
- Make steel distribution to own business domain

Our growth opportunities

Nippon Steel's management policy based on our macroeconomic recognition is exactly what we are implementing in the Medium- to Long-term Management Plan up to fiscal 2025. We need to carry through this plan to the finish line. In addition, I would like to talk about growth opportunities and decarbonization measures, in particular.

First, at this time of great change in society, we must capture new business opportunities. Responding to global climate change issues has become a major force in industry, and new demand has been created in the materials field through changes in the industrial structure. Currently, the expansion of renewable energy, the decarbonization of industrial complexes, and the electrification of automobiles are advancing while measures to ensure national resilience and cope with intensifying disasters are needed. Addressing increasing needs for new steel products and solutions, where Nippon Steel's technologies can be utilized, we need to harness the total power of our group, from product development to our distribution/processing network, and take measures that will lead to the growth of our domestic business. In addition, the declining working population and other changes in the social structure, and the acceleration of DX stimulated by the rapid development of AI are challenges as well as business opportunities for the Nippon Steel Group.

Second, we will further strengthen our global business—our growth engine in terms of both production scale and profit—and enhance the management that supports it. We will expand our integrated steelmaking business in growing markets, particularly in India, ASEAN and North America following the acquisition of U.S. Steel. This means we are entering a new stage in our global expansion. Under these circumstances, our divisions and production bases in Japan will be acting as our global headquarters, deploying the necessary resources according to local needs, and providing strong support for the sound development of our locally based companies. In this way, the domestic steelmaking business needs to become a linchpin that brings together overseas businesses. We will therefore further enhance the strategic headquarters management functions. At the same time, on the technology side in areas such as R&D, manufacturing technology, facility maintenance and engineering, the true value of our manufacturing strength, which has been honed in our domestic business, will be shown on the world stage.

With regard to the acquisition of U.S. Steel, we intend to secure a base in the United States, the largest market for high-grade steel, and fully share all of our cutting-edge leading technologies. By combining U. S. Steel's powerful business assets (organically comprised of its iron ore mines, blast furnaces and electric arc furnaces), extensive U.S. customer base and brand value backed by its long history, we believe that we can help grow U. S. Steel.



Message from the President

> Message from the President and COO

Message from the President and COO

Markets where **steel demand growth is promising**
Markets where Nippon Steel's **technologies and products are highly valued**

Expansion of **integrated steel production bases**
M&A, acquisition of **brownfield production bases**

AM/NS INDIA
Since 2019

NIPPON STEEL

GSteel GJS
Since 2022

Uss
Acquisition underway

Strengthen the strategic management functions of Japan as the **global HQ** and also focus on **developing global personnel** for global development

Third, I would like to talk about decarbonization, which could be the greatest challenge for us.

To achieve carbon neutrality by 2050, our immediate aim is to reduce greenhouse gas emissions by 30% or more by 2030. Fundamentally, among industrial materials, steel materials have the lowest emissions of greenhouse gases to produce one ton of product and are recyclable materials that can be recycled endlessly. The importance of steel remains unwavering even in the age of carbon neutrality. However, a little tricky fact is that because it is inexpensive and has excellent properties, it is used overwhelmingly in large quantities, which makes the steel industry account for about 40% of CO2 emissions from Japan's industrial sector. In recent years, there have been cases where CO2 emissions have become an international trade constraint, and it is no exaggeration to say that the success or failure of our decarbonization measures may affect Japan's industrial competitiveness.

To achieve carbon neutrality in the steel industry, there are three interrelated challenges that we must overcome: Technical challenges, predictability of investment recovery, and infrastructure development. As a technological challenge, there is no existing decarbonization technology for emissions from blast furnaces that reduce iron ore, which dominate the CO2 emissions of the entire supply chain. This means the steelmaking processes need to be innovated. As for investment recovery, the challenge in making investments is to promote the environmental value to consumers and the market to pass on to prices. This is because, despite huge investments and increases in operating costs, steel products based on decarbonized processes will remain the same as current products. In terms of infrastructure, a low-cost stable supply of green power and green hydrogen must be established by the national and local governments as their policy. Prior to the full-scale supply of green steel products, we will work to establish

a shared understanding of the appropriate economic value of the environmental value of CO2 emissions reduction, not only in the industrial world but also in society.

Technical challenges	<ul style="list-style-type: none">Most of the CO2 emissions (Scope 1 to 3) in the entire supply chain of the steel industry is generated by the production process (Scope 1), particularly the key process for reducing iron ore in blast furnaces. → Need for innovative production processThere are no existing, proven decarbonization technologies such as use of renewable energy and nuclear power for electric power, and EVs for automobiles
Predictability of investment recovery	<ul style="list-style-type: none">Innovation in production processes inevitably entails significant investment and rising operating costsBut steel products are the same before and after CN conversion. → The challenge is to promote awareness of environmental value (CO2 reduction) among consumers (price pass-through)
Infrastructure	<ul style="list-style-type: none">Need of a government policy to develop social infrastructure(stable supply of green electricity and hydrogen, CCUS)

Let me also explain the carbon-neutral steelmaking process we aim at.

In the first place, there is not enough steel scrap alone in the world to meet global steel demand in steel production, and iron ore reduction is essential. Also, we have only two types of processes that allow mass production of steel: The blast furnace (BF) method and the electric arc furnace (EAF) method. Therefore, the basic premise is that technological options for achieving carbon neutrality are limited to either decarbonization of the BF method or melting of pre-reduced iron in an EAF. On top of that, the BF method and the EAF method each have their advantages and disadvantages. We therefore need to aim for an optimal steelmaking process portfolio, using the features of either method, according to energy, raw materials, and other economic conditions. Nippon Steel is therefore promoting the development of decarbonization of the BF method, which is superior in productivity and quality and can utilize existing infrastructure. At the same time, we are continuing to study the EAF method, which can be implemented relatively early toward 2030. This is our double-track approach aiming for decarbonization.

The three breakthrough technologies we are striving for to realize these processes are: BF hydrogen reduction, reduced iron production using hydrogen, and high-grade steel production in large-size EAFs. The three external conditions that must be established by government policies are the low-cost and stable supply of green hydrogen and green power, which are necessary for this purpose, and the social implementation of CCUS.

With regard to the progress of technological development and future prospects, technological development has generally been proceeding smoothly, and by the end of 2023, the Kimitsu experimental blast furnace succeeded in reducing CO2 emissions by 33%, which is the world's highest reduction level for a BF-type reaction chamber. As for the large-size EAFs, which can be implemented relatively early, we have built up a track record of high-grade steel production at the Hirohata #1 EAF since 2022, and the construction of an experimental EAF for development will be completed at the Hasaki R&D Center by the end of fiscal 2024. We aim to launch operations by 2030.



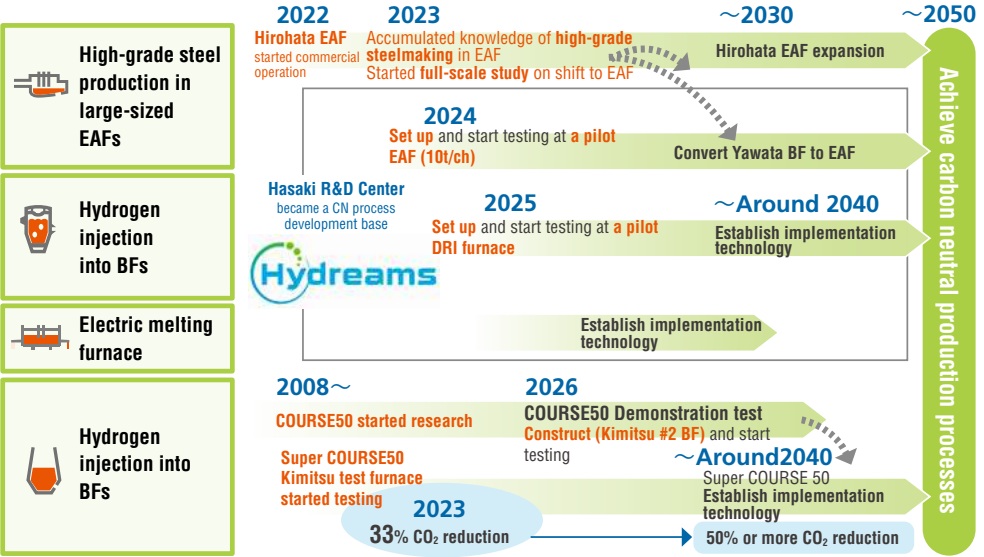
Message from the President

> Message from the President and COO

Message from the President and COO

We have thus far completed planning and budgeting and are undertaking technology development. For predictability of investment recovery and infrastructure development, national policies are indispensable. In order to overcome these challenges, we are taking every opportunity to make various proposals on Japan's climate change measures and energy policies, and to spearhead activities through industry organizations and promote them widely to society. We will continue to make efforts to appropriately disclose information on these initiatives.

[Roadmap to achieve the Carbon Neutral]



Sustainability initiatives

Sustainability issues are considered as one of our priority management issues, which form part of the base that supports the sustainable growth of the company. We have identified our materiality, namely priority issues, among sustainability issues, that we should focus on, with due consideration to our corporate philosophy, values, stakeholders' expectations, and our growth strategy. We aim at achieving higher performance by promoting and following up on the activities based on the Key Performance Indicators evaluating the results.

With regard to climate change issues, in order to contribute to the Japanese government's measures

against global warming based on the Paris Agreement and Japan's Nationally Determined Contributions (NDC), we will continue to work on technological development and commercialization, and the promotion of these objectives to society as a whole.

Creating a circular economy is an essential issue from the viewpoint of further growing the economy while building a sustainable society. Steel itself is a material that "can be reborn as any types of steel products again and again," and is a material that embodies the circular economy. We intend to contribute to the realization of a circular economy through persistent technological innovation including recycling of by-products generated in steelmaking processes and resource recovery from packaging/container plastics generated in society.

As for biodiversity conservation, we endorse the "Declaration of Biodiversity by Keidanren and Action Policy" and are participating in the "30 by 30 Alliance for Biodiversity." We are contributing to actively undertaking initiatives for the conservation of biodiversity and nature positive through the "Creation of Hometown Forests" and the "Creation of Sea Forests" among others.

As efforts to meet the Sustainable Development Goals (SDGs) adopted by the United Nations progress around the world, we will conduct our operations to proactively contribute to creating sustainable communities by providing integrated solutions to issues related to climate change measures, the creation of a circular economy, and the conservation of biodiversity, including maintaining and improving a favorable living environment.

The Nippon Steel Group is engaged in business activities based on its Corporate Philosophy that we will pursue world-leading technologies and manufacturing capabilities, and contribute to society by providing excellent products and services. We would like to continue to be a company that contributes to solving diverse social issues through our business activities. As a part of efforts to earn the trust of all of our stakeholders, we will actively fulfill our corporate social responsibility in the future by placing importance on safety, environment, and disaster prevention first and then on quality, production, respect for human rights, diversity & inclusion, social contribution via support of the arts, culture, and sports, and community-based educational support.

In addition, securing human resources and promoting their active participation are extremely important in advancing our growth and decarbonization strategies. Amid social conditions such as a declining Japanese population, especially the working population, and the increasing mobility of human resources, we need to promote the diverse management strategies we have described, and our human resources are the key to supporting these strategies. We will maximize the abilities of each and every employee through various measures, which start with measures to raise our recognition, expand hiring of experienced personnel, revise their compensation, and increase engagement. We will thus improve productivity.

In addition, as stated in the Nippon Steel Group Human Rights Policy, we will continue to conduct business activities with high ethical standards while giving maximum consideration to respect for human rights.

Message from the President

> Message from the President and COO

Message from the President and COO

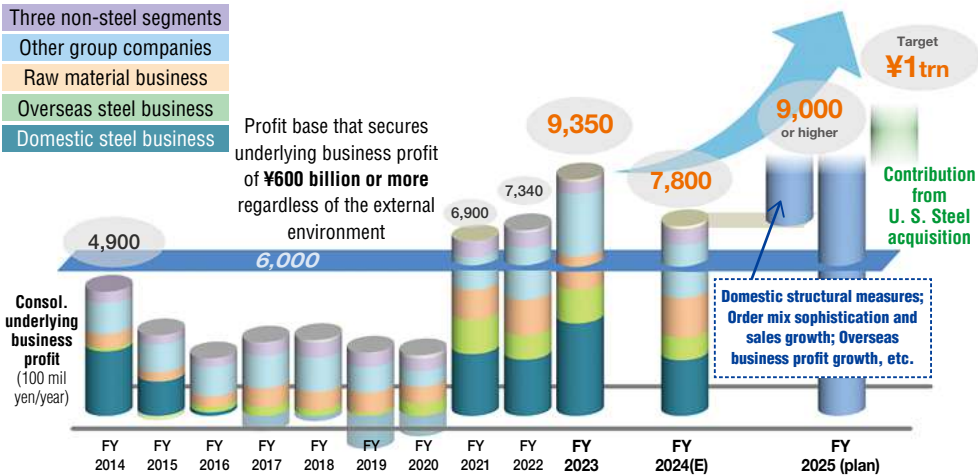
Outlook for future performance

Lastly, I would like to talk about our future performance.

In fiscal 2024, the unprecedented severe situation concerning global steel demand is likely to continue for the foreseeable future. Recovery in actual demand is hard to predict at this point, and it is expected to take time for the market to recover. There is also a risk that the decoupling structure between raw materials and products – high raw materials prices vs. low steel product prices - will continue for the time being. Based on this assumption, business profit is expected to be at the level of 780 billion yen. On an ongoing basis, we have secured an earnings structure that consistently ensures business profit that far exceeds 600 billion yen.

In fiscal 2025, we will work to secure profits of 900 billion yen or more even if the business environment does not improve, by demonstrating the effects of our growth strategy. Once the acquisition of U.S. Steel is completed, we will aim to achieve a revenue structure that enables us to secure a profit of more than or equal to 1 trillion yen.

[Earnings growth in a challenging environment: Toward the Vision of 1 trillion yen in underlying business profit]



Looking ahead

The business environment surrounding the steel industry is likely to remain harsh, and there are management challenges that need to be overcome over the medium to long term, such as addressing various challenges to realize a carbon-neutral society. I am determined to take the lead in our group-wide efforts to tackle these challenges. We will seize global growth opportunities, become a pioneer in decarbonization, and take a giant step forward as the best steelmaker with world-leading capabilities.





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Domestic steel demand will gradually decrease in line with the declining population, but global demand is expected to increase, mainly in emerging countries, especially for high-grade steel, which can contribute to solving social issues.

Point 1 The world's steel demand keeps increasing, mainly in emerging countries

Steel products are accumulated around the world in the form of end products such as buildings, bridges, factories, ships, automobiles, and household appliances. At present, the world's steel stock amounts to approximately 30 billion tons, with steel stock per capita of about 4 tons. The amount is between 8 to 12 tons per capita in developed countries. Projections indicate that China is on track to attain a steel stock per capita of 10 tons by the mid-21st century, while India is

forecasted to achieve a similar figure by the end of the century.

If economic growth in emerging countries, SDGs initiatives, and other factors result in a steel stock per capita of 7 tons globally in 2050, the total amount of global steel accumulation is projected to reach 70 billion tons, taking population growth into account.

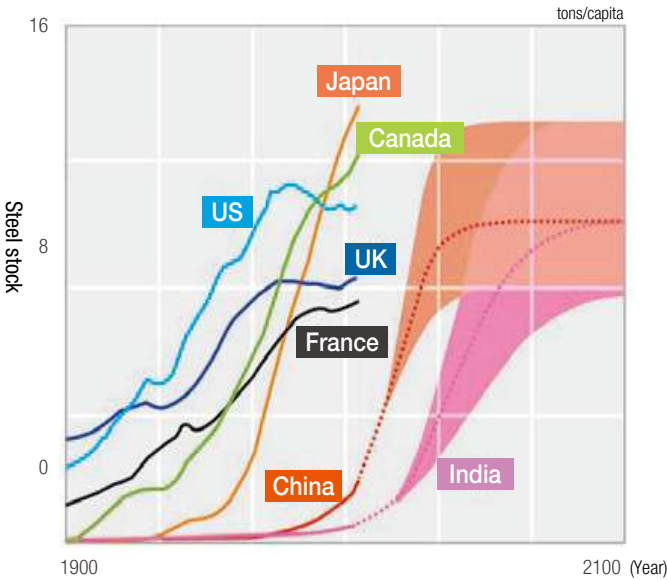
To accumulate 70 billion tons of steel by 2050, the world needs to increase its crude steel production to approximately 2.7 billion tons

per year by that time.

However, steelmaking only with recycled steel is insufficient to meet the steel production requirements due to the limited amount of scrap available.

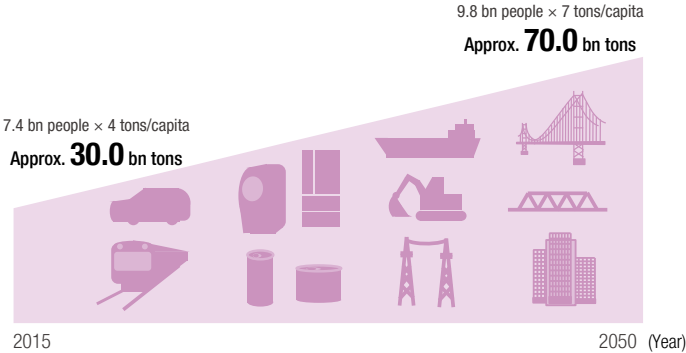
Therefore, even in 2050, there will still be considerable need for pig iron production through iron ore reduction at a similar scale to the present.

[Steel stock per capita]

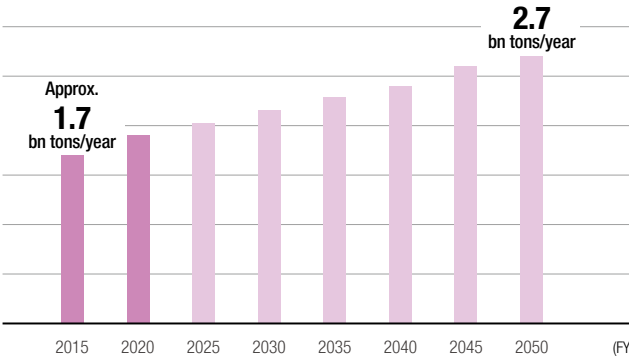


Source: "Sustainable steel: at the core of a green economy," World Steel Association, 2012

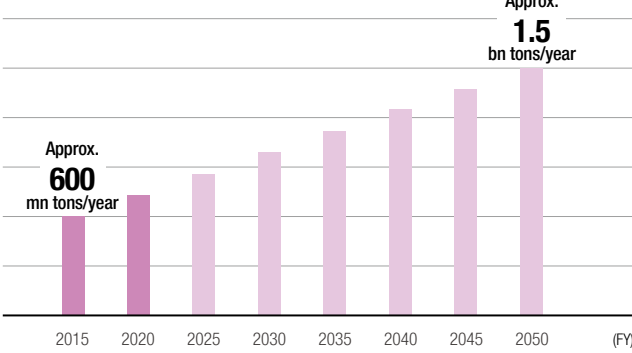
[Assumption of world steel accumulation trends]



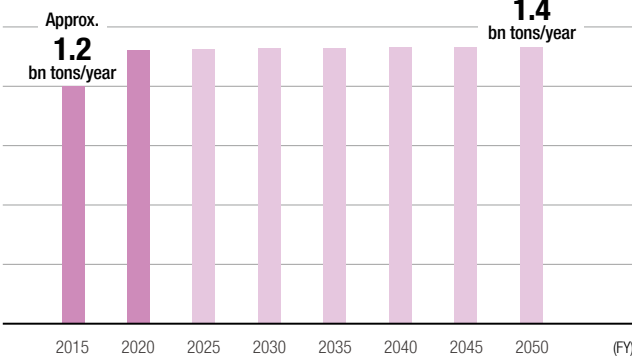
[World crude steel production volume Forecasts]



[Amount of scrap generated]



[New production from iron ore (pig iron production)]





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Point 2 Japan's steel market anticipates a gradual decline

Gradual decline in domestic demand

Domestic steel demand peaked at 94 million tons per year in 1990, during the bubble period, and has since been on a downtrend due to a fall in demand for civil engineering and construction, manufacturers' overseas shift of production, and other factors. The Japanese steel industry has maintained its level of domestic production by balancing the decline in local demand with an increase in exports. Japan's declining and aging population is likely to further reduce domestic steel demand for domestic consumption of the manufacturing industry and for the civil engineering and construction sector.

Increasing difficulty to export

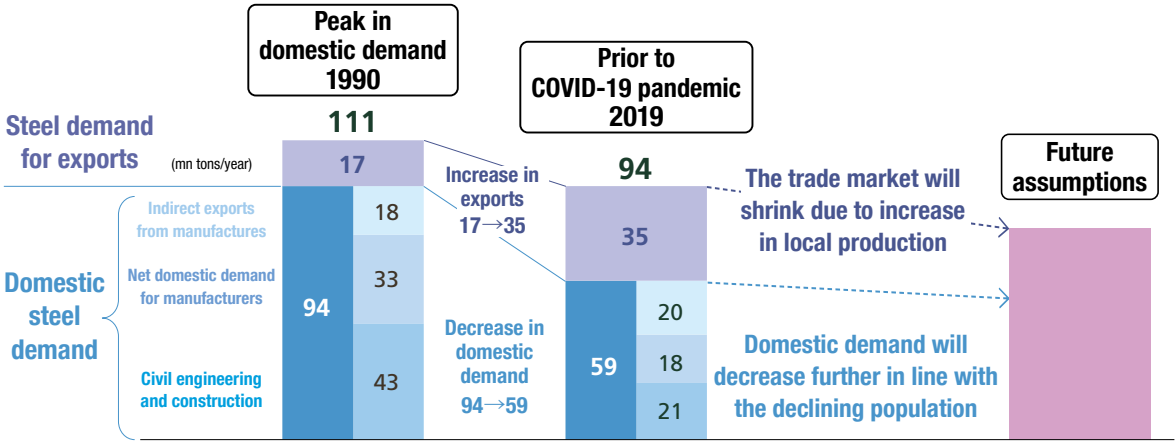
Steel demand is projected to grow overseas, especially in emerging economies. Nevertheless, the export outlook for steel products from Japan is likely to become more challenging. The main reasons behind this are the growing trend toward local production in various regions of the world and intensified competition resulting from the expanded capacity of new mills along the East Asian coastline.

Point 3 Anticipating growth in the high-grade steel market in quality and quantity

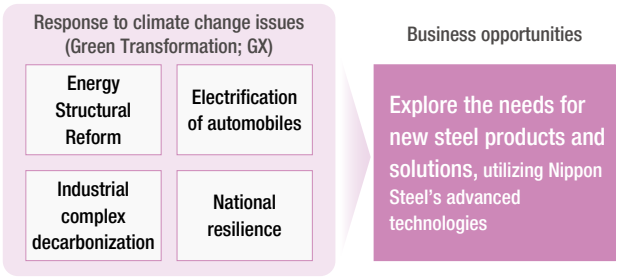
High-grade steel products are products which make use of various properties and limitless potential of steel, are designed to meet various specifications for steel quality, depending on the needs of customers, demonstrate superb functionality in use, and contribute to value creation of end products. Our wide range of high-grade steel includes the ultra-high-tensile steel sheet, which plays a key role in reducing the weight of automobiles, electrical steel sheet that contributes to energy efficiency improvement in motors and transformers, and Prostruct™, a construction solution brand that supports the development of safe, secure and disaster-resistant infrastructure. These high-grade steel products deliver an impact in addressing a range of societal challenges.

As global efforts towards carbon-neutrality and Sustainable Development Goals (SDGs) progress, the demand for high-grade steel is expected to increase, requiring improvements in both quality and quantity.

[Shifts in Japanese Steel Industry's product destinations]



[New business opportunities in the times of social transformation]





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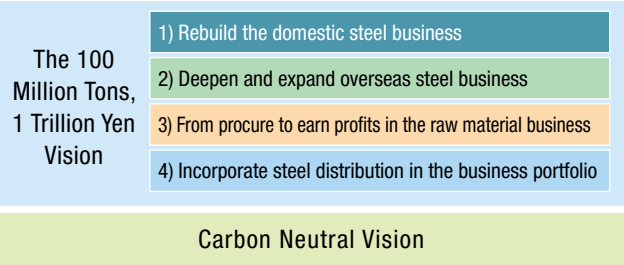
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In light of long-term and structural changes in the steel supply and demand environment and the role that the steel industry should play in solving social issues such as the realization of carbon neutrality, Nippon Steel aims at continually growing to become “the best steelmaker with world-leading capabilities” and contribute to Japan’s industrial competitiveness from the present and into the future.

We are striving to do our utmost to achieve our “The 100 Million Tons, 1 Trillion Yen Vision” and “Carbon Neutral Vision.”



The 100 Million Tons, 1 Trillion Yen Vision

In the future, we expect steel demand to decrease in Japan and exports to become increasingly difficult. As we would require high-level capital spending including the renewal of aging facilities in order to maintain our domestic steelmaking capacity, we believe our conventional business model to maintain domestic production scale by raising the export ratio is difficult to sustain.

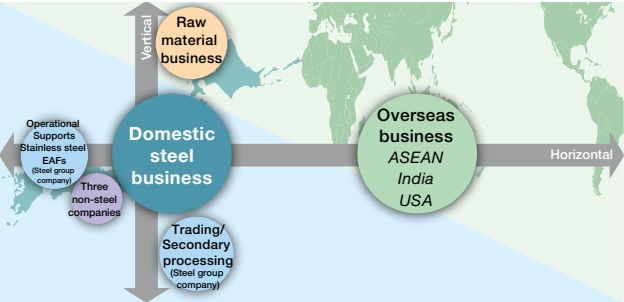
Based on this recognition, in the domestic steelmaking business, we strategically select products and equipment and build an optimal production system to efficiently produce high-grade steel, so as to strengthen domestic steelmaking ability as mother mills.

Our strategy in the overseas steel business is to expand our integrated production bases to ensure capturing of local demand, in “markets where demand growth potential is assured” and “areas where its technology and product capacity can be utilized.” We will increase the width of our business (horizontal growth) with the aim of achieving 100 million tons/year in global crude steel production capacity.

We will also increase the depth of our business (vertical growth) by moving the raw materials business from procurement to business in the upstream direction of the steel business supply chain, and by moving distribution in our business portfolio domain in the downstream direction.

Through these efforts, we will evolve into a more robust business

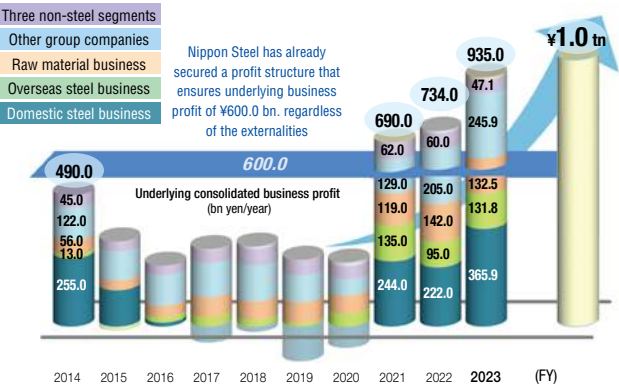
[Developing a robust business structure with vertical and horizontal Expansion]



structure with breadth and depth, and realize a profit structure that can secure stable business profits of 1 trillion yen regardless of the external environment.

As a result of these efforts to date, we have already established a profit structure that ensures stable underlying business profit of 600 billion yen or higher, regardless of the external environment, and underlying business profit significantly exceeded 600 billion

[Toward achieving 100 Million Tons and 1 Trillion Yen]



yen for the third consecutive year since FY2021. Further, we are moving forward toward a profit structure to stably realize profit of 1 trillion yen.

Carbon Neutral Vision

For realizing a carbon neutral society, we are striving to reduce CO2 in our supply chain by providing two types of value: by providing high-performance steel products and solutions that contribute to reducing CO2 emissions throughout society, and by providing carbon neutral steel through decarbonization of the steelmaking process.

To reduce CO2 emissions across society, under the NSCalbolex™ Solution brand, we are developing and selling high-performance steel products and solutions that contribute to the reduction of CO2 emissions at the time of processing of steel products and the use of finished products, as well as to the energy transition of society.

To achieve decarbonization of the steelmaking process, we aim to achieve a 30% reduction in CO2 emissions compared to 2013 by 2030 and carbon neutrality by 2050 by taking a multi-track approach of developing three breakthrough technologies. We are committed to the research and development of these technologies and are steadily making progress. At the same time, from the perspective of ensuring the predictability of decarbonized investment recovery, we are lobbying the government and relevant associations in various industries to help establish a green steel market and support for the rise in capital investment and operating costs. We are also working to ensure the social implementation of infrastructure such as green hydrogen, green power, and CCUS.



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(1) Rebuilding domestic steel business

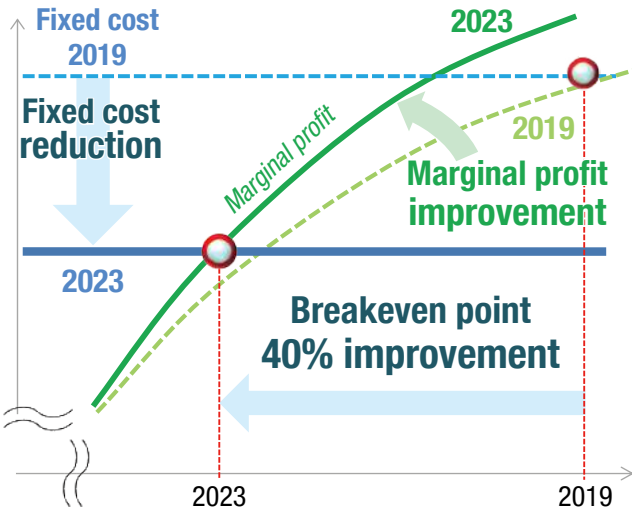
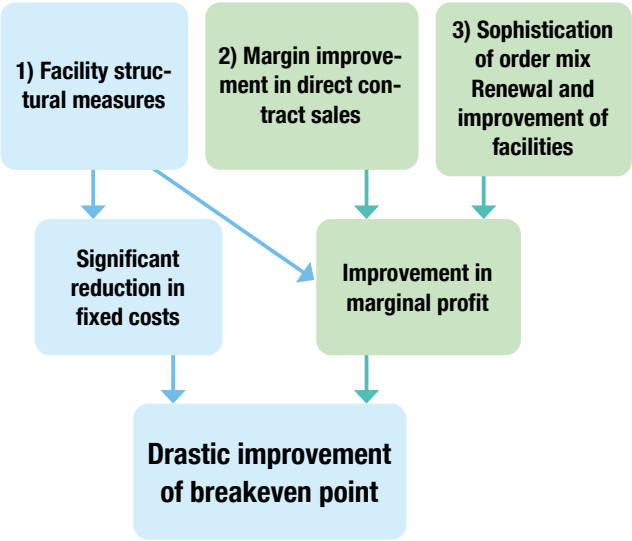
Our mother mills play a crucial role in strengthening the domestic steelmaking business structure and perform a central part in our global strategy aimed at establishing an optimum production system capable of producing high-grade products. We are building a profit base that is not solely reliant on volume by drastically improving the breakeven point. This will be done by improving marginal profit per ton through margin optimization and order mix improvement, and by reducing fixed costs through measures involving structural adjustments within our production facilities. We will continue to work at well-timed and accurate assessment and analysis of demand trends and other factors in order to establish an optimal production system and will develop further measures, if needed.

Drastic improvement of breakeven point

By promoting our strategy based on the “facility structural measures,” “margin improvement in direct contract-based sales,” and “sophistication of order mix,” we reduced fixed costs, significantly enhanced marginal profit per unit, and as a result improved the breakeven point by 40% between FY 2019 and FY 2023. Japan’s annual crude steel production, which stood at approximately 100 million tons before the COVID-19 outbreak,

dropped to about 90 million tons after the pandemic. Our domestic steelmaking business can remain profitable even if the production falls further to 70 million tons. We expect an increase in depreciation expenses because of capital investments in strategic products. However, we will mitigate this impact by implementing production facility structural measures and considering other factors to maintain a low level of fixed costs.

[Drastic improvement of breakeven point]



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1) Production facility structural measures

Nippon Steel's production facility structural measures aim at concentrating production in competitive facilities while shutting down less-competitive ones, in order to make the production framework to be streamlined and more efficient, and to optimize the scale of production capacity and fixed cost. We have already implemented more than 70% of our planned measures of the Medium- to Long-term Management Plan by March 2024, significantly reducing fixed cost.

[Structural measures for production facilities in the Medium- to Long-term Management Plan]

■ Product manufacturing process

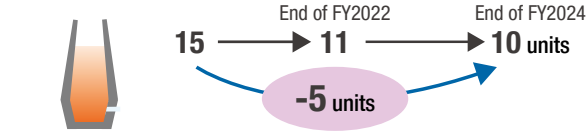
- Shut down some production lines, and concentrate production in lines that are more competitive or closely located to centers of demand, so as to strengthening the business and make an optimal, more efficient production system,.
- Withdrawing from certain products in light of their long-term demand trends.

■ Upstream steelmaking process

- Shut down all facilities at the Setouchi Works Kure Area and the No. 1 blast furnace and related facilities at the Kansai Works Wakayama Area by considering each steelworks' competitiveness in terms of integrated production/shipment capacity, cost, product strength, and other factors, with the aim of increasing competitiveness in the integrated steelmaking process.
- Shut down the No. 1 continuous casting machine at the Kimitsu Area of the East Nippon Works and the No. 3 blast furnace and related facilities at the East Nippon Works Kashima Area by taking into account the overall situation including company-wide upstream steelmaking balance and the integrated production/shipment capacity, and cost of the areas where the product manufacturing lines were shut down,.

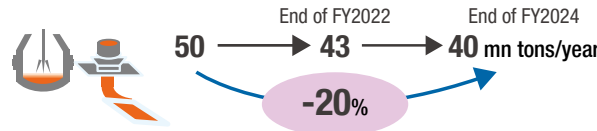
[Facility structural measures]

Number of domestic blast furnaces



Domestic crude steel production capacity

(non-consolidated + Nippon Steel Stainless)

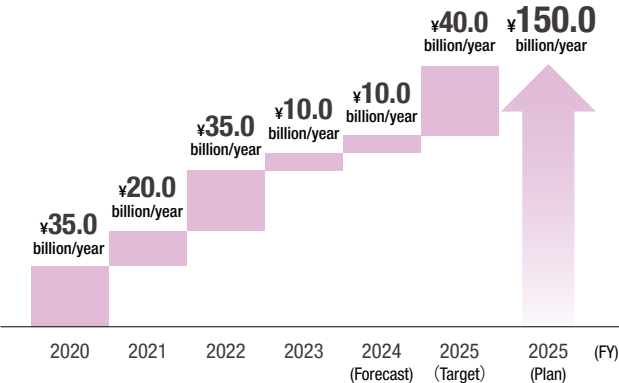


Labor productivity

FY2021 to the end of FY2025
Structural measures and DX measures for the rationalization of staffing

-20% or more

Cost reduction impact of the structural measures



[Structural measures for production facilities: Changes in the number of main target lines]

		Closure	Before → After
	Blast furnace	5 units	15 → 10 units
	Continuous caster	8 units	32 → 24 units
	Steel plate mill	2 lines	4 → 2 lines
	Large shape mill	2 lines	4 → 2 lines
	Seamless pipe mill	1 line	3 → 2 lines
	UO pipe mill	2 lines	2 → 0 line
	Hot rolling mill	1 line	7 → 6 lines
	Cold rolling mill	2 lines	17 → 15 lines
	Plating lines	3 lines	19 → 16 lines
	Special stainless steel cold rolling mill	2 lines	4 → 2 lines
	Titanium raw material plant	1 line	1 → 0 line
	Titanium round bar plant	1 line	1 → 0 line
	Titanium welded pipe plant	1 line	1 → 0 line
	Nippon Steel Stainless Steel's cold rolling mill	4 lines	13 → 9 lines
	Nippon Steel Stainless Steel's electric arc furnace	1 unit	4 → 3 units



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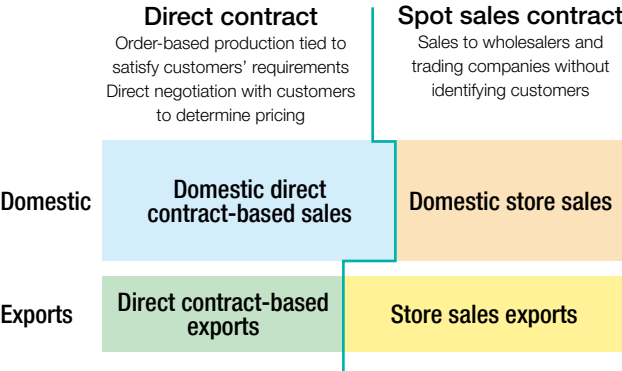
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2) Spread improvement in direct contract sales

Order-made steel products based on the direct contracts with the features and quality that meet customers’ needs account for a majority of our steel products sales. Sales prices for these products are determined through negotiations with customers. We have asked customers with these contracts for their understanding of our need to adjust direct contract-based prices from the viewpoint of proportionate sharing of the impacts of rising costs of raw materials and fuels in the supply chain, and of the value of the products and solutions provided by us. In FY2021, we gained many customers’ understandings and achieved significant improvement of the prices. We also reviewed our business practices for price negotiations. There had been many contracts for which the prices were negotiated and finalized after the order intake, production, and shipment before. We then made a proposal for the pre-fixed pricing system to customers to advance the timing of negotiations and raise the efficiency of this process, so that the price would be fixed before our order intake, which could facilitate our forecast making and coping with longer-term, difficult management issues such as carbon neutrality. Upon discussions, many customers agreed with our proposal. We changed our price negotiation system to the “pre-fixed pricing system” for products shipped after April 2022 under direct contracts. We have also proposed and discussed shorter contract terms, etc., considering different circumstances of each customer, as one of the measures to respond to fluctuating costs of raw materials and fuels. For customers who have already agreed, we have implemented a shorter cycle since April 2022. We will continue negotiating with other customers.

[Nippon Steel’s types of contracts for sales of steel products]



[Trend of direct contract-based spread level]

1 Securing adequate spread up to 2H FY2021

Up to 2H FY2021

- Proportionate sharing of the fluctuations of external costs across the entire supply chain
- Reasonable price based on the value of the product, solution, and supply chain.

Significantly improved our spread.

1’ Maintaining adequate spread

Reflect external cost fluctuations in sales prices to structurally secure adequate spread.

2 More sophisticated order mix

Improve the value of products and services to raise the level of average adequate spread.

Measures to improve the capacity and quality of electrical steel sheets

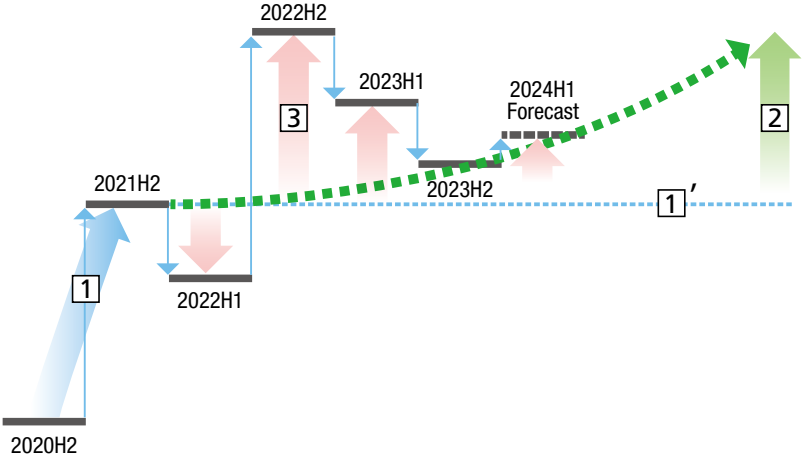
Yawata and Hirohata Step 1 and 2: Full operation in 1H FY2023

Hirohata Step 3: Full operation in 1H FY2024

Yawata Step 3 and Hanshin (Sakai) : Full operation in 1H FY2027

Construction a next-generation hot strip mill in Nagoya:

Full operation in 1Q FY2026



3 External cost fluctuation after pricing					
Changed the price negotiation system to the “pre-fixed pricing system” after April 2022.					
A temporary increase or decrease in the adequate spread level, driven by post-pricing fluctuations in external costs					
	2022 1H	2022 2H	2023 1H	2023 2H	2024 1H (E)
External cost fluctuations after pricing	Increase	Decrease	Decrease	Nearly flat	Slightly decrease
Change vs. adequate spread	Shrink	Expand	Expand	Nearly flat	Slightly expand



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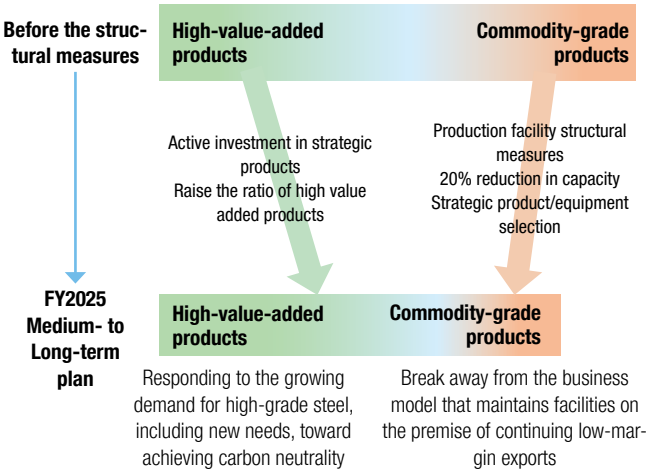
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The 100 Million Tons, 1 Trillion Yen Vision (1) Rebuilding domestic steel business

3) Shift to a more sophisticated order mix, and renewal and improvement of facilities

Our strategic focus is on high-grade steel, which is expected to increase in demand both in terms of quality and quantity. Accordingly, we are investing actively in plants and equipment to expand production capacity and improve quality. We intend to advance our order mix by raising the ratio of higher-value-added products and reducing the ratio of commodity-grade products along with the streamlining of production capacity. This leads to our improving average marginal profit.

[More sophisticated order mix]



We are selectively investing in competitive facilities, including investment to improve the capacity and quality of strategic products. Acquiring new facilities will enable us to turn our technological expertise into actual profits.

Strategic investment in a next-generation hot strip mill at the Nagoya Works

In the automotive industry, where global environmental regulations are tightening and where collision safety standards are becoming more stringent, demand for ultra-high-tensile steel sheets is expected to further grow in response to the need for lighter, stronger vehicle bodies. For the foreseeable future, demand for electric and hybrid vehicles will have high growth potential, creating need to reduce vehicle weight and increase body strength, particularly because of problems concerning mileage and battery weight.

In order to drastically strengthen the production system of high-performance steel sheets such as ultra-high-tensile steel sheets at the Nagoya Works, a core base for automobile steel sheet manufacturing, we are combining the knowledge and experience of many years' R&D in pursuit of the potential of steel materials and are constructing a next-generation hot strip mill with the world's largest load-bearing rolling machine, which will give us dramatically improved rolling control and temperature control.

[Investing in a next-generation hot strip mill]

Time to decide	Investing steelworks	Investment	Start of operation	Production capacity
2023.5	Nagoya Works	Approx. ¥270 billion	1Q FY2026 (plan)	Approx. 6mn tons/year



Construction site of a next-generation hot strip mill at Nagoya Works

Strengthening the manufacturing system of high-end electrical steel sheets

As the world is rapidly moving toward decarbonization, demand for high-efficiency high-grade non-oriented (NO) electrical steel sheets used in the iron core of motors used in electric vehicles (EVs) is also expected to dramatically increase, driven by accelerated growth in demand for EVs, along with the stricter regulations for CO2. In the meantime, regulations concerning energy efficiency of transformers have been tightened in a number of countries. With regard to grain-oriented (GO) electrical steel sheets used in the iron core of transformers, the need for higher-grade materials with less energy loss is anticipated to further increase.

We have started construction as we had decided sequentially from August 2019 to May 2023 to invest ¥213 billion in cumulative total for the improvement in capacity and quality of electrical steel sheets at the Setouchi Works Hirohata Area / Hanshin Area (Sakai) and the Kyushu Works Yawata Area.

[Investing for improvement of the capacity and quality of electrical steel sheets]

Time to decide	Investing steelworks	Investment	Start of operation	Capacity expansion
(1) 2019.8-2020.5	Setouchi Works Hirohata Area Kyushu Works Yawata Area	¥105 bn	1H FY2023 Full operation	Up approx. 1.5 times in NO + GO electrical steel sheet capacity;
(2) 2021.11	Setouchi Works Hirohata Area	¥19 bn	1H FY2024 Full operation	up approx. 3.5 times in high-grade electrical products
(3) 2023.5	Setouchi Works Hanshin Area (Sakai) Kyushu Works Yawata Area	¥90 bn	1H FY2027 Full operation	Numerical production capacity targets for eco-friendly cars: Approx. 5 times the current level Approx. 1.6 times after implementation of (1) and (2)

(¥213 billion in cumulative total)

NO
Grain-oriented electrical steel sheets
⇒ For motors



GO
Grain-oriented electrical steel sheets
⇒ For transformers





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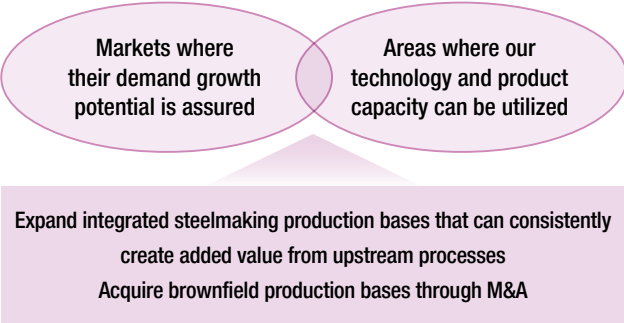
The 100 Million Tons, 1 Trillion Yen Vision

(2) Deepening and expanding overseas steel business

Nippon Steel’s strategy in the overseas steel business is to expand our integrated production framework and downstream bases in the centers of demand, in “markets where demand growth potential is assured” and “areas where its technology and product capacity can be utilized” to ensure that local demand is captured.

Regarding our current international operations, we have actively pursued a strategy of selecting and concentrating. We have focused on expanding international businesses that align with our strategic objectives and have terminated ventures where there is no justification to continue, including businesses that have either served their purpose, lost their synergy potential, or are not expected to generate profits.

[Expansion strategy of overseas steel business]



Global steel demand is expected to continue to grow at a moderate pace. In order to capture growing global demand, we will not only have supply systems of steel products exports, mainly those of high-grade steel products from Japan, and of supplies from overseas operating companies with cold rolling, plating, and other product processes, but also expand our integrated production framework from the upstream steelmaking processes (blast furnace and electric furnace) to capture overall local demand. In doing so, we are moving toward full-scale overseas business.

Our basic strategy is to acquire integrated steel mills through acquisitions and capital participation (brownfield investment) and to expand the capacity of existing bases, in order to maintain the supply-demand balance amid a surplus of steel production capacity worldwide and to avoid the risks associated with starting up a new launch. We have acquired Essar Steel (now AM/NS India) in India in December 2019 and G Steel and GJ Steel in Thailand in March

[Diversify Nippon Steel’s global footprint by three primary geographies]



2022. Our present overseas crude steel production capacity is 19 million tons per year, and the total global crude steel production capacity, including the domestic capacity, is 66 million tons.

In addition, in December 2023, we decided to acquire U. S. Steel in the United States, a country with the world’s largest demand for high-grade steel. We are currently advancing procedures toward closing the deal. When U. S. Steel joins the Nippon Steel Group, our overseas crude steel production capacity will be 39 million tons/year, and our global crude steel production capacity including Japan will be 86 million tons/year.

On top of that, we plan to expand the capacity of AM/NS India, and explore further opportunities to expand our overseas crude steel production capacity to more than 60 million tons, with the long-term vision of achieving a global annual crude steel production capacity of 100 million tons.

[Global crude steel production capacity]

Toward 100Mt vision:				
● Acquisition of U. S. Steel				
● Further capacity expansion in AM/NS India				
● Further expansion of existing steel mills				
(million t/year)	2014	2023	After acquisition of USS	Long-term Vision
Domestic	52	47	47	
Overseas	6	19	39	> 60
Total*	58	66	86	> 100

* Fully including nominal capacity of companies subject to the crude steel production standard of the World Steel Association



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Efforts to expand capacity at AM/NS India

Growth potential of India's steel market

India has become the world's most populous country with its population that surpassed China to more than 1.4 billion and is expected to continue to grow. India's per capita steel consumption is currently about 90 kg per person per year, which is low compared to industrialized countries such as Japan and China, the U.S. and Europe, as well as to ASEAN countries and Brazil*. In India, demand for steel products is expected to steadily increase over the long term due to the synergistic effect of rising per capita steel consumption, driven by demand related to the progress of industrialization and urbanization, as well as population growth. Moreover, the Indian government has set a target of increasing crude steel production capacity to 300 million tons by 2030, and is taking various measures.

* Per capita consumption by country (kg/person/year;round figures):Japan-430, China-630, EU-280, Mexico-220, five ASEAN countries-160, Brazil-110

Capacity expansion of AM/NS India

India's government, under its "Make in India" policy, is resolutely protecting India's steel industry as a key industry. The market has a remarkably high ratio of local production, with domestic steelmakers supplying approximately 90% of the demand. Against this backdrop, major steel producers in India are adopting ambitious strategies to expand their production capacities to meet the expected growth in demand in the coming years.

In this Indian steel market, made attractive by market growth prospects and the local production policy, Nippon Steel acquired Essar Steel jointly with ArcelorMittal in December 2019, and began operating it as AM/NS India, based on an equal partnership of Nippon Steel and ArcelorMittal.

To meet with the growth of the Indian steel market, we plan to grow with capacity expansion at AM/NS India leading the way. We have decided to invest in increasing the capacity of the Hazira Works, located on the western coast of India. For this capacity expansion, we will utilize unused owned land, which frees us from land acquisition issues that can be the biggest cause of obstacles in India. Also, aiming for quick and reliable start-up of facilities, we will adopt the already-established blast furnace-converter process to capture growth in demand early and surely. This investment project

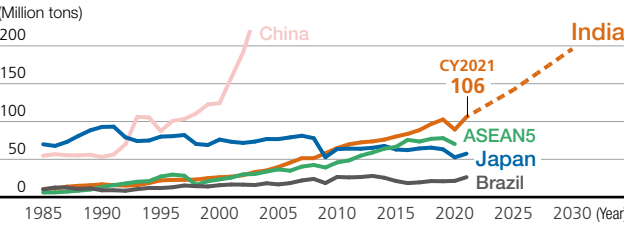
plans to introduce energy-saving equipment and environment control equipment (for dust, odor, water quality, and noise control) that we have developed in Japan, and to incorporate a provision for applying carbon-neutral technology that uses blast furnace equipment, which is under development by us and ArcelorMittal. Also, we started construction for expanding cutting-edge sheet manufacturing facilities (for pickling, cold rolling, and steel plate plating) to capitalize on the anticipated growth in demand for various high-value-added products, such as cold-rolled and plated steel sheets, including those for automotive and construction materials (highly corrosion-resistant) in the Indian market. In December 2023, one plating facility for construction materials commenced production.

We are considering investing in further capacity expansion, which involves building a new steel mill in Eastern India. AM/NS India has already signed an MOU with the government of Odisha state, one of the potential sites, to acquire land for constructing integrated steel mills in Kendrapara and Paradeep districts in Eastern India.

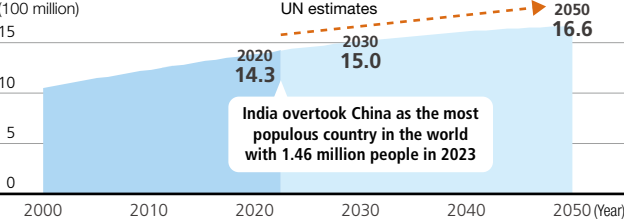
	Project	Facility	Investment	Start of full-scale operation
Sep. 2022: Decided	Hazira integrated steel mill Ironmaking facilities and a hot strip mill: New installation and expansion	Blast furnace: 2 units (4,500m³ X 2 units; 7.0 Mt/y) Pellet plant: 1 unit (approx. 3.0 Mt/y) Sintering: 2 units (approx. 6.0 Mt/y) Coke oven: 3 batteries (2.1 Mt/y) Converter: 3 units (350 t/ch X 3; crude steel production capacity 6.0 Mt/y) Degassing equipment Continuous casting facility: 2 units (2 strands/unit X 2 units) Hot strip mill: 1 unit (5.5 Mt/y, largest scale in India)	INR410 billion (Approx. ¥730 billion)	The First Phase (FY2025): #2 blast furnace and related facilities, new oxygen converters and continuous casters, and a new hot strip mill The Second Phase (FY2026): #3 blast furnace and related facilities
Apr. 2022: Decided	Hazira integrated steel mill Steel sheet facilities: Expansion	Pickling and cold rolling equipment: 1 unit (2.0 Mt/y) Hot-dip galvanizing equipment: 2 units (1.0 Mt/y) Cold-rolling and aluminum-plating equipment: 1 unit (1.0 Mt/y)	INR85 billion (Approx. ¥140 billion)	Plan to start operation by FY2024
Nov. 2022: Acquired	AM/NS Khopoli Acquired	Acquired the former Uttam Galva Steels Established AM/NS Khopoli Pickling and cold rolling equipment (1.0 Mt/y) Hot-dip galvanizing equipment (0.75 Mt/y) Collar steel plate (0.28 Mt/y) Hammer welded pipe (0.05 Mt/y)	Approx. INR37 billion (Approx. ¥67 billion)	
May 2023: Acquired	AM/NS Gandhidham Acquired	Acquired former Indian Steel Corporation Established AM/NS Gandhidham Pickling and cold rolling equipment (0.60 Mt/y) Hot-dip galvanizing equipment (0.37 Mt/y) Collar steel plate (0.12 Mt/y)		
Under feasibility study	Study for constructing integrated iron/steel works in the east	Signed an MOU with the government of Odisha state on the acquisition of land and other items for the construction of integrated steel mills in Kendrapara and Paradeep districts in east India		

* Mt/y: Million tons per year

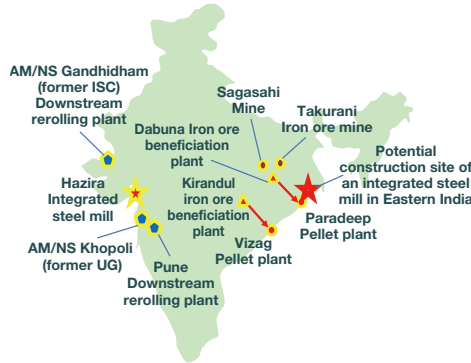
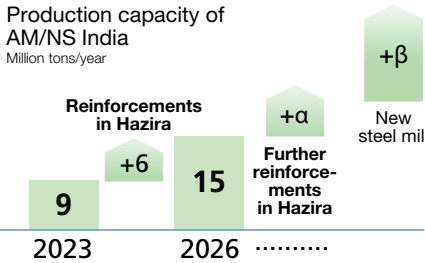
[Demand for steel products]



[India's population]



[Capacity expansion of AM/NS India]



The 100 Million Tons, 1 Trillion Yen Vision (2) Deepening and expanding overseas steel business

G Steel and GJ Steel in Thailand

Among the ASEAN countries, Thailand has been an essential market for us, where we have established product processing bases since the 1960s. To meet demand for high-grade steel from local automotive and home appliance manufacturers, we have supplied semi-finished products from Japan, which are then further processed locally at our cold-rolling, coating, and other processing facilities and supplied as final products to local manufacturing companies. We have contributed to establishing an extensive supply chain in Thailand, from steel production to end-users. General sheet products are the largest demand segment in Thailand where steady, high growth is expected. It is important that we secure our position as an insider in the Thai market to capture the demand for commodity-grade products.

In March 2022, Nippon Steel acquired G Steel Public Company Limited and GJ Steel Public Company Limited, which are integrated steel production mills that produce hot-rolled steel sheets from electric arc furnaces in Thailand, and made them subsidiaries. Both G Steel and GJ Steel manufacture commodity-grade hot rolled products for which large volume demand is expected. Combined with the high-grade steel business at the conventional product processing sites, this has enabled us to establish a broad-based business (high-grade steel plus general-purpose steel) position in the Thai market. Being Thailand's only Integrated steelmakers with EAFs and hot strip mills, the combination of G Steel and GJ Steel provides a stable

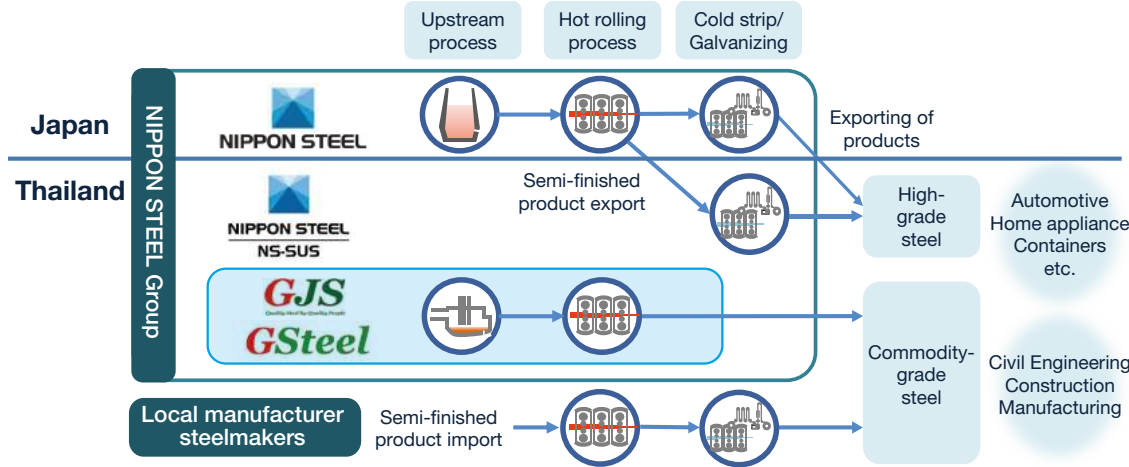
supply mainly to the construction materials and steel pipe fields in Thailand, with short delivery times. In addition, we are actively working on developing new markets, notably by supplying high-strength construction materials and raw plates to reroll makers (cold rolled and plated products), and by exporting to neighboring countries and Europe.

In addition, with the possession of integrated electric arc furnace and hot rolling facilities, G Steel and GJ Steel may potentially become a base to promote “high-grade steel production in a large size electric arc furnace,” which is one of the three breakthrough technologies we are developing for the Carbon Neutral Vision 2050.

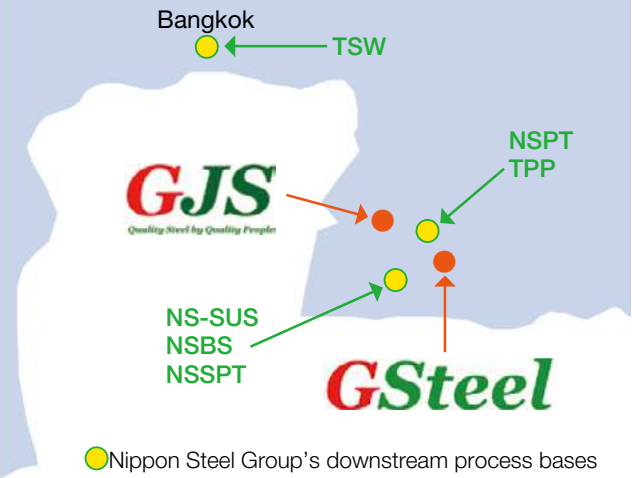
After the completion of the acquisition of G Steel and GJ Steel, Nippon Steel has sent personnel (23 as of August 2024) to the companies' major divisions such as production, sales, maintenance, planning, and finance to rebuild and strengthen their business foundation. In August 2024, we decided to make capital spending of approximately 1.5 billion baht (approximately 6 billion yen) to strengthen their ability to respond to quality and to handle cost competitiveness. Investments include the establishment of a new skin-pass mill and improvement of the scrap yard at G Steel, as well as investment in strengthening scrap management at both G Steel and GJ Steel.

Both companies will strengthen their ability to respond to quality and to handle cost competitiveness, quickly build a strong profit structure, and capture demand in the Thai market, where steady growth is expected.

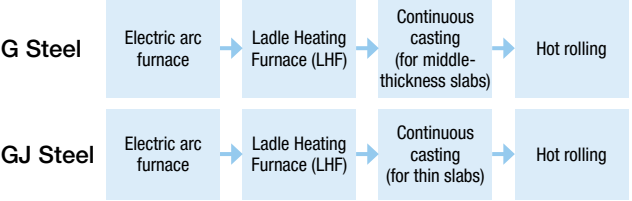
[Thai Market in our Global Business Strategy]



[Manufacturing bases in Thailand]



[Manufacturing process]





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Special Feature: Acquisition of U. S. Steel Corporation

On December 18, 2023, we announced our decision to acquire United States Steel Corporation (“U. S. Steel”), an integrated blast furnace and electric arc furnace steel manufacturer. The acquisition is currently being reviewed by the relevant authorities and is expected to close in the third or fourth quarter of calendar year 2024 as soon as the approval is obtained.

By bringing together the two companies that have provided superior products and services and contributed to the development of society over their long history, we will integrate our manufacturing capabilities with world-leading technologies, provide better value to customers around the world, and move forward together as the best steelmaker with world-leading capabilities.

Overview of U. S. Steel

U. S. Steel is one of the leading integrated blast furnace and electric furnace steelmakers in the United States, and manufactures and sells steel sheets for use in automobiles, home appliances, and building materials, as well as steel pipes for use in the energy sector in the United States and Europe (Slovakia).

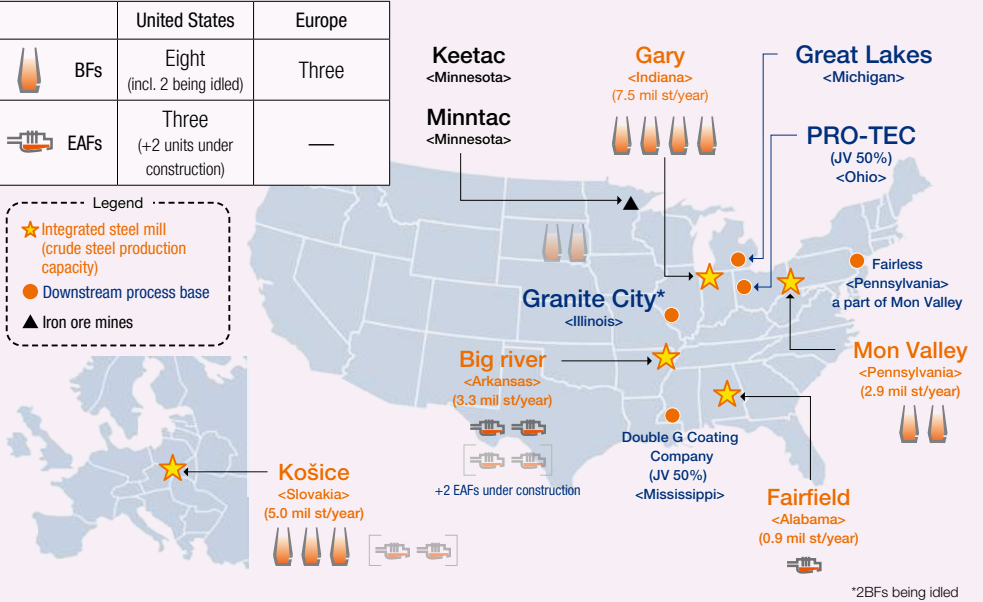
The company has a crude steel production capacity of approximately 20 million tons, and in addition to its competitive integrated blast furnace steelworks, it possesses valuable assets such as an advanced electric furnace mini-mill capable of producing high-grade steel and iron ore mines capable of self-supplying iron ore for use at its North American production sites. U. S. Steel has also invested in carbon neutrality, including the expansion of capacity of the electric arc furnace mini mills’ and installment of equipment for the production of direct reduced iron pellets to supply for electric arc furnaces.

[Overview of U. S. Steel]

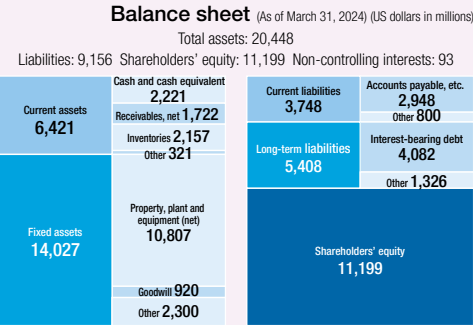
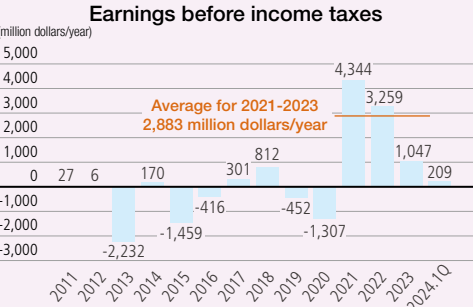
	United States		Europe	Total
Head office location	Pittsburgh, Pennsylvania, U.S.A. (Will stay at the same location after the acquisition)			
Main manufacturing base	<Steel sheet> Gary (Indiana), Mon Valley (Pennsylvania), Granite City (Illinois), Great Lakes (Michigan), PRO-TEC (Ohio) <Electric arc furnace mini mill> Big River Steel (Arkansas) <Steel pipes> Fairfield (Alabama)		Košice (Slovakia)	
Production type	Steel sheets (hot-rolled steel sheets, cold-rolled steel sheets, plated steel sheets, tin sheets, electrical steel sheets), tubular products (seamless)			
Crude steel production capacity	15.8 mil tons/year: 8 BF’s (2 of which are out of service) (17.4 mil st/year): 3 EAFs (plus 2 under construction)		4.5 mil t/year (5.0 mil st/year)	20.3 mil t/year (22.4 mil st/year)
Crude steel production volume*1	11.7 mil t/year (12.9 mil st/year, incl. EAFs of 3.0 mil st/year, 17%*) * As a percentage of total incl. Europe		4.0 mil t/year (4.4 mil st/year)	15.7 mil t/year (17.3 mil st/year)
Shipment volume of steel products*1	10.5 mil tons per year (11.6 mil st/year)		3.5 mil t/year (3.9 mil st/year)	14.1 mil t/year (15.5 mil st/year)
Iron ore mines	Minntac, Keetac (Minnesota)			
Pellet production volume	20.0 mil t/year (22.1 mil st/year) All iron ore used at steelworks in the U.S. is procured from its own mine as pellets			
Net sales*1	14,528 million dollars/year		3,525 million dollars/year	18,053 million dollars/year
Earnings before income taxes*1	1,047 million dollars/year			
Net earnings*1	895 million dollars/year			
Number of employees*2	13,995		7,808	21,803

*1 CY2023 results, *2 At the end of CY2023 t: metric ton, st: short ton

[Map of U. S. Steel main bases]



[U. S. Steel’s financial status]





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Significance for Nippon Steel’s management strategy

Nippon Steel is moving toward 100 million tons of global crude steel capacity through expanding its integrated production framework, which enable us to create added value starting from iron/steel-making process, in “areas where demand is promisingly expected to grow” and for “sectors in which its technologies and products are appreciated.” In doing so, our basic strategy is to acquire integrated steel mills through acquisitions and capital participation (brownfield investment) and to expand the capacity of existing bases.

The U.S. steel industry is largely driven by domestic demand and U.S. steelmakers are not highly dependent on exports of products. In addition, it has been remarkable that there is a trend to bring operations back to the home U.S. market in downstream sectors such as energy and manufacturing, due to relatively low energy prices in the United States and structural changes in the world economy. We are confident that we can utilize our seasoned technologies and product lineup in the United States, since we expect a high level of demand for high-grade steel in this largest market amongst developed countries as well as sustainable growth in domestic steel demand.

We believe that this acquisition is a worthwhile investment since it is not only consistent with our overseas business strategy but also would enable us to diversify our global footprint by securing integrated steel manufacturing capabilities in the United States, adding to existing operational bases in ASEAN and India, where market volume and growth potential are significant.

Upon completion of this acquisition, the Nippon Steel Group’s global crude steel production capacity* will increase to approximately 86 million tons per year, strengthening its reach. Nippon Steel and U. S. Steel will move forward together as the best steelmaker with world-leading capabilities, providing a range of products and services made by the technologies possessed by both companies for high-grade steel including electrical steel and automotive steel to broadly contribute to customers and society.

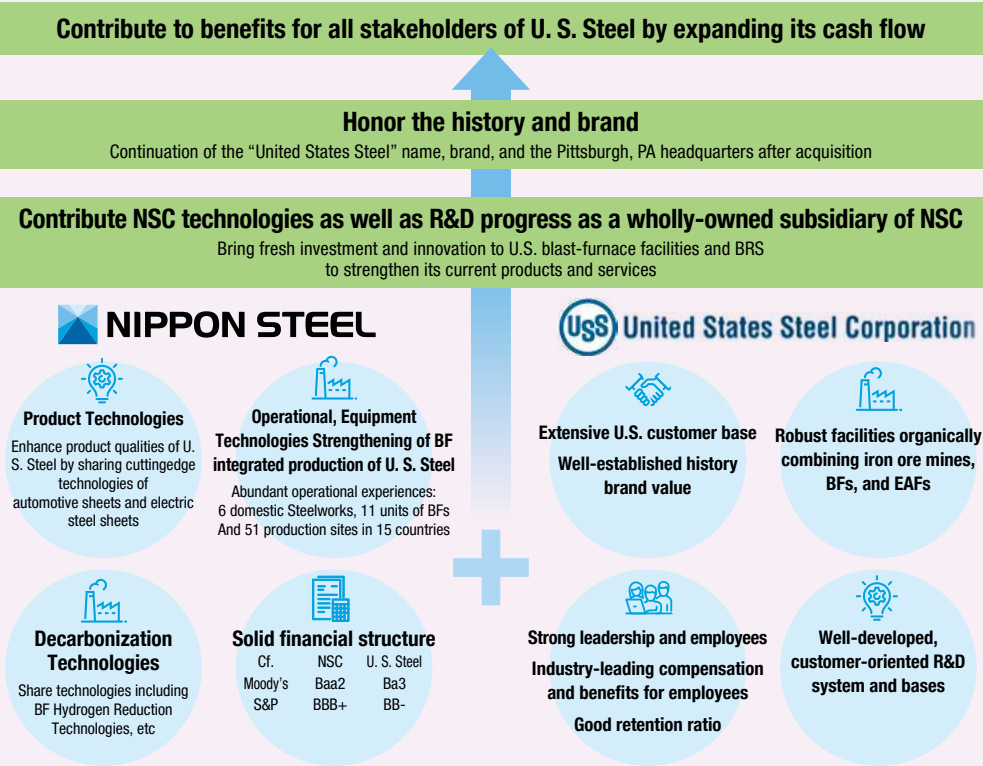
Value creation through the acquisition, and contribution to the U.S. industry and society

Nippon Steel will continue to respect the history and brand of U. S. Steel, which will retain its iconic corporate name, brand, and headquarters in Pittsburgh. Nippon Steel North America, which will be the direct parent company, plans to relocate its headquarters from Houston to Pittsburgh.

The acquisition will not result in any new plant closures or layoffs, or any transfer of U. S. Steel production or employment overseas, protecting production and employment in the United States and bringing new investment and inovation to BF and EAF.

By making U. S. Steel a wholly owned subsidiary, we will be able to fully share our advanced technologies, including product technologies, operation and equipment technologies, and decarbonization technologies, as well as our R&D activities. By combining these with the strengths of U. S. Steel, we will expand U. S. Steel’s cash flow.

[Realizing further growth of U. S. Steel]



U. S. Steel will remain “Mined, Melted and Made in America” and will continue supplying sophisticated steel products to American industry. Nippon Steel will strongly support U. S. Steel’s sustainability, leveraging our advanced technology and formidable financial strength.

U. S. Steel's becoming a wholly owned subsidiary of Nippon Steel will contribute to the interests of all of its stakeholders, including customers, employees, suppliers, communities, and shareholders, and will bring significant benefits to the U.S. steel industry as well as U.S. industry and society as a whole.



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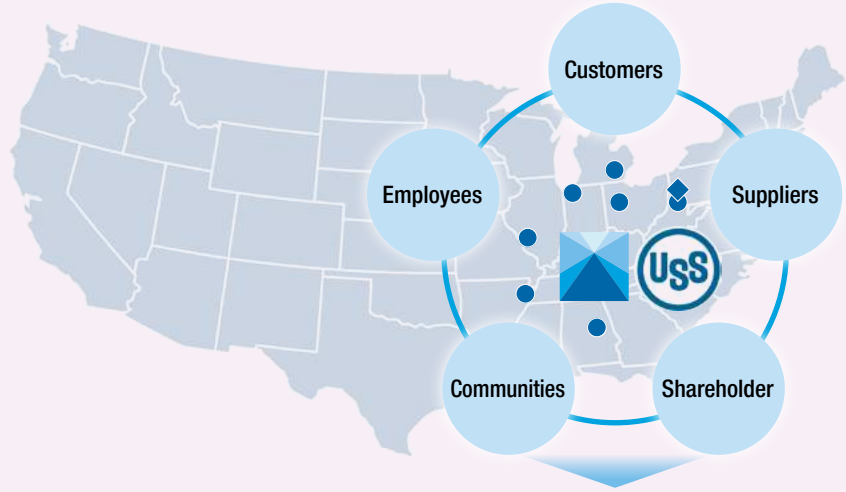
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(As of the end of August 2024)

[Contribute to the benefit of stakeholders]



It will bring tremendous benefits to the U.S. steel industry and the U.S. as a whole

Efforts to achieve carbon neutrality

Nippon Steel and U. S. Steel have been promoting research and development to achieve carbon neutrality by 2050. Each has technological strengths. Nippon Steel's strategy is to advance its three breakthrough technologies to progress towards carbon neutrality: (1) hydrogen injection into BF's; (2) hydrogen direct reduction of iron (3) high-grade steel production in large size EAFs. U. S. Steel operates one of the leading electric arc furnace mini mills, Big River Steel, and construction of Big River 2 is expected to be completed in 2024.

Going forward, by integrating the advanced technologies of both companies, the two companies will further promote efforts to achieve carbon neutrality by 2050 and contribute to the realization of a sustainable society.

Impact of the acquisition on Nippon Steel's consolidated financial position

At the closing of the acquisition, Nippon Steel will pay 14,126 million US dollars, or 55 US dollars per share. We have already received commitment letters from Japanese financial institutions and will use proceeds from the bridge loan for payment. If all funds for the acquisition will be procured through the bridge loan, the D/E ratio immediately after the acquisition is expected to deteriorate from the current 0.5 level to around 0.9. However, in June 2024, we already had raised part of the acquisition funds in the form of hybrid funds of 250 billion yen, 50% of which is deemed as equity by rating agencies. In addition, our existing convertible bonds of 300 billion yen issued in 2021 will be converted to equity due to the arrival of their maturity date or the exercise of the soft call. These factors are estimated to temporarily raise the post-acquisition D/E ratio to around 0.8. Further, mainly by permanent financing by optimal means, the D/E ratio is expected to recover to the 0.7 level by the end of fiscal 2024. Moreover, we will aim to swiftly restore the D/E ratio to the target level of our Medium- to Longer-term Management Plan, 0.7 or lower, with a contribution from our consolidated profit and cash flow including U. S. Steel, permanent financing by optimal means, and other measures.

U. S. Steel's assets and liabilities will be consolidated in Nippon Steel's consolidated balance sheet on or after the date of completion of payment of the consideration for the merger.

(Reference) U. S. Steel consolidated balance sheet (As of the end of March 2024)

Total Assets: 20,448 million US dollars

Liabilities: 9,156 million US dollars (including consolidated interest-bearing debt of 4,082 million US dollars)

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Nippon Steel has made minor investments in raw material mines operated by major resource companies in order to ensure stable procurement of quality raw materials. We used to procure approximately 20% of the iron ore and coking coal we use from our invested mines, but this proportion has increased to about 30% for coking coal after we invested in Elk Valley Resources Ltd. (EVR JV), a Canadian coking coal company.

In order to realize a carbon-neutral steelmaking process, we are developing three breakthrough technologies: Hydrogen injection into blast furnaces, high-grade steel production in large size electric arc furnaces, and hydrogen direct reduction of iron. Securing stable procurement of high-quality raw materials suitable for manufacturing processes using these ultra-innovative technologies will become an increasingly important challenge. We therefore need to secure interests in raw materials that are indispensable to our business strategy.

In recent years, raw material prices have been soaring and fluctuations in market prices have been expanding. In order to realize a consolidated profit structure that is less susceptible to external factors, we must raise the portion to be procured from our mines.

From the standpoint of stable procurement of quality raw materials that will be necessary in the future, and of realization of a consolidated profit structure that is less susceptible to fluctuations in raw material market conditions, we will expand its investment in raw material mines not only for procurement, but also to make this operation into a business, utilizing our insights on user needs and raw material utilization technology. By doing so, we want to build an integrated business structure with an extensive depth spanning from raw materials to manufacturing and distribution.

Investment in EVR JV, a Canadian coking coal company

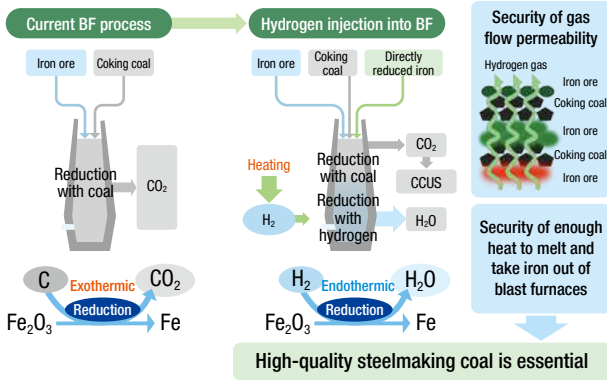
In January 2024, we indirectly acquired a 20% interest (approximately 200 billion yen) in Elk Valley Resources (EVR JV), which is the coking coal business partnership sold by Teck Resources Limited, the world's second largest producer of high-quality steelmaking coal in the world.

In order to realize a carbon-neutral steel production process, we

(3) From procure to earn profit in raw material business

are working on the development of “hydrogen injection into BF’s” technology. In the BF hydrogen injection process, high-quality coking coal, which is used as a raw material for high-quality, high-strength coke, is required to achieve both CO₂ emissions reduction and the stability and efficiency of pig iron production.

[Necessity of securing high-quality steelmaking coal]



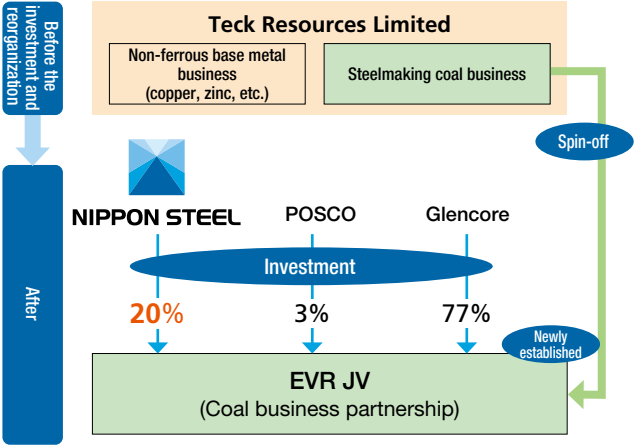
However, given the trend toward decarbonization, investment in development of coking coal for steelmaking is not expected to increase in the future, and there is growing concern that the world's capacity to supply coking coal for steelmaking will gradually decrease. In order to promote carbon neutrality in the future, we believe that we must expand investments in raw material interests by ourselves to secure stable procurement.

The coking coal produced by EVR JV is high-quality, hard coking coal and is highly competitive in terms of the cost of mining and transportation to Japan, which will greatly contribute to the realization of our carbon neutrality and the stabilization of consolidated earnings. In addition to holding a 20% stake in the company, we entered into a long-term coal offtake rights agreement that will enable long-term and stable procurement of hard coking coal. We also have a system in which we are involved in the management of the company as a business by sending one person as a member of EVR's Shareholders Committee, the highest decision-making body, to secure the right to veto decisions on important matters.

[Outline of EVR JV]



[Investment scheme]





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Changes in the environment surrounding steel distribution

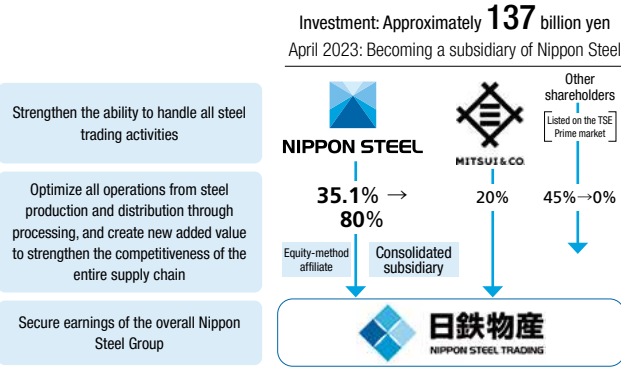
To date, in addition to direct transactions with some customers, Nippon Steel has appointed several trading companies as intermediaries and has maintained and strengthened its sales capabilities throughout the steel supply chain by utilizing their various functions such as information gathering, transaction practice, credit, investment and management in the distribution and processing businesses.

However, the environment surrounding the steel market has structurally and drastically changed in a short period of time due to a potential decline in domestic demand and expansion of local production by customers, qualitative improvement, and quantitative expansion of China and other competitors, the steel industry's global trend of local production for local consumption, and fluctuations in resource and energy prices and exchange rates affected by economic policies in various countries to address geopolitical and inflationary risks. In order to respond swiftly and appropriately to such fluctuations, we must increase direct contact points with customers in Japan and overseas, and strengthen the ability to comprehensively carry out operations related to steel trading. Moreover, in order to securely generate the entire Group's profit, we need to make more optimal, efficient operations that span from manufacturing to distribution and processing and to create higher added value to further improve competitiveness throughout the supply chain.

Turning Nippon Steel Trading into a subsidiary and privately held company

We have long maintained a cooperative relationship with Nippon Steel Trading, the core trading company of our Group, mainly through the sale of steel products and the exchange of personnel. However, the fact that Nippon Steel Trading is a listed company that is an equity method affiliate of Nippon Steel subjects us to certain restrictions on the mutual sharing of customer and technical information, and the storage and mutual utilization of management resources. Moreover, measures aimed at enhancing the corporate value of our Group and Nippon Steel Trading from a medium- to long-term perspective may have been viewed as conflicting with the interests of minority shareholders of Nippon Steel Trading if the measures result in a short-term deterioration in its performance or financial position.

[Changes in the investment ratios of Nippon Steel Trading]



In order to eliminate these restrictions and realize broader synergies, we transformed Nippon Steel Trading into a subsidiary and privately held company. We will create new added value by promoting many actions, listed below, from the following three viewpoints: (1) to enhance and raise the efficiency of the Group's trading company functions, (2) to enhance the direct sales ability by making integrated use of our sales knowhow and infrastructure throughout the group, and (3) to further advance the supply chain.

[Measures under consideration or in preparation for projects involving Nippon Steel Trading]

Equity investment in Hyster, a Norwegian company engaged in the production of water electrolysis equipment for hydrogen production (January 2023: equity investment)
Expansion of a steel material service center in India (August 2023: start of operation)
Integration of NS Construction Materials Sales Co., Ltd. and SK Construction Co., Ltd. (temporary stand construction) (April 1, 2024: integrated)
NST Mechanical Tubular Products Sales Co., Ltd. acquired the automobile steel pipe cutting business from Sakaishin Co., Ltd. (April 1, 2024: acquired)
Transfer of the steel processing business of Mitsuhashi Kozai Co., Ltd. to Nippon Steel Kobelco Shearing Corp. (July 1, 2024: transferred)
Made Denkishizai Co., Ltd. a subsidiary (August 1, 2024: executed)
Merger of Nippon Steel Trading and NS Architectural Steel Services Corp. (former Nihon Teppan Co., Ltd.) (October 1, 2024: to merge)
Construction of high-grade electrical steel sheet processing plant in Mexico (April 2025: scheduled to start operation)
Full-scale development of the portal site for linking information with business partners (NST Business Online)
Undertaking efforts to focus our sales forces on new demand areas, improve the efficiency of our commercial business operations, and strengthen cooperation at overseas bases



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Status of progress in the 100 Million Tons, 1 Trillion Yen Vision

What we did so far	Actions to be taken
1. Rebuilding of the domestic steel business	
Drastic improvement of breakeven point	
1) Facility structural measures <ul style="list-style-type: none">Implemented more than half of the planned facility shut-downs for the production facility structural measures, including 4 BF'sReduced annual costs by ¥100 billion by FY2023 of ¥150 billion planned in the structural measuresSignificantly reduced the scale of fixed cost due to cost reduction efforts, including structural measures	<ul style="list-style-type: none">Shut down facilities including one BF (Kashima No. 3) in accordance with the roadmap for the structural measures, and consolidate production into competitive facilitiesSteadily reduce the remaining ¥50 billion costs of the structural measuresAbsorb the increase in amortization costs, and maintain a low level of fixed costs by cost reduction efforts, including structural measures
2) Spread improvement in direct contract sales <ul style="list-style-type: none">Improved direct contract pricingRevised the business practice of direct contract-based sales (starting with goods shipped in Apr. 2022)	<ul style="list-style-type: none">Promptly reflect the short-term rapid fluctuation of raw material market prices, increase in labor costs and transportation costs, etc. in sales pricesReflect the value of our products and solutions to the sales price
3) Shift to a more sophisticated order mix, and undertake renewal and improvement of facilities <ul style="list-style-type: none">Relined the No. 3 BF at the Nagoya Works (Jan.–Jun. 2021)Decided to invest in improving capacity and quality of electrical steel sheets. Partially completed and launched in Sep. 2023Decided to invest in strengthening the supply system of ultra-high-tensile steel sheets (the construction of a next-generation hot strip mill in Nagoya)	<ul style="list-style-type: none">Steadily execute construction and start of the capital investment plans to improve strategic product capability and quality, increase the ratio of high-value-added products, and increase marginal profit unit priceDevelop and provide high-value-added products and solutions that meet customer needs
2. Deepening and expanding overseas business	
<ul style="list-style-type: none">Acquired G/GJ Steel (Feb. 2022)Decided to invest in expanding capacities for upstream steelmaking and steel sheet capabilities at AM/NS India's Hazira steel mill in west India (Sep. 2022, Apr. 2022), and secured renewable energy power and acquired infrastructure assets (Sep. 2022).Announced the proposed acquisition of U. S. Steel (Dec. 2023)	<ul style="list-style-type: none">Work on deal closing of the U. S. Steel acquisition and maximize the post-acquisition business valueFurther expand capacities at AM/NS India (capacity expansion at Hazira steel mill in west India and construction of a new steel mill)Explore further opportunities toward establishing a 100 million-ton global steel capacity
3. From procure to earn profits in raw material business	
<ul style="list-style-type: none">Indirectly acquired a 20% interest in Elk Valley Resources (EVR JV), which is the coking coal business partnership sold by Teck Resources Limited, the world's second largest producer of high-quality steelmaking coal in the world.	<ul style="list-style-type: none">Pursue more investments in raw material interests in order to secure stable procurement of raw materials essential to the business strategy
4. Incorporate steel distribution in the business portfolio	
<ul style="list-style-type: none">Nippon Steel Trading became a subsidiary and a privately held company (Apr. 2023, Jun. 2023)	<ul style="list-style-type: none">Strengthened the capacity to assume responsibility for all steel trading activitiesBecome more competitive throughout the supply chain by optimizing and improving efficiency in steel production, distribution and processing, and through creation of new value



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We aim to achieve CO₂ reduction in our supply chain by offering two values: “providing high-performance steel products and solutions that contribute to reducing CO₂ emissions throughout society” and “providing carbon neutral steel by decarbonizing the steelmaking process” through the realization of the “Nippon Steel Carbon Neutral Vision 2050”.

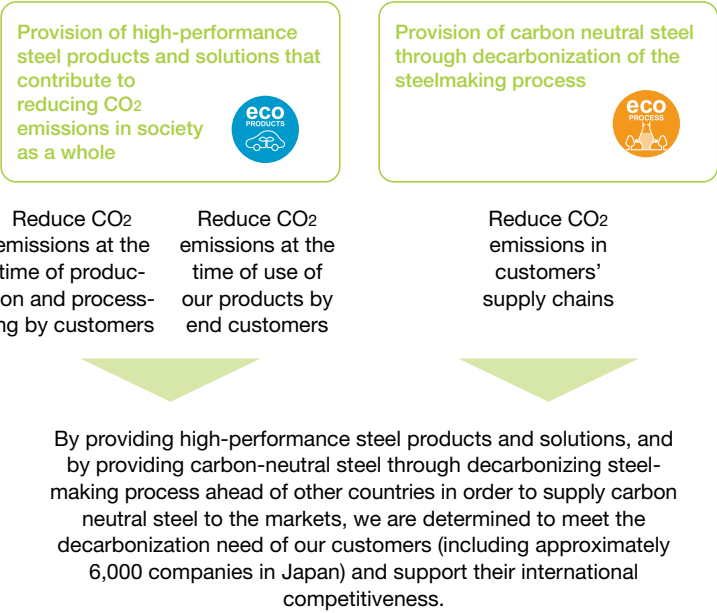
Providing two types of values targeted by the Carbon Neutral Vision 2050



NIPPON STEEL

In support of the ambitious government policy to realize a carbon neutral society in 2050, we announced the Carbon Neutral Vision 2050 as a part of the Medium- to Long-Term Management Plan in March 2021.

Providing two types of values by achieving carbon neutrality



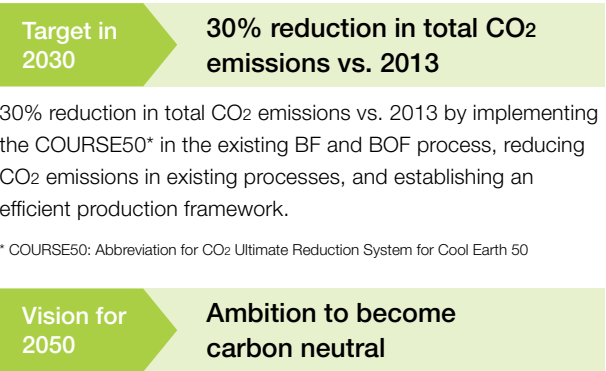
Decarbonization scenario for “Carbon Neutral Vision 2050”

We have formulated a target of reducing total CO₂ emissions by 30% by 2030, compared to the 2013 baseline and of achieving carbon neutrality in 2050. We are working to develop and actually implement breakthrough technologies in steelmaking process ahead of steel companies in other countries.

Our plan is ambitious compared to those of our global peers, and is intended to significantly contribute to the Japanese government's plan. With the assistance of the Green Innovation (GI) Fund*, we are working on specific plans for the roadmap of development and practical implementation.

* This is a project that commissions or subsidizes research and development of the New Energy and Industrial Technology Development Organization (NEDO), a national research and development corporation, to support companies and others implementing projects that aim to achieve ambitious 2030 targets (e.g., CO₂ reduction) in focused areas of the Green Growth Strategy Action Plan.

[Our CO₂ emissions reduction scenario]

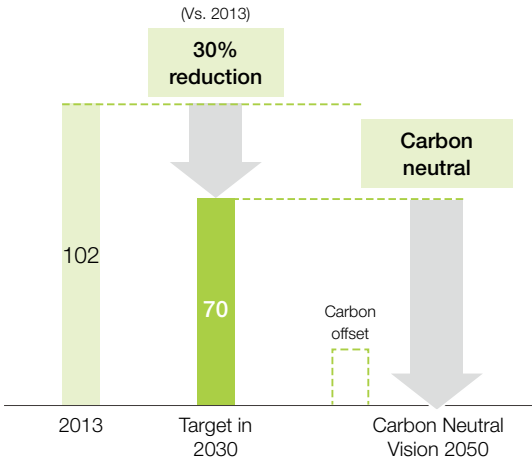


* COURSE50: Abbreviation for CO₂ Ultimate Reduction System for Cool Earth 50

Ambition to become carbon neutral by taking up the challenge to mass produce high-grade steel in large size EAFs and to realize hydrogen steelmaking (i.e., Super COURSE50 use of BFs; hydrogen direct reduction of iron), and with multi-aspect approach, including CCUS* and other carbon offset measures.

* Carbon Capture, Utilization and Storage

[Total CO₂ emissions* (million tons/year)]



[Scope of scenario]
Domestic
SCOPE 1+2 (Receipt of raw materials to product shipment + indirect emissions from purchased electricity)

* Including Nippon Coke & Engineering Co., Ltd. and Sanso Center Co., Ltd.

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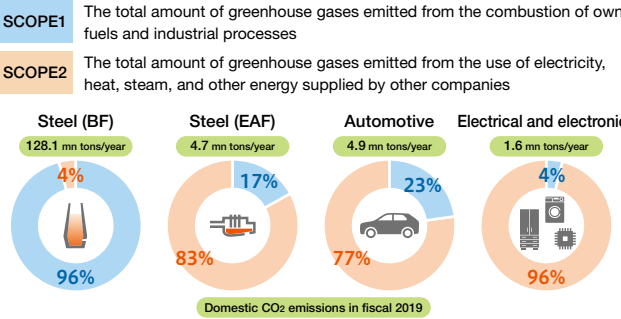
Three challenges to achieving carbon neutrality in the steel industry

In order to achieve carbon neutrality in the steel industry, there are three unique challenges in technology development, predictability of return on investment, and infrastructure, which must be overcome simultaneously.

Technology Development: the need for the development of breakthrough technologies

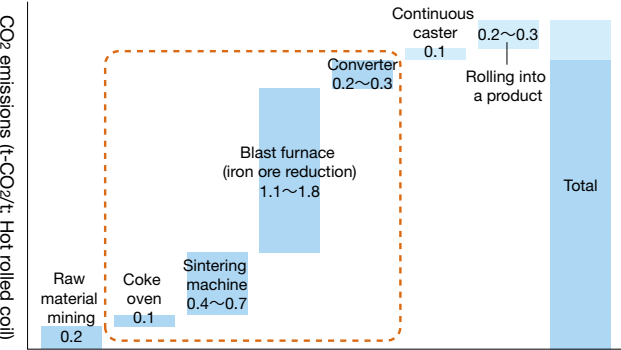
Most of the CO₂ emitted in the supply chain of the steel industry is from steelmaking processes (Scope 1), particularly in the upstream processes from the reduction of raw materials such as iron ore and scrap to melting and refining.

[Ratio of Scope 1 to Scope 2 CO₂ emissions by industry]



Source: The JISF compiled figures recorded in the General Energy Statistics for Fiscal 2019 for non-steel industries, and calculated figures for the steel sector by the Japan Iron and Steel Federation.

[CO₂ emissions from the steelmaking processes]



Source: Carbon Trust International Carbon Flows (2011)

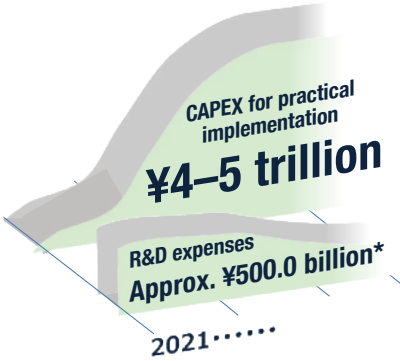
The steel industry does not have any existing technologies for drastic decarbonization, unlike renewable energy and nuclear power generation in the electric power industry, and electric vehicles in the automotive industry. The industry therefore needs to develop a super-innovative technology that uses hydrogen instead of carbon as a reducing agent for iron ore in the steelmaking process.

Nippon Steel has been striving to develop three breakthrough technologies: “Blast furnace hydrogen reduction,” “reduced iron production using hydrogen,” and “high-grade steel production in large electric arc furnaces” to solve the above-mentioned daunting technical challenges and realize a carbon-neutral steelmaking processes.

Predictability of investment recovery

The development and commercialization of breakthrough technologies that realize carbon-neutral steel production processes require significant R&D expenses and capital investment. At present, in order to achieve carbon neutrality in our steel production processes, we anticipate that we will need to spend more than 500 billion yen in R&D and more than 4 to 5 trillion yen in capital investment on actual equipment by 2050. Operating costs will also increase compared to operating the traditional steelmaking processes.

[Carbon Neutral required Investment Image]



* Minimum level estimated to be required for the time being

Three factors to increase costs

- Huge R&D expenses
- Huge CAPEX for practical implementation
- Increase in operational cost, even if inexpensive green hydrogen and green power are to be secured

Concerning R&D expenses, government support via the GI Fund has already been decided. We are making our utmost efforts to become a frontrunner in the world in developing technologies for the practical implementation of the three breakthrough technologies. We are already discovering the seeds of technology and are planning to develop technologies that will minimize significant cost increases. The test results so far have shown steady progress.

With regard to capital investment for practical implementation, predictability of investment recovery is needed in making decisions. In order to ensure predictability, 1) creation of a market for green steel products and 2) sufficient support from the government for rising capital investment and operating costs are indispensable.

■ Creation of a market for green steel products

Efforts to realize carbon neutrality of the steel production process require three huge increases in costs: R&D costs, equipment investment, and operating costs. Nevertheless, steel products based on the new steelmaking processes are no different from products based on conventional steelmaking processes. Because the value in use is the same, and only the environmental value (CO₂ reduction) is added, this environmental value needs to be converted into economic value (to be passed on to the sales price). Unlike the sale of electrified vehicles that differ from conventional vehicles and the sale of electric power, for which the market is closed in Japan, steel products are distributed internationally and are exposed to competition. To customers of steel products and also to consumers of end products, a major challenge for us is to promote the environmental value and convert it into economic value. In order to create a green steel market, it is important to establish an international standardization for green steel products, as well as a mechanism to give an incentive and support for purchasing green steel products. We are lobbying many stakeholders, including governments, various industry associations, national and international standard-setting bodies, and academics to create such a mechanism.



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■ **Support for rising capital investment and operating costs**

In other countries, government support systems have been established not only for R&D expenses to achieve carbon neutrality, but also for actual equipment investment and rising operating costs. From the standpoint of equal footing in international competition, such a support system is desired in Japan as well. The Japanese government has already launched investment promotion measures using GX Economy Transition Bonds for technologies that effectively and efficiently achieve emission reductions, particularly those that are highly effective in strengthening industrial competitiveness and economic growth, as well as tax credits corresponding to the production volume of each strategic sector.

We have lobbied government agencies to establish such a support system. Going forward, we will work to obtain such support and ensure the predictability of investment recovery.

Infrastructure: Energy infrastructure development

Carbon-neutral steelmaking processes require a large amount of hydrogen and electric power, which must be green hydrogen and green power produced without generating CO2. CO2 emissions that would still be partially generated by using Nippon Steel's three breakthrough technologies must be physically offset by CCUS (Carbon Capture, Utilization, and Storage).

We have positioned the “stable supply of low-cost green hydrogen and power” and the “social implementation of CCUS” as “external conditions that should be established by the government” necessary for carbon-neutral steelmaking processes, and are lobbying relevant government agencies.

Policy proposals and industry activities aimed at overcoming the three challenges

As stated, steelmakers alone cannot achieve carbon neutrality in the steel industry. These are national challenges that should be addressed by the entire nation in cooperation with society, based on (1) policy packages to achieve both international competitiveness of industries and carbon neutrality as well as (2) policies for national strategies that include strong and continuous support, including from the financial side.

To realize these policies, Nippon Steel is determined to take every opportunity to make various proposals on Japan's climate change measures and energy policies based on the Paris Agreement and to spearhead activities through economic and industry associations.

■ **What Nippon Steel has advocated so far**

- Strong and continuous support across all stages of R&D, equipment implementation, and operational cost increases for decarbonization, including the expansion of the GI Fund
- Need for a Japanese-style policy package that integrates climate change measures with maintenance and enhancement of the international competitiveness of industries
- Need to establish a mechanism for regulations and support for creating a green steel market, and standardization for a more accurate evaluation of the “actual amount of reductions”
- Request that an effective and feasible system in designing a future emissions trading system be introduced, by considering the fact that the path to carbon neutrality differs depending on the industry and the perspective of equal footing with other countries. Nippon Steel has participated in the GX League, which promotes voluntary emissions trading.
- Reform of the energy supply structure, including not only renewable energy but also the active promotion of the use of nuclear power
- Need for a stable low-cost supply of green hydrogen and green power, as well as the social implementation of CCUS

[Efforts to surmount the 3challenges]

Technology development	Gov't support in develop- ment planning and testing	Green Innovation(GI) Fund “Utilization of hydrogen in the steelmaking process” ¥193.5 bln ➡ Raised to¥449.9 bln	...	Budgeting completed
	Gov't support for capital expenditures	One-third of the total investment borne by the government by use of GX Economy Transition Bonds	...	Institutionalization completed
	Gov't support foroperating costs	Establishment of a strategic materials and production base tax system (Green Steel)	...	Institutionalization completed
Predictability of investment recovery	International standardization	• Adoption of the mass balance method at Worldsteel and development of guidelines	...	High-level agreement in principle
		• Lobbying for revision of ISO, GHG protocol, etc.	...	Implementing and preparing
	Creation of economic value from the environmental value (CO2reduction)	• GX League [Ministry of Economy, Trade and Industry] ➡ Growth-oriented carbon pricing • GX Product Market Study Group [Ministry of Economy, Trade and Industry] and the Government GX Implementation Committee • Exchange of opinions with the automobile industry and others	...	Start of discussion on GX market creation
Infrastructure	Energy infrastructure development	• Safe use of nuclear and other energy sources for the 7 th Strategic Energy Plan	...	Committee recommendations
		• Hydrogen and Ammonia: Revised Basic Hydrogen Strategy, Hydrogen Society Promotion Law	...	Bill passed
		• CCS: JOGMEC/Advanced CCS Support Program	...	Project participation



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Decarbonization of steelmaking process

In the current BF-BOF and EAF processes, coal (coke) has been utilized as 1) a reducing agent, 2) a source of heat, and 3) plays a role to support the function of raw materials at high temperature in a solid form while facilitating to maintain ventilation in the furnace. However, CO₂ is inevitably generated during the reduction reaction.

We are therefore drastically reviewing the process. As our top management issue, we are developing and implementing the following three breakthrough technologies: 1) Reduction with hydrogen in BFs (injecting hydrogen into existing BFs for partial replacement of carbon use), 2) Hydrogen direct reduction of iron (producing solid reduced iron by hydrogen reduction in direct reduction furnaces (DRFs)), and 3) High-grade steel production in large size EAFs (improving the productivity of EAFs to manufacture high-grade steel not producible today using direct reduced iron and steel scrap). In addition, we have started to develop technologies such as high efficiency melting of direct reduced iron using an electric melting furnace.

We aim to achieve carbon neutrality by 2050 by converting the existing BFs into the EAF steelmaking process or introducing an applicable CO₂ reduction technology, such as reduction with hydrogen in BFs, over the next few decades.

In addition, we will continue to actively urge the government and related organizations to establish the development of social infrastructures required to achieve this carbon neutrality, including the “low cost and stable supply of green hydrogen and green electricity” and the “introduction of CCUS.”

Technical Issues for realizing a carbon-neutral production process

<https://www.nipponsteel.com/en/csr/env/warming/future.html>

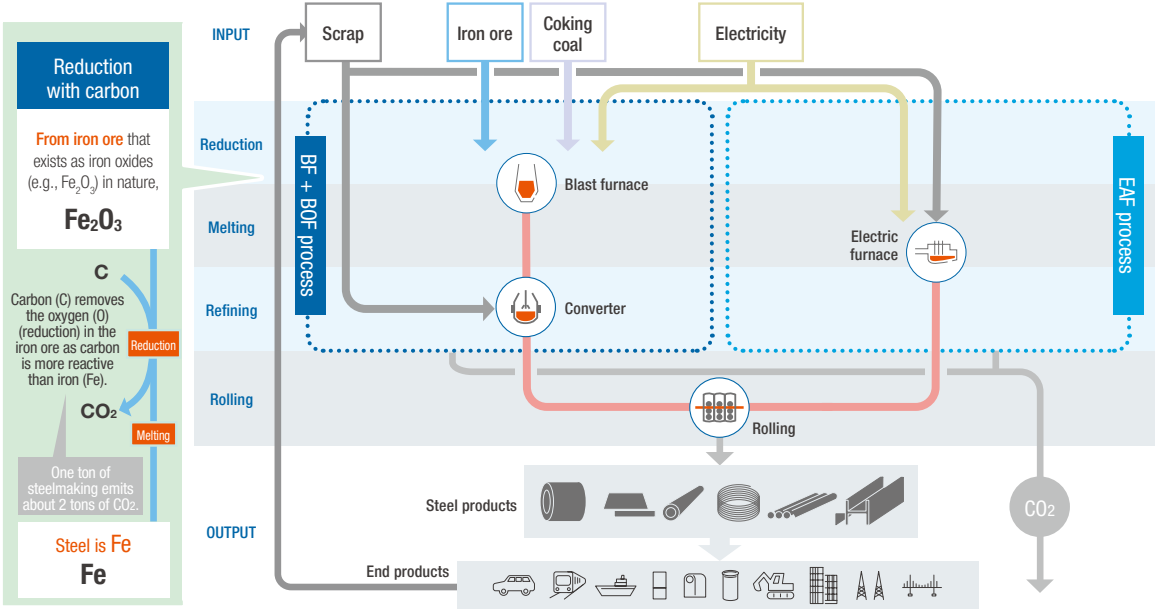
Efforts to reduce carbon emission in power generation

We generate 89% of the electricity we use at our steelworks, 70% of which is from internally generated energy sources such as waste heat and by-product gases. We also use LNG, petroleum, and coal as external-source auxiliary fuels. Therefore, in order to reduce the carbon content of our electric power structure, we will examine and promote the following efforts:

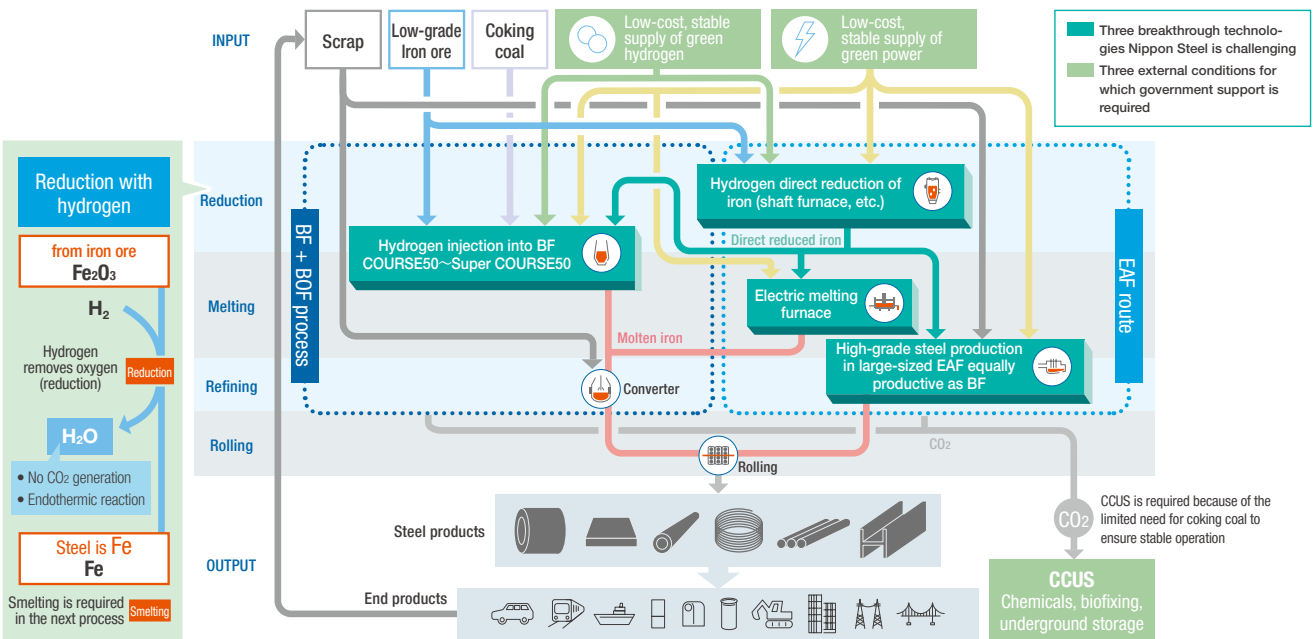
[Issues to consider and promote reducing carbon in the electric power structure]

- Total elimination of inefficient coal-fired power
- Increase efficiency in thermal power fired by by-products, utilization of CCUS, and use of non-fossil fuels for external auxiliary fuels (expanded use of zero-emission fuels such as biomass, ammonia, and hydrogen)
- Purchase of green power

[Current BF-BOF and EAF processes]



[Carbon neutral steel production process (conceptual)]





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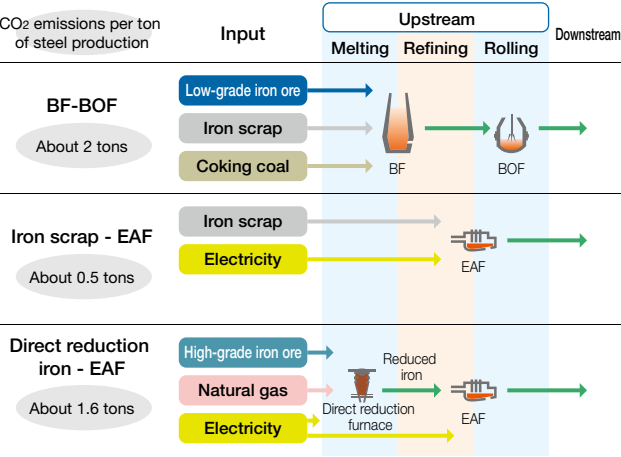
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The need for a multi-track approach

At present, there are two types of mass production processes for steel: The blast furnace and the basic oxygen furnace (BF-BOF) process (reduction and melting) and the electric arc furnace (EAF) process (melting). The BF-BOF process uses iron ore, while the EAF process uses steel scrap and direct-reduced iron by reducing iron ore with natural gas.



Challenges of the BF-BOF method

The current BF-BOF process generates approximately 2 tons of CO2 per ton of steel production. In order to reduce this CO2, we are developing a blast furnace hydrogen reduction technology that replaces the reducing agent from carbon (coal) to hydrogen. However, because the blast furnace is a facility for not only reduction but also melting, it still uses coal as a melting heat source, and CO2 emissions will not be zero. Therefore, the combined use of CCUS offset measures is needed.

Challenges of the EAF method

Among existing steel production processes, the EAF method of melting steel scrap in an EAF (about 0.5 tons of CO2 emissions per ton of steel product) generates the least amount of CO2. However, the EAF process alone cannot realize decarbonization of the global steel industry due to the following issues, and steelmaking by reduction of iron ore will also continue to be needed.

■ Power supply

The EAF steelmaking process requires a large amount of electricity. In contrast, the existing BF-BOF process using carbon reduction generates electricity by using by-product gas and waste heat recovery to internally source the electricity needed for the steelmaking process and supplies surplus electricity to society. If the existing carbon reduction BF-BOF process (using a large BF of approximately 5,000m³) is replaced by the EAF process, an additional power supply of approximately 1 GW will be required.

■ Finite nature of scrap resources

At present, around 600 million tons of steel scrap is generated annually around the world, and its collection/recycling rate is extremely high. As steel will continue to be accumulated mainly in emerging countries, more steel scrap will be generated year by year, which, however, will not be sufficient compared to the increasing global demand for steel. This means that the current scale of steelmaking by reducing iron ore will be needed even in 2050.

■ Impurities in steel scrap

In the future, global steel demand is expected to shift to high-grade steel due to the need to resolve social issues such as decarbonization and national resilience. Against this trend, current EAF steelmaking technology limits the grades of steel products that can be produced from steel scrap in EAF, making it hard to produce high-grade steel due to impurities contained in steel scrap that cannot be removed in the melting and refining process, while nitrogen in the air mixed in the steel in the EAF process affects the properties of the steel.

Challenges of direct reduced iron

Since natural gas containing carbon is used as a reducing agent in the production of direct-reduced iron in the current direct reduction furnace, a certain amount of CO2 (approximately 1.6 tons of CO2 emissions per ton of steel products) is generated. This means that it is necessary to develop technology to convert the reducing agent from natural gas to hydrogen in order to achieve carbon neutrality.

■ Scarcity of high-grade iron ore

Since the reduction of iron ore by hydrogen is an endothermic reaction, the powdering and sticking of the raw material become an obstacle to production when the temperature drops. In order to avoid this, it is necessary to use iron ore that is less susceptible to powdering and sticking. However, such high-grade ores represent only 5% to 10% of the world's iron ore resources.

■ Productivity

Both the direct reduction furnace process and the EAF process have significantly lower per-unit productivity than the BF-BOF process. While the productivity of Nippon Steel's average BF (approximately 5,000 m³) is roughly 10,000 tons/day, the productivity of the direct reduction furnace and the EAF is about half and 20-30%, respectively. Therefore, when replacing the upstream process of the existing BF steelworks with that of the EAF process, the production lot and cycle time of the remaining downstream processes must be adjusted.

Nippon Steel's Carbon Neutral Vision approach

Nippon Steel aims to realize a carbon-neutral steel production process with an optimal composition according to economic conditions such as energy and raw materials by taking advantage of the characteristics of both the BF-BOF and EAF methods. That is why we are working on technology development with a multi-track approach to solve the issues of the EAF method using scrap and direct reduced iron as raw materials while promoting the decarbonization development of the BF-BOF, which is superior in productivity and quality and makes use of existing infrastructure. To ensure that the 2030 CO2 reduction target is met, consideration is being given to an electric kiln that can be implemented as soon as possible.

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CCUS technology development

CCUS (Carbon Capture, Utilization, and Storage) is a technology that separates, captures, and directly uses CO₂ or converts it into other materials and utilizes it or stores CO₂ in the ground. In the carbon neutral steel production process, CCUS technology is used to process CO₂ still generated from the steelmaking process even after it has been minimized. Realization of this technology requires the related technology development as well as preparation

[Nippon Steel Group's CCUS technology development efforts]

Capture

CO₂ Separation and Recovery Technology (NEDO COURSE50 Projects)

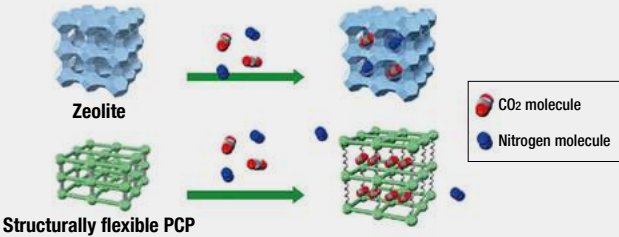
Nippon Steel Engineering Co. in the Nippon Steel Group has commercialized an energy-saving CO₂ chemical absorption process called ESCAP™ (Energy Saving CO₂ Absorption Process), which uses chemical absorption, one of the methods for CO₂ separation and recovery. Two units are already in operation in Japan, including the one installed in the North Nippon Works Muroran Area.

The ESCAP™ is characterized by high energy efficiency with a more than 40% reduction in heat consumption compared to general-purpose technology. In addition, its proprietary impurity removal facility enables recovery of more than 99.9% of high-purity CO₂ from raw material gas with high impurities.

Development of low-concentration CO₂ separation and capture technology (subsidized by the Green Innovation Fund)

Nippon Steel, in collaboration with Oita University, Osaka University, Kyoto University, Chiba University, Nagoya University, Hokkaido University, and Resonac Corporation, started the full-scale development of separation/capture technology for low-concentration CO₂ contained in industrial emission gases.

To separate/capture CO₂ efficiently from low-pressure, low concentration emission gases (with a CO₂ concentration of 10% or less at the atmospheric pressure), we are working on the development and social implementation of a new CO₂ separating agent (structurally flexible PCP), which has higher CO₂ selectivity and enables CO₂ adsorption and desorption with minimal levels of pressure operation.



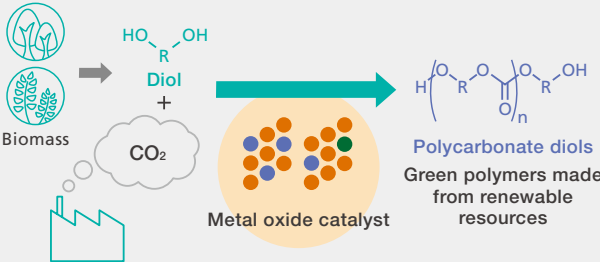
of external conditions. The required technologies include the development and installment of CO₂ separation and recovery technology (high-performance chemical adsorption liquid) and the development of CO₂-based manufacturing technologies for chemicals and fuels. The necessary external conditions include the securing of the storage space, the establishment of the storage infrastructure for CCS, legislation, and tax incentives, the ensuring

of business profitability of chemicals and fuels manufactured by CCU (Carbon Capture and Utilization), and preferential treatment of carbon recycled products. The Nippon Steel Group is aggressively engaged in developing these technologies to help realize the social implementation of CCUS.

Utilization

Chemical product manufacturing technology using CO₂ as a raw material (project commissioned by NEDO)

In April 2023, Nippon Steel, Osaka Metropolitan University, Kyoto University, Tohoku University, Tokyo University, and UBE Corporation started research and development on the "development of one-step synthesis process for polycarbonate diol from CO₂." Polycarbonate diol is a representative material for producing high value-added carbon compounds that do not require hydrogen. It is also a raw material for high-performance polyurethanes, widely used worldwide and whose demand is expected to grow further. However, the high environmental impact of its synthesis process has been a major issue. In contrast, this research and development aims to develop an innovative green process that effectively utilizes CO₂ instead of highly toxic gases such as CO and achieves high yields in one-step synthesis.



Transportation

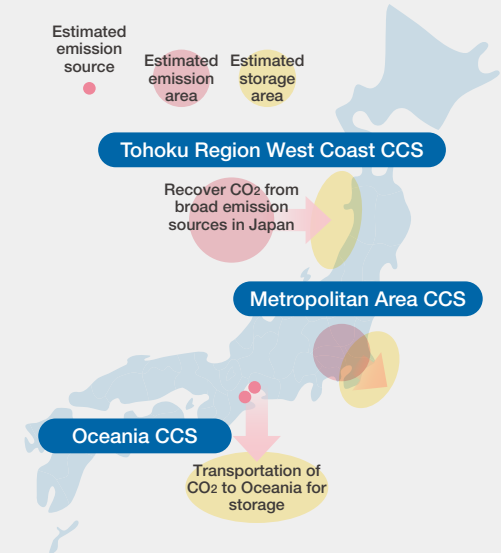
Integrated CO₂ ship transport technology (NEDO-commissioned project)

Jointly with Japan CCS Co., Engineering Advancement Association of Japan, and ITOCHU Corporation, and Nippon Gas Line, we have commenced the R&D and demonstration project related to a CO₂ transport vessel.

Storage

CO₂ storage technologies

As part of the Survey on the Implementation of Japan Advanced CCS Projects that the Japan Organization for Metals and Energy Security (JOGMEC) adopted for its publicly solicited projects in fiscal 2023, Nippon Steel participates in three joint projects: the Tohoku Region West Coast CCS Project, the Metropolitan Area CCS Project, and the Oceania CCS Project. We are working jointly with each participating company to secure storage sites, develop storage infrastructure, and establish external conditions such as developing regulatory requirements. At the same time, we are taking the initiative in studies related to CO₂ separation/capture, liquefaction, and shipping terminals, actively promoting the early social implementation of CCS infrastructure.



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Products and technical solutions that contribute to reducing CO2 emissions in various areas of society NSCarbolex™

Responding to the global climate change problem has become a major trend in the industry, and new demand has been created in the materials field through changes in the industrial structure.

Amid the increasing need for measures to cope with growth in renewable energy, decarbonization of industrial complexes, electrification of automobiles, national resilience, and intensifying disasters, we are addressing the need for new steel products and solutions by utilizing our technologies. We are also working to expand the supply of steel products that contribute to the reduction of CO2 emissions in society by drawing on the Group's

collective strengths, from product development to distribution processing networks.

NSCarbolex is a brand provided by Nippon Steel to the world that collectively refers to “advanced products and solution technologies that contribute to reducing CO2 emissions in society.” It consists of two brands: NSCarbolex Neutral and NSCarbolex Solution.

We are committed to reducing CO2 emissions in society by providing high-performance products and solutions, in addition to CO2 emission reductions in our manufacturing processes.

[NSCarbolex brand structure]



Reducing CO2 emissions in steel production processes

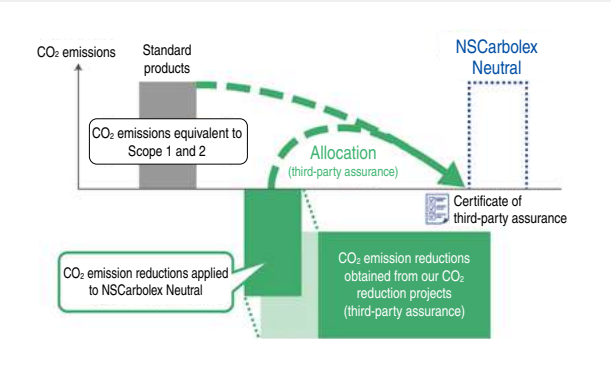
Reducing CO2 emissions in the steel industry is not easy, so it is expected to take a long time to develop decarbonization technologies.

Under such a circumstance, since 2023, we began selling NSCarbolex Neutral, a steel product that uses a mass balance method to track the total amount of CO2 emissions by project that we have reduced by reforming and improving our manufacturing processes and allocating it to any given steel product using the mass balance method, in order to supply customers early on with steel products with a reduced carbon footprint.

We believe that the supply of green steel using the mass balance method would enhance our customers' competitiveness amid society's rapidly increasing decarbonization needs. We will contribute to our customers' decarbonization efforts by establishing a stable supply system of NSCarbolex Neutral as soon as possible.

[Features and mechanism of NSCarbolex Neutral]

- Feature 1** NSCarbolex Neutral products take advantage of the reduction in CO2 missions that Nippon Steel actually achieved by reforming and improving its manufacturing processes.
- Feature 2** They obtain independent third-party assurance and issue certificates.
- Feature 3** They help customers reduce their Scope 3 CO2 missions.
- Feature 4** The NSCarbolex Neutral brand can be applicable to all steel products manufactured by Nippon Steel.



For more information on NSCarbolex Neutral:
<https://www.nipponsteel.com/en/product/nscarbolex/neutral/>

TOPICS

Efforts to create a green steel market

We are engaged in efforts to promote standardization in order to ensure that the importance of the green steel products and the actual amount of reduction that forms its basis is better known in society.

In October 2023, the Japan Iron and Steel Federation announced guidelines for the green steel products, and in March 2024, the GX Product Market Study Group (hosted by METI) advocated the creation of economic value based on the actual amount of reduction in its interim report.

Concurrently, the World Steel Association agreed on the basic principles of the green steel products in April 2024 and is currently formulating guidelines. Further, we are working to promote international standardization in the fields of ISO and GHG protocols.



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Reducing CO2 emissions in our society

This brand offers high-performance products and solutions that contribute to the reduction of CO2 emissions. They include “NSafe™-AutoConcept,” which contributes to the reduction of CO2 emissions in automobile manufacturing and driving; “High-Efficiency Electrical Steel Sheets,” which contribute to the improvement of motor efficiency and the reduction of energy loss in power transmission/distribution networks; “ProStruct™,” a construction material solution brand that contributes to the improvement of productivity on construction sites; and “HYDREXEL™,” a stainless steel for high-pressure hydrogen environments. Through these products and solutions, we are committed to reducing CO2 emissions in various scenes.

[Value propositions through NSCarbolex Solution]

- 1

Reducing CO2 emissions in customers' manufacturing processes

1) CO2 emission reduction in customers' manufacturing processes
2) CO2 emission reduction from raw materials
- 2

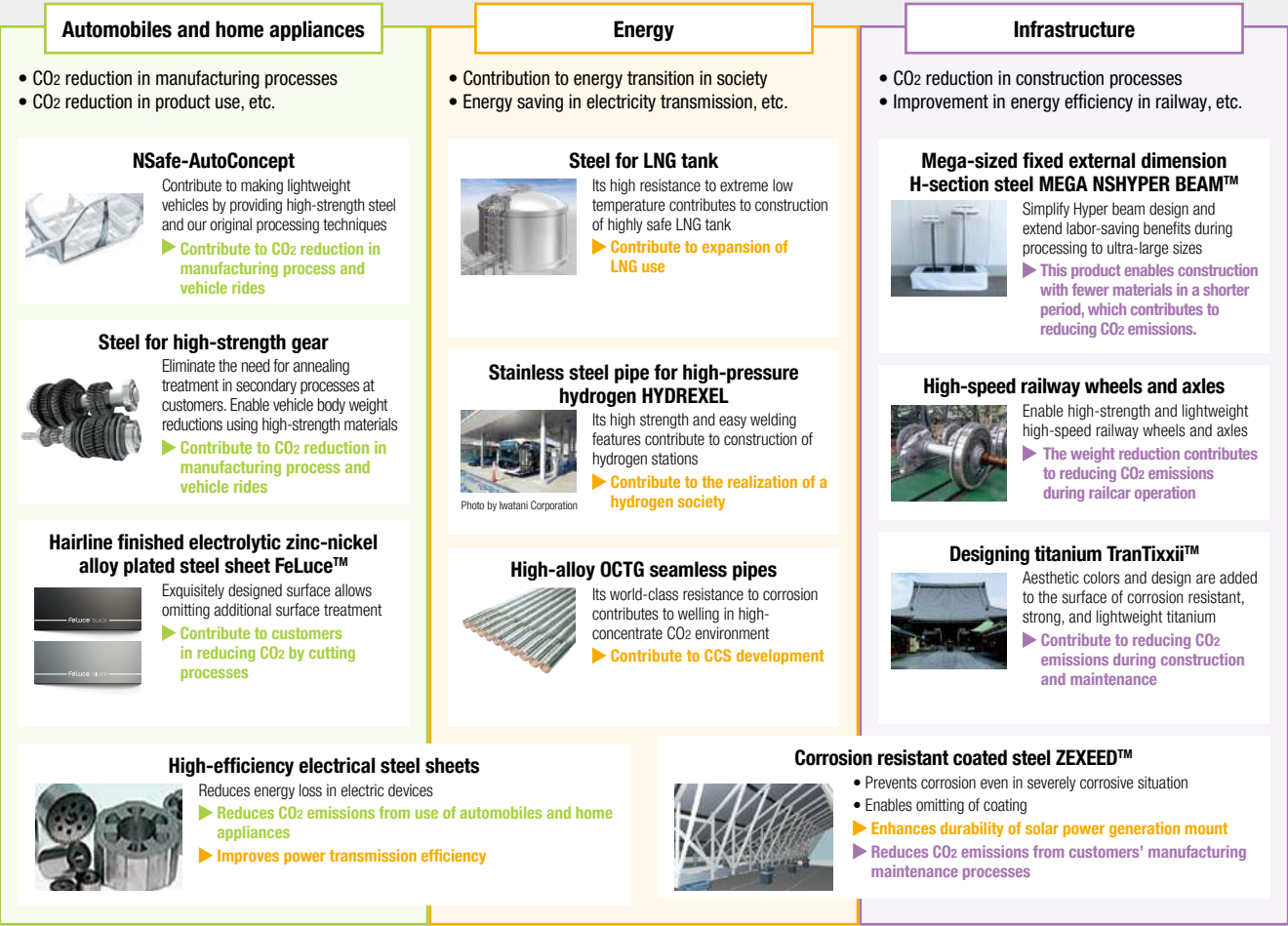
Reducing CO2 emissions during the use of customers' products in society

Contribution to CO2 emission reduction of the lifecycle of a customer's product by contributing to energy saving and longer maintenance cycle of the product
- 3

Contributing to energy transformation in society

Contribution to energy transformation in society by providing high-performance products and solution technology that are needed to diffusion of solar and wind power, geothermal heat and other renewable energy; realization of a hydrogen society, and expansion of other clean energy.

[Products and solutions targeted in NSCarbolex Solution: Product and Solution Technologies Lineups]



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High-efficiency electrical steel sheets that reduce energy loss in electric devices

The social needs behind the drive for attaining carbon neutrality include the reduction of energy loss in motors used in hybrid cars and EVs, as well as transformers used for power transmission. The most rational means to meet such needs is the use of high-grade electrical steel sheets, such as non-oriented (NO) electrical steel sheets used in motors and grain oriented (GO) electrical steel sheets used in transformers. The use of these products contributes to the reduction of CO2 emissions when using hybrid cars, EVs, and home electric appliances, and to efficient transmission of generated power.

Expanding production capacity of high-efficiency electrical steel sheets

In response to the increasing demand for these electrical steel sheets for EVs and other products and requests for high-grade types, we decided to implement further actions toward increasing the production capacity of non-oriented (NO) electrical steel sheets in the Setouchi Works Hanshin Area (Sakai) and the Kyushu Works Yawata Area. We also previously announced measures for electrical steel sheet manufacturing capacity and quality improvements in the Kyushu Works Yawata Area and the Setouchi Works Hirohata Area.

The total accumulated investment amount for these and other measures will be approximately 213 billion yen and they are planned to take full effect in the first half of fiscal 2027. The manufacturing capacity of non-oriented (NO) electrical steel sheets for eco-friendly cars is expected to increase by about five times from the current capacity (approximately 1.6 times versus the previously announced measures).

**[World annual sales of EVs]
(Net Zero Emissions by 2050 Scenario)**

(Million Units)

■ Unit sales of EVs (left scale)

— Market share of EVs (%)

80

60

40

20

0

2021

2025

2030

(year)

Prepared by Nippon Steel based on the IEA “Global Electric Vehicle Outlook 2022”

TOPICS

Response to meet needs for lightweight materials (NSafe™-AutoConcept)

Nippon Steel has contributed to reduction in body weight and improvement in the safety performance of automobiles by developing advanced materials, as well as processing technologies and evaluation technologies to realize components and their structures that maximize material performance. In 2019, we started to make proposals on the NSafe-AutoConcept (NSAC), a comprehensive solution for the development of next-generation steel vehicles to cope with the coming carbon neutral era. We are thus working with our customers to develop advanced vehicles.

Reductions in CO2 emissions and enhanced collision safety are needed for automobiles and for that purpose, both bodyweight reduction and high strength are desired. Such needs can be satisfied by ultra-high-tensile steel sheets for vehicle bodies such as 2.0 GPa hot stamping materials, 1470 MPa high-tensile sheets, and 980 MPa hot-rolling high-strength steel plates for chassis. We have made these high-tensile steel lineups practical and have reduced the body weight of steel cars by 30% with our proposals on structure and processing method as well as various evaluation technologies. This has enabled steel cars to have a similar weight to that of all-aluminum cars and the provision of higher collision safety performance.

Moreover, we began proposing NSafe™-AutoConceptECO³ (NSAC Eco-cubic), a new concept that has deepened the NSAC’s weight reduction technologies. This has enabled us to make optimal solution proposals adapted to customers’ forward-looking automaking (e.g., proposal of parts integration, using steel) from the perspectives of CO2 emission reduction through weight reduction and LCA; cost reduction; and optimal production systems, to meet diverse customer needs in the midst of more innovative automaking, including rapidly advancing electrification of vehicles.

NSafe-AutoConcept

Proposal for weight reduction

NSafe-AutoConcept

Proposal for weight reduction, environmental response and economy

A new concept for realizing a carbon neutral society

NSafe-AutoConcept ECO³

ECology

ECOnomy

ECOSystem

Reduction of CO₂ emissions (weight reduction / Environmental response)

Cost reduction (Economic efficiency)

Optimal production system

Example of a proposal on the NSAC ECO³

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Progress of Carbon Neutral Vision 2050

The Carbon Neutral Vision 2050 aims to achieve carbon neutrality using three breakthrough technologies: “Hydrogen injection into BF,” “Hydrogen direct reduction of iron,” and “High-grade steel production in large size EAF.”

Concerning “High-grade steel production in large size EAF,” a new EAF installed in the Setouchi Works Hirohata Area started its commercial operation in October 2022, making it the world’s first integrated EAF steelmaking process that enables the production and supply of high-grade electrical steel sheets. Also, regarding the conversion from the BF-BOF process to the EAF process, we started full-scale studies at two candidate sites, the Kyushu Works Yawata Area and the Setouchi Works Hirohata Area. We began construction of a small EAF (capacity: 10 tons) in the Hasaki R&D Center to start experiments in the second half of fiscal 2024.

Concerning “Reduction with hydrogen in BFs,” Japan’s three blast furnace steelmakers, including Nippon Steel, are jointly developing the COURSE50 blast furnace, designed to replace carbon used in the BF as a reducing agent with hydrogen-rich gases generated in steelworks. This project has already established the technologies that can reduce CO₂ emission in a COURSE50 test furnace (12m³).

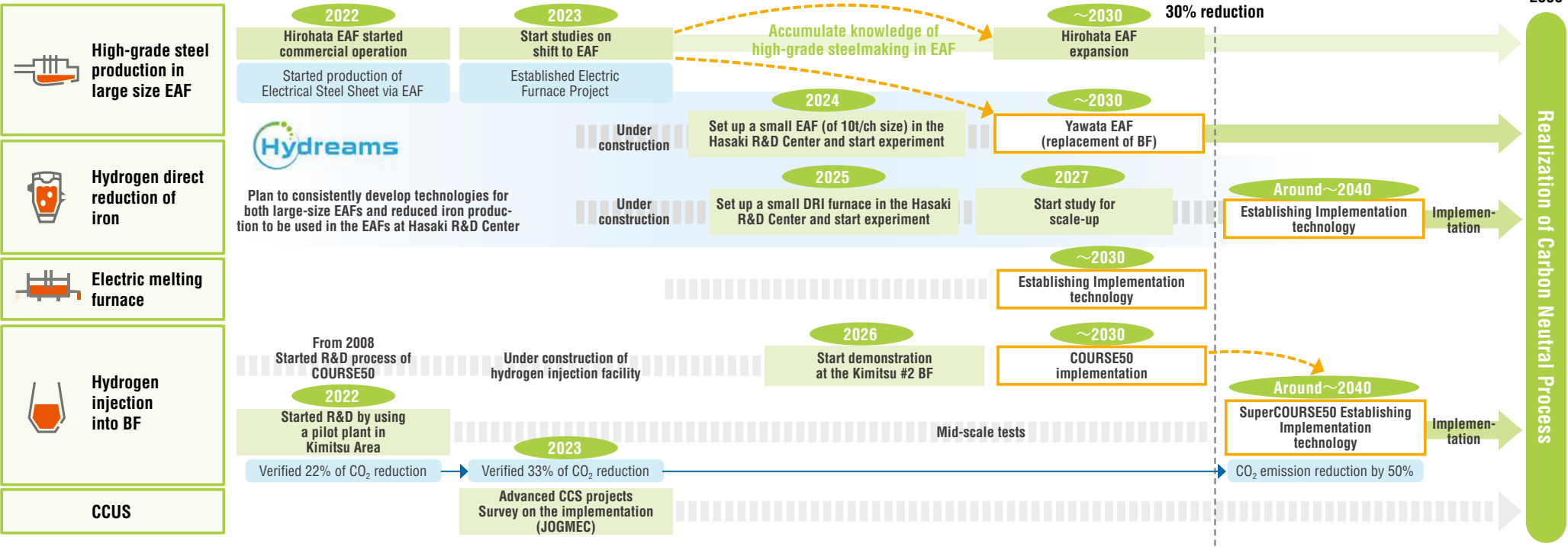
In February 2023, we decided to conduct demonstration tests at the East Nippon Works Kimitsu Area using the No. 2 BF, a large-scale BF in operation that is approximately 400 times larger than the test furnace. We are installing equipment for the demonstration tests, which are scheduled to begin in fiscal 2026. Since May 2022, we have been developing technologies with the modified COURSE50 test furnace. So far, the test in November-December 2023 has already confirmed the world’s highest 33% reduction in CO₂ emission in the blast furnace. We are conducting more demonstration tests to further reduce CO₂ emissions by 40% or more.

We are working to establish the Super COURSE50 technology in large BFs (50% or more reduction in CO₂ emissions).

Concerning “Hydrogen direct reduction of iron,” we started building a small test furnace in the Hasaki R&D Center to start experiments in fiscal 2025. In order to realize production efficiency that can replace the blast furnace process by using the integrated process of hydrogen direct reduction, electric melting furnace, and converter for low-grade iron ore, we are also starting to develop a technology for high efficiency melting by electric melting furnace utilizing direct reduced iron.

Based on this, by 2040, we aim to solve issues such as utilization of low-grade iron ore and conversion of reduction material from natural gas to hydrogen, and we aim to establish technology for commercializing a direct hydrogen reduction reactor using low-grade iron ore from Australia and other countries as feedstock.

[Carbon Neutral Vision 2050]





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The COURSE50 Project*1

The Super COURSE50 Project*2


The COURSE50 is a technology development project that was undertaken from 2008 to 2022 with the aim of partially realizing steel production using hydrogen in the current situation where there is no infrastructure for supplying large amounts of hydrogen.

In the 12m³ test blast furnace constructed in the Kimitsu Area of East Nippon Works, the testing has a target of about a 30% reduction in CO2 emissions: more than 10% by hydrogen reduction using hydrogen contained in the hydrogen-based by-product gas (coke oven gas) generated in the steelworks, and a 20% offset through separation and capture of CO2 from the blast furnace gas. The testing verified more than 10% by hydrogen reduction while, in the case of offset by CO2 capture, we have developed an energy-saving technology using the chemical absorption method and have already put it into practical use for the industrial use of CO2.

Looking ahead to a time when the social infrastructure for an adequate hydrogen supply is in place, we are undertaking the Super COURSE50, a development project aided by the GI Fund with a technology aimed at further reduction of CO2 emissions (more than 50% reduction) by heating and using hydrogen purchased from outside the steelworks, and by maintaining the thermal balance inside the blast furnace.

The testing began in May 2022, and the project has steadily advanced development, confirming the world's highest-level reduction of 22% in CO2 emissions from the blast furnace itself.

The subsequent testing in November and December 2023 confirmed a 33% reduction in CO2 emissions from the blast furnace itself, posting a new record for the highest reduction in the world. We are proceeding with verification testing with the goal of reducing emissions by 40% or more in fiscal 2024.



Source: NEDO "Hydrogen utilization in iron and steelmaking processes" project

*1 Commissioned project by the New Energy and Industrial Technology Development Organization (NEDO)

*2 The Green Innovation Fund "Hydrogen utilization in iron and steelmaking processes" project (NEDO's R&D outsourcing support and assistance project)

TOPICS

Development of high efficiency melting and other technologies by electric melting furnace using direct reduced iron (GI Fund)

Nippon Steel has begun research and development on hydrogen reduction steelmaking technology using an electric melting furnace, which was selected as a new theme of the GI Fund's "Hydrogen utilization in iron and steelmaking processes" project.

The structure of the electric melting furnace enables continuous hot metal tapping by continuous operation, similar to the blast furnace, and removal of impurities by continuous discharge of slag. In an integrated process from direct hydrogen reduction to electric melting furnace and converter, this steelmaking process may enable both high quality and high productivity even when low-grade iron ore is used.

By establishing a technology for direct reduction of low-grade iron ore, we aim to reduce CO2 emissions.

TOPICS


New Carbon Neutral R&D Center "Hydrearms™"


In order to accelerate research and development for the realization of carbon neutrality, we are constructing a new research facility at the Hasaki Research and Development Center (located in Kamisu City, Ibaraki Prefecture).

The name of the site, Hydrearms, is derived from Hydrogen Direct Reduced Ironmaking and Electric Arc Multi-purpose Furnaces for Steelmaking.

Hydrearms is currently constructing a small test reduction furnace and a small test EAF in order to develop technologies for large EAFs and the production of reduced iron, which is the raw material for these furnaces.

The small test EAF is scheduled to start being used in the second half of fiscal 2024, and the small test reduction furnace, in fiscal 2025.





Source: NEDO "Hydrogen utilization in iron and steelmaking processes" project



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R&D Activities — Sources of value creation and competitiveness

Nippon Steel is engaged in advancing strategic R&D, aimed at sustainable growth of the Nippon Steel Group

One of the world's leading research resources

Our R&D resources are among the largest in the world in the steel industry, and we will contribute to the development of society through the R&D aimed at realizing our management plan. Specifically, we will (1) strengthen the development of products with high added value and technology and products that realize carbon neutrality (CN), and (2) acquire a competitive advantage by deploying products and the development technology cultivated in domestic mother mills in the actual site business, and contribute to business expansion for the global system of 100 million tons of crude steel, and (3) work to develop breakthrough steelmaking process to contribute to the realization of CN society. We will also (4) promote the digital transformation (DX) of business operations, including optimization of production plans, and automation of production facilities, by using the vast amount of technical data that we have accumulated over many years and the latest digital technology and AI.

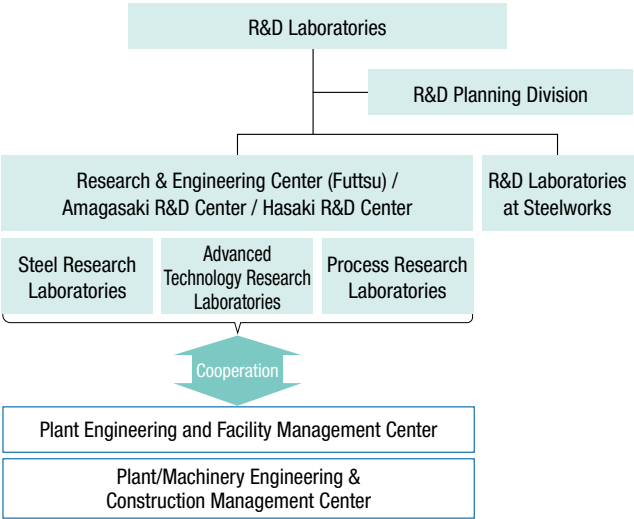
Pillars and contents of medium- to long-term management plan	Representative R&D
Rebuilding of domestic steel business <ul style="list-style-type: none">Shift to a more sophisticated order mix, renewal and improvement of facilities, and concentrated production	<ul style="list-style-type: none">Research on high-performance strategic products that contribute to society (high-tensile steel sheets, electrical steel sheets, etc.)Research on optimal processes and operation technologies to achieve production stability and efficiency
Promoting a global strategy to deepen and expand overseas business <ul style="list-style-type: none">Building an integrated production framework in markets and sectors that are consistent with our strategy	<ul style="list-style-type: none">Stable production of steel products by suppressing the impact of differences in location and factory facilitiesAccumulation of cutting-edge research results in a form that can be used globally
Challenge of carbon neutrality <ul style="list-style-type: none">Hydrogen injection into blast furnaces, Hydrogen direct reduction of iron, High-grade steel production in large size EAF, and CCUS (cooperation with outside parties)	<ul style="list-style-type: none">Research on new steelmaking processes and new products for a carbon-neutral societyBase research through industry-academia-government collaboration that contributes to the creation of a new society
Promoting digital transformation strategies <ul style="list-style-type: none">Innovation of business operations and production processes using digital technology	<ul style="list-style-type: none">Research on digitization technology that drives remote operation, automation, AI, etc.Practical application research on advanced algorithms

Modern steelmaking in Japan began with iron ore as the raw material at the end of the Edo period and continues to progress today. In recent years, in order to develop products that utilize atomic-level observation technology and advanced calculation science and technology, and to develop manufacturing processes for stably mass-producing them at low cost, various researchers with expertise in materials, physics, chemistry, mathematics, machinery, electricity, information, civil engineering and building construction are active and are participating in a wide range of academic societies both in Japan and overseas. In the middle of the big game change in the decarbonization of society, steel is required to transform from the blast furnace method, which has extremely high production and energy efficiency. On the other hand, there is also a demand for developing products that contribute to the reduction of CO2 in society as inexpensive structural materials. We will use our wide range of specialized technical capabilities and large-scale steel research resources fully for the R&D issues that are required in this era, and we will lead the Japanese industry toward the realization of a carbon-neutral society.

R&D organization

R&D is carried out with the R&D Laboratories as a core. The Steel Research Laboratories are mainly engaged in product development; the Advanced Technology Research Laboratories in discovery of new technology seeds from basic research and R&D related to segment companies; the Process Research Laboratories in process development; and the R&D Laboratories at Steelworks in practical application research. Thus, we are dividing our organization to be in charge of R&D management that contributes to our global management. In addition, we have contributed to the early practical application of developed products and processes in cooperation with Plant Engineering and Facility Management Center, which oversees equipment engineering, and newly-established Plant/Machinery Engineering & Construction Management Center, which is engaged in the design and construction of steelmaking plant facilities. We will promote the development of products and processes for the CN society by utilizing the existing framework of the three laboratories. Furthermore, we will strengthen cooperation with universities and research institutes in the fields that require basic examination, including elemental technologies that our group does not possess.

[R&D organization]



An organization that took over a part of the steel plant business of Nippon Steel Engineering Co., Ltd.

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R&D Activities — Sources of value creation and competitiveness

Strengthening products with high-added value and process development

We will continue to work on maximizing the potential of steel as a material, that is, achieving our goal of “mastering steel.” Examples of the development of products with high added value include high corrosion-resistant plated steel sheets (ZEXEED™, etc.), alloyed galvanized sheets (GA), hot-dip aluminum-plated steel sheets (ALSHEET™), nickel-plated steel sheets (SUPERNICKEL™), and grain-oriented electrical steel sheets (GO), non-oriented electrical steel sheets (NO), high-alloy seamless steel pipes. We are promoting this R&D to shift to a more sophisticated order mix.

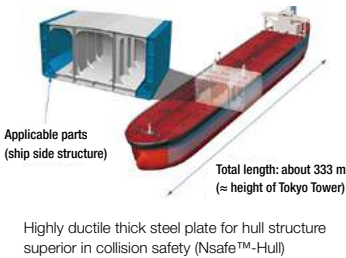
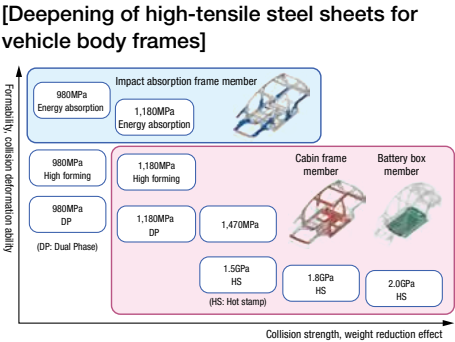
In process development, we utilize various kinds of large-scale laboratory equipment that can accurately simulate the operation of actual production facilities for each process of ironmaking, steelmaking, and rolling, as well as simulation calculation technology. Thus, we are promoting R&D of highly efficient steelmaking process that considers resources and the global environment in producing higher valued-added products.

Next-generation automobiles

We are contributing to the reduction of environmental impact by developing and expanding the application of high-tensile steel sheets to achieve both weight reduction and collision safety of automobiles, developing high-efficiency electrical steel sheets for hybrid and electric vehicles, and improving fuel efficiency through the development of underbody products. We are proposing the NSafe™-AutoConcept ECO³, a next-generation steel automobile concept for the era of carbon neutrality. The cold-forming technology of ultra-high-strength steel sheets, which forms the core of this concept's processing technology group (NSafe-Form Series), was awarded the “Grand Prize of the Society of Technology of Plasticity” (2023) at the 58th Japan Society for Technology of Plasticity.

Energy and resources/Shipbuilding

Steel materials for energy and shipbuilding require a quality that ensures long-term safety under various service conditions. We are contributing to improving the safety of final products and enhancing the productivity and competitiveness of customers by supplying high-performance products that utilizes advanced technology.



Challenge of carbon neutrality

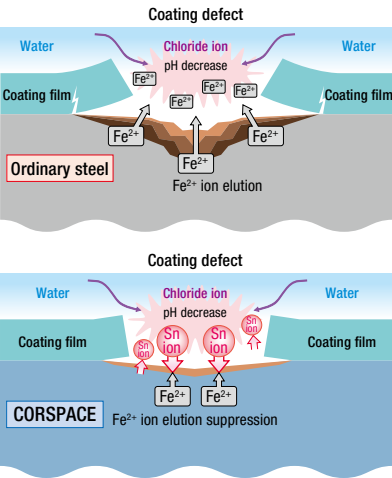
We accurately grasp market needs and continuously develop and supply building materials that exhibit our originality. We support social infrastructure such as construction (building pillars and beams) and civil engineering (roads/railways, rivers/harbor, building foundations). As an example of recent years, we have worked on basic research to explain the corrosion mechanism of coating defects in conventional steel materials and found that the addition of a small amount of element (Sn) to steel materials can suppress the elution of iron in a low-pH environment. We developed CORSPACE™, an extended coating cycle steel with excellent LCC, which can reduce the amount of steel corrosion and coating stripped surface in coating defects to about half that of conventional products. Thus, we have received the Excellence Award of the 9th “The Japan Monodzukuri Nippon Grand Awards” (2023) and the Contribution Award of the 55th “The Ichimura Prize in Industry” (2023). The steel materials and their elemental technologies are protected by a total of 78 comprehensively acquired patents.

Challenge of carbon neutrality

We aim to achieve carbon neutrality using three breakthrough technologies. “Hydrogen injection into blast furnaces” is an effort to replace the reduction of iron oxide using carbon with hydrogen reduction, and the handling of hydrogen and the decrease in furnace temperature due to hydrogen reduction are issues. “High-grade steel production in large size EAF” is based on the existing technology of the electric furnace, but there are issues in reducing impurities and increasing the size of the equipment. “Hydrogen direct reduction of iron” is a process producing reduced iron from iron ore using a shaft furnace, etc., without using a blast furnace, and there are still issues concerning stabilization of mass production.

Through the Green Innovation (GI) Fund Project of the New Energy and Industrial Technology Development Organization (NEDO), we are tackling these challenges by undertaking demonstration tests using a test blast furnace in East Nippon Works Kimitsu Area and a new test electric furnace and a test shaft furnace at the Hasaki R&D Center (Kamisu City, Ibaraki Prefecture). In 2023, we confirmed the world's highest 33% CO₂ emission reduction at the test furnace, making steady progress in development toward proposing the future steelmaking process. In addition, we will conduct R&D of carbon offset measures such as “NSCarbolex™ Solution” which utilizes steel products that can reduce CO₂ during processing and use, and CCUS, etc. We aim for CN with a multi-aspect approach.

[Corrosion mechanism of coating defects]





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Intellectual Property Activities that link strengthen management strategies through R&D results

The Nippon Steel Group respects intellectual property rights, regardless of whether they belong to us or others. We will make the most of the intellectual property rights in our business activities, and position them as one of the important factors for obtaining business revenue now and in the future.

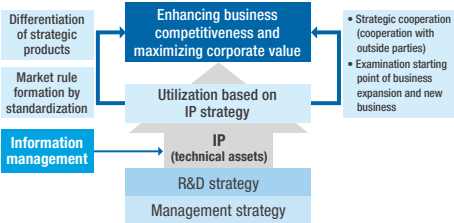
Policy and organization of intellectual property activities

Policy on intellectual property activities

We perform intellectual property (IP) activities under the company-wide slogan, “IP is the source of our corporate activities. Maximize corporate value through enhanced protection management and active utilization.” We are strengthening efforts to directly link IP created from R&D activities, which are implemented based on management strategies, to maximizing business earnings and corporate value.

Based on a specific business strategy and this slogan, we formulate and act on a flexible and effective IP strategy in accordance with all aspects (offensive and defensive) of individual products and technologies, and share the results throughout the Company in an effort to continuously strengthen our strategies. We are also focusing on the acquisition of rights for IP generated in the development of technologies and products that realize carbon neutrality. Moreover, we are involved in licensing IP outside the Group and in standardization to form the market rules, and uses IP in a variety of ways to advance its business. As shown in the table below, we are working to complete our Medium- to Long-term Management Plan by actively utilizing our IP.

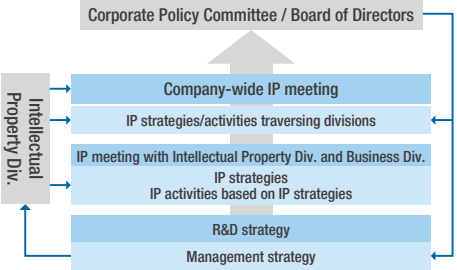
[Schematic diagram of our intellectual property]



Promotion system of IP activities

Business divisions take the lead in making a trinity of management strategy, R&D strategy, and intellectual property strategy, and then carry out specific intellectual property activities. These activities are supported by the Intellectual Property Division. In addition, the Intellectual Property Division is actively involved in management from a traversing perspective regarding intellectual property activities that span business divisions. After discussing the progress of these activities at the company-wide meeting and determining the direction of how to proceed with intellectual property activities, the final decision is made by the Corporate Policy Committee and the Board of Directors. In addition, the results of discussion in the Corporate Policy Committee and the Board of Directors are fed back to the business divisions and people involved in the inventions to strengthen the daily intellectual property activity. Further, through continuous information management and intellectual property training, we are improving the awareness and skills of all the employees related to intellectual property.

[Schematic diagram of our intellectual property activity promotion system]



[Examples of intellectual property utilization for contribution to business to accomplish medium- to long-term management plan]

Pillars and contents of medium- to long-term management plan	Examples of representative intellectual property utilization
Rebuilding of domestic steel business <ul style="list-style-type: none">Shift to a more sophisticated order mix, renewal and improvement of facilities, and concentrated production	<ul style="list-style-type: none">Protecting strategic products (high-tensile steel sheets, electrical steel sheets, etc.) with patents for differentiation and enhancing the appealing power to customersStable and efficient production based on accumulated and expanded patents and technical know-how
Deepening and expansion of overseas steel business <ul style="list-style-type: none">Building an integrated production framework and a sales network in markets and sectors that are consistent with our strategy	<ul style="list-style-type: none">Strengthening the competitiveness of overseas Group companies by utilizing our patents and technology know-howPromotion of strategic globalization considering the value of intellectual property
Challenge of carbon neutrality <ul style="list-style-type: none">Hydrogen injection into blast furnaces, Hydrogen direct reduction of iron, High-grade steel production in large size EAF, and CCUS (cooperation with outside parties)	<ul style="list-style-type: none">Promotion of development and implementation by combining patents and technological know-how of our company and third partiesUtilization of intellectual property in creating new social rules (standardization of standards)
Promoting of digital transformation strategies <ul style="list-style-type: none">Innovation of business operations and production processes using digital technology	<ul style="list-style-type: none">Protection of business and production process reforms by expanding patentsContribution to digital society by patents and technological know-how related to DX elemental technologies



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Securing creation and enhancing protection and utilization of IP

We have been focusing on enriching and accumulating our IP in terms of both quality and quantity to enhance their strategic utilization in all aspects of our business. Specifically, we thoroughly manage technical information related to research results obtained through our independent research and collaboration with universities and external research institutes, and secure and accumulate IP that can be used in our business activities.

We secure the most advanced newly created technologies and other proprietary technologies such as carbon neutral related technologies, as IP through the patent acquisition and tacit knowledge of know-how we have accumulated. We utilize them in the course of our business practices and contribution to society in line with our Medium- to Long-term Management's Plan. For three consecutive years, we have been awarded the National Commendation for Invention, which recognizes outstanding inventions aimed at contributing to the advancement of science and technology and the development of industry.

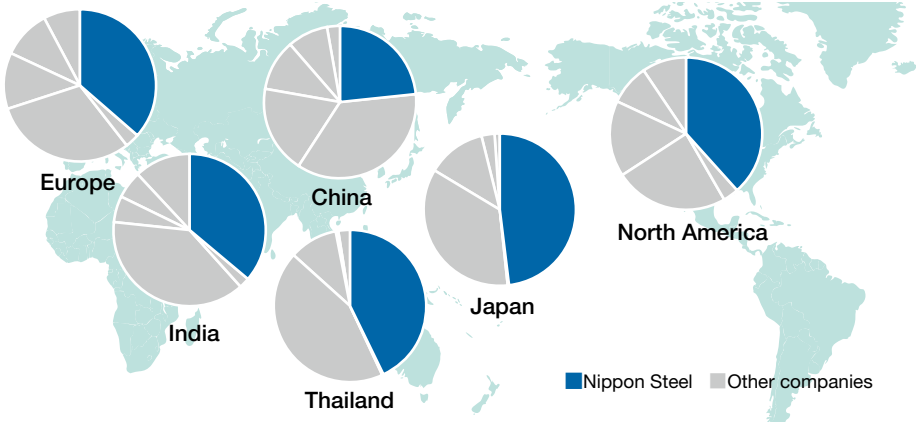
[Specific initiatives in intellectual property activities]

[Nippon Steel's patents in 2023] Japan approx. 15,000 /Overseas approx. 18,000 (non-consol.)	
1. Support the creation of new IP	<ul style="list-style-type: none">Plan IP strategy that contributes to the business strategyBuild and evaluate the IP portfolioEnrich the function of establishing rights for inventions, discoveries, and IP
2. Enhance the protection and utilization of IP	<ul style="list-style-type: none">Globally protect and actively use IP as a means to differentiate strategic productsActively use IP in strategic alliance with collaborating partnersThoroughly control technical information including business secretsEstablish brand strategies with the aim of enhancing corporate value and product valueStrictly deal with counterfeit products as well as any violation and illegal use of our IP
3. National Commendation for Invention award	<ul style="list-style-type: none">2023 Invention Award "Invention of the chrome resource recycling and environment-friendly stainless steelmaking process"

Value of our patents

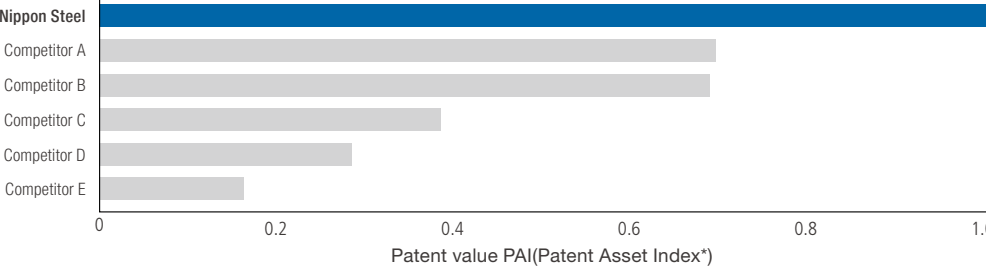
The Nippon Steel Group holds a high share of patents in major global markets compared to its competitors in Japan and overseas.

[Comparison of shares of patents held by Nippon Steel and its competitors in major global markets]



LexisNexis "PatentSight™" provides a patent value index PAI (Patent Asset Index™) based on the technical value and market value of patents. The PAI data in 2023 shows that Nippon Steel has a relatively higher value than our domestic and overseas competitors. We carefully evaluate domestic and international patent applications in line with our management strategy. At the same time, we continue to expand and accumulate important patents in terms of both quality and quantity, thereby increasing our valuable patent portfolio in Japan and overseas, which not only supports our business revenues in the world but also contributes to social, economic and industrial developments.

[Relative comparison of patent value PAI with domestic and overseas competitors (2023)]



* Calculated using PatentSight™, a patent analysis tool of LexisNexis.
Comprehensive evaluation index of patent calculated by multiplying "technical value" calculated based on the number of citations of patents and "market value" calculated based on the country of application for patents with valid legal status (patents pending and granted).



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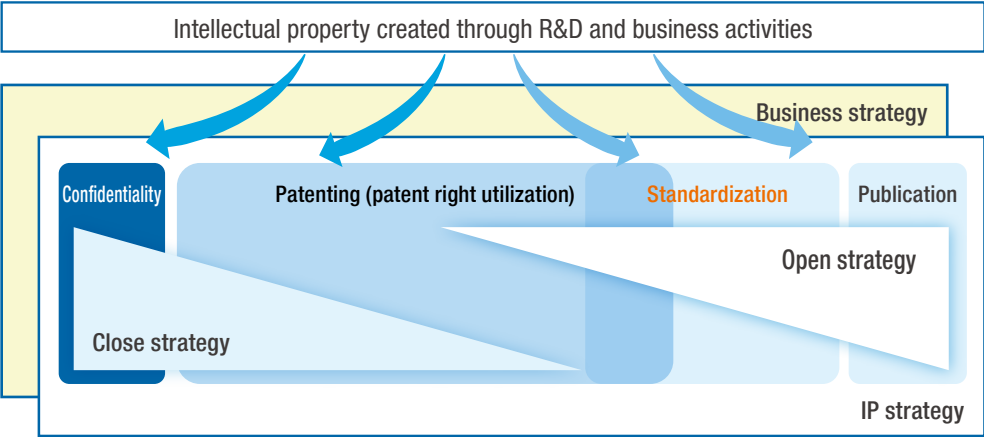
Intellectual Property Activities that link strengthen management strategies through R&D results

Initiatives for standardization

Based on our IP strategy, we utilize IP created through R&D and business activities by combining confidentiality, patenting, standardization, and publication.

Regarding the standardization, we participate in internal activities related to quality assurance, safety, environment, and disaster prevention, as well as external activities related to JIS, ISO, API, etc., and actively standardize steel materials and material testing methods. We have established sustainability standards for steelmaking and rules for the markets for products of our company and our competitors. We seek to make our efforts lead to sales expansion of our new products, thereby contributing to management, and to form and expand markets targeted by the steel industry. In the automotive steel sheet and materials field, our employee has been appointed as the Chair of the Ductility Testing Committee ISO/TC 164/SC 2, leading the standards activities. In the field of steel products for oil and gas development and production environments, our employees promoted standardization of OCTGs and received the 2024 AMPP Fellow Honor Award from the American Association for Materials Protection and Performance (AMPP) in recognition of their achievements.

[Intellectual property created through R&D and business activities]



[Our activities related to standardization]

	Purpose	Examples of standardization
Layer C (Corporate Issue)	(3) Establishing management base	<ul style="list-style-type: none">Green steel international standard (The World Steel Association, etc.)CO₂ Emissions calculationLCA evaluation, etc.
Layer B (Business Strategy)	(2) Strengthening business competitiveness	<ul style="list-style-type: none">ISO and IEC international standardsStandards of other countries such as EN and DINForums such as ASTM, API, and ASME Group standards, etc.
Layer Q (Quality Assurance)	(1) Maintaining and improving quality assurance, safety, environment, and disaster prevention	<ul style="list-style-type: none">Quality control standards such as ISOOur internal quality control standardsOperation standardsSafety rules, etc.



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Promoting of Digital Transformation Strategies

Nippon Steel is strongly promoting digital transformation (DX).

With the aim of becoming a digitally advanced company in the steel industry, we will work to innovate production and business processes by making full use of data and digital technology, and promote measures that will help speed up decision-making and fundamentally strengthen our problem-solving capabilities.

Nippon Steel's DX Initiatives and Vision

Nippon Steel will promote Nippon Steel DX to innovate all steel business processes. Specifically, we are working swiftly on various measures to realize “innovative evolution of manufacturing capabilities by developing smarter manufacturing,” “strengthening of customer relations by reinforcing the flexible and optimal supply system,” and “global management support by enhancing business intelligence.”

Innovative evolution of strength in manufacturing based on smarter manufacturing (Production process innovation)

- Develop smarter manufacturing (Cyber Physical Production) through the advanced use of AI, IoT and other digital technologies
- Improvement of labor productivity through the use of automation and predictive detection, etc., and production stabilization and quality improvement through the advancement of production technology
- Ensuring the same level of operations and quality at overseas sites as in Japan

Strengthen customer responsiveness by enhancing flexible and optimal supply system (Business process innovation)

- Establishment of an integrated production planning platform from order to production to delivery (shortening of lead time, flexible response to changes)
- Linkage with supply chain information, etc., and efforts to contribute to customers and create new value
- Optimization of raw material transportation from the mine to steel mills and enhancement of responsiveness to changes in the procurement environment

Global management support through enhancement of business intelligence

- Construction of integrated data platform (NS-Lib) that enables the linking and advanced utilization of vast amounts of data
- Building an integrated data platform that enables real-time understanding of management information and KPIs for optimal action
- Accelerate decision-making and improve problem-solving capabilities from the management level to the front line

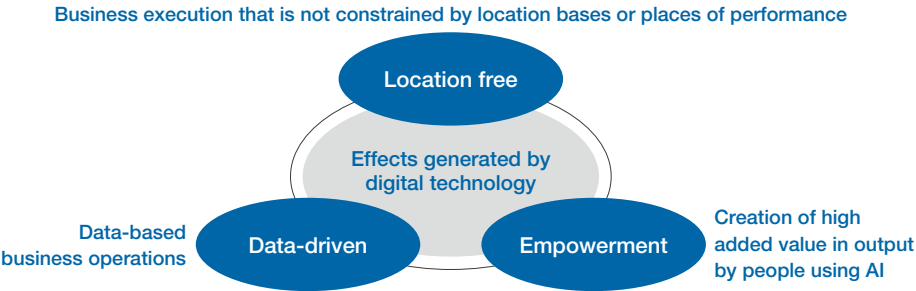
Reform initiatives that make full use of data and digital technology

Specifically, by displaying the three effects of digital technology —“location-free,” “data-driven,” and “empowerment”— we will innovate traditional workstyles and strive to significantly increase productivity, speed up decision-making, and improve problem-solving capabilities.

In addition, rather than simply applying new digital technologies, we aim to review our business operations and production processes based on data, and thereby enhance decisions that tend to be partial optimizations to optimal decisions from a broader perspective, transcending organizational barriers and hierarchies.

AI alone is not sufficient to create value. Even in the midst of the ever-evolving landscape of digital technology, it is still the individual who conceives and carries out reform. We believe that it is crucial that people start the process by charting a course for forward-looking reform with a sense of mission, and use digital technology as a means to execute the reform.

In addition, we believe that there is significant value to be gained from expanding and advancing reforms based on the knowledge and resources made available through the use of digital technology.





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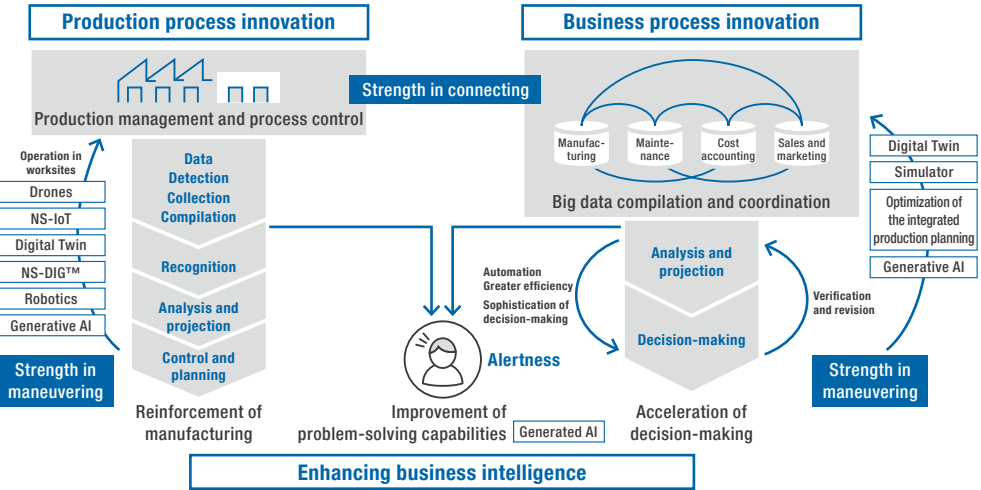
Strength in connecting and strength in maneuvering
Production process innovation and business process innovation

Nippon Steel has been proactively adopting ICT since the 1960s in a variety of fields, including production, sales, logistics, maintenance, purchasing, and profit management, and one of its major strengths is the large number of business systems it has developed and the vast amount of high-quality data it has accumulated.

We will enhance our “strength in maneuvering,” which will enable formidable process control and automation, by bolstering and making advanced use of our “strength in connecting,” which will entail organically linking valuable data assets that are dispersed in individual departments and factories by utilizing advanced information technology and the latest digital technology.

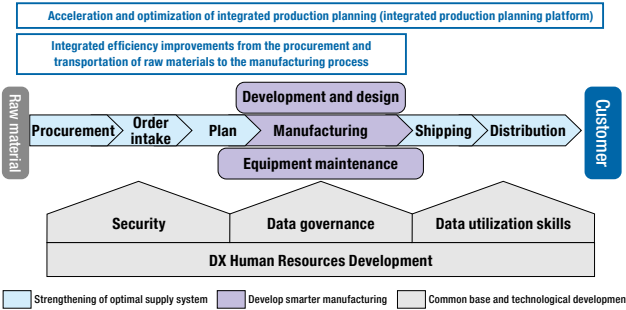
These efforts will be applied to both production and business process reform. By setting ambitious goals, we will increase the overall output of solutions and innovations to achieve these goals, advance manufacturing practices, accelerate decision-making, and drastically enhance our problem-solving ability.

We believe that these strengths will contribute not only to business process innovation and production process innovation, but also to the provision of new value to stakeholders through synergies with measures to enhance our strength in manufacturing and strength in sales and marketing.



Innovation of all steel business processes

Nippon Steel's DX involves a series of comprehensive reforms across the entire spectrum of the steel business process. This includes the supply chain, from raw material procurement to customer relations, as well as aspects such as development, design, manufacturing and equipment maintenance. To achieve these goals, we are actively building a common infrastructure and driving technology development.

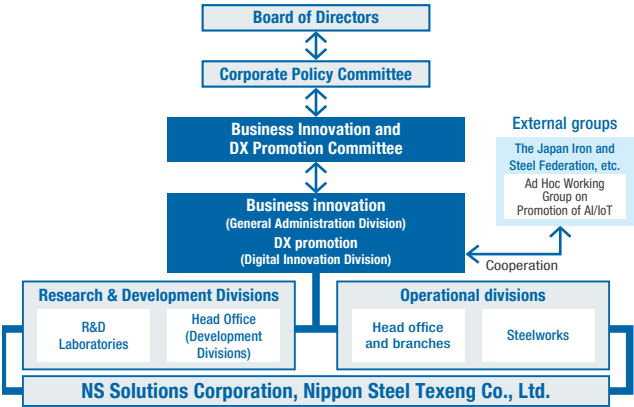


DX promotion framework

With the Digital Innovation Division at the core, the operational divisions and the research and development divisions will work together to strengthen business competitiveness by promoting DX mainly through integrated responses to company-wide cross-sectional issues and data management.

Furthermore, we will continue to take on the challenge of advanced initiatives in cooperation with external organizations and with the collective strength of the Nippon Steel Group, including NS Solutions Corporation and Nippon Steel Texeng Co., Ltd.

We have established the Business Innovation and DX Promotion Committee, chaired by the Executive Vice President in charge of business innovation and DX promotion. It is discussing companywide policies and strategies and promoting related activities based on both the business innovations we have been working on and the promotion of DX.





Promoting of Digital Transformation Strategies

Nippon Steel DX Specific Initiatives

New ways of working with digital technology and data

Nippon Steel's wireless Internet of Things (IoT) sensor-utilization platform NS-IoT for efficient collection of operational and facility data from steelworks sites has been adopted on a full scale. Data have also been accumulated on our integrated data utilization platform NS-Lib and data-driven operations have become widespread, in combination with efforts to raise the efficiency of OA work with RPAs and Microsoft 365, and to make the work more visible with business intelligence (BI) tools such as Tableau.

The integrated AI data analysis platform NS-DIG™ and the edge computing platform AIRON-EDGE™ have made it easy for us to build and implement AI models.

By continuing these efforts and utilizing fast-evolving generative AI in the right places, we are being empowered with the increased value of our time and establishing a new way of working.

Advanced utilization of operational and facility data using wireless IoT sensors (NS-IoT)

We have built a wireless Internet of Things (IoT) sensor-utilization platform NS-IoT for centralized management of data from each steelworks site by using LPWA (low power wide area wireless communication) and cloud technology.

By centralizing the management of data and vehicle location information from sensors and leveraging integrated data from multiple locations for “facility status detection” and trend monitoring, the use and application of data in the production process have been expanded.

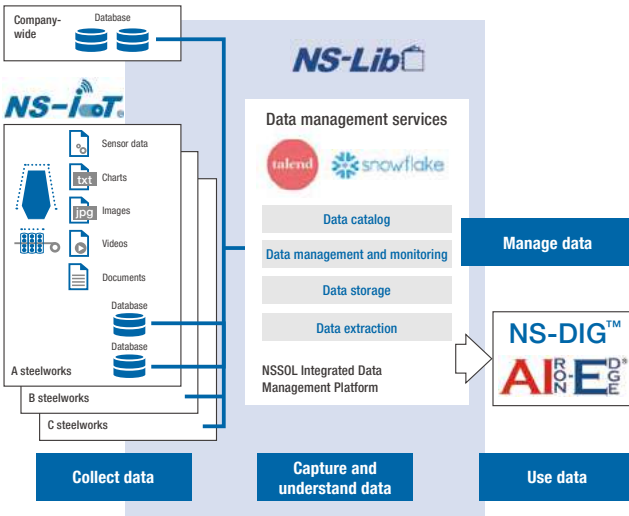
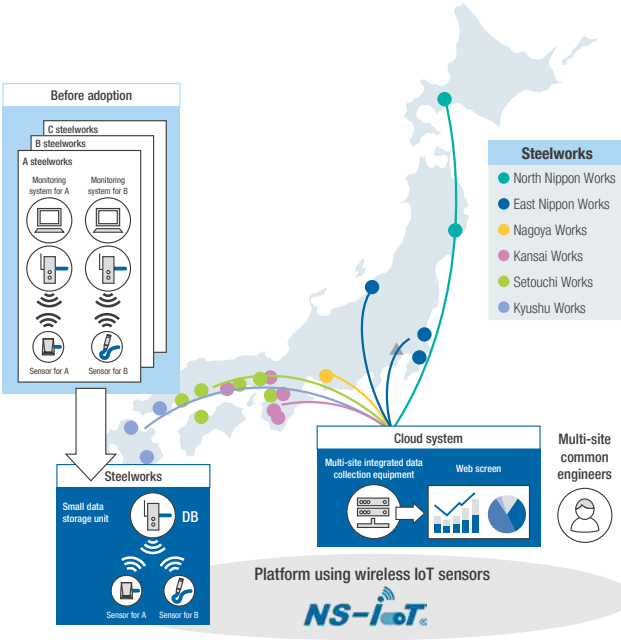
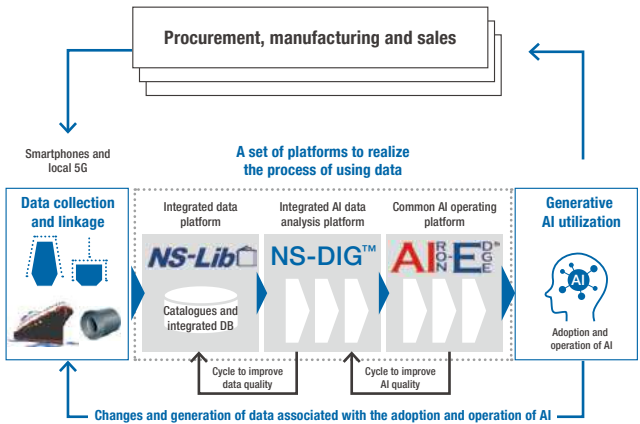
The system will be extended to the entire company and Group companies, starting with East Nippon Works Kimitsu Area and Kashima Area, with a view to expanding the system as a package to other manufacturing industries, etc.

This platform will be used to stabilize production and further enhance quality by improving labor productivity through the use of automation and predictive detection, and by advancing production technology.

Integrated Data Platform (NS-Lib)

NS-Lib is an integrated data utilization platform built by Nippon Steel and NS Solutions by combining TALEND™, a data management function, and SNOWFLAKE™, a data storage and linking function. The platform was put into operation in April 2022. Then, in December 2023, DENODO™, a data virtualization platform, was launched, enabling databases located in different locations to be accessible across the company. We use data for orders, production plans, instructions, and manufacturing by “cataloging” them as a database in the “NS-Lib” (strength in connecting). This enables rapid and advanced decision-making and problem solving based on the same data from the management level to the front line.

By incorporating the knowledge gained by Nippon Steel, NS Solutions has launched services on an integrated data management platform aimed at outside parties under the name “DATAOPTERYX™.”



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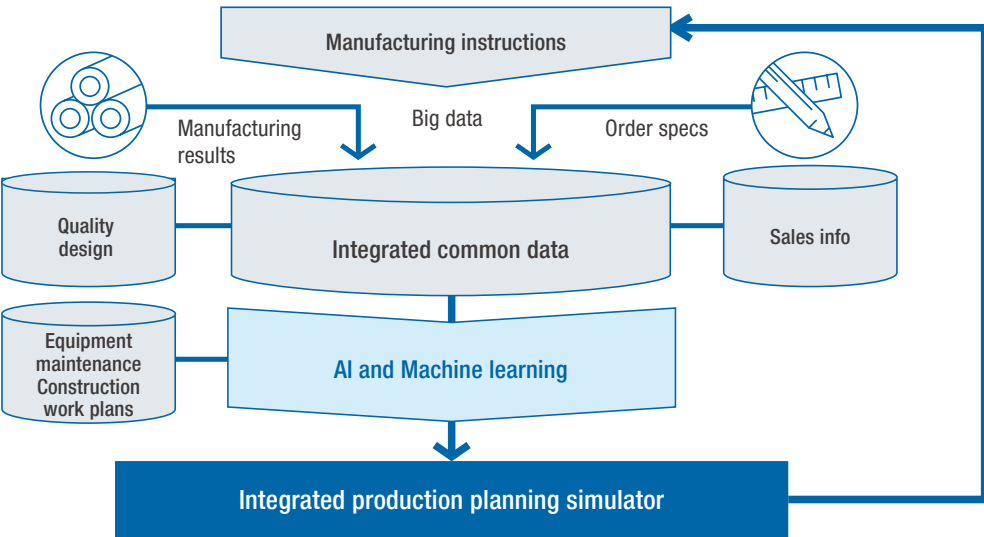
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Acceleration and optimization of integrated production planning

The steel industry uses a variety of raw materials, such as iron ore, coal, and scrap metal, to produce diverse steel products for automobiles, ships, bridges, and household appliances. Of these, approximately 70,000 different sheet steel products are produced, and approximately 40,000 orders are handled each month. The production plan is a complex combination of multiple processes, ranging from crude steel production to rolling to surface treatment.

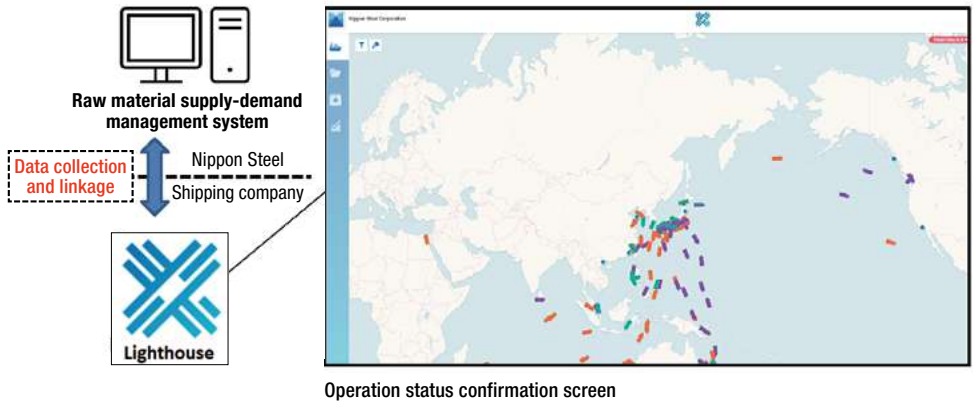
Based on the latest sales information and big data collected by each steel mill on the manufacturing process efficiency and detailed order specifications, we quickly create optimized integrated production plans and build an “integrated production planning platform” that is shared throughout the Company. We will use this platform to unify company-wide information and introduce an integrated production planning simulator that can accurately respond to customer orders and changes in the raw material procurement environment. By applying advanced mathematical optimization technology, this production planning simulator enables rapid selection of the optimal plan from a large number of planning patterns consisting of a huge amount of data. With this initiative, we aim to significantly reduce the workload at each steel works through the sophistication of production planning operations and strengthen optimal production control throughout the Company. For example, in the East Nippon Works Kimitsu Area, we have developed and introduced a new production planning system to efficiently produce "slabs" (steel pieces) in the steelmaking process. This has resulted in about a 70% reduction in the time required to create a production plan that is equal to or greater than the level of quality created by skilled workers and enables multiple plans to be simultaneously created.

[Integrated production planning platform]



Integrated efficiency improvements from the procurement and transportation of raw materials to the manufacturing process

Since we are entirely dependent on imports for iron ore and coal, efficient transportation from mines and coal pits to our steel mills translates directly into cost competitiveness. For the transportation of more than 200 brands of iron ore and coal, we use algorithms to formulate optimal transportation plans from 10⁷⁶⁰ (10 to the 760th power) complex combinations. In addition, because the transportation environment for imported goods varies greatly due to economic, meteorological and geopolitical factors, ship allocation management is required to respond flexibly and quickly to these factors. In response to this need, we have linked Mitsui OSK's “Lighthouse” real-time operation information platform with Nippon Steel's raw material supply-demand management system, thereby streamlining the supply chain from raw material procurement and transportation to production.





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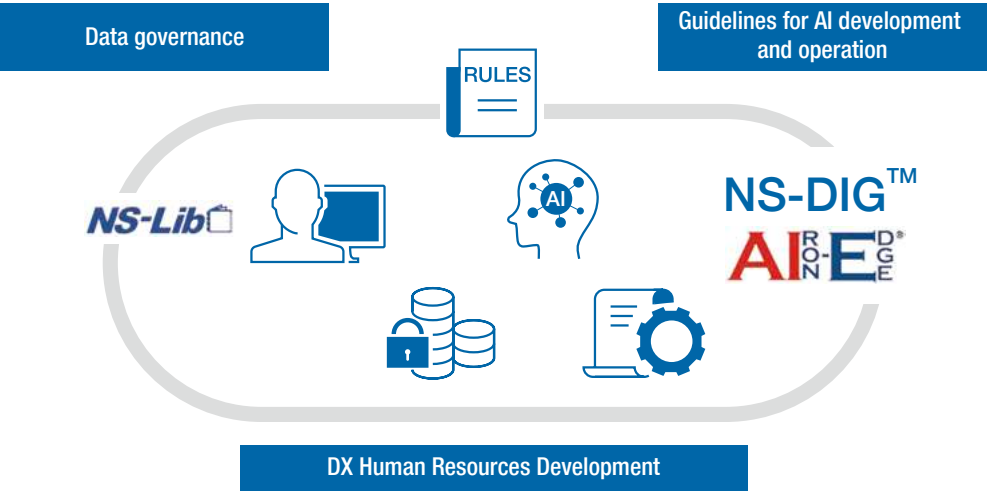
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Promoting of Digital Transformation Strategies

Data governance, and guidelines for AI development and operation

Use of data requires good control, quality, and security. We have supplemented our existing information management rules in order to define the rule of data management, such as to create, store, use, release, and dispose, and to strengthen our ongoing data governance. In February 2022, we set up guidelines for AI development and operation, which compiles various points to consider in using and creating AI. In July 2023, we established guidelines on how to use generated AI and points to keep in mind because of the emergence of new social risks that were not previously seen in AI, such as infringement of intellectual property rights and generation of false or misleading information. Since then, the guidelines have been revised in response to changes in the environment.

Through the establishment of rules and human resource development, we aim to create an internal culture in which our employees become actively involved in DX and keep growing.



Cybersecurity

Cybersecurity is becoming ever more important in the new workstyle with ICT as data utilization becomes more active: Information is exchanged in all different forms, in all kinds of situations and fields. Furthermore, in recent years, the increasing sophistication of cyber-attacks and attacks on operational technology (OT) or systems have forced some companies to shut down their production lines. In addition, cyber-attacks sometimes extend beyond individual companies, penetrating supply chain networks and affecting multiple entities. This underscores the need to strengthen overall security measures not only at the enterprise level, but also at the level of its affiliates and supply chain partners. Against this backdrop, we remain committed to strengthening various safety measures and providing safety education, both in Japan and in other countries. Specifically, we are working actively to improve the IT literacy (information security awareness) of every employee who uses our systems by providing security education through e-learning and conducting targeted e-mail training. In addition, we have established an organization and system dedicated to OT security and collaboration with the IT security unit, and implemented measures to bolster security through network multi-layered defense, etc.

Furthermore, with a focus on ensuring business continuity, we require our subcontract firms and suppliers in our supply chain to improve their security. In particular, we have established a “Group Companies’ Cybersecurity Security Council” with Group companies with whom we closely share security strategies, so that we can work together to raise our security standards. Lastly, the NSG CSIRT, made up of our Group companies, conducts incident response to computer-related incidents.



- Proactive detection of incidents, response to incidents, and implementation of reactive measures
- Sending of the procedures to collect, analyze, and respond to incident-related information within the Company and to the Group companies

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Intellectual Property Activities

> Digital Transformation Strategies

Promoting of Digital Transformation Strategies

DX human resources development

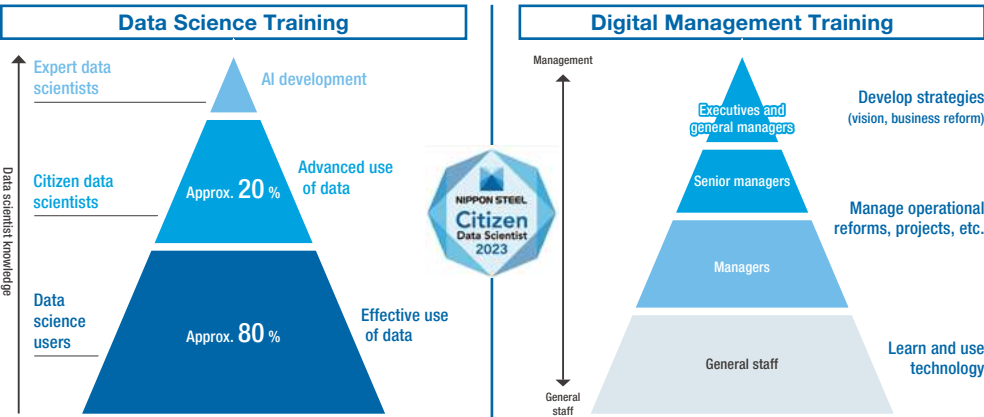
Nippon Steel defines “those who can extract and solve business problems based on data” as DX human resources, and aims to make all office staff and engineers DX human resources. Skills in three areas of business, data science, and data engineering are required to drive data-driven operations.

The strength of our Group is that we have a large number of people who are well versed in operations and have skills in business and data engineering, including people in NS Solutions. Our business competitiveness will be further enhanced by improvement of our data science skills.

We have defined data science knowledge in three levels: Expert data scientists, citizen data scientists, and data science users. In July 2021, we launched data science education programs with the goal of turning all office staff and engineers into data science users by March 2024. In addition, by 2030, we want 20% of all office staff and engineers to be citizen data scientists in every place of work. All office staff and engineers have completed the program to become data science users. By March 2024, approximately 6% of all the office staff and engineers had been certified as citizen data scientists, and by 2025, we expect this ratio to reach 10%.

To motivate employees to improve their knowledge and skills, those certified as citizen data scientists receive Open Badges. In December 2021, we also launched a new digital management education program with components for different levels or types of managers. By September 2023, all officers, from executives to managers, had completed the program.

We intend to promote education both in data science and digital management, and accelerate our production and business process reform, using data and digital technology.



TOPICS

Certified Citizen Data Scientist in action:
Create a system that allows viewers to make decisions and take action

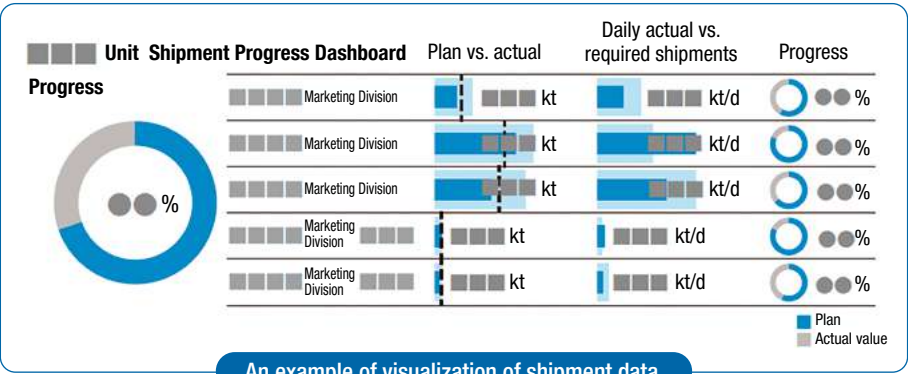
We faced the challenge that the management tools for shipment progress and transit points were still under development. In our business, sales production planning and process management are said to be the “key for shipment.”

Therefore, we are building a platform to visualize progress and quickly move from identifying issues to action. We believe that “visualization” is not just about creating graphs, but also “creating a system that allows the viewer to make decisions and take action.” After investigating and subdividing the business flow, we designed and created the necessary databases and dashboards.

Going forward, we aim to further improve the level of risk prediction by expanding the system to areas other than sales departments and using predictive models based on machine learning.



Takeaki Fukunaga
Sales Planning & Coordination Section
Sales Coordination Department
Marketing Administration & Planning Division Nippon Steel Corporation



An example of visualization of shipment data



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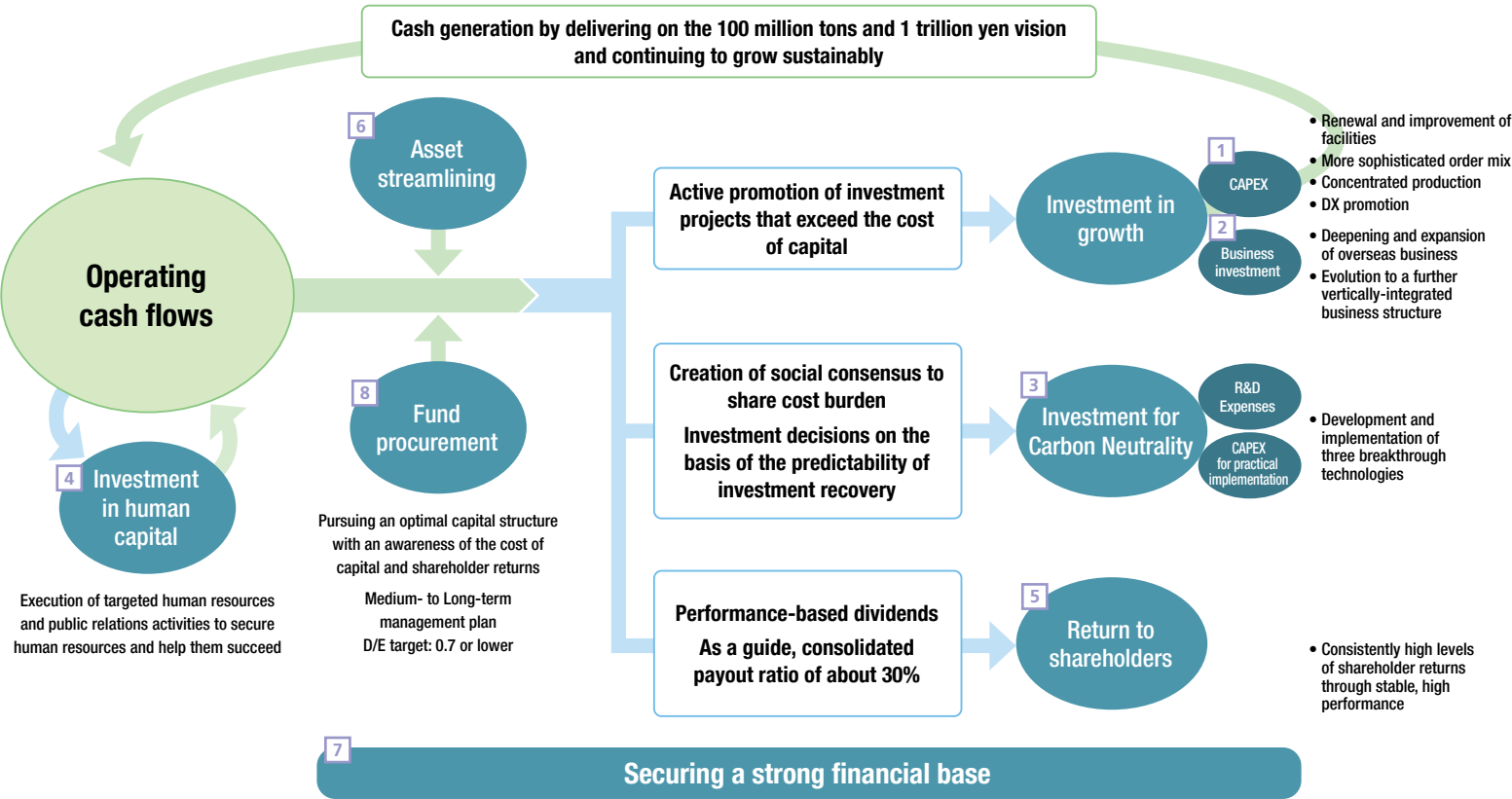
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By establishing a virtuous cash cycle, we will achieve profit growth toward our vision of 100 million tons and 1 trillion yen, as well as carbon neutrality.

Virtuous cash cycle

We proactively promote growth investments that generate returns exceeding the cost of capital and achieve sustainable profitable growth. We also make investments necessary to make the steelmaking process carbon neutral by ensuring the predictability of investment recovery based on a consensus on sharing the needed cost burden by the entire society, including government support and the formation of a green steel market. By doing so, we secure a sound financial base and at the same time aim at stable, high-level shareholder returns.

[Virtuous cash cycle]



[Investment plan (FY2021-2025)]

Capital expenditures	¥2,400 billion over 5 years
Business investment	¥600 billion over 5 years
Payout ratio	Around 30%

[Targets (FY2025)]

ROS (Return on Sales)	About 10%
ROE (Return on Equity)	About 10%
D/E Ratio	0.7 or lower even in a deteriorating environment

Assumption: Non-consolidated crude steel production About 38 million tons/year



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1 Capital expenditures

We will implement capital expenditures of ¥2,400 billion over the five years FY2021 to FY2025. We promote the production facility structural measures with suspending less-competitive facilities and consolidating production to competitive ones.

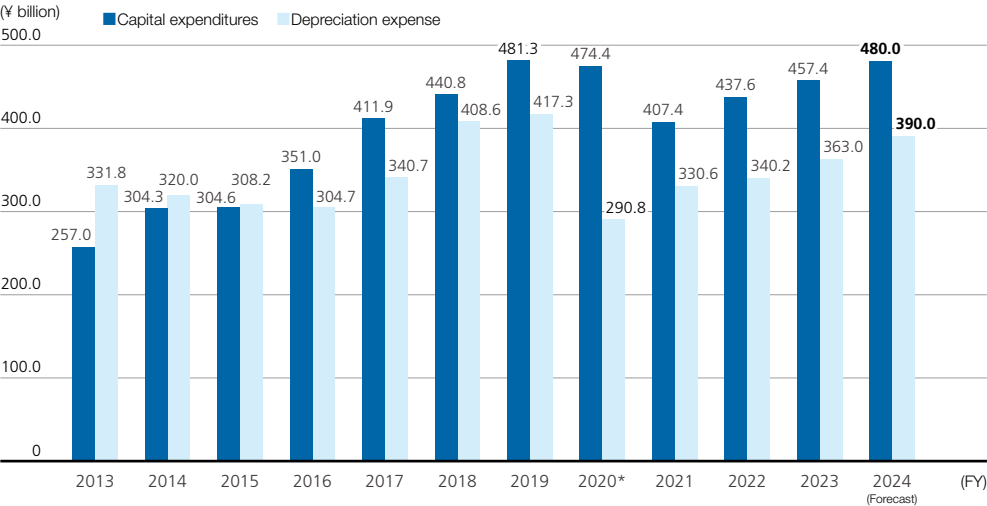
We are reducing investment in facilities scheduled for suspension, while selectively investing in remaining facilities to upgrade equipment and improve capacity and quality of high value-added products. Up to the present, we have decided to make investment of ¥213 billion for improving the capacity and quality of electrical steel sheets, investment of ¥270 billion for installing a new next-generation hot strip mill at the Nagoya Works and others.

Meanwhile, many of our steelworks were built during Japan's high growth era and are passing a 50-year milestone. Since construction, the facilities have been appropriately maintained and refurbished and are in good condition but some facilities for infrastructure and others are in an extremely long refurbishment cycle, which are approaching refurbishment time. Due to the concentration of refurbishment investment for these equipment and facilities, capital expenditures will be at a high level for the near term. We seek to efficiently inject capital based on the long-term refurbishment plan, aiming for reduction in overall capital expenditures.

For determining capital expenditures, we set a hurdle rate for collection period of investment aimed at profit improvement and manage to secure that the internal rate of return (IRR) of overall capital expenditures, including spending for replacing aged facilities, exceeds the cost of capital.

[Capital expenditures and depreciation expense]

The amounts of capital expenditures are on a construction basis; from FY2018 onwards they are calculated on the changed accounting system.



* Depreciation expenses in FY2020 Impact of the change to the straight-line Method: -70 billion yen
Impact of impairment loss: -60 billion yen

2 Business investment

We are making strategic moves towards achieving a global crude steel production capacity of 100 million tons by acquiring and investing in integrated steel mills (brownfields) in areas where demand is expected to grow and in sectors in which our technologies and products are appreciated. To date, we acquired G Steel and GJ Steel in Thailand in March 2022 (total purchase price 55.6 billion yen). In India, we decided to expand AM/NS India's sheet manufacturing facilities in April 2022 (approximately 140 billion yen), invest in the installation and expansion of facilities for iron-bearing materials and hot rolling in September of the same year (approximately 730 billion yen), and acquire critical infrastructure companies and assets (approximately 340 billion yen). (The investment amount is that of AM/NS India. We provide debt guarantees to AM/NS India as required in proportion to our 40% stake.)

In addition, we invest in the upstream raw materials and downstream distribution domains of the steelmaking value chain to broaden our business scope. Our aim is to evolve into a further vertically-integrated business structure through these initiatives. In January 2024, we invested 200 billion yen for a 20% stake in Elk Valley Resources, a Canadian coal mine, and in April 2023, we invested in Nippon Steel Trading Co., Ltd. (approximately 137 billion yen), which became our consolidated subsidiary and was delisted from the stock market.

Meantime, in view of boosting overseas steel business profit and reallocating management resources, we have almost completed asset sale of and withdrawal from businesses that could not move into the black, businesses that had completed their roles, and businesses that lost synergies. We intend to continue improving our asset portfolio.

As for business investment, we set a hurdle rate for the IRR that exceeds the cost of capital, even with consideration of diverse risks, and runs a PDCA system, which enables us to track the execution status and make judgment on restructuring, withdrawal, and other options, as needed.



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Business investment management system

Nippon Steel has embedded in its business investment procedures a management system with a clearly-defined PDCA cycle, in order to (1) make appropriate decisions on business investments, such as for founding and equity investing in companies in Japan and overseas, as well as for M&A deals, (2) identify early and solve promptly issues during the stage of execution of those deals, and (3) share and preserve such know-how within the organization.

Deal finding and planning

1. Discussion and decision making

Execution

2.Execution evaluation

Start-up and progress following

Achievement report (interim reporting)

Evaluation of soundness

Criteria for judgment

Judgment on business continuity

1.Discussion and decision making

Proposed projects are considered in terms of significance to business strategy, market growth, competitive landscape, and individual risks (country, partner, foreign exchange, and other risks). In the case of M&A deals, based on due diligence, their risks are to be understood and appropriately hedged. After such a procedure and considered risk scenarios, the certainty of generating return that matches investment is confirmed.

2.Execution evaluation

Start-up and progress following

For about three years since start-up, KPIs for operation, production, shipment, financials, and other items are set up for each project, and the corporate division follows its performance relative to the plan once every three months, and reports to the Investment and Loan Committee and the Corporate Policy Committee. The status of particularly important projects is reported to the Board of Directors once a year.

Achievement report

About three years from the start-up, the entire processes from decision making to full-scale operation are reviewed and reported to the Investment and Loan Committee and the Corporate Policy Committee. The status of particularly important projects is reported to the Board of Directors once a year.

Investment and Loan Committee

The Investment and Loan Committee discusses projects from a professional perspective of each corporate unit and division.
The business investment projects are submitted to the Corporate Policy Committee after being discussed at the Investment and Loan Committee. Especially important projects are then submitted to the Board of Directors.

Evaluation of soundness

All Group companies in which Nippon Steel has made direct investment are evaluated in terms of financial soundness, based on their financial data, and the results are reported at the Corporate Policy Committee every half year. Those companies in which Nippon Steel has made indirect investment are similarly evaluated but only once a year. They are also reported to the Board of Directors once a year.

<Decision on exit or restructuring>

Concerning group companies that are determined not contributing to raise the company’s corporate value in terms of financial soundness based on quantitative standards (future cash flow, financial position) and qualitative standards (sustainability, compliance, etc.), the Investment and Loan Committee discusses whether to continue business and the status of particularly important project are to be approved by, or reported to, the Corporate Policy Committee to determine whether to exit (or be reorganized) or restructure.



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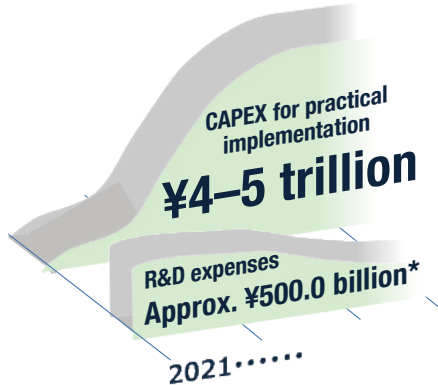
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3 Investment for achieving carbon neutrality

Nippon Steel is taking a multi-track approach of making the steelmaking process carbon neutral through the development of three breakthrough technologies and the implementation of CCUS. In responding to economic conditions including those related to energy and raw materials, we seek to achieve optimal process structure. Developing the three breakthrough technologies and implementing equipment will require huge expenditures. We currently expect a need for 500 billion yen in research and development and 4 to 5 trillion yen in capital expenditures up to 2050. The breakdown of investments will be clarified in the future, depending on the state of future technological developments and economic conditions such as energy and raw materials.

As the transition to a carbon-neutral steelmaking process will improve neither product functionality nor its quality, we critically need comprehensive and effective government support and the establishment of a green steel market that transforms environmental value (CO₂ reduction) to economic value (to be passed on to the sales price) for us to invest in equipment implementation aimed at CO₂ reduction. Under the premise of these conditions being prepared and the predictability of investment recovery being ensured, we are taking up the challenge of materializing economically viable measures.

[Conceptual illustration of investments required to achieve carbon neutrality at Nippon Steel]



* Minimum level estimated to be required for the time being

4 Investment in human capital

Amid intensifying recruitment competition due to a declining population, diversification of individual career perspectives, and increasing mobility in the labor market, we need to secure human resources and promote their active participation in our business to advance our diverse management strategies toward realizing the 100 Million Tons and 1 Trillion Yen Vision, and we have positioned it as one of the most important management issues.

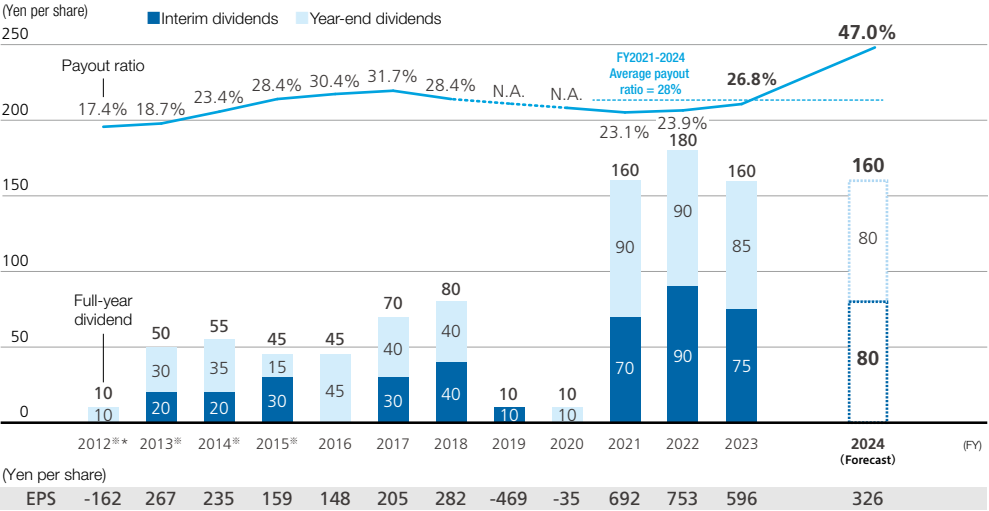
In April 2024, as an investment in human resources for our productivity enhancement, we implemented a major revision of the employee benefit plan, with the objective of providing our employees with top-class benefits in the domestic manufacturing industry. The list of actions we will continue to implement includes: diverse measures for hiring, support for balancing work and personal life, work, and human resource development, etc. in order to secure and promote human resources, as well as PR measures to raise favorable recognition of the company.

5 Return to shareholders

With regard to shareholder return, we retain our current dividend distribution policy with the target range of around 30% as the payout ratio to consolidated net profit. This shall be based on the allocation of profits in accordance with operating and financial performance, and by taking into account funds needed for investment in improving corporate value, and other factors including performance forecasts and consolidated and non-consolidated financial positions.

As a result of building a revenue base that secures stable underlying business profit of 600 billion yen or higher regardless of the external environment, underlying business profit has continuously remained at a high level, exceeding 600 billion yen from fiscal 2021 onward. In contrast, the net profit (consol.) has fluctuated significantly due to a huge amount of one-off unrealized gains (losses) such as inventory valuation difference and foreign exchange valuation difference and losses on reorganization as individual disclosure items, and others. Against this backdrop, we are managing our affairs based on the above-mentioned dividend policy while also taking into consideration the continuous high level of shareholder returns. In fiscal 2021 and 2022, when large amounts of inventory valuation gains and foreign exchange valuation gains were recorded, and in fiscal 2023, when earnings were sharply revised upward toward the end of the fiscal year, we adopted a somewhat restrained payout ratio compared to the dividend guideline. In fiscal 2024, profit is expected to decrease compared to fiscal 2023 due to factors such as effects of the transition phase of growth strategy amid a sluggish business environment and the large losses on reorganization associated with the structural reforms. Despite this, we intend to maintain the same level of dividend per share as in the previous year at 160 yen per share, in light of anticipating a recovery in underlying business profit and almost eliminating losses on reorganization in fiscal 2025. We will continue to aim for a high level of shareholder returns.

[Dividend Trends]



* FY2012: Dividends for the second half
* FY2012-2015: Dividends prior to the reverse stock split are adjusted in accordance with the assumptions following the completion of the reverse stock split (from 10 shares to 1 share on October 1, 2015).



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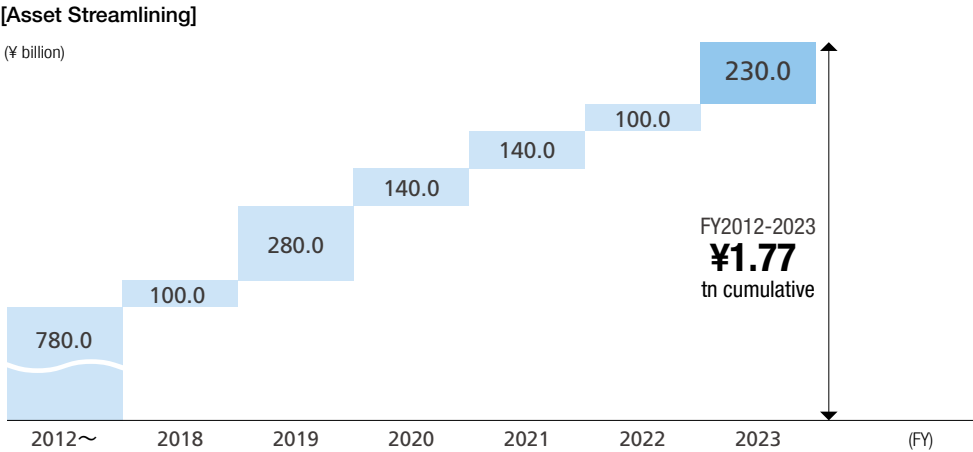
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6 Asset streamlining

Nippon Steel has reduced assets by a cumulative total of 1.77 trillion yen over the 12 years to FY2023. This was achieved through sales of strategic shareholdings and properties, inventory reduction, and improved efficiency in managing consolidated funds. Going forward we will continue asset streamlining.



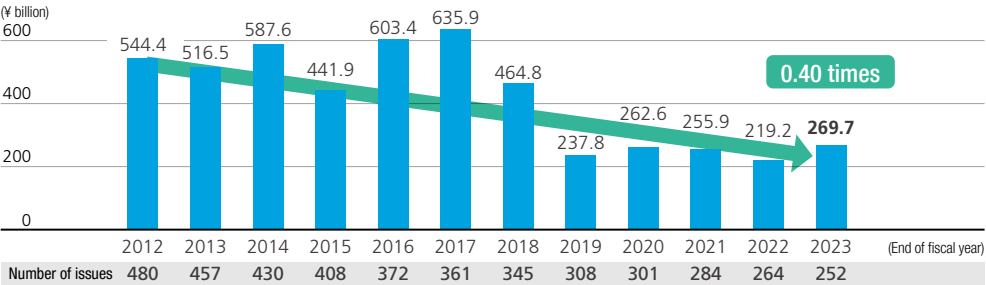
Asset streamlining by disposing of strategic shareholdings

Strategic shareholdings are seen as contributing to maintenance and strengthening of the business foundation by means such as the business and alliance relationships between Nippon Steel and the investees, enhancing the profitability of both parties, and thereby contributing to sustainable growth and improving medium to long-term corporate value of Nippon Steel and the Group. However, we dispose of holdings of companies, when we confirmed, based on sufficient dialogues with them, that the above objectives could be achieved without holding their shares.

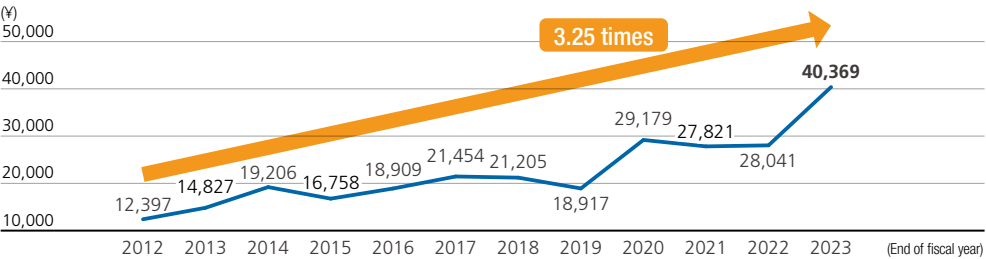
Over the 11-year period from March 2013 to March 2024, we sold and reduced our strategic shareholdings by 60%. Considering the fact that the Nikkei Stock Average has increased 3.25 times during that period, this can be considered as equivalent to a reduction of 85%* or more.

*Balance at the end of FY2023: 269.7 billion yen / (Balance at the end of FY2012: 544.4 billion yen × Growth rate of the Nikkei Stock Average: 3.256 times) = 15% reduction, or around 85% reduction in real terms

[Total value of strategic shareholdings on the balance sheet]



[Nikkei Stock Average]





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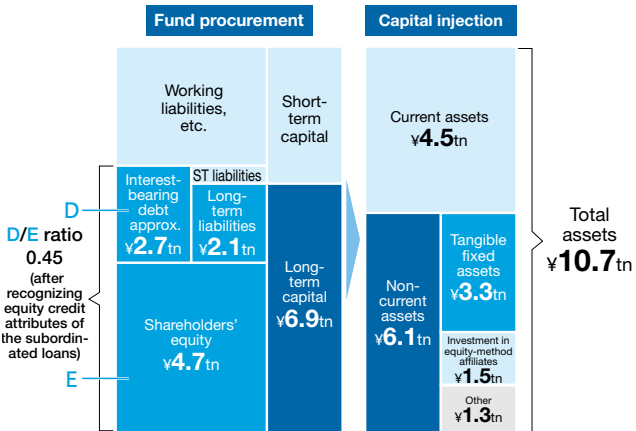
7 Financial base

The steel industry is a gigantic equipment-based industry, which uses an immense amount of fixed assets, including machinery equipment and other tangible fixed assets, in its business. Procurement for fixed assets is financed by shareholders' equity and long-term borrowings, ensuring financial stability.

Nippon Steel's basic financial policy is to actively make growth investments and to secure a sound financial base at the same time. Our target is to keep the D/E ratio at 0.7 or lower even if the business environment further deteriorates. Moreover, our ultimate target is the D/E ratio of 0.5, a level that allows us to maintain the A international credit rating. The status of the credit ratings obtained as of July 2024 is shown in the table.

We are committed to secure both solid financial strength and financial flexibility to enable confident, flexible execution of the following investments: 1) growth investment in Japan and overseas; 2) in carbon neutral-related facilities investment from fiscal 2025; and 3) investment in initiatives to achieve 100 million tons of global crude steel production and to evolve into a further vertically- and horizontally-integrated business structure.

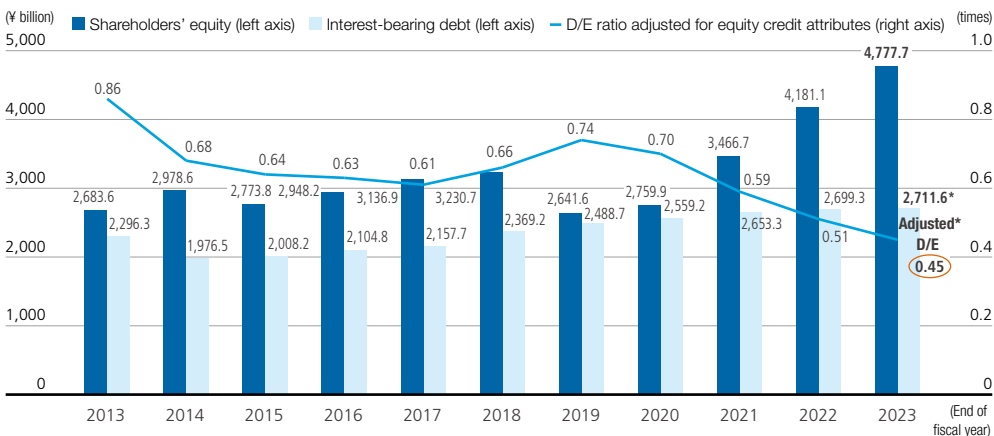
[Nippon Steel's asset and liability management (March 31, 2024)]



Rating agency		Nippon Steel's rating
Japan	R&I	A+ (Positive)
	JCR	AA (Stable)
Overseas	Moody's	Baa2 (Stable)
	S&P	BBB+ (Positive)

(as of July 2024)

[Consolidated shareholders' equity, Interest-bearing debt, and D/E ratio]



*Impact of consolidation of Nippon Steel Trading: +430 billion yen in interest-bearing debt and +0.10 in D/E ratio

8 Fund procurement

Nippon Steel is currently undertaking the acquisition of U. S. Steel, which will be paid approximately \$1.4 billion at the time of closing. We have already received commitment letters of bridge financing from Japanese financial institutions to finance the acquisition. If all funds for the acquisition will be procured through the bridge loan, the D/E ratio immediately after the acquisition is expected to deteriorate from the current 0.5 level to around 0.9. However, in June 2024, we already had raised part of the acquisition funds in the form of hybrid funds of 250 billion yen, 50% of which is deemed as equity by rating agencies. In addition, our existing convertible bonds of 300 billion yen issued in 2021 will be converted to equity due to the arrival of their maturity date or the exercise of the soft call. These factors are estimated to temporarily raise the post-acquisition D/E ratio to around 0.8. Further, mainly by permanent financing by optimal means, the D/E ratio is expected to recover to the 0.7 level by the end of fiscal 2024. Moreover, we will aim to swiftly restore the D/E ratio to the target level of our Medium- to Longer-term Management Plan, 0.7 or lower, with a contribution from our consolidated profit and cash flow including U. S. Steel, permanent financing by optimal means, and other measures.



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We are aiming for “becoming the best steelmaker with world-leading capabilities.” We believe that an objective indicator of being No. 1 in overall strength is becoming No. 1 in market capitalization, which summarizes the market’s assessment of our performance. However, we do not hold the top position in terms of market capitalization at present. In addition, our PBR remains below 1.0.

We believe that our stock’s PBR has remained below 1.0 mainly because of two reasons:

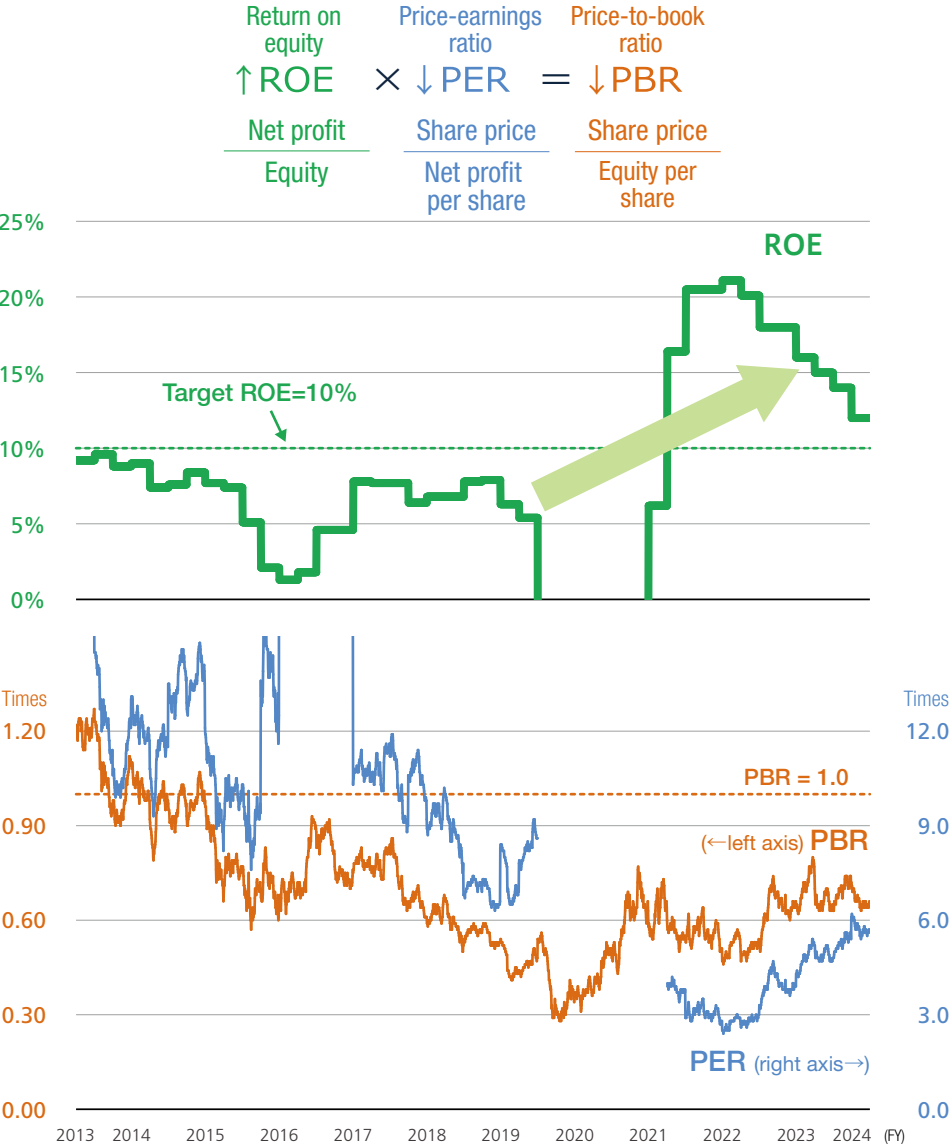
1) it has taken time for the market to appreciate that Nippon Steel has established a profit structure that secures stable, high-level earnings;

2) the market is not yet fully convinced whether Nippon Steel's Carbon Neutral Vision is realistic and economically viable.

Nippon Steel has established an earnings base to surely generates a steady underlying consolidated business profit of more than 600 billion yen per year, driven by our efforts for structural reform of the domestic steel business and the deepening and expansion of overseas operations. We are now advancing to a new phase toward our vision of 100 million tons and 1 trillion yen. We are also committed to advancing breakthrough technologies for achieving carbon neutrality ahead of our counterparts in Europe, the U.S., China, and other countries. This requires significant R&D expenditures and investments in equipment acquisition. We will make such investment decisions only when the investment return becomes predictable as a consequence of securing comprehensive and effective government support and after a green steel market that transforms environmental value (CO2 reduction) to economic value (to be passed on to the sales price) is established and active.

We intend to more effectively disclose and communicate our management strategy. In addition, we will also continue efforts to promote the understanding of shareholders and investors of our dual goals of “delivering robust and sustainable earnings with continued growth” and “ensuring the practicality and economic viability of our carbon-neutral vision.” By doing so, our ultimate goal is to become the world’s leading steelmaker in terms of market capitalization.

[Stock price related indices]



* The ROE, PER, and PBR figures are based on average net assets and average net income of the last four quaters



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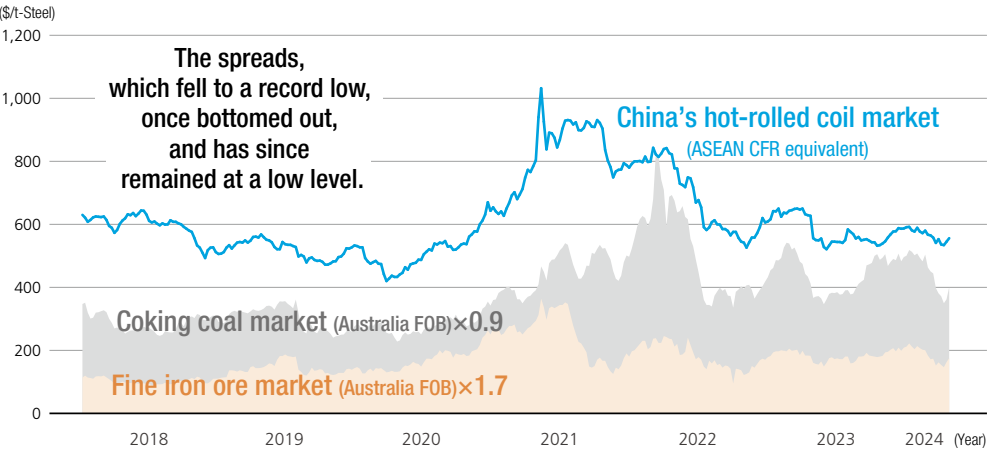
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Nippon Steel reached a record high in underlying business profit in fiscal 2023, for the third consecutive year, amid the unprecedented harsh environment. Overcoming the transitional period of our growth strategy measures in fiscal 2024, we aim to achieve 1 trillion yen in profit level from fiscal 2025 onward.

An unprecedented harsh environment

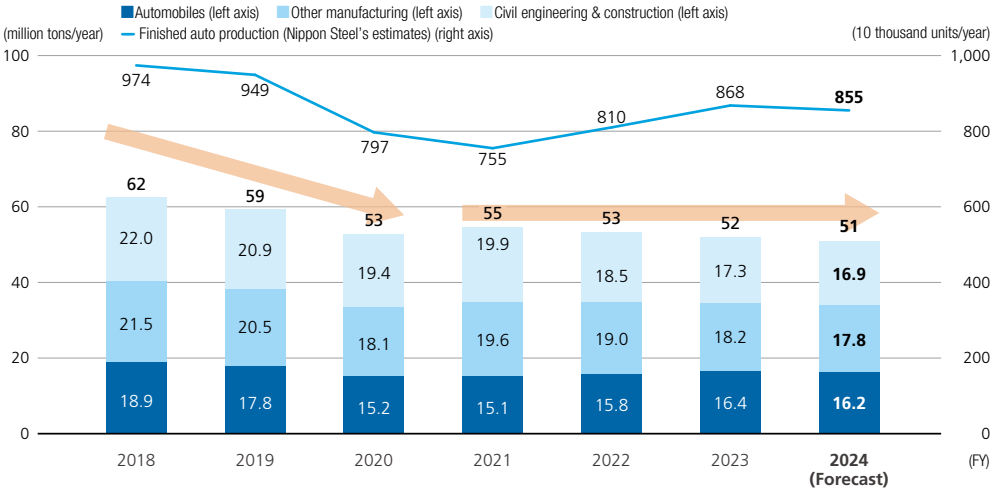
In fiscal 2023, the global economy increasingly showed signs of weakness due to the progressive inflation stemming from the situation in Ukraine and the monetary tightening in Europe and the United States. Since the second half of fiscal 2023, the Asian steel market has experienced an unprecedented harsh environment, with spreads in the Asian commodity-grade steel market at record lows. Despite sluggish demand for steel products in China, high levels of production have continued, and the iron ore market has remained high. Large amounts of steel products that could not be sold domestically have been exported to the Asian market, resulting in a sluggish steel market there. In India, on the back of steady growth in steel demand and production, the coal market remains at a high level as coal is not internally sourced and is bought in the spot market. As a result, a decoupling of high-priced raw materials and low-priced steel products has emerged.

[Spreads in Overseas Markets]



In Japan, too, demand for steel products in the civil engineering, construction, and manufacturing industries is sluggish, and the anticipated increase in demand in the automobile industry, driven by normalization of the supply chain, has been delayed due to its quality problems. Domestic demand for steel products is therefore expected to decrease for the third consecutive year from fiscal 2021 to 2024.

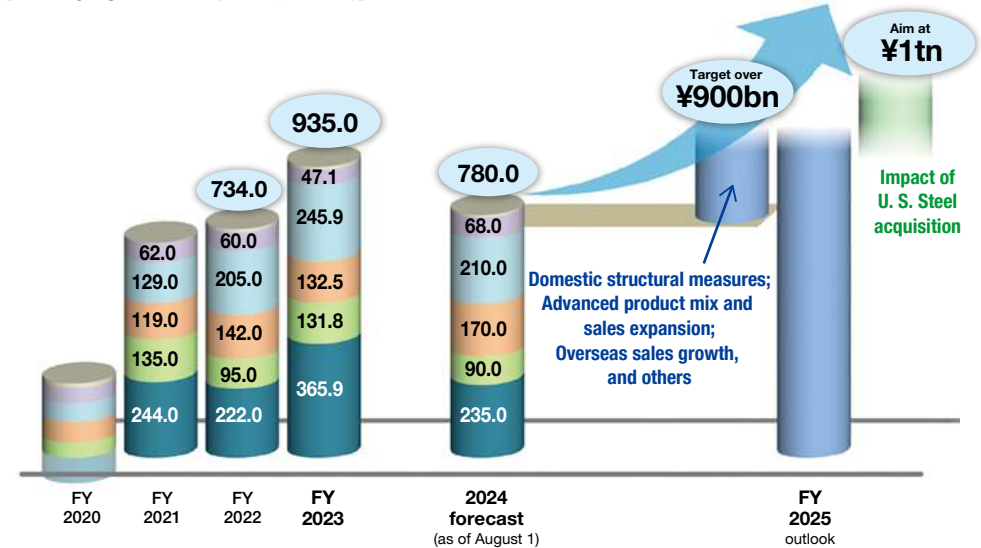
[Domestic steel demand]





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[Underlying business profit (consol.)]



Operating results in FY2023

Despite the harsh business environment, underlying business profit (consol.) in fiscal 2023 reached a record high for the third consecutive year, achieving 935 billion yen. This is proof that the Company has established a strong profit structure that can stably secure earnings of 600 billion yen or higher regardless of the external environment thanks of our efforts of the past four years: 1) drastic improvement of the break-even point of the domestic steel business through the production facilities structural measures, improved spreads of contract-based sales, and the sophisticated product mix; 2) deepening and expansion of overseas operations, and 3) shifting to a further vertically- and horizontally-integrated business structure. In addition, more stabilized operations resulted in cost reductions, contributing to earnings. One-off positive factors in Japan and overseas also boosted earnings.

Forecast for FY2024

We expect the unprecedented harsh environment to continue through fiscal 2024. Concerning contract-based sales, which account for more than half of our steel product shipments, our policy is twofold: 1) a fair allocation of external cost burden across the entire supply chain; and 2) fair prices based on the value of our products and solutions. We will continue to maintain and secure an appropriate spread level. However, due in part to the current sluggish domestic demand, we have no choice but to rely on exports of commodity-grade steel products, and this field will also be affected by the severe environment in the Asian market.

We have actually assumed the current harsh situation in formulating the Medium- to Long-term Management Plan, and have implemented various growth strategies, such as the production facilities' structural measures and the deepening and expansion of overseas businesses. A tricky thing is that fiscal 2024 falls into a transitional period of not yet showing the effects of these strategies. Profit in fiscal 2024 is therefore expected to decrease temporarily due to the deterioration of the environment and the absence of one-time profit, which was recorded in fiscal 2023.

Actions we are taking include: 1) to secure stable production and shipment while controlling the cost disadvantages of low production, 2) to improve cost competitiveness including variable and fixed costs through further improvement of performance specifications, thorough productivity improvement, and operational efficiency, 3) to appropriately reflect increases in logistic, labor and other costs in sales prices of steel product, and 4) to promptly and appropriately respond to changes in the supply-demand environment. By doing so, we expect to steadily secure underlying business profit of 780 billion yen and ambitiously strive for an upward revision in fiscal 2024.

Outlook for FY2025

By fiscal 2025, the ongoing construction and the implementation of the facility measures will be completed, and we will start to see the effects of the following growth strategies:

- 1) Production facilities structural measures (Suspension of Kashima One series of upstream facilities, large shape mill and steel plate mill, etc.)
- 2) More sophisticated order mix (sales expansion of high value-added products, including the effect of investment in measures to improve the quality of electrical steel sheet capacity)
- 3) Growth of overseas businesses (production volume growth of AM/NS India, etc.)
- 4) Cost improvement

We will implement these measures as set in the Medium- to Long-term Management Plan without delay and intend to steadily demonstrate their effects, even if the current harsh environment continues. By these measures we anticipate securing underlying business profit of 900 billion yen or more in fiscal 2025, the final year of the Management Plan. Once the acquisition of U. S. Steel is completed and its profits are added, our consolidated underlying business profit will be in the range of more than 1 trillion yen.

As for individual disclosure items not included in business profit, losses for facility suspension (associated with the production facilities structural measures), were recorded in fiscal 2023 and are expected in fiscal 2024, but are most likely to be small in fiscal 2025. Including this factor, net profit is expected to recovery significantly in fiscal 2025.

Financial Strategy

Financial Strategy

Virtuous cash cycle

1. Capital expenditures
2. Business investment
3. Investment for achieving carbon neutrality
4. Investment in human capital
5. Return to shareholders
6. Asset streamlining
7. Financial base
8. Fund procurement

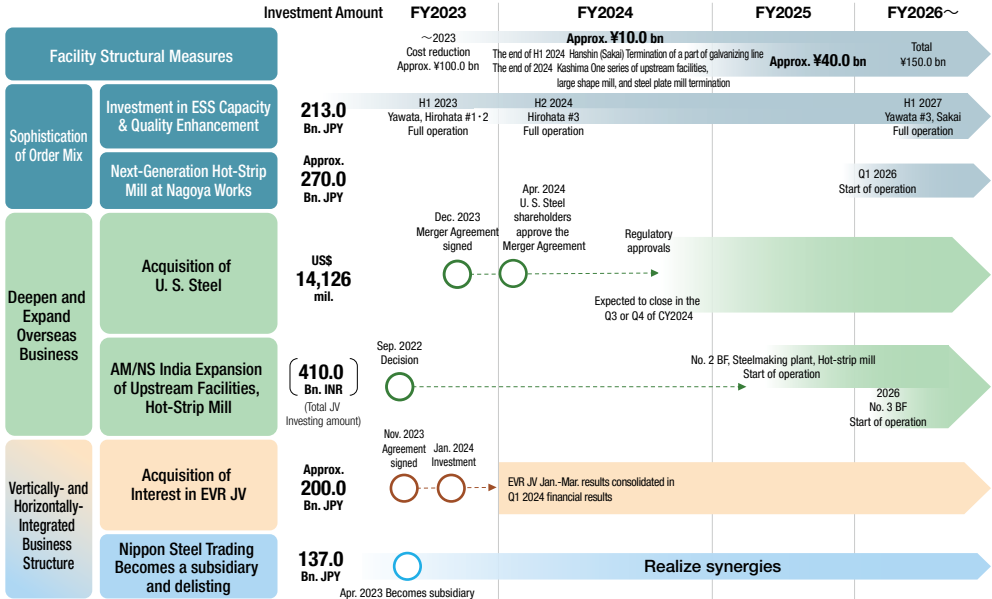
Initiatives to raise share price indicators

> FY2023 Operating Results, FY2024 Forecasts and FY2025 Outlook



FY2023 Operating Results, FY2024 Forecasts and FY2025 Outlook

[Roadmap of Growth Strategy]



[Overview of Profit]

	August 1, 2024		
(Billion yen/year)	FY2022 results	FY2023 results	FY2024 forecast
Crude steel production (non-consol., 10,000 tons)	3,425	3,499	Approx. 3,450
Steel product shipment (non-consol., 10,000 tons)	3,147	3,203	Approx. 3,200
Yen/\$ exchange rate	135	144	Approx. 153
Domestic steel business	222.0	365.9	235.0
Overseas steel business	95.0	131.8	90.0
Raw material business	142.0	132.5	170.0
Other group companies	205.0	245.8	210.0
Three non-steel segments	60.0	47.1	68.0
Underlying business profit excl. inventory valuation	734.0	935.0 Record-high	780.0
Inventory valuation differences, etc.	182.4	▲65.5	▲80.0
Consol. business profit	916.4 Record-high	869.6	700.0
ROS	11.5%	9.8%	8.0%
Losses on reorganization	▲32.8	▲90.9	▲130.0
Net profit*	694.0 Record-high	549.3	340.0

*Profit for the year attributable to owners of parent

FY2025 outlook

Target over ¥900 bn

+ Impact of U. S. Steel acquisition

* Impact of U. S. Steel acquisition
U. S. Steel earnings before tax
CY2023 actual: US\$1,047 mil/yr (¥152.0 bn/yr)
CY2021-2023 average: US\$2,883 mil/yr (¥418.0 bn/yr)
(@ ¥145/US\$)

Drastic decline in losses on reorganization

Improvement in net profit

Currency sensitivity

The impact of exchange rate fluctuation on the consolidated financial results of Nippon Steel as a whole is insignificant.

In the domestic steel business, the proportion of foreign currency-denominated costs to overall steel costs has risen due to the rise in raw material and fuel prices in recent years, and the foreign currency balance is in excess of imports. This means that the stronger yen has a positive impact to the performance of the domestic steel business.

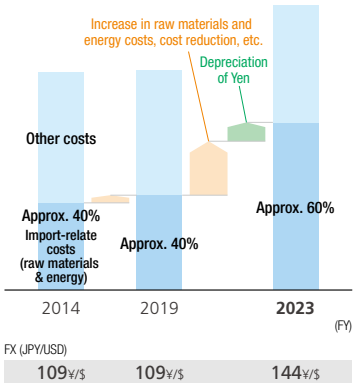
A majority of the overseas steel business and the raw materials business are denominated in U.S. dollars, and the weaker yen has a positive impact on the performance of these businesses, while the stronger yen has a negative impact on it due to differences in the translation of profits. As for items not incorporated in underlying business profit, the weaker yen has a positive impact on inventory valuation difference and foreign currency translation difference.

Overall, the exchange rates tend to be almost neutral to Nippon Steel's overall consolidated business profit, with the weaker yen having a slight positive impact.

[Currency fluctuation sensitivity]

	Impact from Yen depreciation	
Domestic Steel Business	Negative	Excess of import to export Q1 FY2024 0.7 bn. USD/Q (import 4.0 – export 3.3)
Overseas Steel Business	Positive	Increase in profit translated into Yen basis
Raw Material business	Positive	
Other Group Companies	Positive	Excess in export, gain in foreign asset valuation
Three Non-Steel Segments	Positive	
Underlying consol. business P/L	Negative	
Inventory valuation Non-operating P/L	Positive	Gain in valuation for imported materials, gain in foreign asset valuation
Consol. business P/L	Neutral or slightly positive	

Cf. Rough figure for our steel manufacturing cost structure



Financial Strategy

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Virtuous cash cycle

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Initiatives to raise share price indicators

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Materiality of Sustainability Issues

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Environmental Risk Management

Responding to Climate Change

Creation of a Circular Economy

Biodiversity Conservation and Nature
Positive

Safety

Disaster Prevention

Quality Management

Production and Supply Chain Management

Human Resources Development

Diversity & Inclusion

Respect for Human Rights

Coexistence with Communities

Sustainability

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Sustainability

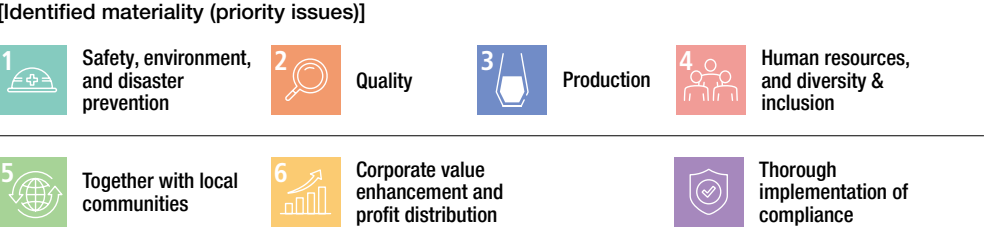
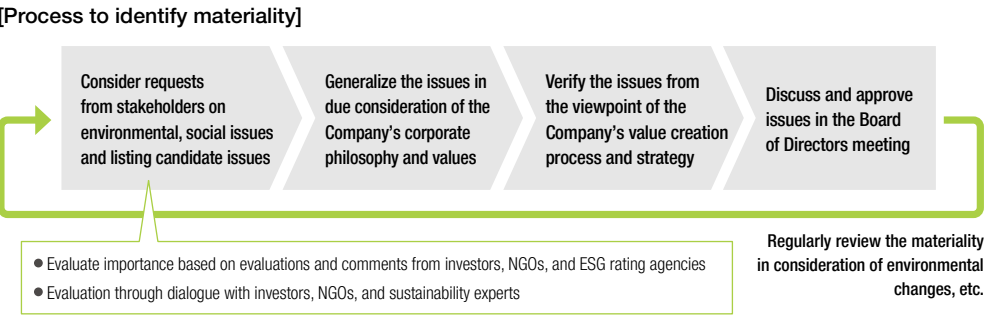
> Materiality of Sustainability Issues

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Materiality of Sustainability Issues

Nippon Steel recognizes that sustainability initiatives are one of the important issues and form the base that supports the very existence and growth of the Company.

Among the initiatives, the issues to be focused by taking into account our shareholders’ expectations and our Corporate Philosophy, Values, and growth strategy have been identified as materiality (priority issues).



Nippon Steel's Materiality

In consideration of our stakeholders’ expectations, we have defined the materiality based on the following principles. We believe that tackling these materiality issues will contribute to the achievement of the United Nations’ 2030 Agenda for Sustainable Development, featuring Sustainable Development Goals (SDGs).

Materiality with due consideration of the corporate philosophy and priorities in manufacturing

Our Corporate Philosophy (Our Values) states: “The Nippon Steel Corporation Group will pursue world-leading technologies and manufacturing capabilities, and contribute to society by providing excellent products and services.”

Concerning “provision of excellent products and services,” our critical mission as a responsible manufacturing company is to reliably produce and deliver quality products that satisfy customers. Needless to say, the prerequisites to enable this mission include “safety, environment, and disaster prevention” as well as thorough compliance to rules and regulations.

The “world-leading technologies and manufacturing capabilities” are realized by our human capital. Securing and fostering of outstanding personnel is an important challenge to be overcome in order to strengthen overall manufacturing capabilities. We firmly believe that development of human resources and diversity & inclusion, as well as respect for human rights, are the basics for our employees to work vigorously. With regard to the relationship with society, we must maintain good relationship with the community where our steelworks or other facilities are located. This is indispensable for us to continue operating business in the future. We are pledged to operate in an environmentally-friendly manner and maintain good communication with local communities, as a corporate citizen.

Materiality with due consideration of the Company's value creating process and potential changes in business environment

A base of our value creation process is to use a diverse range of financial/ non-financial assets and competitive advantages, and to provide products and solutions to customers. In order to reproduce such processes, stable production and continual profit generation are indispensable.

In addition, having positioned environmental matters as priority issues that underlie our corporate management, we have pledged to contribute to the creation of a society oriented toward environmental conservation and with low environmental impact. We have also been engaged in building of a circular economy through reduction of CO2 emissions by the three “Eco” initiatives and innovative technology development, and recycling of industrial waste (such as plastics).

Concerning the climate change problems that affect the survival of humanity, we are making efforts aimed at carbon neutrality by 2050 from two aspects: Provision of high-performance steel products and solutions to reduce CO2 emission of the society as a whole, and breakthrough technology development to decarbonize steelmaking processes.

Corporate value enhancement and profit distribution

We are committed to continuing operations as a sustainably growing company by generating profit and raising corporate value from business activities, including sustainability initiatives. We will also contribute to society by providing excellent products and services, and distributing profit to employees, government, shareholders, and other stakeholders.

Thorough compliance

As a responsible leading company, we thoroughly adhere to laws and regulations, which is fundamental to all of our activities. It should be achieved by our independent efforts, based on our corporate philosophy, value, code of conduct and alike.



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Materiality of Sustainability Issues

Materiality, KPIs and major initiatives in FY2023



Safety, environment, and disaster prevention

Materiality		Target and KPI	Main Initiatives and Achievements in FY2023 (including some results in 2023)	
1	Safety and health	<div>● Accident frequency rate of 0.10 or less (2023)</div> <div>● Zero fatal accident</div>	<div>● Deepened education on compliance with rules and promoted human resource development to build a culture of safety.</div> <div>● Continued equipment measures based on risk assessment.</div> <div>● Reinforced the system to smoothly carry out the basic cycle of safety activities (completed acquisition of ISO 45001 certification at all works).</div> <div>● Accident frequency rate 0.08 (2023)</div> <div>● Number of fatal accidents 1</div>	
2	① Promotion of climate change measures	<div>[Promotion of the Carbon Neutral Vision 2050]</div> <div>P.36</div> <div>● Target in 2030: 30% reduction in CO₂ emissions (compared to 2013)</div> <div>● Vision for 2050: Carbon neutral</div>	<div>● [Hydrogen injection into in blast furnaces] Confirmed the world's highest level of 33% CO₂ emissions reduction in the Super COURSE50 test furnace.</div> <div>● [Hydrogen direct reduction of iron (DRI)] [High-grade steel production in large size EAFs] Established HyDreams™, a base for integrated development of large size EAF and DRI production at Hasaki R&D Center, promoting the construction of test electric furnace and shaft furnace.</div> <div>● [High-grade steel production in large size EAFs] Started an examination of conversion from the BF steelmaking process to the EAF steelmaking process, with the Kyushu Works Yawata Area and the Setouchi Works Hirohata Area as candidate sites.</div> <div>● [CCUS] Participated in a survey and study of basic design of three advanced CCS projects for Japan Organization for Metals and Energy Security (JOGMEC).</div> <div>● NSCarbolex Neutral Inquiries and adoption expanded in various areas including the private sector (domestic/overseas construction, manufacturing) and the public sector (public civil engineering, etc.)</div>	
		<div>[Implementation of “Eco Process”]</div> <div>P.93</div> <div>● Maintaining high-level effective use of energy</div>	<div>● Effective use of by-product gas (coke oven gas, blast furnace gas etc.) and waste heat</div> <div>● Use of by-product gas 100%</div> <div>● Use of waste heat in steam generation 75%</div> <div>● In-house generated energy use in in-house power generation 70%</div>	
		<div>● Promotion of adopting advanced energy-saving technology</div>	<div>● Adoption of high-efficiency power generation equipment and oxygen plant: regeneration burner in reheating furnace</div> <div>● Investment cost for energy-saving ¥9.2 bn</div>	
		<div>[Enhancement of “Eco Products”]</div> <div>P.43, P.152</div> <div>● Supply of high-performance steel products to help reduce CO₂ emissions through use of their end products</div>	<div>● NSCarbolex Solution: Disclosed the applicable product/technology line-ups on a dedicated website.</div> <div>● Acquired the SuMPO EPD (former Eco-Leaf) environmental label.</div> <div>● Expanded to over 100 products and technologies</div> <div>● Acquired over 60 labels that cover almost all the products</div>	
	② Contribution to creation of a circular economy	<div>[Contribute with “Eco Solutions”]</div> <div>P.87</div> <div>● Transfer and dissemination of the world-leading energy-saving technology to help CO₂ emission reduction globally</div>	<div>● Growing cumulative CDQ delivery record by Nippon Steel Engineering in the Group</div> <div>● 143 CDQ cumulative units (FY2022) (contributing to 30.44 mn t-CO₂ reduction, FY2021)</div>	
		<div>[Realization of zero emissions within the Company]</div> <div>P.91</div> <div>● Reduction in final disposal amount 263,000 tons or less (FY2025 target)</div>	<div>● Promotion of recycling of by-products (slag, dust, sludge, etc.) in and out of the Company</div> <div>● Final waste disposal: 282,000 tons</div>	
		<div>[Realization of recycling of waste generated in society]</div> <div>P.92</div> <div>● Establishment of a waste plastics recycling system to expand its collection volume</div>	<div>● Aggressive promotion of recycling treatment, according to the Chemical Recycling Act</div> <div>● Packaging/container plastic waste treatment 180,000 tons (equivalent to 30% of Japan's total plastic waste)</div>	
	③ Conservation of biodiversity and nature positive	<div>[Contribution to the conservation of biodiversity and nature positive]</div> <div>P.95</div> <div>● Promoted activities aimed at achieving the 30by30 biodiversity target</div>	<div>● Chita Peninsula Green Belt, in which Nippon Steel participated, was certified as a site in harmony with nature.</div> <div>● Promoted the Creation of Hometown Forests at steelworks</div> <div>● Conducted activities of the Creation of Sea Forests</div> <div>● Certified in October 2023</div> <div>● Greenery space: 838 ha (decreased mainly due to the entire closure of the Kure Area)</div> <div>● Creation of Sea Forests at 56 spots in total (+12 spots from the previous year)</div>	



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Materiality of Sustainability Issues

Materiality, KPIs and major initiatives in FY2023



Safety, environment, and disaster prevention

Materiality		Target and KPI	Main Initiatives and Achievements in FY2023 (including some results in 2023)	
2 Environment	④ Promotion of environmental risk management  P.79	[Protection of the air environment] ● Maintaining low-level emissions of NOx and SOx	● Installment of equipment that reduces SOx and NOx emissions; shifting to low-sulfur fuel; adoption of low NOx regenerating burners	● SOx: 11 mn Nm ³ ● NOx: 23 mn Nm ³
		● Maintaining of lower discharge levels than voluntary targets in chemical substances ● Emission of VOC (Volatile Organic Compounds) 1,106 tons/year (down 30% vs. FY2000) ● Emission of benzene 172 tons/year (voluntary target, along with the government target)	● Continual efforts based on the voluntary reduction plan	● VOC: 509 tons/year ● Benzene: 69 tons/year
		[Water environment preservation] ● Recycling of water; high-level stable use of recycled water	● Water treatment, recycling and reuse of freshwater used by the Company	● Use of recycled water: app. 90 %
3 Disaster prevention  P.103		[Elimination of disaster risks and group-wide sharing of effective measures] ● Zero serious disaster-related accident (2023)	● Promoted activities to prevent recurrence and prevention of disaster-related accidents based on risk assessment ● Promoted initial response training aimed at minimizing damage when a risk occurs ● Implemented various monitoring (audits) as a survey of disaster prevention activities. Evaluation of disaster prevention activities through third-party monitoring, hearings from head office management, and self-monitoring by steelworks disaster prevention managers	● Serious disaster-related accidents: 1 (2023)



Quality

Materiality		Target and KPI	Main Initiatives and Achievements in FY2023	
1 Quality control and guarantee P.104		<ul style="list-style-type: none">Systemization and automation aimed at more credibility in testing and inspection	<ul style="list-style-type: none">Continuing a shift from manual data input to automatic data input as a measure to prevent input errors and falsification of pre-shipment judgment data	
2 Research and development and intellectual property investment/utilization P.47		<ul style="list-style-type: none">Promotion of strategic research and development aimed at sustainable business growthRespect for intellectual property and enhancement of its strategic protection and utilization	<ul style="list-style-type: none">Actively promoted research and development related to priority issues such as product sophistication, process efficiency improvement, and the development of carbon-neutral-oriented innovative processesPromoted utilizing intellectual property by strengthening patent applications related to priority issues, response to infringement of patent rights, technical tie-ups, and other means	<ul style="list-style-type: none">R&D expenses: ¥72.7 bn (consolidated)The number of patents held: app. 33,000 (15,000 in Japan and 18,000 overseas)
3 Solution that result in customer satisfaction P.160		<ul style="list-style-type: none">Number of awards from customers, government, and institutions	<ul style="list-style-type: none">The 70th Okochi Memorial Production PrizeThe 56th Ichimura Prize in Industry against Global Warming for Distinguished AchievementThe 2024 Commendation for Science and Technology by the Minister of MEXTThe 2024 National Commendation for Invention	<ul style="list-style-type: none">Number of awards from customers, government, and institutions: 10



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Materiality of Sustainability Issues

Materiality, KPIs and major initiatives in FY2023



Production

Materiality	Target and KPI	Main Initiatives and Achievements in FY2023
<div>1</div> <div>Stable production and supply</div> <div> P.105</div>	<ul style="list-style-type: none">Initiatives for more stable production and supply (hardware and software)	<ul style="list-style-type: none">Enhancement of the stable supply system by promoting measures to expand the electrical steel sheet capacity and improve quality in Setouchi Works Hirohata Area and Kyushu Works Yawata AreaStandardization of veterans' operational skills and extended use of expertsUse of IoT and AI for operational support, improved efficiency of facility inspection and operation monitoring, and reinforcement of predictive monitoring



Human resources, and diversity & inclusion

Materiality	Target and KPI	Main Initiatives and Achievements in FY2023	
<div>1</div> <div>Human resource development</div> <div> P.110</div>	<ul style="list-style-type: none">Promotion of measures to develop human resources	<ul style="list-style-type: none">Promoted various measures to maximize human resources to enhance their productivity and technological advancement	<ul style="list-style-type: none">Hours of training and education: 990,000 hours/year (35 hours/person, year)
<div>2</div> <div>Diversity & inclusion</div> <div> P.107</div>	<ul style="list-style-type: none">The number of female employees in management positions: at least 2 times, (vs. 36 in FY2020), and 3 times as target in 2025; at least 4 times, and 7 times as target by 2030The ratio of paid holidays taken: 75% or higherWellness management aimed at maximizing people's ability up to the age of 65, and support to enhance mental and physical health	<ul style="list-style-type: none">Continued to actively recruit women, implement measures to improve the retention rate, support career development and work-life balance, and provide education for supervisorsContinued to expand the system and improve the environment to realize flexible work styles and holidaysContinued various initiatives to promote mental and physical health	<ul style="list-style-type: none">Number of women in managerial positions: 70 (as of April 2024)The ratio of paid holidays taken: 86.2% (FY2023)
<div>3</div> <div>Respect for human rights</div> <div> P.113</div>	<ul style="list-style-type: none">Identification of adverse human rights impacts and establishment of human rights due diligence mechanisms to prevent or mitigate themAppropriate response for corrective actions or remedy, if it becomes clear that our business activities have caused or contributed to a negative impact on human rights	<ul style="list-style-type: none">Established the Nippon Steel Group Human Rights Policy, based on the recognition that respect for all human rights is fundamental to corporate activitiesConduct business activities ethically while fully respecting human rights	



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Materiality of Sustainability Issues

Materiality, KPIs and major initiatives in FY2023



5

Together with local communities

Materiality	Target and KPI	Main Initiatives and Achievements in FY2023	
1 Environmental preservation/creation activities in communities  P.78	<ul style="list-style-type: none">Green space development to contribute to the local environment	<ul style="list-style-type: none">Funding for green space development and maintenance	<ul style="list-style-type: none">Expenses for green space development and maintenance: ¥1.3 bn
2 Activities mainly in the support of education, sports, and arts  P.115	<ul style="list-style-type: none">Ongoing promotion of hosting plant visits	<ul style="list-style-type: none">Proactively accepting plant visits by shareholders, investors, and junior high/elementary school students	<ul style="list-style-type: none">Number of plant visitors: app. 70,000 (FY2023 results)
	<ul style="list-style-type: none">Continual support of music culture via Nippon Steel Arts Foundation	<ul style="list-style-type: none">Support of music culture via presentation of Nippon Steel Music Awards and operation of the Kioi Hall	

6

Corporate value enhancement and profit distribution

Materiality	Target and KPI	Main Initiatives and Achievements in FY2023	
1 Securing of profit and enhancement of corporate value	<ul style="list-style-type: none">ROS of 10% (FY2025 plan target)ROE of 10% (FY2025 plan target)	 Please see P.11,P.66	<ul style="list-style-type: none">ROS 9.8%ROE 12.3%
2 Profit distribution	① Salary and wages payment to employees <ul style="list-style-type: none">Bonus payment amountRevised amount of salary	Additional facts "Wage and bonus" https://www.nipponsteel.com/en/factbook/2024/09-02.html	<ul style="list-style-type: none">Base bonus amount: ¥2.30 mn (FY2024)Revised amount of salary: + ¥35,000 (FY2024)
	② Appropriate tax payment <ul style="list-style-type: none">Tax payment (consol.)	Policy on taxation https://www.nipponsteel.com/en/csr/tax/index.html	<ul style="list-style-type: none">Tax payment (consol.): ¥126.5 bn
	③ Dividend payment to shareholders <ul style="list-style-type: none">Dividend payment*Target consolidated payout ratio: around 30% (FY2025 management plan)	 Please see P.62	<ul style="list-style-type: none">Dividend per share: ¥160/year

Thorough implementation of compliance

Adhering to laws and regulations as a base of all activities	 Please see P.120
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Basic Environmental Policy and Initiatives for Priority Areas

Nippon Steel has set the Basic Environmental Policy based on its belief that the environmental management is an integral part of corporate mission. We are dedicated to managing the Company so as to reduce and minimize impact on the environment at all stages, from technological development work to the purchase of raw materials and equipment, manufacturing processes, transportation of products, and onward to their use, recycling and disposal.

Basic Environmental Policy

Under the principle of “Environmental Management,” Nippon Steel is committed to contributing to the creation of a sustainable society through its operations. To this end, we will conduct our operations to actively contribute to creating sustainable communities through integrated solutions to the issues related to climate change measures, the creation of a circular economy, and the conservation of biodiversity, including maintaining and improving a favorable living environment.

1 Reducing environmental impacts at every stage of operations (Eco Process)

At every stage of business activities including production processes and transportation of products, Nippon Steel will, besides complying with environmental laws and regulations, promote activities to reduce environmental impacts primarily through voluntary efforts, in cooperation with customers and other industries, with the aim of further improving environmental preservation and the efficiency of resources and energy, and of promoting reduction and recycling of waste inside and outside the company.

2 Offering of environment-oriented products (Eco Products)

With the aim of reducing environmental impacts at every stage of the life cycle of our products offered to domestic and overseas markets, Nippon Steel will make efforts, making good use of its innovative technologies, to develop and offer products that contribute to environmental preservation, resource conservation and energy conservation.

3 Proposing environmental preservation solutions from a global perspective (Eco Solution)

Nippon Steel will further improve its long-accumulated technologies and environmental management system that are related to environmental preservation, resource conservation, and energy conservation technologies. We offer them in Japan and abroad to contribute to, in addition to the reduction of environmental impacts, the development of infrastructure for disaster prevention with due consideration given to nature and scenery as well as to solving environmental issues outside Japan through technology transfer.

4 Development of innovative technologies

Nippon Steel will address on a medium and long-term basis the development of innovative technologies focused on the future issues of resources and the environment with the aim of providing society with technologies and products that contribute to environmental preservation, resource conservation and energy conservation.

5 Development of a rich natural environment

As a member of each community where we operate in Japan, Nippon Steel will contribute to the conservation of biodiversity and nature positive by promoting greenery environment in land areas, environmental improvement in sea areas, and many other activities. In addition, when conducting business activities overseas, we will ensure the preservation of the natural environment of partner countries.

6 Promotion of environmental relations activities

To gain social trust consistently, Nippon Steel will proactively promote relationship-building activities that contribute to environmental management, including environmental education for our employees, disclosure of environmental information on an adequate and timely basis, and close exchange with stakeholders.

Initiatives for priority areas

In order to achieve the SDGs, we identified three priority issues and two bases that help solve these issues based on the Basic Environmental Policy, implementing various initiatives defined as five priority areas.





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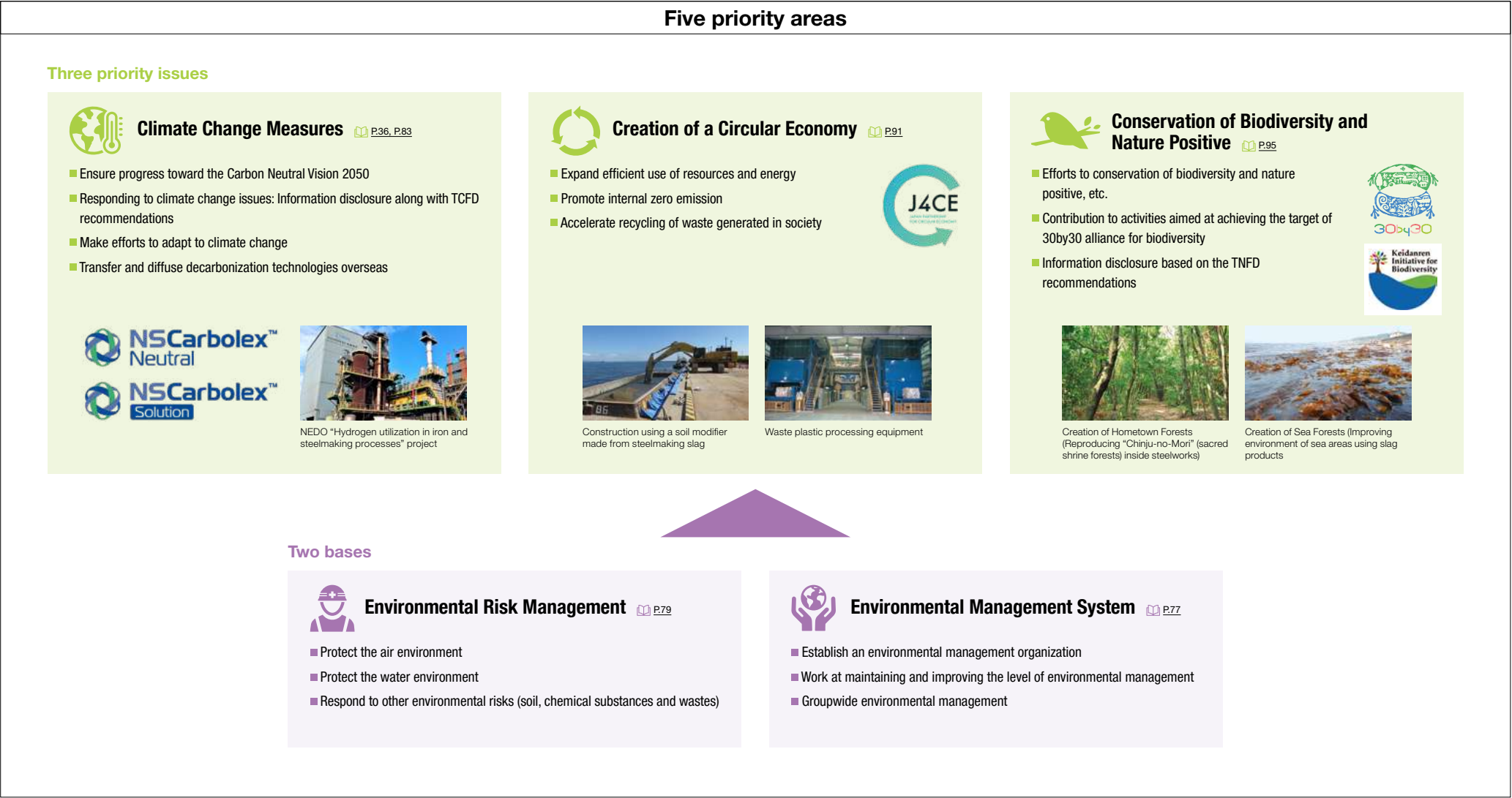
Respect for Human Rights

Coexistence with Communities

Basic Environmental Policy and Initiatives for Priority Areas

Specific initiatives in five priority areas

Recognizing that efforts in the five priority areas are important for the realization of a sustainable society, Nippon Steel is steadily implementing measures in each of these areas. In particular, since we announced the Carbon Neutral Vision 2050 in March 2021, we have been actively working on climate change measures as the most important management issue.





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Nippon Steel has built an environmental governance and management system that includes not only its own steelworks and factories, but also its group companies in Japan and abroad.

Activities to reduce environmental risks are promoted by combining internal and external environmental audits and following the plan-do-check-act (PDCA) cycle.



Establishment of environmental management system

Nippon Steel has three committees to respond to environmental issues, including climate change: the Environmental Planning Committee, the Environmental Technology & Management Committee, and the Green Transformation Development Committee.

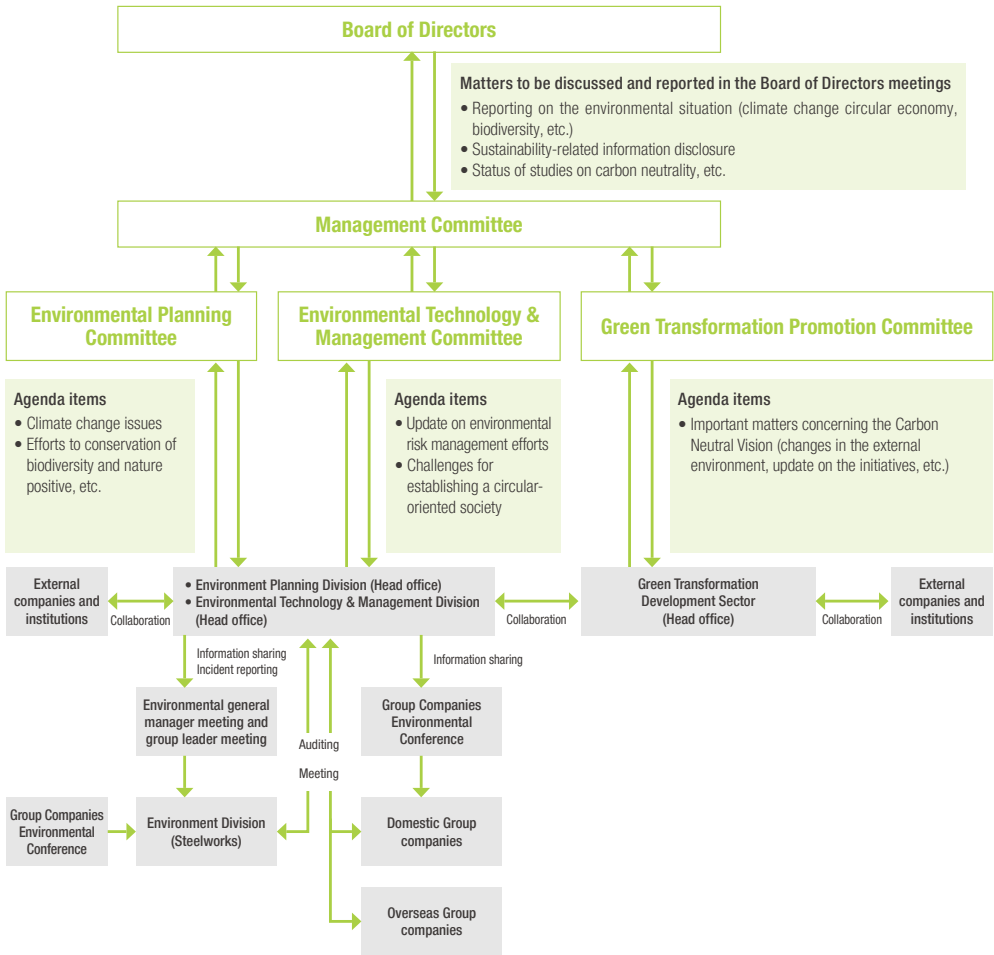
The Environmental Planning Committee is chaired by the Executive Vice President in charge of Environmental Policies. The Environmental Technology & Management Committee is chaired by the Executive Vice President in charge of Technology. Other Executive Vice Presidents, Directors, and Executive Officers are members of these committees. Meetings of each committee are held every six months. The Environmental Planning Committee and the Environmental Technology & Management Committee manage environmental issues such as response to climate change, biodiversity, and nature positive, and response to environmental risks and to create circular economy associated with the air, water, and waste, respectively.

As a part of the enhancement of governance, we regularly hold Environmental Managers' Meetings and Environmental Group Leaders' Meetings across all steelworks. In particular, Nippon Steel works to reduce risks related to settled dust, water discharge, and waste including activities, based on the work of expert's conferences held for each of these areas.

The Green Transformation Promotion Committee is chaired jointly by the Executive Vice President in charge of Environmental Policies and the Executive Vice President in charge of Technology. Other Executive Vice Presidents, Directors and Executive Officers are also members of the Committee. The committee meets as needed to review important matters related to the promotion of carbon neutrality (changes in the external environment, update on the initiatives, etc.).

The content of discussions on climate change and the environment at the three committees are reported and discussed as one of the risk management items of the entire company at the Management Committee and the Board of Directors meetings, both of which are attended by the Chairman and the President. The Board of Directors oversees the risk management by being regularly reported about important management risks which were initially reported and discussed at the Management Committee. Environmental issues, including climate issues, are addressed at least four times a year. In this way, climate change and other environmental management are integrated into our overall governance.

[Environmental management system]





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Work at maintaining and improving the level of environmental management

In accordance with the international standard ISO 14001, Nippon Steel has built an environmental management system, with each steelworks general manager serving as the responsible person. Each year, in addition to an internal auditing of each steelworks and a management review by its general manager, each steelworks is audited by the Environmental Technology & Management Division of the Head Office. Environment officers of other steel works and facilities also participate in these audits to cross-check. In addition, periodical reviews are conducted by the ISO certification agency.

For the Group companies (71 companies subject to environmental review) including those overseas, a direct interview is conducted by a member of the Environmental Technology & Management Division of the Head Office to improve management levels. This is part of the corporate governance conducted by the Internal Control/Audit Department of the Head Office.



Internal audit (hearings)



Internal audit (on-site patrol)

Environmental risk management concerning Group companies

From the Group companies in Japan, Nippon Steel has identified 45 companies (as of April 2024) as having certain environmental impact and holds meetings for those companies twice a year. In the meetings, we share information including the latest trends of environmental laws and regulations, cases of environmental initiatives with the goal of reducing environmental risks. In addition, we have established a venue to share information within the portal site to disseminate information on environmental regulatory trends and the troubles.

Costs associated with environmental conservation (Environmental accounting)

Nippon Steel has adopted environmental accounting to be used as guidelines for corporate activities, and to accurately track the environmental costs and effects. Environmental conservation costs, which combine the costs of capital investment associated with environmental measures, energy-saving measures, and recycling measures, and expenses incurred to conserve the environment, totaled ¥213.6 billion in fiscal 2023: ¥17.6 billion for capital investment and ¥196.0 billion for environmental conservation. It is difficult to quantify environmental preservation effects in monetary terms since such calculation would require many assumptions. Therefore, effects taking environmental measures are kept track of as environmental preservation performance, which are reported in this report and on our website.

[Environmental conservation costs]

(Billion)

Item		FY2023	
		Capital expenditures	Total expenses
Pollution Prevention Costs	Air pollution control (including measures against dust), etc.	9.4	49.9
	Water pollution prevention	6.3	10.1
	Soil pollution prevention, and noise and vibration control	0.3	0.7
Global Warming Prevention Costs	Energy saving measures	1.5	7.7
Costs of Recycling Resources	Recycling of resources and generated materials	–	56.3
	Industrial waste treatment (including PCB, coal ash, etc.)	–	16.7
	Business-related general waste treatment, etc.	–	0.3
Environmental Management Activities Cost	Construction of EMS and acquisition of ISO14001 certification	–	0
	Monitoring and measurement of environmental loads	–	0.6
	Personnel expenditures related to environmental measures, etc.	–	3.0
Research and Development Costs	Development of Eco Products	–	7.2
	Development of products which have low environmental impact during manufacture, etc.	–	38.3
Social Activity Costs	Beautification and greening of offices	–	1.3
	Supporting environmental organizations, etc.	–	0.1
Other Environmental Costs	Environmental fines, etc.	–	3.8
Total		17.6	196.0

[Major effects of environmental measures]

Energy usage P.84, Water usage P.80, Various resource inputs P.93, Final waste disposal amount P.91, SOx P.79, NOx emissions P.79, Water and soil quality P.82, Hazardous chemicals P.82



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Environmental Risk Management

Nippon Steel is promoting management of environmental risk with the aim of continually enhancing preservation of the environment in various regions, with due consideration of environmental risks, which differ by each steelworks and factory, and with due consideration to compliance with Japan’s Air Pollution Control Act and other regulations.



Protection of the air environment

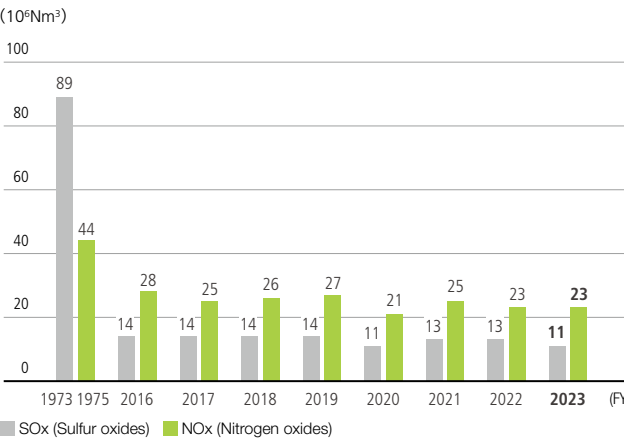
Air pollution control

In order to reduce emissions of sulfur oxides (SOx) and nitrogen oxides (NOx), Nippon Steel is taking measures such as using low-sulfur fuel, adopting low NOx generating burners and installing effective equipment, including equipment that reduces SOx and NOx emissions.

Prevention of scattering of raw materials and dust

To curb emissions of soot and dust generated from factories and raw material yards, we try to enhance their function by installing dust collectors and prevent scattering of particles by installing windscreens, windbreak trees and sprinklers, based on air pollution risk analysis through scientific simulation. We also conduct constant monitoring and regular patrols to ensure no change in the implementation status of the environmental measures.

[Emission of SOx and NOx]



Prevention of scattering of materials and dust and air pollution control measures in each works

Spraying of water and chemical in coal yards



Water and chemical are sprayed on piles of iron ore and coal to restrain the scattering of raw materials.

Sprinkler trucks



These trucks spray water on the road and empty lots or clean the road within works to restrict the secondary scattering of dust.

Road cleaning trucks



Windbreak net at yards



A windbreak net is installed to reduce the strength of wind and restrain the scattering of raw materials.

Electric dust collectors



Dust generated in the burning process is collected by two types of dust collectors (electric or with bag filter), depending on the characteristics of the dust (i.e., particle size distribution, emission gas concentration.)

Dust collectors with bag filters



Wet type desulfurization equipment



The wet desulfurization method enables SOx in emission gas to be eliminated.

Active coke dry type desulfurization equipment



The dry desulfurization and denitrification methods, using active coke, enables SOx and NOx in emission gas to be eliminated.

Low NOx regenerative burners



Burners featuring reduced levels of NOx generation and outstanding fuel savings have been installed.

See details: https://www.nipponsteel.com/en/csr/env/env_risk/air.html



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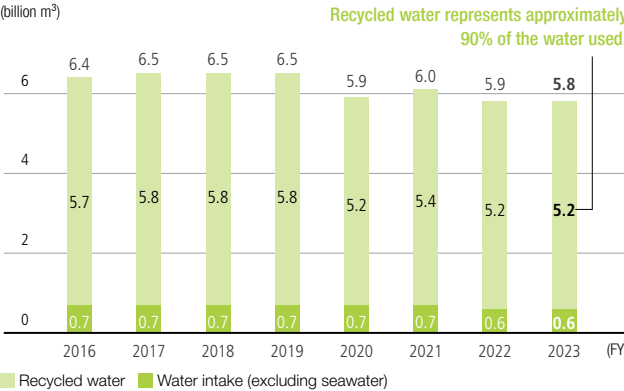
Environmental Risk Management

Protect the water environment

Efforts to control the water intake and reduce water discharge in works

In our business activities, we strive to reduce our environmental impact by continuously reducing water use and enhancing efficient usage. We use about 5.8 billion m³ of industrial water a year, of which approximately 90% is derived from recycled or reused water to reduce water discharge, at all of our works and factories combined. We try not to waste precious water resources, and to control water discharge. To achieve this, we make daily efforts to maintain and improve the performance of water discharge treatment equipment, and the inspection and control of discharged water quality. Our operational bases in Japan are evaluated by the World Resources Institute (WRI) Aqueduct to confirm that we are not prone to high-level water stress. Nevertheless, in preparation of the remote chance of a water intake restriction, the Kyushu Works Yawata Area and some other works possess their own water reservoir. In certain circumstances, we contribute to easing water stress of the community by providing water for agricultural use or by cooperating in other ways.

[Nippon Steel's water usage (excluding power generation facilities)]



[Water intake by source]

(Unit: Billion m³)*1

		2019	2020	2021	2022	2023
Industrial water	Rivers and lakes ²	0.7	0.7	0.7	0.6	0.6
	Groundwater ³	0	0	0	0	0
Water supply (city drinking water)		0	0	0	0	0
Seawater		2.2	2.0	2.0	1.9	1.8
Rainwater and other sources of water intake		—	—	—	—	—
Total water intake		2.9	2.7	2.7	2.5	2.5

[Discharge volume by destination]

(Unit: Billion m³)*1

	2019	2020	2021	2022	2023
Ocean ^{*4} , evaporation	2.9	2.7	2.7	2.5	2.5
Off-site water treatment ^{*5}	0	0	0	0	0
Surface water, underground/well, beneficial/other applications, and other discharge destinations	—	—	—	—	—
Total discharge	2.9	2.7	2.7	2.5	2.5

*1 Boundary of data collection: Nippon Steel (domestic manufacturing bases and Research & Engineering Center)

*2 The amount of water taken from the company's reservoirs is included in "Rivers and lakes (industrial water)."

*3 Some workplaces have taken water from groundwater, which is less than 0.3% of the total.

*4 Water discharge is treated appropriately according to water quality and discharged in compliance with water discharge standards.

*5 Other than the ocean, water treatment (sewerage) outside the site is less than 0.01% of the total.

Measures to reduce the risk of violating laws and regulations

In consideration of the importance of complying with the Water Pollution Control Law and conserving the water quality in the sea area to which it is discharged, we ensure that in the event of an operational problem the drainage outlets will not release abnormal water discharge outside the steelworks. Water drainage automatic monitoring systems, water shutoff gates, emergency reservoirs, etc. are installed to prevent water pollution. We also strive to check, repair, and maintain equipment in order to prevent water pollution, and to train our personnel in methods of checking of operations and controlling work procedures. Moreover, our steelworks have taken measures, such as to install a large storage tank so that water tainted with iron ore powder would not directly be released into the sea even if our steelworks were struck by a local torrential rain caused by weather abnormality. If there is a crack in an embankment facing the sea, there is a risk of a leakage of groundwater with unknown contaminants. In order to prevent this, the embankment is regularly inspected from the sea side enabling us to maintain and manage it in a sound condition. In areas with potential risk of leakage of water which may exceed permissible levels of contaminants, boards or a sheet water barrier may be installed so as to prevent leakage even if a crack develops on the embankment.

In fiscal 2022, the leaks of water that exceeded water discharge standards from the Kimitsu Area of the East Nippon Works occurred. We apologize for the concern and inconvenience this caused for the residents of the neighboring areas, authorities including the local government, and other related parties. Taking this incident very gravely, we are determined to make utmost efforts to investigate the cause and prevent any such problems from happening again.

Please refer to the following website for details and countermeasures related to the incident of exceeding the water discharge standards in the Kimitsu Area.

Regarding the response to the leakage incident in the Kimitsu Area
https://www.nipponsteel.com/works/east_nippon/kimitsu/eco/index_02.html

Measures to prevent the reoccurrence of environmental incidents in the Kimitsu Area of the East Nippon Works
https://www.nipponsteel.com/en/csr/env/env_risk/water.html



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Measures for water purification and prevention of abnormal water discharge in each works

Water discharge coagulating sedimentation treatment equipment



Fine undissolved matter is coagulated into bigger masses by chemical treatment, permitted to settle, and is removed.

Pressurized flotation system



Floating oil is removed by tiny bubbles formed by released air.

Activated sludge treatment equipment



Organic matter is decomposed and eliminated by bacteria.

Filtration equipment (secondary treatment)



Undissolved residues in the treated water discharge are filtered by a sand layer and removed.

Water discharge automatic monitoring equipment



The water quality of water discharge is automatically monitored.

Water discharge closing gate



Water discharge flow is shut in case of trouble.

Rainwater effluent treatment facility



Undissolved residue from rainwater is coagulated and eliminated.

Checking of embankments



The embankments are regularly inspected from the sea side to find potential issues.

Repair of the damaged area of embankment



Damaged areas found by inspection are promptly repaired to maintain and manage the embankment in a sound condition.

See details: https://www.nipponsteel.com/en/csr/env/env_risk/water/recycle.pdf

COLUMN

Addressing water risks: Installation of liquid barriers

At our manufacturing sites, weirs (liquid-proofing barriers) are installed around storage tanks to prevent them from leaking out to the outside in the event of a chemical solution leaking. While some storage tanks are legally obliged to install liquid barriers, depending on the size of the tank and the type of stored liquid, we have installed a liquid barrier that can accept 110% of the total capacity of a storage tank for all storage tanks that have a risk of leakage and causing environmental pollution, without being limited to legally-mandated storage tanks.



Tanks and a liquid barrier



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Management of discharged chemical substances

Comprehensive management of discharge

Nippon Steel appropriately manages and tries to improve the production, handling, and discharge or disposal of chemical substances in accordance with the Chemical Substance Management Law, Chemical Substance Evaluation and Regulation Law, and other laws concerning the management of chemical substances as well as the procedures employed. According to the targets of the Chemical Substance Management Law, we thoroughly manage the material balance, which includes the amount of chemical substances handled, the amount discharged to the environment, disposable amount, and the amount used as products. We properly submit notifications in fiscal 2024 in accordance with the revised Control Law that came into effect on April 1, 2023. Similarly, we take care in managing the Volatile Organic Compounds (VOC), which are said to cause photochemical oxidants and suspended particulate matter. In complying with the Chemical Substance Evaluation and Regulation Law, we identify and provide notification of the amounts of production and sales of the targeted chemical substances. Nippon Steel also takes the lead in promoting use of alternatives to using steelmaking materials and equipment that contain hazardous materials such as polychlorinated biphenyl (PCB) and mercury. According to safe handling standards, we systematically replace or dispose possibly hazardous parts and materials, given the time limit for disposal or the expiration date, stipulated for each area.

Management of discharge based on the Chemical Substance Management Law

In 1999, two years before the enforcement of the Chemical Substance Management Law, Nippon Steel began surveying chemical substances according to the voluntary control manual developed by the Japan Iron and Steel Federation (JISF). At present, in compliance with the Chemical Substance Management Law, we monitor 515 chemical substances and try to control their emissions and improve the way we manage it.

In fiscal 2023, there were 50 target substances for notification and the emission amount was 309 tons into the atmosphere and 25 tons to public water areas, while the disposal amount of mostly metals including manganese and chrome, and silicon carbide used for bricks and grindstone to outside of the works was 104447 tons in aggregate.

Every year, data is compiled by each works and experience in

carrying out reduction measures is shared with other works. In addition, the compiled results are disclosed on our website.

We have similarly been working on reducing volatile organic compounds (VOCs). In fiscal 2009, the 30% reduction target relative to fiscal 2000 was achieved. Since then, low discharge levels have been maintained.

Voluntary priority control of select chemical substances

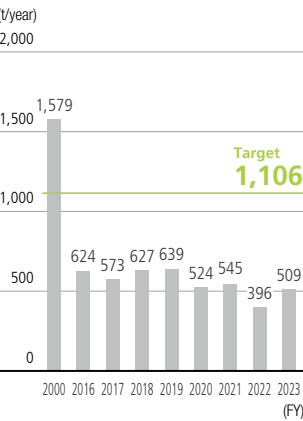
Dioxin

Some of our facilities, such as sintering facilities and incineration facilities, are a source of emissions of dioxins into the atmosphere. All these facilities have conformed to the emission concentration standard and have achieved levels of emissions far below the voluntary reduction target, based on the JISF guidelines, relative to fiscal 1997.

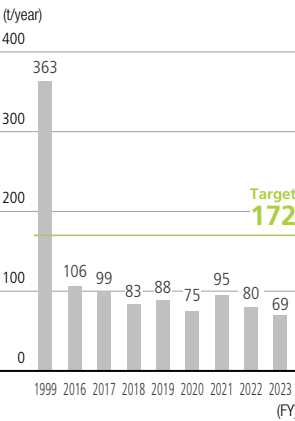
Benzene, tetrachloroethylene, dichloromethane

We developed a voluntary reduction plan of hazardous air pollutants specified in the environmental standard, which we handle. As a result of our systematic undertaking, we have already reached the targets for all three pollutants and have been maintaining the target levels.

[Emission of VOC]



[Benzene]



*1 An abbreviation of the Act on Confirmation, etc. of Release Amounts of Specific Chemical Substances in the Environment and Promotion of Improvements to the Management Thereof (Law concerning Pollutant Release and Transfer Register/PRTR)
*2 An abbreviation of the Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc.
*3 Volatile organic compounds (VOC): Organic chemical compounds emitted into the atmosphere in the form of gases, which are considered to be the source of undesirable airborne particles and photochemical oxidants, which became subject to control under the Air Pollution Control Act of 2004, as amended.

Appropriate treatment of industrial waste

In order to appropriately handle industrial waste generated in our business activities, we thoroughly carry out (1) management by sorting industrial waste depending on the status of its occurrence, (2) appropriate selection and continuous management of collectors, transporters, and disposal contractors, and (3) appropriate management of Manifests (industrial waste management documentation). In order to enhance compliance in waste treatment by appropriately managing the Manifests, all Nippon Steel steelworks and offices have adopted the e-Manifest system and fully utilize it for waste management.

We also evaluate collectors, transporters, and disposal contractors based on our internal rules and conduct on-site inspections at predetermined frequency, so as to continuously and appropriately ensure proper management.

Soil risk management

We are taking appropriate soil management in compliance with the “Soil Contamination Countermeasures Act,” “guidelines for investigations and measures based on the Soil Contamination Countermeasures Act” issued by the Ministry of the Environment, and the regulations set forth by local government ordinances, and so on. We report to the local government when performing landform modification work such as excavation which is required to be reported. We conduct pollution surveys when needed.

Starting in fiscal 2018, the Revised Soil Contamination Countermeasures Act is being enforced in stages will be expanded. We will continue to comply with relevant ordinances.



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Responding to Climate Change

— Information disclosure of the Task Force on Climate-related Financial Disclosure (TCFD)

The Nippon Steel Group recognizes that climate change is an important issue that affects the survival of humankind, and that it may have a serious impact on the business environment and business performance. In order to conduct business in a sustained manner, we are working to reduce the impact of climate change through initiatives to reduce CO2 emissions throughout the supply chain.



Information disclosure according to recommendations of the TCFD

Given the international community's commitment to achieving the long-term goals of the Paris Agreement, Nippon Steel signed the statement of support for the TCFD in May 2019, in consideration of the climate change as one of priorities that the planet is facing today. Based on the recommendations of the Agreement, we are committed to information disclosure on the climate change impact to our business activities.

	TCFD's recommendations and supporting recommended disclosures	Reference page
Governance	Disclose the organization's governance related to climate-related risks and opportunities.	P.83
Strategy	Disclose the actual and potential impacts of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning where such information is material.	P.36,89
Risk Management	Disclose how the organization identifies, assesses, and manages climate-related risks.	P.83
Metrics and Targets	Disclose the metrics and targets used to assess and manage relevant climate-related risks and opportunities where such information is material.	P.84

Governance concerning climate change

Nippon Steel recognizes climate change as one of its important managerial issues. We have established the Green Transformation Promotion Committee and the Environmental Planning Committee at the Board of Directors level because this issue may have an significant impact on the business environment and management. These two committees set strategies, risk management policies, annual budgets, business plans, and performance targets related to climate-related issues, as well as deliberate and supervise their progress.

Among the matters discussed, decided, and reported by the Committees, significant matters are resolved and reported at the Board of Directors.

[Examples of climate-related issues reported or resolved at the Board of Directors]

- Formulation of the Nippon Steel Carbon Neutral Vision 2050
- Expressing support for the purpose of the TCFD Final Report and disclosing information in accordance with the TCFD recommendations
- Green Transformation R&D and issues concerning actual implementation
- Procurement issues concerning green transformation
- Issues concerning green steel
- Response to the Green Innovation Fund
- Support for the GX League basic concept, participation in the GX League, etc.

Management of climate-related risks

Recognizing external climate-related risks and opportunities, we identify risks and opportunities that could have a significant impact on our business in terms of impact on upstream procurement, direct operations, and downstream provision of products and services for each transition factor and physical factor.

Specifically, from the perspectives of markets, policies, laws and regulations, technology, and reputation, we identify transition risks, physical risks, and opportunities that could affect upstream procurement, direct operations, and downstream provision of products and services. We then identify significant risks based on the likelihood of occurrence and magnitude of impact of those risks and opportunities.

The identified risks and opportunities are reported to the Board of Directors level committees as stated on the left, and significant risks are reported to the Board of Directors. These risks are thereby integrated into the Company's overall risk management.



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The Group’s CO2 emissions reduction target

Nippon Steel has set its CO2 emission reduction targets under the Nippon Steel Carbon Neutral Vision 2050, aiming to reduce total CO2 emissions by 30% from 2013 levels by 2030 and achieve carbon neutrality by 2050.

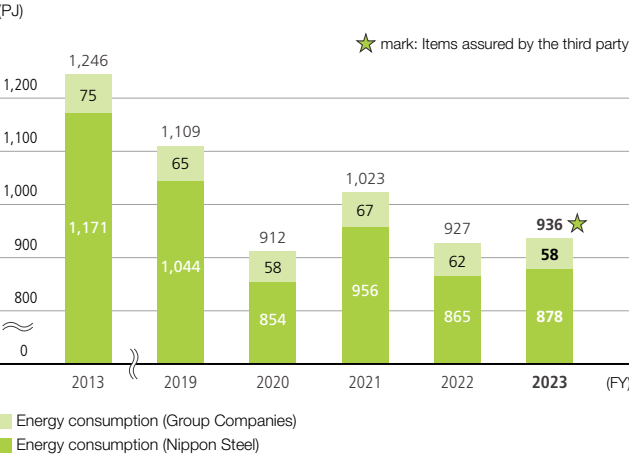
In addition, the Nippon Steel Group including consolidated crude steelmaking companies that have blast furnaces and electric furnaces with high CO2 emissions have set a target for 30% reduction in CO2 emissions in 2030 compared to 2013. Also, our major domestic consolidated subsidiaries aim to be carbon neutral in 2050. Our overall Group will work together to tackle climate change issues.

Furthermore, the Company will continue to timely and flexibly work on the matter of how to deal with the scope of setting CO2 emission reduction targets (such as covered subsidiaries and affiliates) as it conducts business in Japan and overseas, in light of, among others, international trends in climate change measures and trends in laws, systems, and disclosure standards in each country.

Nippon Steel Group’s energy consumption and energy-derived CO2 emissions

Nippon Steel has been working on energy conservation from diverse starting points: improving efficient use of energy generated in the steelmaking process (i.e., power generation from recovered by-product gas and waste heat); making operational improvements in each process; renovation of older coke ovens and other equipment; introduction of high-efficiency power generation facilities and oxygen plants; and conversion to regenerative burners in the reheating furnaces.

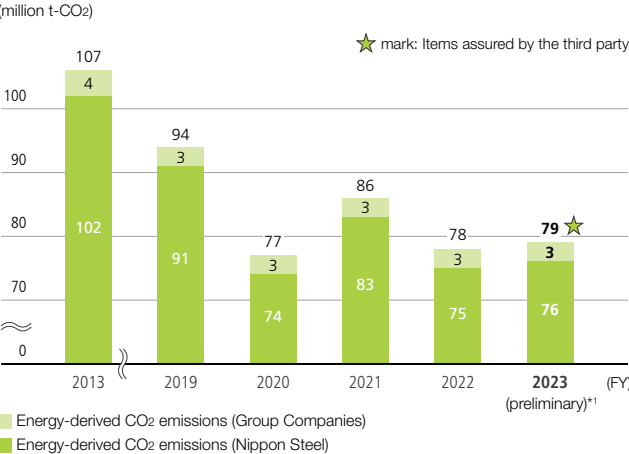
[Energy consumption]



In fiscal 2023, when production slightly increased, energy-saving measures were also addressed. As a result, our energy consumption and energy-derived CO2 emissions were 936 petajoules (PJ) and 79 million t-CO2 (a preliminary figure). Our energy-derived CO2 emissions accounted for 96% of our GHG emissions.

GHG emissions <https://www.nipponsteel.com/en/csr/env/warming/overview.html>

[Energy-derived CO2 emissions]



[Boundary of data collection]

Nippon Steel*^{2, 3}, associated EAF mills (Osaka Steel, Sanyo Special Steel, Nippon Steel Stainless Steel, Oji Steel, Tokai Special Steel, Nippon Steel Structural Shapes Corporation, Tokyo Kohtetsu, Ovako, Sanyo Special Steel Manufacturing India, and Standard Steel), and three Sanso Center companies*⁴

The data collection period used is each company's accounting period. As Ovako has changed its fiscal year end, Ovako's fiscal 2021 results cover a period from January 1, 2021 to March 31, 2022 (15 months).

[Calculation method]

Calculation for the Company and its domestic subsidiaries is based on the methodology of the Carbon Neutrality Action Plan.

Overseas subsidiaries follow local regulations or guidelines for calculation.

[Conversion factor]

The Company and its domestic subsidiaries use the "Table of heat generation and carbon emission coefficient by energy source" (revised January 31, 2020) of the Agency for Natural Resources and Energy, METI.

Overseas subsidiaries use relevant emission factors according to local regulations or guidelines.

*1 Preliminary figure: The amount of CO2 per unit of purchased electricity from each of the general power companies in Japan in fiscal 2023 is assumed to be the same amount as in fiscal 2022.

*2 Excluding energy consumption and CO2 emission associated with the IPP operation by the steelworks

*3 The amounts of energy consumption required for production of coke purchased by Nippon Steel and CO2 emissions are included in the aggregate.

*4 Concerning the three Sanso Center companies, the amount of energy consumption required for production of oxygen purchased by Nippon Steel Group and CO2 emissions are included in the aggregate.



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CO2 emissions in the value chain

CO2 emissions from energy source and generated in Nippon Steel's manufacturing process (Scope 1 and Scope 2) as well as CO2 emissions in the value chain (Scope 3), which are calculated by using the Green Value Chain Platform of the Ministry of the Environment and other methods are as follows.

Scope1・2

★ marks: Items assured by the third party

	(FY)	CO2 emissions (thousand t-CO2)						Calculation method
		2013	2019	2020	2021	2022	2023	
Scope1	Direct emissions from owned sources associated with use of fuel	89,578	78,693 ^{*3}	63,170 ^{*3}	71,311 ^{*3}	63,402 ^{*3}	64,007	★ Based on the Carbon Neutrality Action Plan. See the boundary of dxata collection stated on the right.
Scope2	Indirect emissions from the generation of purchased energy	13,825	12,100 ^{*3}	11,035	12,458 ^{*3}	11,913 ^{*1}	12,466	
Scope1+2	(Energy consumption per ton of crude steel: t-CO2/t)	103,403 1.89	90,793 ^{*3} 1.93	74,205 ^{*3} 1.97	83,768 ^{*3} 1.88	75,309 ^{*1} 1.92	76,472 1.93	★
	Crude steel production ^{*4} (consolidated-base, 10,000 tons)	5,474	4,709	3,766	4,445	3,913	3,951	

Scope3

★ marks: Items assured by the third party

	(FY)	CO2 emissions (thousand t-CO2)			Calculation method
		2021	2022	2023	
Scope3 All indirect emissions (not included in Scope 2) that occur in the value chain of the reporting company					
① Purchased goods and services		15,994	12,939	11,995	★ Calculated using method*5 on the right for purchased iron ore, coking coal, coke, and oxygen
② Capital goods		1,400	1,503	1,571	[Amount of capital expenditures] X [Emission factor]
③ Fuel and energy related activities not included in Scope 1 or 2		338	293	257	[Amount of electric power procured and fuel used] X [Emission factor]
④ Upstream Transportation and Distribution		710	638	611	[Transportation distance reported in the Energy Saving Law document] X [Emission factor]
⑤ Waste generated in operations		5	5	5	[Amount of waste] X [Emission factor]
⑥ Business travel		4	4	4	[Number of employees] X [Emission factor]
⑦ Employee commuting		14	13	13	[Number of employees] X [Emission factor]
⑮ Investments		1,053	1,193	1,124	[Emissions by subsidiaries and affiliates that emit GHG of over 10,000 tons] X [Equity stake of each company]

Scope1・2

[Boundary of data collection]
Nippon Steel^{*2} and associated EAF mills (Osaka Steel, Sanyo Special Steel, Nippon Steel Stainless Steel, Oji Steel, Tokai Special Steel, Tokyo Kohtetsu, Nippon Steel Structural Shapes Corporation, Ovako, Sanyo Special Steel Manufacturing India, and Standard Steel). The data collection period used is each company's accounting period. As Ovako has changed its fiscal year end, Ovako's fiscal 2021 results cover a period from January 1, 2021 to March 31, 2022 (15 months).
^{*1} Preliminary figure: The amount of CO2 per unit of purchased electricity from each of the general power companies in Japan in fiscal 2023 is assumed to be the same amount as in fiscal 2022.
^{*2} Excluding CO2 emission associated with the IPP operation by the steelworks.
^{*3} Due to a review of the summary values and changes in coefficients and other factors, the figure for this past year was revised retroactively.
^{*4} This does not include G/GJsteel.
[Conversion factor]
The Company^{*2} and its domestic subsidiaries use the "Table of heat generation and carbon emission coefficient by energy source" (revised January 31, 2020) of the Agency for Natural Resources and Energy, METI.
Overseas subsidiaries use relevant emission factors according to local rules or guidelines.

Scope3

[Boundary of data collection] Nippon Steel
^{*5} Iron ore and coal: [Amount purchased of procured iron ore and coal] X [Emission factor]
Coke: [Amount purchased of procured coal at source] X [Emission factor] + [Amount of energy used in production of coke] X [Emission factor by energy source]
Oxygen: [Amount of energy used in production of oxygen] X [Emission factor by energy source]
[Source of emission factor]
"Emissions unit value database for accounting of greenhouse gas emissions throughout the supply chain (ver. 3.4)" (March 2024, Ministry of the Environment)
"Table of heat generation and carbon emission coefficient by energy source" (Revised January 31, 2020; METI, Agency for Natural Resources and Energy)



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Efforts to reduce Scope 3 emissions

Dialogues with raw material suppliers

In order to steadily reduce emissions in Scope 3, Category 1 (products and services purchased), we are engaged in dialogue with major suppliers of iron ore and coking coal.

We interviewed major suppliers who account for more than 70% (based on our purchase volumes in fiscal 2023) of the raw materials purchased (iron ore and coking coal) about their actual Scope 1+2 emissions and their reduction plans. We confirmed through the dialogue that many suppliers are working to achieve net zero Scope 1+2 emissions by 2050.

We will continue to promote dialogues with our suppliers on climate change initiatives and other issues.

Reducing CO2 emissions through more efficient logistics

Nippon Steel maintains a high modal shift rate of 98% and works at reducing CO2 emission by raising efficiency in logistics, such as by use of large vessels.

As part of the efforts, we have begun to use “Utashima”—a hybrid-type cargo vessel, equipped with lithium-ion batteries. Our seven cargo vessels were rated the highest in the Coastal Ship Energy Conservation Rating of the Ministry of Land, Infrastructure, Transport and Tourism.

We have also introduced cargo vessels equipped with a hybrid propulsion system consisting of a natural gas-fueled engine and battery, for marine transportation of domestic raw materials.

We will continue to cooperate with relevant ministries, agencies, and organizations to promote use of ships utilizing alternative fuels, in order to reduce greenhouse gas emissions in marine transportation.

[Logistics sector's ton-kilometer achievements for FY2023]
(Reference)

	Transportation quantity: 10,000 tons/year		Million ton-kilometers/year		g-CO2/ton-kilometers
Ship	1,656	(57%)	10,846	(91%)	39
Railway	6	(0%)	36	(0%)	25
Truck and trailer	1,342	(43%)	1,182	(9%)	211
Total	3,003	(100%)	12,064	(100%)	



Hybrid Cargo Ship “Utashima”
equipped with lithium-ion batteries
(Received the Small Cargo Vessel
Award of the Ship of the Year 2019)

Efforts to adapt to climate change

In addition to taking mitigation actions against climate change, we consider the diverse impact of climate change and appropriately prepare for risks, as adaptive initiatives, and at the same time seek to capture business opportunities.

Preparation for risks

There is a risk that operations of steelworks and their shipments may be interrupted due to events caused by abnormal weather and other reasons as a consequence of climate change. To prevent such risks, we are implementing measures to prevent wind and flood damage at each steelworks, including measures to prevent overturn of cranes, etc., installation of levees, and reinforcement of embankments and gradients.

Moreover, our steelworks have enhanced facilities to prevent water pollution. These facilities were provided to increase waste water treatment capacity and involved installation of a large storage tank so that water tainted with iron ore powder would not be directly released into the sea even if our steelworks were subjected to localized heavy rain.

Furthermore, we have established a system to prepare for floods and high tides, by installing piloti-structured offices and evacuation facilities to avoid the destructive force of tsunami, for example.

Capturing business opportunities

We have many products that have been used for a long time as construction materials for embankments and other public infrastructure. They contribute to providing solutions for “national resilience,” such as protecting towns from flooding or high tides caused by heavy rains or typhoons. Adaptation to climate change also leads to business opportunities for Nippon Steel.

For example, we have developed and provided for actual use various types of products and product utilization technologies in the civil engineering field. They include hat-type sheet piles (contributing to national resilience in a wide range of ways, including measures against liquefaction of river levees, water leakage, and tsunami reaching coastal levees), linear-type steel piles (having a high-tensile strength at the joints, being suitable to cell-type quays, erosion-control dams and water shut-off work, and contributing to measures for sand embankments and against landslide at the time of heavy rain or a typhoon), and a method of preventing subsidence by use of sheet piles.

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Activities to transfer and diffuse decarbonization technologies overseas

With the understanding that the transfer of Japan’s advanced energy-saving technologies overseas can be effective ways to globally reduce CO2 emissions, Nippon Steel is participating in many energy-saving and environmental initiatives in Japan and overseas. For example, we work with the World Steel Association and directly with countries such as China and India.

Japan’s steel industry’s international cooperation in energy conservation

As a core member of the Japan Iron and Steel Federation (JISF), Nippon Steel is involved in multinational projects such as those for the Environment Committee of the World Steel Association.

In addition, the JISF is promoting 1) joint meetings of public and private steel-related parties, 2) preparation of customized list of technologies, and 3) assessment of steelworks as to energy-saving status. These are the three pillars of collaboration for bilateral energy-saving and environmental cooperation with India, Southeast Asia, and other countries and regions.

■ Joint meetings of public and private steel-related parties

In public-private steel-related joint meetings, we share the technologies customized list, the results of assessment of steel mills, and introduce detailed technical information and financing schemes, in order to realize the early transfer of energy-saving technologies to emerging countries. By fiscal 2023, joint meetings have been held: 12 times in India and 16 times in six ASEAN countries. In 2023, we held the “2023 Public and Private Collaborative Meeting between Indian and Japanese Iron and Steel Industry” with India and the online “ASEAN-JAPAN Steel Initiative Webinar 2024 - Pathways to Carbon Neutrality” conference with ASEAN countries and shared policies and private sector initiatives aimed at achieving carbon neutrality.

■ The technologies customized list

We identify the appropriate technologies for each country and region, and in addition to detailed technical information, we conduct the assessment of steel mills, and provide the technologies customized list, which complies with information such as on suppliers, for reference. For the ASEAN countries the 4.1 version on blast furnace (BF) steelmaking and 4.0 version on electric arc furnace (EAF) steelmaking of the technologies customized



The technologies customized list

list have been released while, for India, the list was updated into the 5.1 version on BF steelmaking and the 5.0 version on EAF steelmaking in fiscal 2023.

■ Assessment of steelworks

Experts from the Japanese steel industry visit the steel mills overseas to propose energy-saving technologies, provide operational improvement advice based on the operational conditions of the facilities, and conduct the energy-saving assessment of steel mills using the international standard ISO14404. Up to fiscal 2023, we had carried out the assessment of 14 steel mills in India and 17 mills in six ASEAN countries.

Activities as a Climate Action member

Nippon Steel participates in the Climate Action Program of the World Steel Association, which uses universal methods to calculate and report on the CO2 emitted by steelworks. As a Climate Action member (data provider), our 17 years of contribution have been highly recognized.



Climate Action DATA PROVIDER certificate

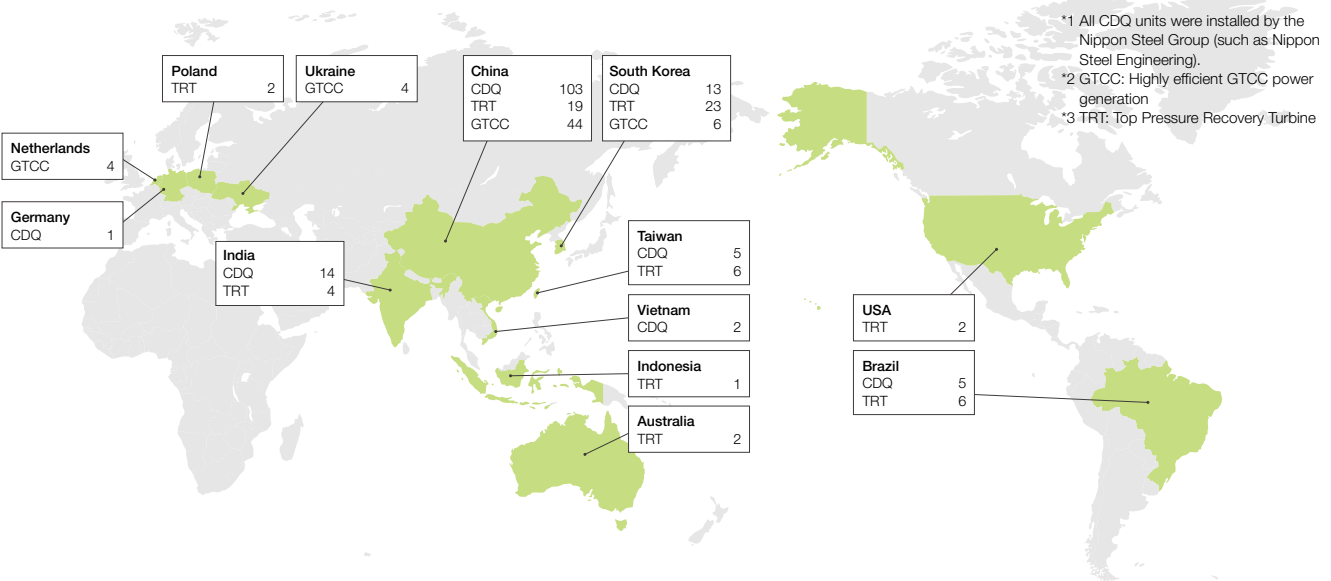
Contribution to reduction of CO2 emission on a worldwide scale

Japan’s steel industry can contribute to the reduction of CO2 emissions on a worldwide scale by transferring its advanced energy-saving technologies to emerging countries. The reduction effects of CO2 emission by transfer of Japanese steelmakers’ energy-saving technologies have amounted to 77.67 million tons of reduction in CO2 emissions per year in total.

	Number of units	CO2 emission reduction (10,000 t-CO ₂ /year)
CDQ*1	143	3,044
GTCC*2	58	2,545
TRT*3	65	1,170
Oxygen Converter Gas collection	22	821
Heat recovery	7	98
Oxygen Converter Gas waste heat collection	8	90
Total	303	7,767

(FY2022)

[Japanese steel industry’s energy-saving technologies are spreading globally (units installed in numbers)]



Blast furnace cement P91



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Our strategy for climate-related risks and opportunities





















For each transition factor and physical factor, we have identified risks and opportunities that may have a significant impact on our business in the areas of upstream procurement, direct operations, and downstream demand for products and services. We have then considered strategies for each scenario.

In conducting the scenario analysis, we have used the scenarios of the International Energy Agency (IEA) as a base, and evaluated medium- to long-term risks and opportunities up to 2050, by referring to the IEA's 1.5°C scenario (NZE2050) and the below 2°C scenario (B2DS) in transitional aspects and the 4°C scenario (NPS) in the aspects of physical impacts.

[Reference scenario]

1.5°C/2°C scenario	IEA WEO2022 NZE2050
	IPCC Special Report on the impacts of global warming of 1.5°C
	IEA WEO2018 SDS
	IEA ETP 2017 B2DS
4°C scenario	IEA WEO2018 NPS
	IPCC AR5 RCP

TCFD scenario analysis

Scenario	Factors (risks and opportunities)	Events (expectations and concerns of stakeholders)	Impact to Nippon Steel (opportunities in  , risks in )	Nippon Steel's strategy (including future responses)
1.5°C/2°C scenario	Transition factor 1 Advance in electric vehicles (EVs)	World EV sales: 65 million units, 60% market share in 2030 (vs. 6.6 million units, 8.6% market share in 2021)*	Opportunities in demand growth for our steel products  Increase in the global total number of cars and resultant increase in steel demand despite a decline in the share of steel demand for cars equipped with internal combustion engines due to the growth of EVs' share of the new car market  Increase in demand for high-performance steel products — our area of strengths, such as electrical steel sheets for EVs	 Capture growing demand by strengthening the global supply of electrical steel sheets (TOPICS on P.44)
	Transition factor 2 Shift to other lightweight materials, prompted by tighter fuel efficiency regulations, etc. (multi materials)	Shift to other lightweight materials, prompted by tighter fuel efficiency regulations, etc.	Opportunities in demand growth for high-strength steel and capturing of demand for other materials  Some possibility of switching to other lightweight materials but little prospect for significant progress since steel excels in environmental evaluation from the LCA perspective, including the production stage and material recycling, and automakers increasingly emphasize the evaluation from the LCA perspective  Increase in demand for high-tensile steel, carbon fiber-reinforced plastic (CFRP), titanium, etc.	 Strive to further popularize the LCA concept through activities to raise customers' understanding and lobby the government for regulatory change  Further increase the high-tensile strength of steel and provide the lightweight steel structure technology by proposing a comprehensive automotive solution (NSafe™-AutoConcept) (TOPICS on P.44)  Capture demand for CFRP and other products in cooperation with Nippon Steel Chemical & Material Co.)
	Transition factor 3 Shift to low-carbon steel (steel that generates low CO2 emissions in production)	Accelerating shift to low-carbon steel due to change in customers' demand	Opportunities in demand growth for low-carbon steel  Some shift to EAF steel with low CO2 emissions in production  Continued increase in demand for BF steel due to insufficient increase in EAF steel to satisfy growing worldwide demand, caused by the limited supply of scrap	 Acquire the SuMPO EPD (former EcoLeaf) environmental label for more products  Accelerate the Carbon Neutral Vision (breakthrough technology development, including high-grade steel production in large-sized EAFs and hydrogen steelmaking) (P.36)  Promote the use of direct reduced iron and other measures to reduce CO2 emissions in existing processes  Supply of NSCarbolex™ Neutral
		Higher needs for decarbonization in steelmaking process	Needs for a fundamental review of the steelmaking process aimed for decarbonization  Potential to gain a great competitive advantage if our technological development and investments advance ahead of global peers  Increase in investment burden and operating cost for the introduction of breakthrough technologies	 Facilitate the development and implementation of breakthrough technologies by utilizing government support such as the Green Innovation Fund (P.46)  Consider sharing of cost by society (P.37,42)

* Source for EV-related data: the NZE 2050 Scenario of the IEA Global Electric Vehicle Outlook 2022. EVs include battery electric vehicles (BEVs) and plug-in hybrid vehicles (PHVs).



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Scenario	Factors (risks and opportunities)	Events (expectations and concerns of stakeholders)	Impact to Nippon Steel (opportunities in ■ , risks in ■)	Nippon Steel's strategy (including future responses)
1.5°C/2°C scenario	Transition factor 4 Higher needs for energy-efficient products and technology	Eco-friendly technology solution to boost demand	Opportunities in demand growth for eco-friendly technology ■ Increased demand for products that realize energy savings in the processing by customers ■ Increased demand for products that contribute to energy savings in use of end products ■ Increase in profits through the provision of the Group's technology solutions that enable energy saving in steelmaking process	<ul style="list-style-type: none">● Expansion of NSCarbolex Solution, a brand that offers products that realize energy conservation in customers' manufacturing processes, products that contribute to energy conservation in using their end products, and products that contribute to energy transformation in society. (P.43)● Government-private cooperation, technologies customized list, and steelworks diagnosis to provide energy-saving technologies to emerging countries (contribution to the global value chain), e.g. dissemination of CDQ, all of which are handled by Nippon Steel Engineering, into emerging countries (P.87)
	Transition factor 5 Higher needs for products and solutions associated with a society based on renewable energy and hydrogen	Ratio of renewable energy in world power generation: 88% in 2050 (vs. 28% in 2020) World production of hydrogen: 490 mn tons in 2050 (vs. 90 mn tons in 2020)*	Opportunities in demand growth for products of our Group ■ Profit growth by provision of the Group's products and solutions that support a renewable-energy-oriented society ■ Profit growth by provision of the Group's products and solutions that support a hydrogen-oriented society	<ul style="list-style-type: none">● Enhance the Group's product menu for the renewable-energy society and expand sales in Japan and overseas, e.g. high corrosion-resistant steel sheets for solar power generation mount, steel plates and steel anchor chains for offshore wind power generation, and steel pipes for geothermal and biomass power generation● Enhance the Group's product menu for the hydrogen society and expand sales in Japan and overseas, e.g. HYDREXEL™ stainless steel for high-pressure hydrogen environments
	Transition factor 6 Increase in cost caused by adoption of carbon pricing (CP)	Incremental introduction of carbon pricing (CP) measures	Increasing burdens on our cost due to CP introduction ■ The GX Promotion Act states that the introduction of CP will help companies secure the funds and time required to work on technology development and capital investment aimed at decarbonization. While the impact of CP is not so significant for the time being, the burden on our costs will increase due to the CP system design cost and the movement of passing the burden of CP on to electricity charges, etc. we pay.	<ul style="list-style-type: none">● Reduce CO2 emissions through the expanded use of direct reduced iron, reduction in CO2 emissions in existing processes, and advance in breakthrough technologies such as hydrogen steelmaking and production of high-grade steel using large EAFs● We will request the government to take measures to support heavy emission-producing industries, which have few options for decarbonization, and measures to support narrowing product price increases due to the rise in energy costs
4°C scenario	Physical factor 1 Abnormal weather to suspend raw material suppliers' operation	Difficulty in operation, caused by a natural disaster	Limited impact by taking measures for risks ■ Limited assumed risk in securing stable procurement of raw materials by taking the following measures: <ul style="list-style-type: none">• Material sourcing from multiple regions in the world• Keeping raw material inventories in steelworks and ships	<ul style="list-style-type: none">● Continue multiple sourcing● Appropriately manage days of inventory and risks
	Physical factor 2 Abnormal weather to suspend operation and shipment	Difficulty in procuring raw materials, caused by abnormal weather	Limited impact by taking appropriate measures ■ Adoption of BCP measures. Limited risks in production disruption caused by natural disaster. Excessively abnormal weather may result in suspension of operation, etc.	<ul style="list-style-type: none">● Continually adapt measures in consideration of long-term trends Measures against typhoons and heavy rain, measures to prevent crane overturns, measures against earthquakes and tsunami (securing emergency evacuation places, embankment reinforcement, etc.)
	Physical factor 3 Heightened needs for solutions for "national resilience" against natural disasters	Natural disaster caused by abnormal weather	Demand growth of steel for national land resilience ■ Profit growth by providing products and solutions for national resilience against earthquakes, tsunamis, heavy rain, typhoons, etc.	<ul style="list-style-type: none">● Enhance the Group's product menu and expand sales in Japan and overseas, e.g. steel-slit dams and NS ECO-PILE™ method

* Source for data on renewable energy and hydrogen: the NZE 2050 Scenario of the IEA World Energy Outlook 2021.



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Creation of a Circular Economy

Steel is a flexible material that can be repeatedly recycled: it is a perfect example of a circular economy.

Nippon Steel strives for the greatest efficiency possible, including minimization or elimination of waste, in use of our energy and limited resources, in every process of steelmaking. By utilizing this steelmaking process, we also work to recycle internally-generated by-products so that we can realize zero emission. We are also actively engaged in recycling of waste generated in society or by other industries.



Efficient use of resources and energy

We use industrial water and energy resources such as electricity and fuel in producing steel products, which are mainly made of iron ore mined overseas, coal used as a raw material for reducing iron ore, and iron scrap recycled by society.

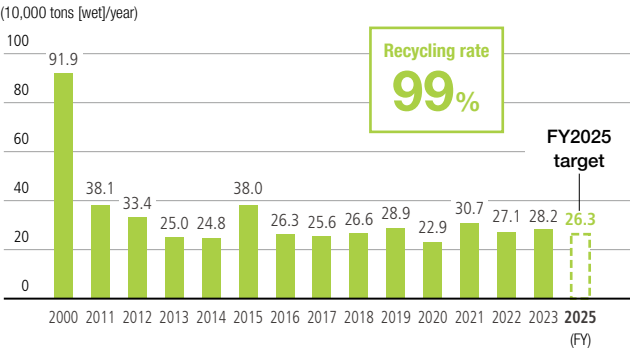
Nippon Steel's steelworks use 100% of by-product gas generated in the steelmaking process, as fuel for heating of steel or as energy for an onsite power plant. Concerning water resources, 90% of water used in cooling and cleaning of products and manufacturing facilities are reprocessed and repeatedly used. These are examples of our efforts to make maximum use of limited resources and energy, without waste.

Promote internal zero emission

By-products generated and final disposal

In the iron and steel-making process, over 600 kg of by-products, such as steel slag, dust, sludge, and used refractory bricks, are generated for each ton of crude steel produced. In fiscal 2023, Nippon Steel produced 34.99 million tons of crude steel and generated 21.16 million tons of by-products. We are committed to recycling these by-products both in and outside the Company, maintaining the high recycling rate of 99%. For the final disposal amount, we will continue efforts to reduce generation of by-products toward achieving the fiscal 2025 target.

[Nippon Steel's final disposal amounts]



Recycling of dust and sludge

To recycle the dust*¹ and sludge*² generated in the iron and steelmaking processes, for them to be used as raw materials, Nippon Steel operates a dust reduction kiln (RC: Resource circulating oven) at East Nippon Works Kashima Area and a rotary hearth reduction furnace (RHF) at East Nippon Works Kimitsu Area, Setouchi Works Hirohata Area, and NIPPON STEEL Stainless Steel Corporation (Hikari). This enables us to recycle all internally-generated dust.

[By-products and recycling (FY2023)]

By-product	Amount generated (wet weight – million tons)	Recycling application	Recycling rate
Blast furnace slag	10.76	Blast furnace cement, fine aggregate, road base, etc.	100%
Steelmaking slag	4.5	Road base, civil engineering materials, fertilizer, etc.	97%
Dust	2.72	Raw materials for use in-house and also zinc refining	100%
Sludge	0.57	Raw materials for in-house use	90%
Coal ash	0.42	Cement raw materials, construction materials	100%
Waste furnace materials	0.23	Reuse, etc.	64%
Others	1.96	In-house use, others	100%
Total	21.16	Total recycling rate	99%

*1 Fine dust collected with a dust collector

*2 Semi-solid slurry recovered from industrial water discharge or sewage treatment

Effective use of steel slag

Almost all steel slag is effectively utilized. Approximately 70% of blast furnace slag is used for blast furnace cement, while steelmaking slag is used for materials for road base layers, civil engineering work, soil improvement, marine environment improvement, fertilizer, etc. “Blast furnace cement,” a mixture of pulverized blast furnace slag and ordinary Portland cement, contributes to a 40% reduction of CO₂ emissions during manufacturing, since the cement clinker burning process can be omitted. The blast furnace cement also excels in long-term strength and is registered as Eco Mark-certified product. The steel slag products help reduce natural crushed stone mining and have the energy saving impact during cement manufacturing. As a result, they are designated as a “designated procurement item” under the Act on Promoting Green Procurement, and have been certified as recycled products by some local governments. Nippon Steel's pavement materials, KATAMA™ SP, are advantageously used in keeping with the characteristics of steel slag which hardens by reacting with water. They are used for forest roads and farm roads, as well as for weed preventive pavement to be installed near mega-solar panel installations and other locations. Geo-Tizer™ made of steel slag can be mixed with soft soil (mud, such as surplus excavated soil from construction sites or farmland soil) to reform the soil to make it usable. Unlike conventional soil-improvement materials (i.e., cement and lime), this soil produces less dust, significantly reduces CO₂ emissions, and is less expensive, enabling reduction of construction cost. The remediated soil is outstanding in compacting and can also be easily excavated, as it does not excessively solidify. Calcia modified soil — a mixture of steelmaking slag calcia modifier and dredged soil — has been used to improve the marine improvement, such as by backfilling deep-dug seabed areas and creating shallow bottoms and tideland. In addition, Nippon Steel's Vivary™ Unit, which are composed of steel slag and humus made from waste wood, provides iron needed for seaweeds to flourish, promoting regeneration of an area of the sea bed that had lost much of its living organisms. Moreover, as steel slag contains nutrition that helps plants grow, it is also widely used as fertilizer, contributing to improving farming productivity.

Creation of a Circular Economy

Increase in recycling of waste generated in society (waste plastics)

We recycle 100% of waste plastics collected from ordinary households through chemical recycling by using a coke oven in accordance with the Containers and Packaging Recycling Law. Specifically, waste plastics are used as hydrocarbon oil (40%), coke furnace gas (40%), and part of coke (20%). Currently, Nippon Steel is processing approximately 200,000 tons annually, or about 30% of the volume of waste plastics collected nationwide, in cooperation with local governments. Our method of using coke oven has an extremely high recycling efficiency and a great treatment capacity, contributing to a circular economy in many regions. Furthermore, as the Plastic Resource Recycling Promotion Law enacted in fiscal 2022 calls for collection not only of container packaging plastics but also products made of plastics in bulk collection, we are also recycling plastics collected in bulk. In addition, we are also working hard to develop technologies for expansion of treatment to meet the increasing plastics processing needs in the future.

The cumulative amount processed in fiscal 2000–2023 was approximately 4.09 million tons, equivalent to 13.09 million tons in terms of reduction in CO₂ emissions (the amount of annual CO₂ absorption in artificial cedar forests in the area as big as 320,000 Yankee Stadiums).

This expanded use of waste plastics has been incorporated in our “Carbon Neutral Vision 2050” measures to combat climate change, and is presented as one of the examples of the efforts of Nippon Keidanren (Japan Business Federation) member companies’ activity in its “Recycling Economic Partnership.”

* One hectare of artificial cedar forest absorbs approximately 8.8 tons of CO₂ per year (source: the website of the Forestry Agency).

[Chemical recycling of waste plastics]

Thermal decomposition enables 100% effective re-use of plastics





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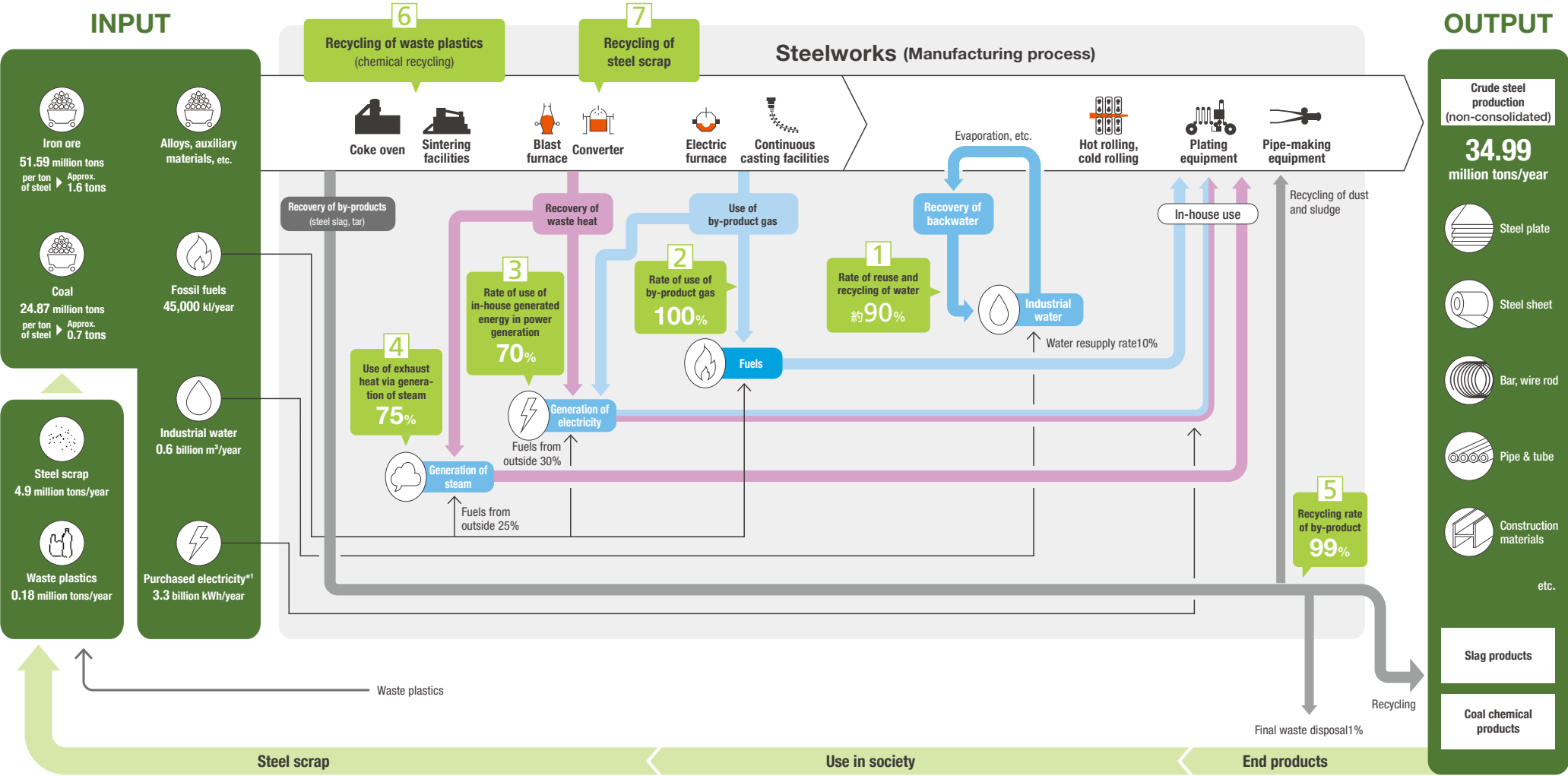
Basic Information

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Creation of a Circular Economy

Energy Material Balance

We are not only moving toward the achievement of zero emissions with minimal environmental impact and recycling internally generated materials, with utilizing the steel manufacturing process, but also actively recycling waste materials generated by society and other industries.



*Numbers represent FY2023 performance *1 Purchased electricity (kWh) excludes electricity purchased from Cooperative Thermal Power Companies



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1 Water resources

Of water used in cooling and cleaning of products and manufacturing facilities, approximately 90% is reprocessed and repeatedly used, while the remaining approximately 10%, which disappears mainly due to evaporation, is replaced.

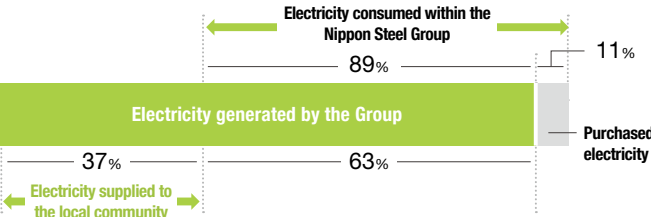
2 By-product gas

By-product gases, such as coke oven gas generated when coal is thermally cracked in an oxygen-free environment in the coke manufacturing process and blast furnace gas generated from blast furnaces, are fully utilized as fuel gas for steel heating furnaces or energy sources for power generation plants on the premises of steelworks.

3 Electricity

Nippon Steel itself generates 89% of the electricity it uses at steelworks, 70% of which is from internally generated energy sources such as exhaust heat and by-product gases. In the future, we will also consider making more efficient facilities and switching fuel in order to further lower carbon generation.

[Nippon Steel Group's* Electricity Supply and Demand Balance (FY2023)]



- The Group internally generates **89%** of the electricity it uses.
- The Group supplies **37%** of internally generated electricity to the local community.

* Including cooperative thermal power companies and affiliated electric arc furnaces

4 Use of exhaust heat

Exhaust heat, generated in the blast furnaces, sintering facilities, coke ovens, converters, and other facilities, is recovered and used in steam generation and power generation.

Coke Dry Quenching (CDQ) for large-scale waste heat recovery

The CDQ equipment quenches hot coke made in the coke oven with inert gas, and the heat is used to generate steam for power generation. Compared to the conventional wet quenching, 40% energy saving has been achieved.



CDQ

5 By-products

By-products generated in steelmaking are recycled for reuse in the same process or for commercial use. We thus promote achieving zero emission and contribute to conservation of resources and energy.

6 Waste plastics

Approximately 200,000 tons per year, or about 30% of plastic containers and packaging collected from households nationwide, are fully recycled by a chemical processing method using coke furnaces.

7 Recycling of steel scrap

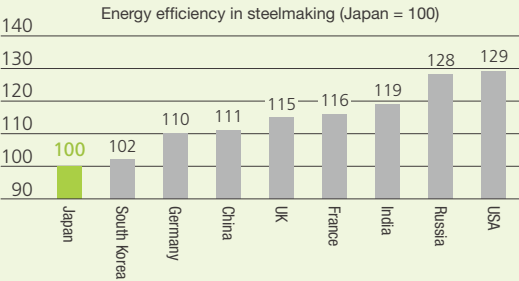
We recycle steel scrap generated in steelmaking and processing processes, as well as steel scrap recovered after use in society, as raw materials for producing new steel products.

In fiscal 2023, we used 4.9 million tons of steel scrap.

Recycling steel scrap is one of the important measures to achieve carbon neutrality. By maximizing the use of steel scrap resources generated in Japan, we aim to significantly reduce CO₂ emissions in the steelmaking process.

[Energy efficiency in steelmaking by country (2019)]

Efforts for efficient use of various resources have resulted in Japan's steel industry achieving the world-leading level in energy efficiency.



Source: International Comparisons of Energy Efficiency (Sectors of Electricity Generation, Iron and steel, Cement), RITE, 2019 (The Japanese translation and numerical values were provided by the Japan Iron and Steel Federation.)



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Biodiversity Conservation and Nature Positive

Nippon Steel participates in the activities of the Keidanren (Japan Business Federation) Nature Conservation Council has affirmed the Keidanren Declaration for Biodiversity and Guidelines (revised in December 2023), and has accordingly been taking initiatives on biodiversity preservation. We also participate in the 30 by 30 Alliance for Biodiversity, contributing to the vitalization of nature-positive efforts through these activities.



Efforts to conservation of biodiversity and nature positive

Which are closely aligned with measures to deal with climate change and the creation of a circular economy, under the following policy.

Policy for the initiatives

- As a member of Keidanren, we comply with the Keidanren Declaration for Biodiversity and Guidelines.
- Recognizing both that our business activities greatly rely on nature's gifts, and that biodiversity is vital for realizing a sustainable society, we are well aware of the relationships of our business activities with biodiversity and are pledged to respond to challenges rooted in diverse local features, in order to build a society in harmony with nature.
- As a member of the international community, we also recognize that initiatives aimed at building a society in harmony with nature are closely related to global issues of measures to deal with climate change and the creation of a circular economy. We aim to realize a sustainable society through integrated environmental corporate management which includes these initiatives in business activities.

Contribution to activities aimed at achieving the 30 by 30 biodiversity target

In March 2023, we participated in the 30 by 30 Alliance for Biodiversity to contribute to achieving the 30 by 30 diversity target the Japanese government strives to achieve, based on the rationale of the Kunming-Montreal Framework adopted at the 15th Conference of the Parties to the Convention on Biological Diversity (COP15) held in December 2022. The alliance is a coalition of volunteers working in the public and private sectors to conserve and protect at least 30% of their own country's land and sea areas by 2030 (30 by 30), with the goal of halting and reversing biodiversity loss by 2030 (nature positive).

We aim to have our areas under conserved biodiversity registered as Other Effective area-based Conservation Measures (OECM), including in the registration of the Creation of Hometown Forests at our steelworks and the Creation of Sea Forests.

[Other Effective Area-based Conservation Measures (OECM)]

An OECM is an area with a biodiversity value, subject to conservation of biodiversity through various efforts by companies, private organizations/ individuals, and local governments, and where the government certified that "it is under conserved biodiversity through private-sector efforts."

Certified areas are registered in the international database as an OECM, with their overlap with protected areas excluded.



Responding to nature-related information disclosure

Today, the state of nature is said to be deteriorating at the fastest pace in human history, raising concerns about the possibility that many of nature's essential services benefitting society (ecosystem services) may deteriorate. Scientists say that this natural degradation is attributable directly to the pressure on nature caused by human activities, such as changes in how nature is utilized, how resources are exploited, how climate changes and pollution affect the world's society, and the effects of invasive alien species in the land, freshwater, and oceanic areas.

In as much as we recognize that our core business activities of steel production impact nature, we are engaged in various undertakings to evaluate and analyze the impact of steel production on nature, using various assessment approaches advocated by the TNFD that we reflect in our business activities.

[Task force on Nature-related Financial Disclosures(TNFD)]

Aiming to support shifting global financial flows away from nature-negative outcomes, and towards nature-positive outcomes in accordance with the recognition of biodiversity and natural resources risks, the TNFD is a disclosure recommendation with a mission: to develop and provide a framework for risk management and information disclosure so as to encourage organizations to report and act on ever-changing nature-related risks.

While considerations are given to the consistency between the TNFD and the Task Force on Climate-related Financial Disclosures (TCFD), such as their having the same basic design, the TNFD requires broader consideration, due to, for example, a difference from the TCFD in the evaluation of activity areas in "Strategy," traceability in "Risk Management," the quality of stakeholder involvement, and the consistency between their climate change and nature targets in "Metrics and Targets" and so on.



Biodiversity Conservation and Nature Positive

Specific initiatives

Creation of Hometown Forests

Reproducing “the grove of a village shrine” and nurturing biodiversity

We have carried out the “Creation of Hometown Forests” projects at our steelworks and factories in Japan under the guidance of the late Dr. Akira Miyawaki (professor emeritus of Yokohama National University), with the aim of facilitating harmonious coexistence between nature and humans. This project comprises research on the natural vegetation inherent to a certain area in a nearby grove associated with a historical shrine (Chinju-no-mori) and planting trees by local residents and our employees.

This was the first project by a private company in Japan to create a forest that harmonizes with the local scene and is based on an ecological approach. At present, our forests in aggregate have grown to total around 840 ha (about the size of 180 Yankee Stadiums).

Wild birds and animals visit the forests at our steel works sites across Japan. Wild birds and animals inherent to the land return to the forests. Thus, the “Creation of Hometown Forests” helps conserve biodiversity, and sequester CO₂.



Kyushu Works (Oita Area)

Creation of Sea Forests

Implemented in 56 spots in Japan to improve sea desertification

With the aim of solving the supply deficiency of iron, which is said to be one of the causes of sea desertification, Nippon Steel has developed the Vivary™ Unit via joint research with Tokyo University and uses it to promote the regeneration of seaweed beds.

Humic acid iron is the combination of iron ions and humic acid in the soil of a land forest in the natural environment. We have developed the technology to artificially generate humic acid iron by using steel slag and humic substance originating from waste wood. The Vivary Unit has received a safety certificate from the Safety Check and Certification System of the National Federation of Fisheries Cooperative Associations for our steel slag products.

In Mashike Town, Hokkaido, starting from an experiment in 2004, we have developed a large-scale project (for a 300-meter coastal line) since 2014, confirming the expansion of seaweed beds and increase in the sea urchin population. This project is also expected to restore the once-atrophied seabed and steadily raise biodiversity.



Mashike Town, Hokkaido

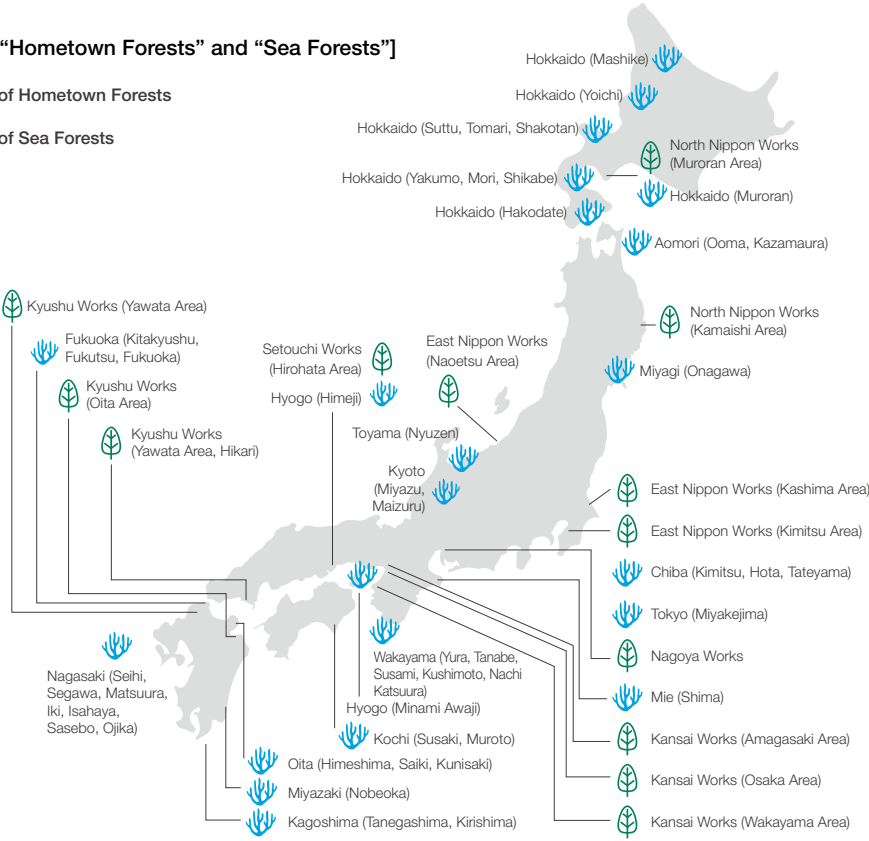
[Creation of “Hometown Forests” and “Sea Forests”]



Creation of Hometown Forests



Creation of Sea Forests



[Some animal inhabitants of the Hometown Forests]

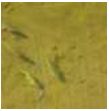
Muroran	Ezo deer, Ezo red fox, Ezo squirrel, eagle, buzzard, magpie
Kamaishi	Moon bear, Japanese serow, deer, hare, black-tailed gull
Naoetsu	Japanese dace, carp
Kashima	Pheasant, shrike, duck
Kimitsu	Bulbul, pheasant, little tern, swallow, egret
Nagoya	Raccoon, pheasant, bulbul, shrike, swallow, great tit
Osaka	Weasel, starling, bulbul
Wakayama	Raccoon, marten, bulbul, tiger keelbuck



Gray heron



Buzzard



Japanese dace



Bulbul



White-tailed skimmer



Little tern



Duck



Raccoon

Sakai	Duck
Amagasaki	Heron, bulbul, lizard, killfish, white-tailed skimmer
Hirohata	Buzzard, shrike, oriental turtle dove, bulbul, starling, bunting
Yawata	Weasel, pheasant, gray heron, Japanese cormorant
Kokura	Gull, Japanese wagtail, graphium sarpedon
Oita	Whooper swan, kingfisher, killfish, mayfly, firefly
Hikari	51 species of birds including black-tailed gull and herring gull

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Participation in community projects

Participation in ecological preservation activities in the community

Since 2012, the Nagoya Works of Nippon Steel has participated in the Inochi-wo-Tsunagu (Life Sustaining) Project, which has been organized by a local students' planning committee, 11 partner companies, the Eco-Asset Consortium and the Japan Ecologist Association of Support (NPO). This project seeks to develop an ecosystem network that connects green spaces of company sites. To thereby increase the potential of the connected areas, an animal pathway was established and a fixed-point observation camera recorded raccoons coming and going through the pathway. The project received the Minister of the Environment Award of the 2021 Sustainable Social Development Award as the project activities were highly evaluated for their creation of a network that transcends student and corporate boundaries, which are linked to a wide range of cooperative activities.

In October 2023, the Chita Peninsula Green Belt, which has been promoted jointly by 11 companies including the Nagoya Works of Nippon Steel, governments, students, experts, and NPOs, has been certified as a “symbiosis with nature site” by the Ministry of the Environment.



Contribution by use of by-products

Steel slag repurposed for rice cultivation

Steel slag, a by-product of steelmaking, contains nutritional matter that helps plants grow. It is therefore used as a fertilizer for rice cultivation, dry-field farming, and pasture grass. Silica contained in steel slag promotes photosynthesis by keeping leaves upright and improving their light receiving orientation, while iron is effective in preventing root rot and leaf blight. The steel slag also contains phosphoric acid, manganese, boron, and various other components of fertilizer. Nippon Steel donated converter slag fertilizers to cooperate with research by the Tokyo University of Agriculture for salt removal in farmland in the Soma area of Fukushima Prefecture, which was devastated by the earthquakes and tsunami of March 2011. The slag fertilizers have proved effective in rapid and efficient salt removal. The restoration of rice fields also works to restore habitats for birds, frogs, and various other living things.



COLUMN

Hometown Forest of Nippon Steel Kyushu Works Oita Area
More than 50 years of efforts and their significance

IGES-Japanese Center for International Study in Ecology
Director Shinichi Suzuki

The Chinju-no-Mori (local historical forest) in the Oita Area, the planting of which began in 1971, is an artificial forest similar to Tokyo's Meiji-Jingu Shrine forest planted in 1920. However, it is not just a man-made forest. The forest was devised by the late Dr. Akira Miyawaki based on the results of vegetation ecology research, and was created by meticulous planning and management. This has evolved into a Miyawaki-Method environmental conservation forest of evergreen broadleaf trees, and is highly praised globally.

More than 50 years after planting, trees of the local forest in the Oita Area have already reached a height of 20 meters and have flourished so as to become a forest reminiscent of one at the Meiji Shrine. Going beyond the framework of forest greening, the forest project provides excellent scenery and vegetative landscape in the community. At the same time, it comprises a forest area with an impressive overall environmental conservation effect, accompanied by disaster prevention and dust resistance qualities. Unlike single planting of adult trees with props, which was the mainstream back in the 1970s, Nippon Steel's foresight in environmental conservation incorporating ecological methods is highly praised.

In fact, the site in the Oita Area used to be bare land formed by coastal reclamation before planting to create the current forest. What made it possible to establish the trees was the determination of potential natural vegetation based on field surveys, combined with use of ecological planting of carefully chosen techniques and species, soil improvement, and the creation of mound. Even 50 years after planting, the hometown forest in the Oita Area is still in the process of developing. As a living and continuously growing environmental preservation device, the forest is expected to bring high benefits and contribute to global environmental issues including global warming and biodiversity. The Oita Area hometown forest is precious natural capital.

Dr. Shinichi Suzuki

Vegetation Scholar, Director of IGES-Japanese Center for International Study in Ecology (IGES-JISE), Ph.D. (Academic)
Born in Gunma Prefecture in 1958. After graduating from the Faculty of Agriculture, at Meiji University, he studied under Dr. Akira Miyawaki at the Vegetation Studies Laboratory of the Research Center for Environmental Sciences, Yokohama National University. He served as a biology teacher at Gunma Prefectural High School, a researcher at the IGES-JISE, and a professor at the Junior College of Tokyo University of Agriculture and the Faculty of Regional Environmental Sciences at the same university. In July 2024, he became Director of the IGES-JISE. He is also a member of the vegetation map legend review committee of the Ministry of the Environment, an advisor to the Environmental Review Board of the Ministry of Economy, Trade and Industry, a special adviser for the protection of Oze, Gunma Prefecture, and the Chairman of Chinju-no-Mori Project Engineering Department.
Co-authored “Nihon Shokuseishi Vol. 3-10” (Shibundo, 1983-1989), “Vegetation Landscape and its Management” (Tokyo University of Agriculture Press, 2014), “Study on Forests That Protect the Environment)” (Kaiseisha, 2018), etc.





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Information disclosure according to recommendations of the Task Force on Nature-related Financial Disclosures (TNFD)

Recognizing that the conservation of biodiversity and restoration of nature (nature-positive) are important environmental issues similar to carbon neutrality and a circular economy, we will strengthen our various measures and consider strategies to reduce nature-related risks and realize opportunities, incorporating them into our business activities.

Disclosure approach in line with the TNFD Final Recommendations

We conducted an evaluation and analysis of the nature-related disclosure recommendations advocated by TNFD, according to the LEAP approach.

TNFD evaluation and analysis process

- L: Location assessment and identification of vulnerable areas
- E: Evaluation of sector-level dependencies and impact relationship
- A: Assessment of material risks and opportunities
- P: Strategy development based on the analysis results and management by metrics and targets

TNFD Disclosure Recommendations

- 1 Governance: Governance of nature-related dependencies and impacts, and risks and opportunities
- 2 Risk and Impact Management: A process used to identify, assess, prioritize, and monitor nature-related dependencies and impacts, and risks and opportunities
- 3 Strategy: Impacts plus risks and opportunities of nature-related dependencies on business models, strategies, and financial planning
- 4 Metrics and Targets: Metrics and targets used to assess and manage critical nature-related dependencies and impacts, and risks and opportunities

1 Governance

The Environmental Policy Planning Committee, chaired by the representative vice president in charge of the environment, reports and discusses environmental policy issues every six months. Issues related to nature-related dependencies and impacts, as well as risks and opportunities, are also reported and discussed by this committee together with other environmental policy issues such as climate change countermeasures and the establishment of a recycling-oriented society. The results are reported and discussed at the Management Committee and the Board of Directors, and are supervised by the Board of Directors.

2 Management of risks and impacts

Concerning dependencies and impacts on nature, as well as our risks and opportunities, we have assessed our direct operation (steelworks) of the core steelmaking business and the mining of iron ore and coking coal in the upstream supply chain, according to the LEAP (Locate, Evaluate, Assess, and Prepare) approach advocated by TNFD. The processes for managing these natural-related risks and impacts are integrated into the company-wide risk management process as described in 1 Governance.

See the process of identifying, assessing, and prioritizing risks and opportunities (assessment and analysis using the LEAP approach)
<https://www.nipponsteel.com/en/csr/env/biodiversity/tnfdassess.pdf>





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3 Strategy

Using the ENCORE (Exploring Natural Capital Opportunities, Risks, and Exposure) and other tools, we assessed the dependencies and impact relationships of our direct steel operations (steelworks) and upstream supply chains (major raw material suppliers), and assessed and analyzed the nature-related risks and opportunities linked to critical dependencies and impacts from the perspective of their impact on our business models, strategies and financial plans. The resulting items identified as critical risks and opportunities and our strategies to reduce risks or realize opportunities related to them are shown below.

[Risk Analysis Results]

Target	Critical dependencies/impact		Risk type	Factors and events	Impact on Nippon Steel	Nippon Steel's strategy
Direct operation Production activities in steelworks	Water pollution (Impact)		Physical (Acute)	Pollution of the surrounding water environment and water contamination accidents caused by wastewater or leakage of steelworks	<ul style="list-style-type: none">Increased costs for additional waste-water treatment.Suspension of the production process if the existing processing facility cannot handle itPossibility of penalties or fines due to exceeding the baseline	[Target] No serious violations of environmental laws and regulations and no environmental accidents <ul style="list-style-type: none">Consider water pollution caused by wastewater and leaks as a risk that can occur at all steel-making sites, regardless of whether they are located in areas where there is a risk of impact on the ecosystem. Implement hardware/software measures assuming their occurrence across the company. <Hardware measures> Automatic wastewater monitoring equipment, wastewater shut-off gates, emergency water tanks, etc. <Software measures> Inspection and repair, drafting of work standards, operation confirmation, and training of procedures (See the ENV P.80 for details of measures for the water environment)Have a system in place to promptly report environmental events at each business site to the head office. Report the status of such events twice a year to the Environmental Technology and Management Committee chaired by the executive vice president in charge. Also, report to and be supervised by the Board of Directors.
Indirect operation (Upstream supply chain)	Utilization of terrestrial ecosystems (Impact)		Physical (Acute)	Temporary suspension of business activities caused by the destruction of land, including the operating area, by the mining activities of a supplier	<ul style="list-style-type: none">Deterioration of corporate image and a decrease in product sales due to procurement of raw materials from the supplier in troubleDecrease in product production due to limited procurement of raw materials in case of a suspension of a supplier's business activities	<ul style="list-style-type: none">Have a system in place that allows us to continue our business, with diversified material sourcing as a comprehensive risk countermeasure, by increasing the amount of procurement from other suppliers even in case of temporary suspension of procurement from one supplierChecking the status of suppliers' nature-related activities in future engagements with suppliers, recognizing that some of the activities of suppliers have an impact on nature <p>Examples of activities of suppliers of raw material (Vale)</p> <p><Terrestrial ecosystems></p> <ul style="list-style-type: none">Enhanced measures to eliminate dangerous tailing dams by 2025 <p><Water Resources></p> <ul style="list-style-type: none">84% use of recycled water for production (result in 2023)20% reduction of per-unit consumption of fresh water vs. 2017, the base year
	Mining activities of iron ore and coking coal	Utilization of the terrestrial ecosystem (Impact)	Utilization of water resources (Impact)	When a supplier causes problems such as land destruction or excessive use of water resources, or fails to properly disclose to investors, despite investors' increased ESG investment associated with higher awareness of the use of terrestrial ecosystems and water resource conservation: <ul style="list-style-type: none">Decline in the supplier's brand valueSupplier's withdrawal from the business due to their deteriorating financing When a supplier causes a water-related problem or fails to properly disclose it to local residents or environmental organizations, despite their increased interests in the use of terrestrial ecosystems or water resource conservation: <ul style="list-style-type: none">Decline in the supplier's business continuity in the target regions due to criticism from local residents and environmental organizationsDecline in the reputation of the supplier due to news and other information		



Vale ESG portal/Sustainable mining/Nature



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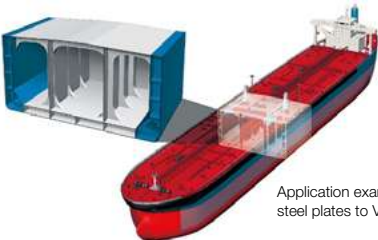


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[Opportunity Analysis result]

Target	Critical dependencies/ impact	Risk type	Factors and events	Impact on Nippon Steel	Nippon Steel's strategy
Direct operation The NS Group's nature-related activities	Nature in general (Impact)	Transition (Products and services, reputation)	Increase in demand for eco-friendly products due to increasing social interest in and needs for the conservation of nature and biodiversity	<ul style="list-style-type: none">• Increase in production by expanding the lineup of eco-products and strengthening the steelmaking system, and increase in earnings from environmentally friendly products	<p>Natural restoration and expansion of supply of a variety of nature-positive and eco-friendly products</p> <ul style="list-style-type: none">• Improvement of marine environment and regeneration of seaweed beds using steel slag as raw material (marine fertilizer: Vivary™ Unit)• High ductility steel plates for hulls that reduce the risk of environmental damage such as oil spills by improving marine safety <div><p>Application example of high ductility steel plates to VLCC</p></div> <ul style="list-style-type: none">• Development and provision of steel materials that do not contain environmentally hazardous substances such as lead and hexavalent chromium
			Increased impact of nature and biodiversity conservation activities on the corporate image due to increasing social interest in and needs for the conservation of nature and biodiversity	<ul style="list-style-type: none">• Improved corporate image and increase in product sales by effectively disseminating activities related to the preservation of nature and biodiversity	<p>Enhanced PR for the above products (sales activities, academic conferences, events, commercials, etc.)</p> <ul style="list-style-type: none">• Presentation on the creation of sea forests at COP28 <div><p>Chika Kosugi, Advanced Technology Research Laboratories, R & D Laboratories, Nippon Steel as a panelist at the Japan Pavilion</p></div> <ul style="list-style-type: none">• Award from an external organization (Expansion of the use of wood biomass made from local thinned wood)
		Transition (Reputation)	Increasing attention from stakeholders, including local residents, regarding the conservation of nature and biodiversity	<ul style="list-style-type: none">• Implementation of initiatives related to the preservation of nature and biodiversity and effective communication to build good relationships with local communities and improve preparedness for business continuity	<ul style="list-style-type: none">• Establishment of management standards based on ecological methods, under our Basic Environmental Policy, to promote the creation of Hometown Forests• Contribute to the restoration of ecosystem services (fishery harvest) through the creation of sea forests• Promotion of environmental activities such as dialog and participation in local activities by steelworks, and participation in 30 by 30 activities <div><p>Parantica sita identified in our green areas</p></div>



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4 Metrics and targets

We manage critical dependencies and impact, and risks and opportunities, based on the TNFD Core Global Indicators. Concerning water resources and water pollution risks that are assessed as having a critical impact on direct operations, we are implementing initiatives with the targets of “no serious violations of environmental laws and regulations and no environmental accidents” and “high-level stability of the water circulation rate,” reflecting the risk analysts results in 3 Strategy.

[Indicator: TNFD Core Global Indicators for Critical Dependencies and Impact]

No.	Driver of nature change	Indicator	Nippon Steel’s disclosure (Direct operation: Steelworks)
C2.1	Pollution/pollution removal	Wastewater discharged	Volume of water discharged by destination (m³) P.80
C3.0	Resource use/replenishment	Water withdrawal and consumption from areas of water scarcity	No manufacturing base located in areas of water scarcity P.80 Volume of water withdrawal and consumption (m³)

[Indicator: TNFD Core Global Indicators for Risks and Opportunities]

No.	Category	Metric	Nippon Steel’s disclosure (Direct operation: Steelworks)
C7.2	Risk	Description and value of significant fines/penalties received and litigation action in the year due to the negative nature-related impacts	None
C7.3	Opportunity	Amount of capital expenditure, financing or investment deployed towards nature-related opportunities, by type of opportunity, with reference to a government or regulator green investment taxonomy or third-party industry or NGO taxonomy, where relevant	1.3 billion yen (costs for beautification and greening of steelworks) P.78

[Goals and Performance: Objectives and performance to manage critical dependency/impact items, and risks and opportunities]

Target	Metric	Goal	Progress management method	Results for FY2023
Water pollution	Serious violations of environmental laws and regulations and environmental accidents	Zero	Development of communication and reporting systems, internal audits, and interviews	Zero
Water Resources	Water circulation rate	Stable rates at high levels	Internal audits and hearings	The water re-use rate of about 90% P.80



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Safety

In keeping with the basic philosophy that “safety and health of employees of the Nippon Steel Group is the Group’s most important, top-priority values and the basis that supports business development,” the Nippon Steel Group has firmly adhered to its manufacturing values, which include observing the principles of prioritizing safety, protecting the environment, and preventing disasters. We are working on all of the related activities to improve the level of our Occupational Safety and Health Management System (OSHMS) while creating safe and secure workplaces.

The Basic Policy on Safety and Health is applied to Nippon Steel as well as to related or cooperative companies.

Reducing disaster risks to zero, and group-wide sharing of effective measures

We make a risk assessment when planning a new project and regularly conduct safety and risk assessment for existing projects, to prevent accidents and reduce risks. We also seek for greater safety of equipment even when such equipment is essentially safe, and take countermeasures against human error. We also actively promote the use of IT in safety measures, such as checking worker location data via GPS, safety surveillance cameras, and helmet-mounted cameras. We conduct an analysis of actual accidents for the prevention of similar accidents and make known effective examples of accident-preventive measures. As a result of continuing efforts, our safety performance in 2023 shows that the number of accidents accompanied by lost work time was 8 for the company*1, 7 for our cooperating companies

(including fatal cases of one for the company and zero for cooperative companies), the comprehensive accident frequency rate was 0.08 (vs. Japan’s steel industry average of 0.81), and the intensity ratio was 0.04 (vs. the same average of 0.12). We will continue to strive for a safe work environment with the safety wellness targets for FY2024 which are zero fatalities/severe accidents and less than 0.10 as the accident frequency rate.

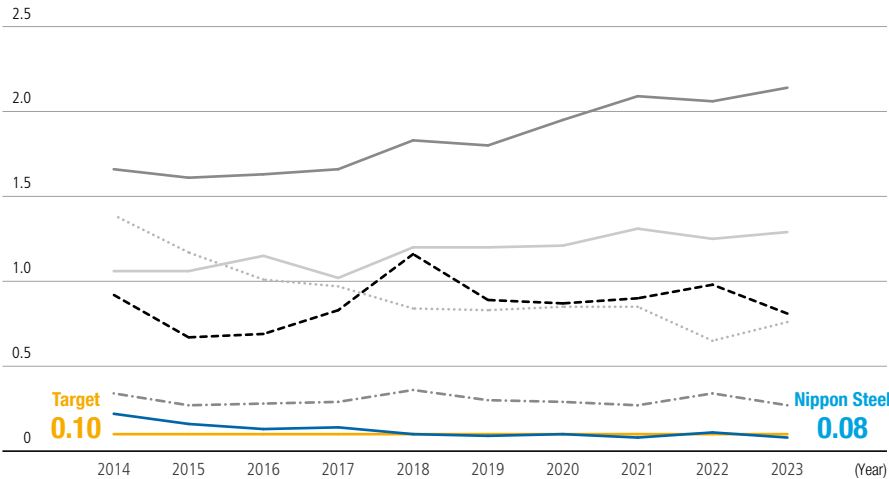
Target

Accident frequency rate
0.10 or less

Fatalities accidents
0

*1 Nippon Steel’s employees include seconded employees as well as temporary and part-time workers, and those dispatched to Nippon Steel.

[Accident frequency rate]



- Target: 0.10
- Nippon Steel
- Domestic all industries*2
- Domestic manufacturing industries*2
- - - Domestic steel industries*2
- Domestic steel industries (JISF members)*2
- World steel industries (WSA members)*3

*2 JISF “Safety Management Overview, 2023”
*3 World Steel Association, Safety and health 2022 metrics report

Accident frequency rate = $\frac{\text{Number of accidents and recordable incidents, accompanied by lost work time}}{\text{Total number of hours worked by all employees}} \times 1,000,000$

Acquisition of third-party certification

Nippon Steel’s all steelworks acquired the ISO (JIS Q) 45001 Health and Safety certification (published in March 2018) as of April 2024.

Acquisition of ISO (JIS Q) 45001 certificates

- FY2019 Kansai Works Wakayama Area
- FY2020 Amagasaki Area and Osaka Area of Kansai Works; Nagoya Works; Kyushu Works Oita Area; East Nippon Works Kashima Area
- FY2021 Naetsu Area and Kimitsu Area of East Nippon Works, North Nippon Works Muroran Area, Setouchi Works Hirohata Area
- FY2022 North Nippon Works Kamaishi Area, Kyushu Works Yawata Area
- FY2023 Setouchi Works Hanshin Area



ISO (JIS Q) 45001 Health and Safety certificate (Setouchi Works Hanshin Area)

Safety training

We make efforts to improve training for accident prevention. The safety training programs are attended by all newly appointed managers of manufacturing worksites (80 managers in fiscal 2021, 65 in fiscal 2022, and 64 in fiscal 2023). Our Taikan Program (an experience-based safety education program) allows employees to experience worksite risk through simulation, so as to better prepare them for anticipating and managing risk. In addition, we regularly hold safety and health education programs (74 participants in fiscal 2022 and, 69 participants in fiscal 2023) for the safety and health staff of our Group companies and major cooperative companies, striving to enhance information sharing about our safety and health management approaches and activities and the acquisition of knowledge about laws and regulations related safety and health.

The safety and health management organization, etc.
<https://www.nipponsteel.com/en/csr/sdq/safety.html>



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Disaster Prevention

For our company, trust, and coexistence with our customers, local communities, and society are of the utmost importance, and it is important for the continuity of our company that we do not cause preventable accidents that occur despite efforts for disaster prevention that may damage our credibility. For this reason, our disaster prevention promotion activities aim to improve disaster prevention management while building mechanisms and systems for autonomous and continuous activities, taking measures to reduce disaster risks of, and preventing accidents that can be preventable.

Three initiatives to reduce disaster risks

As initiatives to reduce disaster risks, Nippon Steel’s Plant Safety Division undertakes these three: 1) identification of disaster occurrence risks based on risk assessment for each plant and for each of their process technology divisions; and implementation of measures on this basis for software and hardware to reduce risks and control residual risks; 2) corporate-wide implementation of measures against risks exposed by disaster to prevent recurrence; and 3) self-management of monitoring concerning the appropriate implementation of points 1) and 2) by persons in charge of disaster prevention in each work; understanding of the control status based on the management hearings at the head office, and implementation

[Specific disaster prevention initiatives]

1 Prevention of disaster occurrence (mitigating risks exposed by disaster)

- Identify and assess risks in manufacturing sites based on the corporate-wide guidelines; manage residual risks; and develop and promote permanent measures
- Identify accident risks related to operating processes and facility design and promote the drafting of permanent measures by outside experts and the process technology division in the head office
- Strengthen disaster prevention management in the facility measures of the Medium to Long-Term Management Plan

2 Enhancement of initial response

- Enhance drills for initial response (drills at all plants in all steelworks; enhanced drill programs; use of dedicated training facilities, improvement of hazard sensitivity by use of CG, etc.)
- Improve the fire-fighting capacity of the in-house fire defense function, in cooperation with experts (joint fire drilling with public firefighters; training for leaders, etc.)
- Prevent forgetting of past incidents and accidents (panel presentations in training facilities; session for employees to learn about past accidents during training)

3 Measures to mitigate existing risks (measures for disaster prevention equipment)

- Prevent disaster recurrence; investment in measures for compliance and risk assessment

of corrections if needed. In our targeting of a zero score for serious accidents that can be preventable, we promote essential disaster prevention improvement measures in manufacturing sites.

We profoundly regret that one serious Disaster–related accident occurred in fiscal 2023. This has made us become more solemnly determined to achieve the target of zero serious disaster-related accident.

Target

Serious disaster-related accidents

0

4 Auditing disaster prevention

- Voluntary monitoring by disaster prevention organization at each steelworks for regular check-ups and corrective action on the status of disaster prevention activities at the manufacturing work front
- Regular check-up and corrective action on the implementation status of disaster prevention management of all steelworks based on the disaster prevention auditing of the head office

5 Third-party monitoring toward enhancing safety competency in steelworks

- Assessment of steelworks by an NPO, the Japan Industrial Safety Competence Center

6 Preparedness measures for earthquakes and tsunami and measures for natural disaster mitigation

- Promotion of measures in preparation for earthquakes in the order of declining importance: 1) human injury prevention, 2) area damage prevention, and 3) minimizing of impacts on production
- Developing disaster mitigation procedures for natural disasters, conducting simulated exercises, and reviewing countermeasures.

7 Group companies’ disaster prevention management

- Meetings to enhance coordination for disaster prevention management; individual visits to a workplace where a disaster or accident happened or which has risks related to disaster prevention

Efforts to prevent the occurrence and recurrence of accidents

As part of disaster prevention efforts, we conduct activities to prevent occurrence and recurrence of accidents.

In disaster risk assessment activities, in addition to identifying the causes of accidents and implementing countermeasures, we work to reduce risks by establishing and standardizing company-wide disaster risk assessment guidelines and sharing information on the identified risks as a company-wide system.

As for the enhancement of initial response, we are focusing on initial response training in addition to hardware measures for early detection in order to enable the minimization of damage in the event of a disaster. We are devising ways to make it more practical in each workplace; such as the off-day or night drill and drills with no pre-fixed scenario.

We have so far promoted the enhancement of the corporate-wide disaster management infrastructure (standardization). In order to raise the level of our activities, we will implement initiatives to support disaster prevention activities at manufacturing sites, including activities conducted by managers, to make our disaster prevention activities sustainable through the spread and enhancement of safety culture.

The disaster prevention management organization, etc.
<https://www.nipponsteel.com/en/csr/sdq/disaster.html>



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Quality Management

Quality management is one of the most important aspects in obtaining the trust and satisfaction of customers in the provision of products and services. All of our group employees are responsible for thorough quality management.

The basic policy of quality assurance of the Nippon Steel Group

As a basic policy in line with the Japan Iron and Steel Federation's guidelines, aimed at strengthening the quality assurance system, we are promoting 1) the enhancement of education on quality compliance (compliance with laws and regulations), 2) activities to reduce quality risks, and 3) the extraction of quality risks through quality audit. Quality management issues are shared by the Quality Management Committee, chaired by the Executive Vice President in charge of quality management. By having the Committee review actions to take to resolve the issues, we strive to maintain and improve our quality management system.

Activities aimed at strengthening the quality assurance system

Nippon Steel's quality management system is based on autonomous quality management activities by each steelwork, business unit, and group company including overseas ones.

The Quality Management Division, in cooperation with the steelworks and business units, promotes quality compliance education, behavioral risk reduction activities, and the extraction and correction of quality risks through quality audits. The code of conduct for quality, called the Five Basic Rules of Quality Behavior, has been made known to all employees, with a focus on improving awareness of quality compliance and preventing quality problems from occurring.

Information on quality-related events is promptly shared across the Group and at appropriate times measures are launched to resolve issues through standardization, systemization, and automatization. These measures are then implemented to enhance the identification management of actual products and to improve reliability of testing and inspection.



The Five Basic Rules of Quality Behavior

[Specific activities]

1 Education on quality compliance

Employees of the Company and the domestic and overseas Group companies receive quality compliance education. It covers such topics as the importance of compliance with laws and regulations, the impact that our products and work have on society, quality risk management, and internal rules and standards. Compliance cases which occurred in and out of the Company in the past have also been used as examples. This education takes the form of training that effectively uses quality e-learning and digital tools.

2 Activities to reduce behavioral risks

Based on the analysis of the causes of past quality issues, we have established the basic principles that employees involved in quality management should follow and are working to disseminate them as the Five Basic Rules of Quality Behavior. To improve the reliability of testing and inspection, we also work to eliminate risks from human intervention by automating data retrieval and introducing systems for product identification and product quality judgment before shipment.

3 Quality audits

The Quality Management Division performs periodic quality audits of the Company and the Group to enhance customer confidence. Audits include a review of compliance with the Japan Iron and Steel Federation's Guideline, conformity with standards and specifications, and quality-related behavioral risks. We are nurturing auditors at steelworks and Group companies to strengthen the autonomous audit system. We also receive external reviews, such as those for ISO 9001 and JIS certifications, to raise the credibility of our quality management system.



Autonomous audit by certified auditors

Quality management system and standardization activities

Quality management system (ISO 9001 certification)

All steelworks of Nippon Steel are ISO 9001 certified. By implementing the quality management system, we ensure that the processes used to provide products and services to customers are appropriately managed. Following the reorganization of our manufacturing bases in Japan, we have integrated the quality management systems, which had been individually certified at the steelworks or area level. We will thereby efficiently proceed with activities to clarify each steelworks' quality policy and to improve quality promptly and continuously.

Standardization activities

With regard to Japanese and international steel standards (JIS, ISO, and ASTM), we promote the establishment and revision of standards by participating in the standardization activities led by the Japan Iron and Steel Federation and contribute to the standardization (rules development) of steel products through public-private cooperation.

Building systems for standardization also helps us nurture human resources specialized in standardization.

The quality management organization, etc.
<https://www.nipponsteel.com/en/csr/sdq/quality.html>



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Production and Supply Chain Management

To realize the production and supply of steel products required for a sustainable society, Nippon Steel is making various initiatives and DX (digital transformation) for stable procurement, stable production, and shipping in all aspects of the supply chain, from the procurement of raw materials, fuel, equipment, and materials to the shipment to customers.

Sustainable procurement efforts

The economic development of emerging countries is a major element of change in the global purchasing environment, requiring Nippon Steel to make strategic purchasing to enhance manufacturing capabilities. At the same time, it is becoming increasingly important for not merely our Company but also our entire supply chain to fulfill social responsibilities in order to realize a sustainable society. Against this background, we steadily and continuously procure raw materials, other materials, and equipment to achieve a stable supply of steel products for a sustainable society.

In terms of procurement of raw materials and fuels, we are sourcing from suppliers worldwide, including Australia, North America, South America, and South Africa, for a stable supply of more than 100 million tons of raw materials for the steelworks. The supply of materials is mainly iron ore and coal. In the procurement of equipment and materials, we purchase around one million product items of equipment and materials — from gigantic facilities such as blast furnaces to electric and mechanical products as well as safety, emergency, and office supplies — from about 3,000 suppliers.

In engaging in these procurement activities, we are committed to compliance with laws and regulations, consideration of environmental conservation, elimination of racial discrimination and human rights abuses, confidentiality, and thorough information management as prerequisites. We then strive to maintain and improve mutual understanding and trust with suppliers from a long-term perspective. In July 2020, upon affirming agreement with efforts made by the Ministry of Economy, Trade and Industry, we made a declaration for the establishment of partnership relations with suppliers and other business partners to establish cooperative and co-existing relationships.

In addition, based on the Nippon Steel Group Human Rights Policy adopted on April 1, 2024, we continue to conduct procurement activities with high ethical standards while giving maximum consideration to respect for human rights.

With regard to equipment and materials for which we have business relationships with many suppliers, we conduct a “Partners Questionnaire” every year to deepen mutual understanding and aim for sustainable development together with our suppliers. The information received is used to formulate various measures to strengthen cooperation and collaboration with suppliers.

[Basic policy on equipment and materials procurement]

- 1 Compliance with laws
- 2 Equal opportunities
- 3 Building of a partnership
- 4 Fair disclosure of information and quick transaction processing
- 5 Consideration to resource protection and environmental preservation
- 6 Preservation of confidentiality

The declaration for the establishment of partnership relations
https://www.nipponsteel.com/news/20200731_100.html

Nippon Steel Group Human Rights Policy
<https://www.nipponsteel.com/common/secure/en/topics/pdf/20240401.pdf>

Consideration to reducing environmental impact in procurement activities

Based on the Life Cycle Assessment concept, Nippon Steel is taking initiatives in reducing environmental impact at various points along the supply chain. In keeping with rising demand for tighter management of chemical substances, we have created management standards for 16 toxic chemical substances, including cadmium, jointly with customers and suppliers. We then established a system to manage substances of concern contained in purchasing products, including packaging materials.

In addition, as stipulated in the Charter of Corporate Behavior by Keidanren, we have set up internal rules, including an appropriate purchasing policy, which puts us on record as fully considering resource protection and environmental preservation. Jointly with businesses, governments, academia, local governments, and NGOs, we have taken the initiative in developing a framework to prioritize the purchasing of products and services that represent less environmental burden. Moreover, we have participated in the Green Purchasing Network (GPN) since 1996, when the network was founded, in order to promote green purchasing activities.

Toxic material management concerning quality assurance
<https://www.nipponsteel.com/en/csr/customer/support.html>

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Efforts to stabilize production

We are focusing on stabilizing production, including the operation of blast furnaces and coke ovens, which have a particularly significant impact. Currently, the tapping ratio of the blast furnaces remains at a low level, and we are also focusing on developing operational plans under these circumstances.

In such efforts to stabilize production, we also frequently use solutions using DX. For example, in the case of identifying abnormalities in machinery and equipment and preventing problems, regular inspections by manpower had been performed in the past, but now with the installation of a large number of wireless vibration sensors, it is possible to monitor them 24 hours a day, and thereby quickly identify and respond to abnormalities. Further, by centrally managing the collected data and analyzing it with AI and machine learning, we can now obtain even higher value-added information.

Concerning blast furnaces, because it is difficult to grasp the situation inside the blast furnace, there have been cases where the intuition and experience of skilled operators have been relied on. Nowadays, it is by using technology that measures temperature, pressure, gas distribution, and other conditions in one second with sensors installed inside the blast furnace body and reproduces conditions inside the furnace with three-dimensional images that we strive to stabilize blast furnace operations and improve production efficiency. Through this type of simulation, we are developing automatic control that predicts future operating conditions and optimizes operations.

In order to deliver products that meet customer requirements on time, our head office unit in charge of overall management of sales and operations coordinates the relevant corporate-wide product manufacturing plans every day, while keeping track of sales and production. The process control units in each steelworks receive the plan and manage the progress of each single product while keeping in mind the productivity of each manufacturing base. These units work for optimal processing from manufacturing to shipment, and delivering products as scheduled.

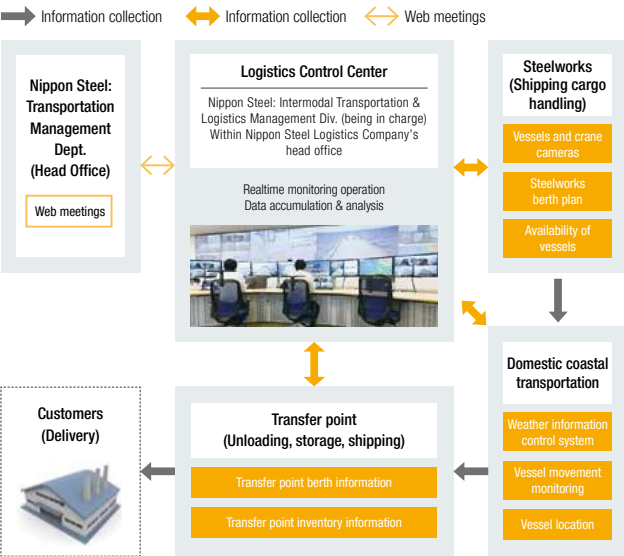
Improve productivity in domestic logistics

Approximately 60% of our domestic steel products are transported by about 200 coastal ships, which provide the primary means of transportation for industrial logistics. In the coastal shipping industry, as in other logistics industries, the shortage of workers has been a problem.

As one of the ways to answer the question of how to improve logistics, the Nippon Steel Group is working on improving logistics efficiency by establishing a logistics control center at its head office and utilizing the latest domestic logistics control system. Specifically, we consolidate the information needed for allocation and control of the coasters, such as their location data, progress rate of quay cargo handling at the steelworks, and the status of inventory at transfer points. We then perform real-time monitoring and operation, thereby improving transportation efficiency.

We believe that these efforts will lead to increased productivity and ease of work in domestic industrial logistics as well as in the domestic shipping industry, and will contribute to alleviating the shortage in the workforce.

[Function overview of the Logistics Control Center]



Dealing with the workforce shortage in domestic logistics

The Nippon Steel Group has therefore built a practical training ship, Reimei, and started its operation as one of the ways to secure crews. Many operators (shipowners) in the coastal shipping industry are small or medium-sized business persons and find it difficult to recruit and train new sailors even if they are willing because extra cabin space cannot be installed and the crew members find it burdensome to teach newcomers. Reimei is well designed with cabin space for an instructor and up to five trainee students, comfortable living space, a bridge, and a dining room, greatly contributing to the development of new sailors.

We will continue to make efforts for the sustainable development of domestic industrial logistics.



Practical training ship Reimei



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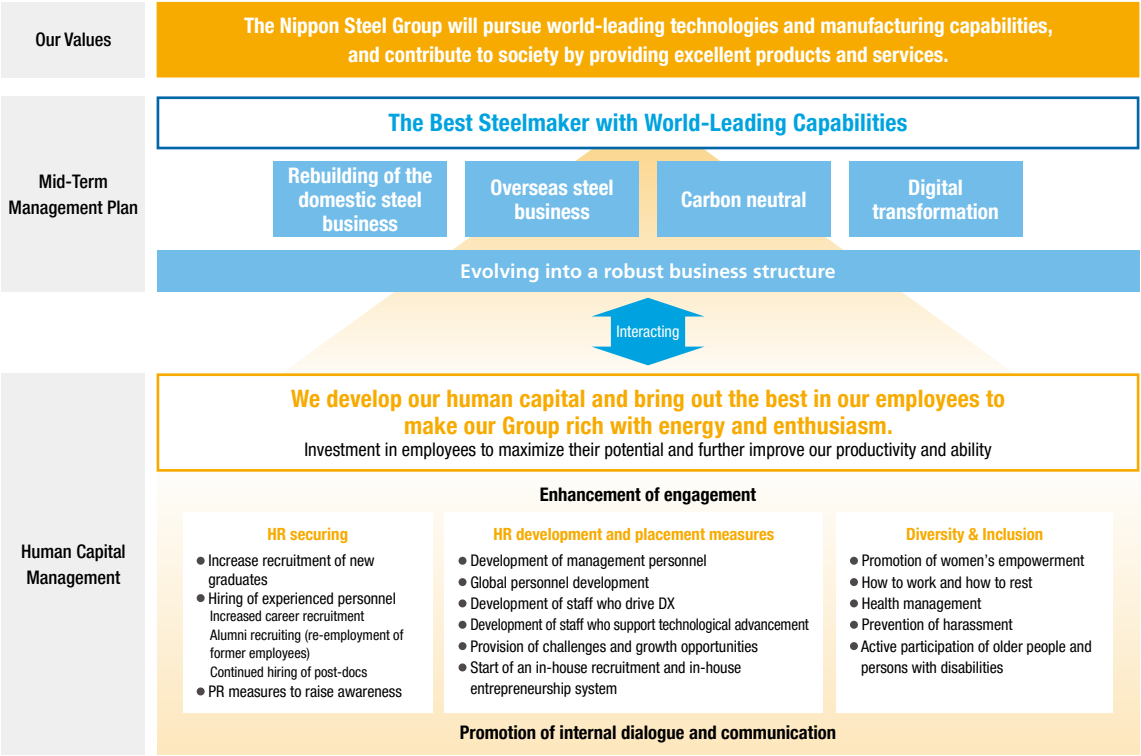
Recognizing that the source of our competitiveness is the power of our employees, we are working on human resource development as an important theme.

Human Capital Management Policy

The Nippon Steel Group’s basic philosophy is to “pursue world-leading technologies and manufacturing capabilities, and contribute to society by providing excellent products and services.” In addition, our management principles state, “We develop and bring out the best in our employees to make our Group rich with energy and enthusiasm.” In keeping with these principles, we have been working on human resource development as an important theme.

With the aim of continually evolving to become “the best

steelmaker with world-leading capabilities,” we are also working to transform our business structure into a robust one that is not affected by the external environment, in addition to implementing the measures in the four pillars of our Medium-to Long-term Management Plan. In order to steadily implement these measures, we are investing in human resources, getting the most potential out of our employees, and promoting various measures to further improve productivity and ability.



Basic Policy for Human Resource Development

A goal of HR development is to create employees who can understand and implement our Corporate Philosophy and our Employee Action Guidelines. With this in mind, each employee shares in taking the lead in HR development.

The Nippon Steel Group's basic approach to HR development is for supervisors to mentor their subordinates, through daily dialogue on the job, transferring understanding and knowledge of criteria for judgment and of operational skills. In order for this mindset to be shared by all employees, the following Basic Policy for Human Resource Development has been adopted.

[Basic Policy for Human Resource Development]

- 1** HR development is the job itself, and supervisors play an important role in HR development.
- 2** OJT training is a basis of HR development and is complemented by off-the-job training.
- 3** Supervisors share objectives and outcomes of HR development clearly with their subordinates.
- 4** Each individual strives for continual personal improvement for further growth.

		Unit	FY2021*	FY2022	FY2023
Number of training/learning hours	hours/year per employee [million hours/year]		32 [0.90]	28 [0.80]	35 [0.99]

* Includes the training/learning during operation with reduced production in FY2021



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Development of management personnel

In order to develop management personnel who will be responsible for the future of the Group, we get to share policies and issues through dialogue with management and other means. In addition, we provide training according to the stage of their rank as candidates for management executives so that they can develop a broader perspective. Specifically, the program provides them with the opportunity to learn about corporate and organization management, business management skills (financial, business strategy), global management, etc.—contents which lead to strengthen the exchange and collaboration of personnel.

- Development of management personnel
- Seminar for Group company executives
 - Seminar for senior executives
 - Seminar for executives
 - Seminar for middle management

Personnel development of office staff and engineers

Following the organizational strategy based on the Corporate Philosophy and Management Policy, the Nippon Steel Group uses an HR Development PDCA for office staff and engineers to effectively implement and establish the development of human resources. A development plan is formulated for each person, and an annual detailed plan is a base for the OJT, which is aligned with the supervisor-subordinate dialogue based on the assignment commitment sheet. At the end of a fiscal year, they look back the status of development, which leads to formulation of the plan for the following year. By reviewing performance, personnel who can deliver a strategy for each organization are systematically developed.

We are also working continuously to enhance the OFF-JT which complements the OJT. Various training programs are aimed at acquiring the knowledge and skills required for each qualification and position. An employee's period of time from

joining the Company to becoming a manager is divided into three steps: “Discipline,” “Creation” and “Independence.” Work reporting sessions and training by rank are carried out at the milestones of the 2nd, 3rd, or 5th anniversaries of the start of employment.

In addition, selective training to improve the skills needed for work, and technical education programs to systematically learn the knowledge needed for our engineers are available. These can be taken based on individual development needs upon the supervisor-subordinate dialogue.

Each employee acquires the knowledge and skills required for each role and position and, in addition to rank-based training aimed at improving the abilities of employees as a whole, and selective training based on individual development needs, training measures that support the realization of management strategies are incorporated for promoting human resource development by incorporating.

[Development of human resources who support realizing management strategies]

Development of heads of department/plant/mill

- Seminar for supervisor empowerment
- Training for newly appointed heads of department/plant/mill
- Training for manager candidates
- Training for newly appointed senior managers
- Training for newly appointed managers
- Training for supervisor candidates and follow-up training

Global personnel development

- Training for overseas dispatched personnel and training for administrative personnel
- Orientation prior to relocation overseas and including family members
- Training for English and local languages
- English advanced course and training for studying abroad

Development of staff who drive DX

- Various training activities to develop expert data scientists and data science users
- Training for citizen data scientists

Development of staff who support technological advancement

- Technical skills training (11 courses)
- Technical courses (48 courses in 14 fields)

Development of heads of department/plant/mill

The training courses are provided to managers who match certain manager qualifications and position so that they can acquire a proper understanding of their responsibilities and authority as managers, acquire knowledge, skills, and mindset that contribute to enhancing management as supervisors, and acquire group management capabilities. In recent years, we have given increased attention to management education. For example, we incorporated a program on communication skills as managers and expanded a voluntary training course.

Global personnel development

For our employees to effectively work in any country where we are active, we provide pre-assignment training aimed for them to acquire basic knowledge to do business in the country and understand cultural differences. We have also set targets for English language skills to be reached at each level, and are working to raise the overall level of our group. For those whose job requires English skills, there is a program aimed at raising their proficiency level in English so that they can perform their jobs overseas without the need for translators or interpreters.

Further, to train future employees in our domestic and overseas businesses, we have incorporated, in the training courses by rank, a program for acquisition of the knowledge and skills necessary for business management.

Concerning development of overseas local staff, we make efforts to transfer to an appropriate number the Nippon Steel Group's operational skills, mainly through OJT, according to the Company's Basic Policy for HR Development. In the ASEAN countries and India, where our overseas Group companies are concentrated, training courses by rank, as well as OFF-JT courses for specific skill learning and other subjects are conducted.





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Development of staff who drive DX

We are developing human resources in both data science and digital management. As for data science education, our goal is to develop DX skills training to enable all office staff to become data science users “who can effectively use data” by 2030, and to grow at least 20% of our office staff and engineers into citizen data scientists “who can make advanced use of data.”

As for digital management education, we have been conducting training for all managers to understand their role in the promotion of DX and encourage them to change their mindset, so that they can facilitate operational process reform using digital technology. Through the education in these two aspects, we intend to accelerate our production and business process reform, using data and digital technology.

Development of staff who support technological advancement

In order to train our employees to achieve world-leading technologies and manufacturing capabilities, courses to learn the essential knowledge and technologies for steelmaking engineers are prepared. In particular, the content of courses classified as steelmaking process-specific technologies is at the core of Nippon Steel’s technology. We have developed an environment in which we can learn from basic technologies to advanced technologies, with excellent in-house engineers as instructors.

Training scheme for office staff and engineers
<https://www.nipponsteel.com/en/csr/human/development/staff.pdf>

Personnel development of operators and maintenance staff

The operators and maintenance staff continuously build up their skills in steelmaking and maintenance, starting when joining the Company, on the assumption of continued long-term employment to retirement. Smooth transmission of technology and skills from veterans to younger workers is essential and a system that facilitates this is needed. Therefore, after identifying, through a supervisor-subordinate dialogue, the skill or skills to be acquired, a skill development plan is developed and carried out. Training is conducted mainly through On-the-Job Training (OJT), and the HR Development PDCA is kept up to date for use by repeatedly revising and implementing the development plan based on the progress of individuals.



Off-the-job training (OFF-JT), which complements OJT, is used throughout the Company by organizing the minimum skills and knowledge required by each rank of employees of the Nippon Steel Group into a company-wide standard system. Through this, we work at education of workplace leaders to further increase their ability to add to and improve our knowledge base from the field (“field technology”) and at measures to maintain and improve motivation of older people to continue working with health and motivation.

We are also actively promoting cooperation in HR development with partner companies, which play an important role in our steelmaking, from the perspective of deepening and expanding our partnerships. Specifically, in addition to the training of each partner company, we also conduct training for the employees of our cooperative companies. Level-specific training to impart and improve knowledge and skills needed for partner companies’ employees in different ranks, such as newcomers, young staff, team leaders, job leaders, and line managers, is available, with Nippon Steel’s employees serving as instructors.

Through these efforts, we support the HR development of our partner companies, encourage exchanges between our on-site employees and their employees, and establish a foundation for smooth business execution.

Another area we focus on is to diversify recruitment sources (especially for female employees and mid-career recruitment), and we strive to create a workplace climate in which diverse personnel can be motivated and collaborate with each other through human rights awareness and harassment prevention.



Training scheme for operators and maintenance staff
<https://www.nipponsteel.com/en/csr/human/development/operator.pdf>

Personnel treatment system

Nippon Steel’s administering of personnel policies aim at encouraging our employees to grow and develop their overall capabilities, from the time they join the company until they retire. We also find it important to ensure consistent, fair treatment of all employees regarding their capability and achievement, by methods including through dialogue between supervisors and subordinates.



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Diversity & Inclusion

Through our efforts in promotion of diversity and inclusion, we are committed to creating a company where diverse employees are empowered and feel proud and fulfilled.

Basic policy

Our basic policy for diversity and inclusion is to create a company where diverse employees are productive, perform at their best, being empowered, and feel proud and fulfilled. We are reinforcing various efforts with a focus on the following five areas, as one of the important management issues.

- 1 Promotion of women's participation and career advancement
- 2 Realizing the work life balance as a means to enable employees with diverse situations perform well in the workplace
- 3 Health management aimed for employees to work at their best up to the age of 65
- 4 Preventing harassment
- 5 Empowerment of older people and persons with disabilities

As a dedicated unit to promote these efforts, the Diversity & Inclusion Department has been established. Its staff reports the progress of various efforts, the work engagement score as a general index, and other matters to the Management Committee and other committees every year.

[Status of employees (non-consolidated basis)]

	Men	Women	Total
Number of employees (March 31, 2024)	25,721	2,822	28,543
Number of new hires (April 2024)	645	104	749
Average years of service (March 31, 2024)	18.0 years	13.5 years	17.6 years
Average age (March 31, 2024)	40.3 years old	35.6 years old	39.9 years old
Turnover rate* (FY2023)	1.7%	3.8%	1.9%

* The rate of voluntary retirees to all employees



Promotion of women's participation and career advancement

What we have done so far

We have endeavored to establish a comfortable working environment for female employees. Specific programs include: 1) a childcare leave benefit which is more generous than legally required; 2) a program for employees who rejoin the Company after having left it because of childcare or nursing care and other reasons; 3) a leave option to assist overseas relocation of a spouse; and 4) a temporary exemption program for employees who have difficulty in relocation because of childcare or nursing care and other reasons. We have also been opening 24-hour childcare centers in steelworks and provide maternity work clothes for use by steelwork employees who are in the childbirth/childcare phase, in order to help them continue their shift work with confidence. We are also working to improve the workplace infrastructure at manufacturing sites, and to improve the work content.

Internal childcare centers
(As of April 2024)

7 centers

Users of internal childcare centers
(As of April 2024)

139

Based on the various programs and work environments that we have established, we have developed an action plan, which includes a numerical target for the number of women in management positions. Our aim is to support female employees to continue to demonstrate their abilities through career development, and to promote their empowerment in all workplaces and levels, including enhancement of promotion to managerial positions.

General employer action plan, based on the Act on Promotion of Women's Participation and Advancement in the Workplace in Japan
<https://www.nipponsteel.com/en/csr/human/diversity/target.pdf>

	2022	2023	2024
Number of female employees in management positions (As of April)	55	65	70

Improved hiring and retention

We have been working to hire a greater number of women to promote their participation and career advancement. Career assessments for female employees are conducted to facilitate flexible placement and development based on the understanding of individual circumstances and to improve retention rates.

The ratio of women in overall hiring (2024)

Office staff and engineers
25%

Operators and maintenance personnel
11%

Overall hiring
14%

Support for employees' career development and work-life balance

We encourage female employees to develop and show their abilities by providing them with opportunities for career growth through efforts in anticipation of their various life events, and by actively promoting their advancement to managerial positions. For staff, as a training measure for the promotion of managers, we have newly established two-way online seminars for young employees with the aim of interacting with female senior employees, and career training for mid-level employees. For operators and maintenance staff, we started exchange meetings for female team leaders from different steelworks/areas in fiscal 2021. This provides an opportunity for female team leaders to share their workplace challenges and concerns and find clues to a resolution.

We are creating a workplace culture where work and home life are comfortably balanced by supporting employees in various ways, including improving and disseminating brochures explaining the relevant programs and guides for employees facing life events as well as for their managers. We also provide to managers training concerning unconscious bias and diversity management.



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Realizing the work life balance as a means to enable employees with diverse situations perform well in the workplace

Restraint on long-work hours

As a precondition for an environment in which diverse employees can perform at their best, we are committed to reducing long work hours based on appropriate work time management. We are promoting improved work management and work practices that lead to more efficient, higher-value-added output. In addition, we had set a goal of less than 2,000 hours on average for the total annual actual working hours, and have achieved it.

Enabling flexible ways of working

All employees with their diverse attributes and circumstances ideally should make the most of their finite time available and perform at their best. From this viewpoint, we are expanding our work system to pursue more flexible and diverse ways of working. Specifically, we are utilizing the remote work system and expanding workplaces that use the “coreless flexible system,” which eliminated the core time — an essential time period to work. In April 2024, we expanded the system for employees who are assigned unaccompanied, and revised the system to enable flexible working for employees who use shorter working hours for childcare, nursing care, etc.

Realization of a flexible way to take time off from work

We have been establishing the environment that facilitates our employees to flexibly take time off from work, tailored to their individual circumstances and life stage.

Annual paid holidays can be taken on a half-day basis to meet employees’ needs. Each of our steelworks and offices designates dates on which employees are encouraged to take holidays. The head office, for example, sets mainly Fridays in August, as “Eco-paid leave days” of approximately five days and recommends making it easier for employees to take leave by, for example, not setting up meetings and other events on those days.

Concerning childcare leave, in addition to providing a longer period than the statutory limit, the expired annual leave days accrued by each individual can be converted to paid off-days for parental leave. Moreover, we encourage male employees with a spouse after childbirth to take childcare and related leave.

In addition, programs for nursing care leave and time off for nursing care have been established to help employees continue working while attending to nursing care. The expired annual leave days accrued can be also converted to paid off-days for nursing care.

The expired annual leave days that have been accrued can be used for such purposes as prenatal checkups and recurrent (relearning) education, in addition to childcare and nursing care, sick leave, care of elementary to junior high school children, volunteer work, and infertility treatment. With regard to recurrent education, there is also a system of leave of absence to pursue a degree or other studies at a university or other educational institution.

In April 2024, we changed the name of menstrual leave for women to “F-Care leave,” and revised it to make it possible to leave on a half-day basis.

[Performance of ways of working and taking time off (FY2023)]

Average overtime hours per worker per month	23.6 hours
Utilization of paid leave days	86.2%
Average paid leaves taken	17.2 days
Childcare leave users and utilization rates	675 men (66%) 176 women (100%)
Return ratio of female employees after childcare leave	99.0%
Number of users of the short-work hour program for childcare	128
Nursing care leave and vacation program users	23
Users of the short-work hour system for nursing care	3

Benefit programs

In order to support the various life stages of employees and enable them to achieve a good work-life balance, we are also focusing on welfare measures. We support employees’ personal life with various programs: provision of housing, including dormitories and company housing, and a cafeteria plan (work-life support program).

Health management aimed for employees to work at their best up to the age of 65

Basic policy

Embracing the basic philosophy of Nippon Steel’s Basic Policy on Safety and Health, our basic policy of health management is to become a vibrant company in which all employees maintain both mental and physical health and work at their best from the time of joining the company to retirement, which has been extended to the age of 65.

Nippon Steel’s Basic Policy on Safety and Health Basic philosophy (excerpt)

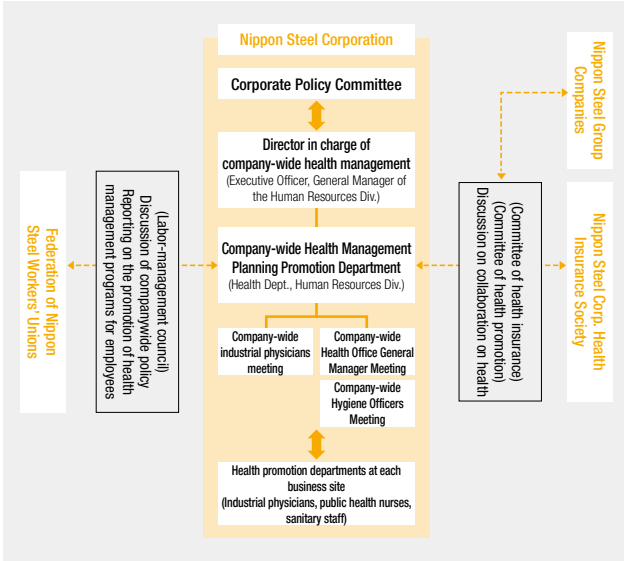
Basic Philosophy

- 1 Ensuring and maintaining the safety and health of employees of the Nippon Steel Group is the Group’s most important and top-priority value, and the basis that supports business development.

2 Under the Management Principles of “developing and bringing out the best in our employees,” the Nippon Steel Group makes continuous efforts to abide by this philosophy and continues to contribute to society through their safety and health.

April 1, 2019 Nippon Steel Corporation

[Organization for health promotion]





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Diversity & Inclusion

Promoting physical wellness

■ **Cerebral cardiovascular disease control**

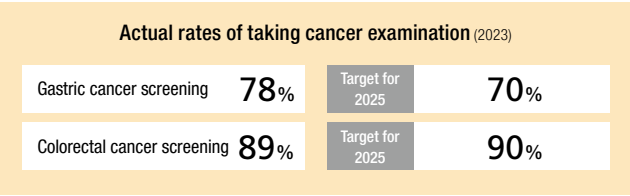
We have established a unique company-wide system that enables us to assess and manage the risk of diseases based on the results of health checkups. We provide health guidance according to risk factors or control the frequency of health checkups. It is important that workers with high risk of cardiovascular disease improve their lifestyle. We are improving the implementation rate of specified health guidance, aimed at improving the dietary and exercise habits of workers, by setting a target rate and promoting medical visits. We cooperate with the Health Insurance Union for achieving these goals.



■ **Cancer disease control**

Various cancer screening (including non-statutory exams) based on age and gender are incorporated in our health checkups.

In particular, regarding exams for gastric and colon cancer, which are high risk diseases, we set the evidence-based priority target age and screening frequency for the examination. We also set our target rate of exam-taking and encourage employees to take exams for early detection and treatment of cancer.



[Initiatives to standardize manufacturing]

Classification	Details
Health Challenge Campaign	● A company-wide measure in which employees are challenged for two months to improve their personal habits Ex. Take 8,000 steps a day/Have good breakfast
Passive smoking preventive measures and non-smoking guidance	● Since April 2020, smoking in Company buildings has been prohibited (excluding designated smoking rooms) ● Implementation of guidance on how to quit smoking at the on-site clinic or other clinics or via website For employees who wish to stop smoking, an occupational health care professional will provide individual guidance

Promoting mental wellness

Aiming for each employee in the Nippon Steel Group to enjoy a vigorous life on and off the job, we provide a consulting service for prevention and early detection in the area of mental health.

We have incorporated the issue of mental health in various in-house seminars and offer education on how to be aware of one’s own stress and to deal with it. For managers, we additionally offer education on how to care for their subordinates and manage their teams, and how to coordinate with the corporate health care professionals (occupational physicians, health nurses, and other staff).

Moreover, we provide stress checks through a workplace stress survey every fall. Occupational health care professionals give guidance for improvement by teams and individuals based on the result of the stress check. In contributing to a vigorous work environment, managers implement necessary measures according to the issues of their team or an individual, coordinating with the personnel department and the health department.

We identify those who are at risk at the Health Consulting Contact by various measures in association with the Company’s mental health e-learning and questionnaire event conducted every June. Occupational health care professionals swiftly respond to the findings of the events to foster mental wellbeing.

[Our mental health initiatives]

Classification	Details
Proactive action	(Self-care) <ul style="list-style-type: none">● Stress check for awareness of their stress● Training for new hires and young employees (Care by management supervisors) <ul style="list-style-type: none">● Workplace analysis of stress check to help employees become aware of their stress● Support from supervisors or colleagues● Training for managers (Care by occupational health care professionals) <ul style="list-style-type: none">● Providing mental health education program by occupational health care professionals
Early detection	<ul style="list-style-type: none">● Screening to identify those in poor condition during a regular health checkup● Screening of highly stressed employees via stress checkups● e-learning to identify those who wish to be consulted● Establishment of a health counseling contact
Support for employees’ return to jobs and prevention of recurrence	<ul style="list-style-type: none">● Support for employees’ return to jobs based on the return-to-work program● Re-designing of work assignments for a smooth return to the workplace● Regular interviews after return by occupational health care professionals

Preventing harassment

We are strengthening efforts to prevent harassment in order to create an environment where diverse human resources can work diligently with peace of mind.

We have clarified our internal policies, created and disseminated leaflets to inform and enlighten all employees, and repeatedly provided education on harassment in training at employees’ milestones, from new employees to managers. From fiscal 2020, in addition to these initiatives, we are conducting a “Harassment Prevention Campaign” every December. In the campaign, we offer e-learning and self-checks for all the employees and board members, and workplace dialogue specifying themes such as creating an open workplace.

Dedicated consultation and reporting points of contact have been established for employees who face a harassment issue.

Each of the contact points responds to each individual case while paying attention not to disadvantage anyone for reporting or cooperating. After investigating and confirming the existence of a problem, we take strict measures in accordance with employment rules and other regulations.

Empowerment of older people and persons with disabilities

Concerning promoting the empowerment of older people, we have decided to raise the retirement age from 60 to 65 in fiscal year 2021. This change reflects the decline in the working population and the raising of pension eligibility age, and was made also from the perspective of maintaining and enhancing our on-site manufacturing capacity.

As for the employment of persons with disabilities, we have implemented an action plan and work to promote their employment and provide an accommodating working environment. Since 2007, we have established special-purpose companies to expand employment opportunities.





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Respect for Human Rights

Nippon Steel respects human rights and strives to create a working environment which allows diverse human resources to be more empowered.

Basic policy

In compliance with the Universal Declaration of Human Rights and other international norms on human rights, the Nippon Steel Group respects our employees' diverse views and fully utilizes their individuality via effective communication and collaboration so as to create and deliver enhanced value. Based on the United Nations Guiding Principles on Business and Human Rights, the Nippon Steel Group Conduct Code has been set. By adhering to its principles, Nippon Steel conducts business ethically, while paying full heed to human rights issues arising with the increasing globalization of the economy. Nippon Steel gives due attention to the rights of workers, and staunchly opposes the use of forced or child labor. These are prerequisites of our corporate activities. We have also prohibited as unjust the discriminatory treatment of workers based on nationality, race, belief, creed, gender, age, sexual orientation, and disability. In addition, we give careful consideration to the traditions and culture, business practice, and labor practice of each country or region as we accelerate overseas business development.



Informal gathering of employees dispatched from Nippon Steel and local employees of our overseas operating companies

The Nippon Steel Group has established the Nippon Steel Group Human Rights Policy to demonstrate this corporate stance within and outside the Group. This policy has been approved by the Board of Directors of Nippon Steel Corporation.

Nippon Steel Group Human Rights Policy

<https://www.nipponsteel.com/common/secure/en/topics/pdf/20240401.pdf>

Efforts to prevent human rights abuses

<Response inside and outside the Nippon Steel Group>
Conduct human rights due diligence

Based on the establishment of the Human Rights Policy effective April 1, 2024, we have established a human rights due diligence system to identify negative impacts on human rights, prevent or mitigate them, and are working on continuous implementation and improvement. In fiscal 2024, we conducted a survey for several suppliers. We are currently analyzing the findings, and we will continue to consider the number and the type of suppliers for the survey from fiscal 2025 onward.

Mechanism of corrective actions

We have clarified whom to contact for consultation on various compliance issues including human rights. This is a part of the effort to establish a groupwide claims handling mechanism that makes it easy for employees and related personnel to ask for consultation, and that enables the Company to understand and identify incidents of human rights abuses.

Specifically, a Compliance Consultation Room has been established to accept inquiries and reports and give counseling regarding human rights abuses such as harassment, from employees of the Company and Group companies and their families, as well as from employees of business partners. Reports and consultations from various stakeholders are accepted through the Inquiry Form accessible on the website. Regarding the response to these individual incidents, such as internal reports and consultations, we investigate the facts and, if necessary, seek advice from outside parties, including lawyers and outside professional organizations, to protect the privacy of the persons and to ensure that they do not receive unfavorable treatment. We then provide guidance and education to those involved, and strive to appropriately resolve the incidents.

[Inquiry form concerning human rights]

- Consultations in Japanese
bhr_contact@jp.nipponsteel.com
- Consultations from overseas or in English
<https://jacer-bhr.org/en/application/form.html>

In the event that a target for correction or remedy is identified, we strive to take appropriate measures, and periodically check and verify the effectiveness of the measures through checklists and other means. We also strive to promote dialogue and discussions with internal and external stakeholders regarding our Group's initiatives for human rights in its business activities.

Furthermore, since labor-management relations play an important role in preventing human rights abuses and resolving related incidents, in the event of disputes concerning the interpretation of collective agreements, labor-management agreements or other rules directly related to them, a grievance committee is established to resolve the dispute, based on the agreement concerning complaint-handling procedures that has been concluded with the labor union. The committee comprises members from both the management and the labor side.



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Efforts to prevent human rights abuses

<Actions taken by the Nippon Steel Group>

Addressing human rights risks

From the viewpoint of promoting human rights awareness activities we have assigned human rights awareness advocates at each steelworks and each office, and implemented corporate-wide human rights awareness activities. We hold a “corporate-wide forum of human rights awareness advocates” in March each year to exchange views on human rights awareness education and new human rights risks, and to consider the related action policy for the next fiscal year. Based on this, we hold a “corporate-wide forum of human rights anti-discrimination promotion” at the beginning of the fiscal year, chaired by the Executive Officer in charge of Human Resources, with the human resources managers from each steelworks and each office as members. At this forum, the fiscal year’s policy for promoting human rights development is determined.

In addition to implementing human rights awareness activities in accordance with the policies decided at the forum, each steelworks and each office are actively engaged in employee awareness-raising activities, including holding workshops on a specific issue of the steelworks or office. We also participate in enlightenment of organizations and activities hosted by public entities and others in each community. We make concerted efforts for human rights enlightenment within the communities.

Along with the group-wide expansion of our efforts to Group companies in Japan and overseas, we routinely carry out monitoring surveys on the status of compliance with labor-related laws and regulations, the establishment of consultation contacts, and other issues via an internal control checklist.

Through these efforts, we are continuously and systematically promoting activities to prevent human rights abuses. These include the understanding of human rights risks that change with the times and the development of a system and a strategy to reduce the risks.

Prevention of forced or child labor

Adhering to international norms concerning forced or child labor, Nippon Steel has a policy of prevention and eradication of both types of labor. We comply with applicable regulations and conduct regular monitoring surveys of our Group companies to prevent such violations in our business activities.

Compliance concerning salaries

In compliance with laws and regulation concerning salary and wages payment, Nippon Steel has set up pay at a higher level than minimum wage stipulated by the country, region, and type of work where we do business. With regard to bonuses, we regularly survey relevant matters, including the status of each country, region, and type of work, hold meetings with labor representatives, and appropriately reward employees by paying performance-based bonuses linked to company profits.

Human rights awareness education

Based on the policy decided at the “corporate-wide forum of human rights anti-discrimination promotion,” information on human rights awareness is incorporated in training courses for all ranks, from new employees to experienced ones. We also provide education on a variety of subjects, including the issues of harassment and discrimination, understanding of LGBTQ, and human rights issues in the conduct of our business.

Two-way communication with employees based on good labor-management relations is important in order to prevent human- rights abuses. We therefore incorporate education toward building sound labor-management relationships in the training of executives of the Company and the Group companies.

In addition to general education that contributes to the prevention of human rights abuses in workplaces, we also address specific human rights abuse risks in formulating and the oversight of specific work assignments. Examples include education on fair recruitment selection by employees assigned to the tasks of hiring in order to prevent job discrimination, and education on cross-cultural understanding and communication for those assigned to overseas business in the context of preventing human rights abuses (i.e., consideration for each country’s unique traditions, culture, business practices, and labor-management practices).



Training on human rights

The number of recipients of training courses by rank on human rights
(FY2023 results)

5,211



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Coexistence with Communities

Nippon Steel has many manufacturing bases all over Japan and are engaged in business activities rooted in local communities. In accordance with our attitude of maintaining harmony with local communities and society, we are promoting a wide range of activities, including promotion of environmental preservation, support in education, sports, and music culture, holding dialogues with shareholders and investors.

Participation in activities of the “Mori wa Umi no Koibito” NPO

We are also a regular corporate member of the NPO, Mori wa Umi no Koibito, represented by Mr. Shigeatsu Hatakeyama, a fisherman raising oysters and scallops in Kesenuma City, Miyagi Prefecture, who received the Forest Heroes award from the United Nations in 2012.

The NPO's activities are based on a scientific mechanism according to which the ecological linkage of forests, villages, and sea nurtures the blessings of the sea forest. In other words, the forestation leads to an increase in iron-humic acid that flows down rivers, and which enriches growth of oysters and scallops near the river mouth. Since 2012 we participated in the NPO's tree planting activity at Murone Mountain in Iwate Prefecture, which began in 1989. In 2024, 30 people, consisting of employees of Nippon steel and Group companies, as well as their families, participated in the 36th round of tree planting activity.



Tree planting activity

Acceptance of teachers

We participate in the “Private Sector Training Program for Teachers” organized by the Economic Public Relations Center, and every year we invite teachers from elementary and junior high schools in various regions involved in school education to visit our production line, introduce our efforts in human resource development and environmental activities, and we provide safety education using VR and explain the superiority of steel recycling. In fiscal 2023, we welcomed 47 teachers at 6 manufacturing sites.



Safety education using VR (East Japan Works Kimitsu Area)



Exchange of opinions with teachers (East Japan Works Kimitsu Area)

On-site classes

Our staff at each steelworks go to nearby elementary schools to provide on-site classes. The Kyushu works Oita area has been holding classes every year since 2007, but after an interruption due to the COVID-19 pandemic, classes resumed in fiscal 2023 for the first time in four years. This year, a total of 103 children from two elementary schools were given science experiments.



On-site class at a nearby school



Children who participated in the class

Social interaction at festivals

Each steelworks holds a steelworks festival jointly with the local community. Factory tours and many other events are held, and many people, including steelworks employees and their families, and local residents have a great time every year. We also actively participate in communities' festivals.



Joto Spring Festival (Kyushu Works Oita Area)



Kamaishi Festival (North Nippon Works Kamaishi Area)



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Coexistence with Communities

Community cleanup activities

Various cleaning activities are carried out in the vicinity of each steelworks. At Isonoura Beach adjacent to the Kansai Works Wakayama Area, we conducted a clean-up activity on June 24, 2023. This was the first time in four years due to the COVID-19 pandemic, and a total of about 180 people—those involved in the steelworks and their families, as well as surfers who were present cleaned the beach before the start of the beach season.



Beach cleanup activity

Sports tournaments

In the Setouchi Works Hirohata Area, on November 5, 2023, the "Nippon Steel Midori-no-machi Sports Tournament 2023" was held in the vicinity of the Hirohata Baseball Stadium. about 1,200 people from the local community participated. (The event was sponsored by the Setouchi Works Hirohata Area, co-sponsored by the Association for Creating Green Town and the Nippon Steel Hirohata Labor Union.) Sports such as soft baseball, soft tennis, table tennis, kendo and volleyball were held and the participants competed, demonstrating the result of their training. Other steelworks also hold various sports tournaments.



Volleyball tournament

Activities in the support of sports as a social contribution

Nippon Steel manages or supports sports teams in the local communities of its steelworks. These include a judo club, which has produced Olympic medalists; baseball teams, which have sent many of its players to the professional leagues; a football team, a rugby team, and a volleyball team. All of these teams also contribute to their local community through such various activities as sports classes for children, coaching of junior teams, and making our athletic facilities available to local residents for games and training. Together with local residents who support our teams, we strive to provide renewed vigor to our local communities, and at the same time to support their healthy lifestyle.



Nippon Steel Kashima Baseball Club

Visit to steelworks

As one of ways to enhance dialogue with shareholders, institutional investors, and residents in local communities, we regularly hold business strategies briefing sessions and visits to steelworks in various areas. We accept tours at each manufacturing site, open the premises of the steelworks to the general public for local festivals and sports events, and open the welfare facilities to the general public so that many people become familiar with our company. In fiscal 2023, approximately 70,000 people visited our steelworks.



Visit to steelworks

Support of music culture

Nippon Steel is actively supports music culture, particularly through the work of the Nippon Steel Arts Foundation. The Foundation manages the Kioi Hall in Tokyo, organize performances of its resident chamber orchestra, and promote Japanese traditional music. We also give the annual Nippon Steel Music Awards, established in 1990, to young classical music performers and to those who have contributed to the development of classical music.



Kioi Hall

Kioi Hall 30th Anniversary

We built the Kioi Hall as a base for supporting music culture and opened it in 1995.

The hall name will be changed to Nippon Steel Kioi Hall as it celebrates its 30th anniversary on April 1, 2025. The hall is located in a prime location in Tokyo with high convenience, and has a hall dedicated to Western music, which is ideal for classical music, and a hall dedicated to and most desirable for traditional Japanese music. As a high-quality concert hall with careful consideration, it has received high praise from musicians and fans both in Japan and abroad, and as of the end of January 2024, it has welcomed a total of more than 4 million visitors.

A large-scale renovation of the hall is planned in 2025, creating a new history of supporting music culture.



Kioi Hall (exterior)



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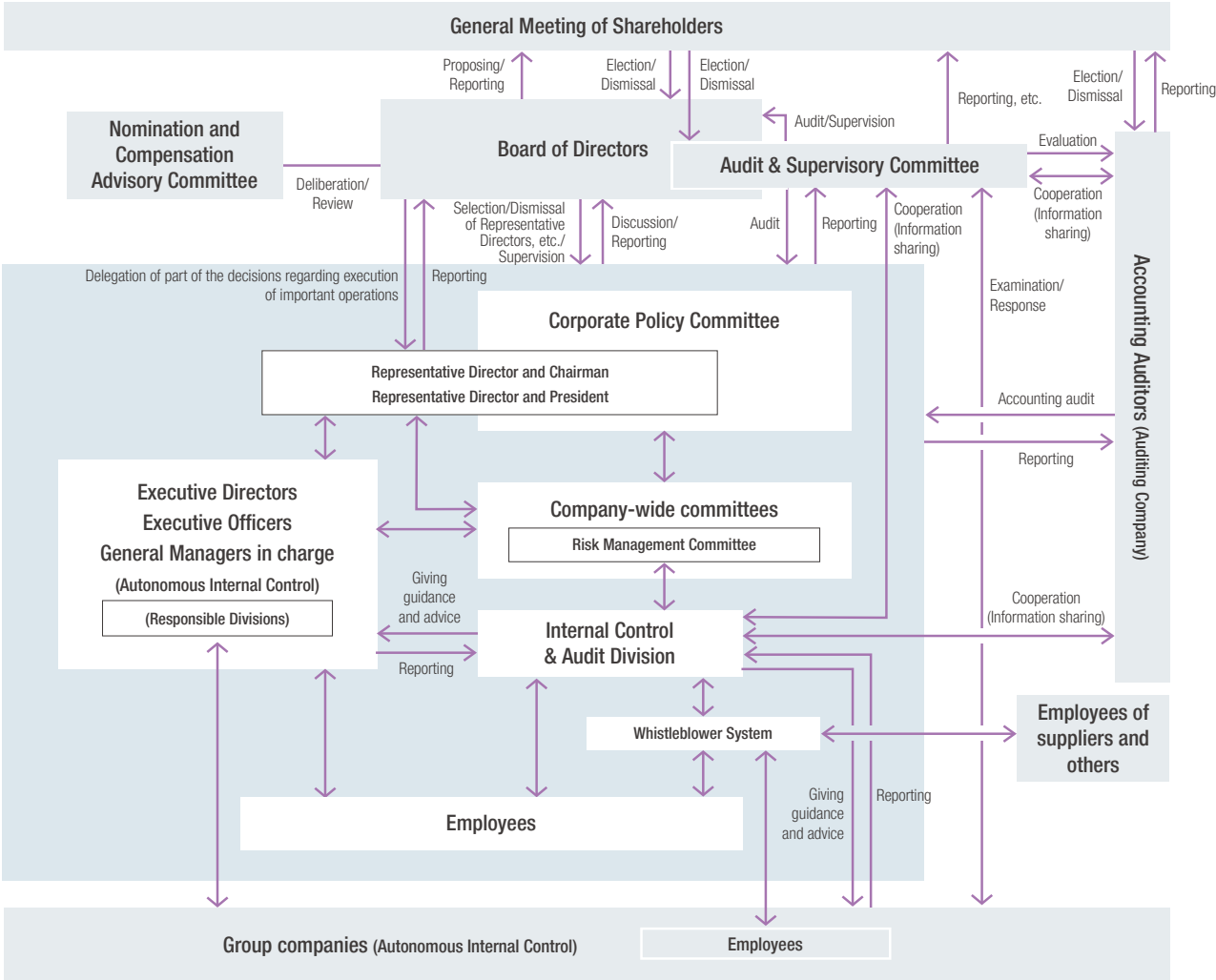
Corporate Governance Structure

The Nippon Steel Group is engaged in business activities based on its Corporate Philosophy—that we will pursue world-leading technologies and manufacturing capabilities, and contribute to society by providing excellent products and services.

Heeding that Philosophy, the Nippon Steel Group has established a corporate governance system suited to the businesses of the Nippon Steel Group in order to achieve sound and sustainable growth of the Nippon Steel Group and increase its corporate value over the medium- to long-term, in response to the delegation of responsibilities by and trust of all stakeholders, including its shareholders and business partners.

Basic views on corporate governance

Nippon Steel has adopted a company structure with an Audit & Supervisory Committee for the purpose of, among others, expediting management decision-making, enhancing discussions by the Board of Directors relating to matters such as the formulation of management policies and strategies by limiting the number of items for deliberation by the Board of Directors and strengthening the supervisory function of the Board of Directors over management.





Corporate Governance

> Corporate Governance Structure

- Board of Directors
- Message from Outside Director
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Corporate Governance Structure

Board of Directors

The Board of Directors of Nippon Steel is comprised of fifteen (15) members, of whom ten (10) are Directors (excluding Directors who are Audit & Supervisory Committee Members) and five (5) are Directors who are Audit & Supervisory Committee Members, and is chaired by the Representative Director and President. Independent Outside Directors account for one-third (5 out of 15, including three female Directors) of all members of the Company's Board of Directors.

By all Directors appropriately fulfilling their respective roles and responsibilities, prompt decision-making is achieved corresponding to changes in the management environment, and multifaceted deliberations and objective and transparent decision-making are secured.

In addition, Directors who are Audit & Supervisory Committee Members have the voting rights on the Board of Directors regarding decisions on proposals for the election and dismissal of Directors as well as on election and dismissal of Representative Director, and other decisions in general regarding business execution (excluding decisions that have been delegated to Directors). The Audit & Supervisory Committee has the authority to give its opinions at the General Meeting of Shareholders regarding the election, compensation, etc. of Directors, excluding directors who are Audit & Supervisory Committee Members. This structure strengthens the supervisory function of the Board of Directors over management.

Furthermore, the Board of Directors delegates part of the decisions regarding the execution of important operations (excluding matters

listed in each item of Article 399-13, Paragraph 5 of the Companies Act) to the Representative Director and Chairman and Representative Director and President, thereby expediting management decision-making, while enhancing discussions by the Board of Directors relating to matters, such as the formulation of management policies and strategies, important business strategic issues, safety, environmental issues, disaster prevention, and quality assurance.

Audit & Supervisory Committee

The Audit & Supervisory Committee acts with the obligation of contributing to the establishment of a high-quality corporate governance system that enables sound and sustainable growth of Nippon Steel and its Group companies, by supervising the performance of responsibilities by Directors and acting as part of the Company's oversight function, as an independent organ fulfilling its roles and responsibilities that are recently expected, in response to the delegation of responsibilities by the shareholders, and social trust.

Nomination and Compensation Advisory Committee

The Nomination and Compensation Advisory Committee has been established to conduct discussions and deliberations on a wide range of topics relating to the nomination and compensation of the Directors in general, including the compositions of the entire Board of Directors and the Audit & Supervisory Committee, the system and levels of the Directors' compensation, and other topics. The

Committee comprises five members: the Representative Director and Chairman, Eiji Hashimoto, the Representative Director and President, Tadashi Imai, and Outside Directors Tetsuro Tomita, Kuniko Urano, and Kenji Hiramatsu. The Representative Director and President serves as the chairman of the Committee. The Nomination and Compensation Advisory Committee, as a general rule, is held twice a year (plan to be held in May and December in fiscal 2024).

Corporate Policy Committee

The Corporate Policy Committee comprises the Representative Director and Chairman, Representative Director and President, Representative Directors and Executive Vice Presidents, and other members, and is held once a week, in principle. The execution of important matters concerning the management of Nippon Steel and the Nippon Steel Group is determined at the Board of Directors after deliberations in the Corporate Policy Committee. In addition, Nippon Steel has introduced an Executive Officer system for setting clear responsibilities and improving management efficiency by more prompt decision-making.

Company-wide committees

As a deliberative body prior to the Corporate Policy Committee and the Board of Directors, we have established companywide committees chaired by the Executive Vice President for each purpose and field. (As of April 1, 2024, there are a total of 23 committees, including the Ordinary Budget Committee, Equipment Budget Committee, Investment and Loan Committee, Risk Management Committee, Green Transformation Promotion Committee, and Environmental Planning Committee)

[Number of meetings held in FY2023]

Board of Directors	Audit & Supervisory Committee	Nomination and Compensation Advisory Committee
14 meetings	18 meetings	3 meetings

Measures implemented to enhance corporate governance		
June 2006	<ul style="list-style-type: none">Reduction of the number of directors in the Articles of Incorporation from 48 to 15* (* Increase to 20 when Nippon Steel & Sumitomo Metal Corporation was established in 2012)Adoption of the Executive Management SystemAdoption of a limited liability contract with External Auditors	<div>June 2015</div> <div>October 2015</div> <div>June 2018</div> <div>June 2020</div>
June 2014	<ul style="list-style-type: none">Appointment of Outside Directors (two)Adoption of a limited liability contract with Outside Directors	<ul style="list-style-type: none">Adoption of a limited liability contract with full-time Audit & Supervisory Board MembersEstablishment of the Nomination and Compensation Advisory CommitteeIncrease the number of Outside Directors to three (appointment of a female director)Transition to a Company with an Audit & Supervisory Committee



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Internal control system

Nippon Steel has established internal control and risk management systems, based on autonomous activities by internal divisions and group companies, according to the Basic Policy on Internal Control System, which was resolved by the Board of Directors, and the Internal Control Basic Rules. The Internal Control & Audit Division cooperates closely with each area's functional division in charge of risk management, develops annual plans concerning internal control and risk management, prepares a scheme for check and review, regularly ascertains the status of internal control across the entire Group, and works at continual improvement.

Recognizing that the creation of a sound and open organization is indispensable in raising the efficiency of internal control, Nippon Steel emphasizes dialogues in and out of workplaces and regularly conducts awareness surveys regarding internal controls for all employees. By doing these, the Company checks the employees' awareness on the compliance and internal control activities, carries out education and enlightenment through the survey, and complements the internal control system. Based on these results, the effectiveness of the internal control system is regularly reviewed for achieving greater efficiency in management and is incorporated in an internal control plan.

As a whistleblower system, the Compliance Consulting Room was established to receive information relating to the risks associated with operation not only from officers and employees of Nippon Steel and the Group companies, but also from their families and others. It is also positioned as one of the bodies that monitor the status of internal control activities, in addition to its functions on compliance and optimization of operations, such as to prevent accidents and violation of laws, and to improve operations. In fiscal 2023, there were 441 cases of internal reporting and consultations (compared to 433 cases in fiscal 2022).

Risk management

The status of risk management initiatives is reported to the Corporate Policy Committee and the Board of Directors after deliberations by company-wide committees chaired by the Executive Vice President for each purpose and field. In addition, the vice president in charge of internal control serves as the chairperson for overall internal control, including matters related to risk management in each field (labor safety, harassment, human rights, environment, disaster prevention, quality assurance, financial reporting, information security, etc.). The Risk Management Committee, which is held every quarter, deliberates and approves the status of initiatives, and reports important matters to the Corporate Policy Committee and the Board of Directors. Through these mechanisms, our Board of Directors supervises important managerial risk control.

Thorough implementation of compliance

Adherence to relevant laws and regulations, and building of an appropriate relationship with government and public institutions

Based on the Nippon Steel Group's Corporate Philosophy and Code of Conduct, Nippon Steel has developed company rules and guidelines for the prevention of bribery of domestic and foreign public officials, compliance with anti-monopoly laws and environmental regulations, and protection of personal information. The Company makes sure that its officers and employees are aware of and adhere to laws and regulations and other rules.

Fair tax payment

Nippon Steel complies with relevant laws and regulations and pays tax appropriately in all countries in which it operates. The Company maintains transparent, constructive communication with tax authorities, eliminates action that could be construed to be for evasion of taxes, and bear a fair tax burden.

Activities of the Audit & Supervisory Committee

The Audit & Supervisory Committee Members who are mutually elected by the Committee cooperate closely with the department in charge of internal audits, and proceed with daily supervisory activities in a planned way, with a main focus on the development and operation of the internal control system, the development of business infrastructure, and the progress of various measures for management plans, in accordance with, among others, the standards for the Audit & Supervisory Committee's audits, the policies and plans of audit and supervision, and assignment of duties as set forth by the Audit & Supervisory Committee.

In addition, the Audit & Supervisory Committee Members attend important meetings, such as meetings of the Board of Directors, and conduct onsite audits of steelworks and other facilities. Further, the Audit & Supervisory Committee Members ask Executive Directors and employees, among others, to explain the performance of their responsibilities, and other related matters, and actively express opinions.

For the Group companies, the Audit & Supervisory Committee Members of Nippon Steel exchange opinions and information with the Directors of such Group companies and the Directors, etc. of the responsible divisions of Nippon Steel, and as necessary, receive business reports from them and ask them for explanations.

Further, the Audit & Supervisory Committee Members of Nippon Steel seek to improve the quality of the supervisory activities as the whole Group, by establishing close cooperation with the Group companies' audit & supervisory board members, through liaison

conferences and other opportunities.

The full-time Directors who are Audit & Supervisory Committee Members, as the Members selected by the Audit & Supervisory Committee, strive to exchange opinions with the department in charge of internal audits and other departments, collect information, and prepares the audit environment, pursuant to the audit policy and plan stipulated by the Audit & Supervisory Committee. They also attend the Board of Directors, the Corporate Policy Committee, and other meetings, interview relevant people on the agenda or matters to be reported and discussed and on other important matters, receive reports from the Accounting Auditor, and conduct surveys on the status of business and assets in the headquarters, steelworks, and other places.

The Outside Directors who are Audit & Supervisory Committee Members contribute to Nippon Steel's sound and fair management by, among other tasks, expressing their respective opinions independently at the Board of Directors, the Audit & Supervisory Committee, and other opportunities, and performing supervisory activities, including audits on the business and affairs and the status of assets at major steelworks, etc. and hearing of reports from the Accounting Auditor, as Audit & Supervisory Committee Members selected by the Audit & Supervisory Committee, based on their vast experience in, and deep insights into, such areas as world affairs, economics and culture, accounting, the environment and energy issues. In addition, Outside Directors who are Audit & Supervisory Committee Members strive to share information and understanding about Nippon Steel's management issues with the Representative Director and Chairman, Representative Director and President and Outside Directors (excluding Directors who are Audit & Supervisory Committee Members) through liaison meetings and other means.

Policies on and procedures in the nomination of director candidates and the appointment and dismissal of senior management

Policies on the nomination of director candidates and the appointment of senior management

For the nomination of Director candidates, and the appointment of senior management, Nippon Steel's policy is to consider not only each individual's experience, insight, and expertise, but also the size of each of the Board of Directors and the Audit & Supervisory Committee as a whole, and the balance of candidates comprising these respective boards (including the number of Outside Directors) so that Nippon Steel will establish an optimum board composition in which each individual is able to appropriately fulfill its role and responsibilities and properly respond to the management challenges of the Group's business.

Nippon Steel believes the appointment of the President and other

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senior management to be one of the most important roles/functions of the Board of Directors.

To ensure that optimum human resources who are capable of realizing the sustainable growth of the entire Group and the mid- to long-term improvement of its corporate value are appointed to the office of President and other senior management in a timely manner, Nippon Steel provides various opportunities for Directors and Executive Officers who are to become successor candidates to improve their credentials by strategically assigning and rotating them to various positions, and by other means as well.

Procedures in the nomination of director candidates and the appointment of senior management

The nomination of Director candidates and the appointment of senior management are resolved at the Board of Directors after discussion at the Nomination and Compensation Advisory Committee. The Nomination and Compensation Advisory Committee conducts discussions and deliberations from various perspectives, in accordance with the policies stated above, considering, among others, the sizes of the entire Board of Directors and the Audit & Supervisory Committee and the balance among the candidates who will comprise the members.

The nomination of candidates for Directors who are Audit & Supervisory Committee Members is to be submitted to the Board of Directors for deliberation, after the approval at the Audit & Supervisory Committee.

Procedures in the dismissal of the President and other senior management

In the event that any disqualification for Directors as stipulated by laws and regulations occurs to the President or other senior management, Nippon Steel shall dismiss him or her from the President or other managerial positions by the resolution of the Board of Directors. In addition, in the event that the President or other senior management has engaged in any acts suspected of committing fraud or breach of trust, or in the occurrence of an incident to the President or other senior management that has caused significant hindrance to the continuation of duties, etc., Nippon Steel may dismiss him or her from the President or other managerial positions by the resolution of the Board of Directors, while also taking into account discussions and deliberations at the Nomination and Compensation Advisory Committee as necessary.

Policies on determining compensation for Directors

Directors (excluding Directors who are Audit & Supervisory Committee Members)

■ Basic policy
Directors (excluding Directors who are Audit & Supervisory Committee Members) are compensated solely by monthly compensation, which is designed as an appropriate composition of fixed compensation and performance-linked compensation. Fixed compensation and the base amount of performance-linked compensation (compensation paid when Nippon Steel's consolidated performance reaches a certain level) are set for each position as deemed appropriate in consideration of the skills and responsibilities required of each Director. This base amount varies within a certain range based on Nippon Steel's consolidated performance. The Company then determines the amount of monthly compensation for each Director within the limit approved by the General Meeting of Shareholders.

■ Composition of compensation and policy on performance-based compensation
Based on the above basic policy, the underlying consolidated business profit/loss which is a simple indication of the Group's operating results (calculated by deducting inventory valuation differences from consolidated business profit/loss, etc.; considered to be appropriate to demonstrate the Group's financial strength) is used as a benchmark for performance-linked compensation for Directors (excluding Directors who are Audit & Supervisory Committee Members and Outside Directors). This is also from the perspective of providing an appropriate amount of compensation according to the performance of the period and by taking into account the earnings targets of the Medium- to Long-term Management Plan. In addition, the ratio of "fixed compensation vs. performance-linked compensation" in the standard amount (at the time of achieving underlying consolidated business profit of 600 billion yen) shall be "50% vs. 50%" for Representative Directors and roughly "70% vs. 30%" for Directors with other positions (excluding Directors who are Audit & Supervisory Committee Members and Outside Directors). In this way, appropriate incentives are provided according to the position and performance of the Company. Compensation for Outside Directors (excluding Directors who are Audit & Supervisory Committee Members) shall consist solely of fixed compensation.

■ Method to determine compensation for each individual
The specific amount of monthly compensation for each Director was determined by the Board of Directors after the deliberation of the "Nomination and Compensation Advisory Committee," which

consisted of the Chairman, the President, and three or more Outside Directors designated by the President, who chaired the Committee.

Directors who are Audit & Supervisory Committee Members are compensated solely by monthly compensation, which consists solely of fixed compensation. The monthly compensation for each Director who is Audit & Supervisory Committee Member is determined to be within the limit approved by the General Meeting of Shareholders, by considering the duties of the Director's position and whether the Director is full-time or part-time.

Methods of determining the policies
The policies described above are determined by resolution of the Board of Directors, after the deliberation of the Nomination and Compensation Advisory Committee, for Directors (excluding Directors who are Audit & Supervisory Committee Members) and by discussion of Directors who are Audit & Supervisory Committee Members for Directors who are Audit & Supervisory Committee Members.

The Nomination and Compensation Advisory Committee conducts discussions on a wide range of topics including the system of Directors' compensation and the appropriateness of the compensation levels by position, taking into account the survey results of directors' compensation levels of other companies obtained from third-party research organizations.

[Total amounts of compensation for directors (FY2023)]

Position	Number of recipients	Total amount (yen)	Total amount by type (yen)		
			Monthly compensation	Non-monetary compensation	Other compensation
Directors (excluding Directors who are Audit & Supervisory Committee Members)	11	1,175,320,000	1,175,320,000	—	—
Outside directors	2	34,560,000	34,560,000	—	—
Directors who are Audit & Supervisory Committee Members	5	172,790,000	172,790,000	—	—
Outside directors	3	51,840,000	51,840,000	—	—
Total	16	1,348,110,000	1,348,110,000	—	—

The above number of recipients includes one (1) Director (excluding Directors who are Audit & Supervisory Committee Members) who retired at the conclusion of the 99th General Meeting of Shareholders held on June 23, 2023.

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Analysis and evaluation of the effectiveness of the Board of Directors as a whole

At Nippon Steel, the office of the Board of Directors (General Administration Division) conducts quantitative analysis through comparison of the number of the agenda items submitted for deliberation or reported to the Board and the number of hours of deliberation, as well as the attendance rate and the number of opinions expressed by attendees at the Board meetings with these of prior years; and the Board, taking into account self-assessments and opinions of each Board member on the Board's operation obtained through individual interviews with them, annually analyzes and evaluates the effectiveness of the entire Board and utilizes such analysis and evaluation to improve the future operation and administration of the Board. In fiscal 2020, Nippon Steel decided to take the opportunity of the transition to a Company with an Audit & Supervisory Committee to establish the Rules of the Board of Directors, enhance discussions by the Board on matters such as the formulation of management policies and strategies, strengthen the supervisory function of the Board over management, and devise and improve operation of meetings so as to contribute to these efforts. Measures to improve the issues, which were raised when evaluated the effectiveness in fiscal 2022, have also been implemented.

The Board of Directors, at its meeting held in June 2024, analyzed and evaluated the effectiveness of the Board for fiscal 2023, and confirmed that the Board generally functions effectively. This is because, among other reasons, all of the matters, with relevant information being provided in advance, were submitted for deliberation or reported to the Board pursuant to the Companies

Act or Nippon Steel's rules, and were resolved or confirmed, after questions & answers and discussion from various viewpoints among internal and outside Directors, in consideration of enhancing Nippon Steel's mid- to long-term corporate value. In addition, in order to further improve effectiveness, based on the opinions of each director in the effectiveness evaluation of fiscal 2023, the Company will continue to further improve the composition, contents, and method of providing materials for the Board. It will also continue to enhance and activate deliberations by streamlining and reviewing the items to be deliberated. Further, Nippon Steel will utilize other opportunities besides the Board of Directors and share a wide variety of information and exchange opinions on matters related to various environmental changes surrounding management, long-term important themes, including a theme to secure human resources and promote active participation, and risk management.

[Main matters deliberated in FY2023 Board of Directors]

- Formulation of management policy and strategies
- Important matters regarding business strategies
- Initiatives on Safety, Environment, Disaster Prevention and Quality
- Formulation of human rights policy
- Analysis and evaluation of the effectiveness of the Board of Directors as a whole
- Initiatives on diversity & inclusion
- Initiatives for achieving carbon neutrality
- Maintenance and operation status of internal control system
- Selection of Representative Director, the nomination of director candidates and the selection of senior management
- Opinion feedback from shareholders and investors

Training policy for Directors

Nippon Steel, via relevant officers, explains its corporate philosophy and the Group business lineups, among others, to each Outside Director individually once they assume their positions. In addition, after the assumption, Nippon Steel proactively provides opportunities for them to visit steelworks, research laboratories, and to have dialogue with the Chairman, the President, and the Vice Presidents. Nippon Steel also explains anew to Executive Directors and Directors who are Audit & Supervisory Committee Members, both of whom were employees of Nippon Steel, their responsibilities under important applicable laws and regulations such as the Companies Act, and Nippon Steel's rules, upon the assumption of their positions. Moreover, Nippon Steel provides opportunities for Directors to attend exchanges of opinions with outside experts and executives of other companies, as well as lectures and seminars.



Corporate Governance Structure

Significance of having listed subsidiaries

Based on the Nippon Steel Group Corporate Philosophy, Nippon Steel aims to achieve a company that is trusted by society, while promoting sound and sustainable growth and improving medium- to long-term corporate value of the Nippon Steel Group. In addition, in order to comply with relevant laws and regulations and to ensure the reliability of financial reporting and the effectiveness and efficiency of operations, Nippon Steel has developed and is appropriately operating an internal control system suitable for the Group's business operations, and is making efforts to continuously improve it. Based on this basic policy, Nippon Steel and its Group companies share business strategies and manage the Group as a whole, while taking into account the business characteristics of each Group company. With respect to control of the Group companies, Nippon Steel sets forth basic rules in the Rules for Control of Group Companies, and ensures their appropriate application, while each Group company builds and maintains its internal control system based on autonomous internal controls, and seeks to improve measures relating to internal controls based on support, guidance, and advice from Nippon Steel.

In order to ensure independent decision-making of listed subsidiaries, each of them has more than one-third of its Board members being represented by independent outside directors and Nippon Steel also recognizes that its listed subsidiaries carry out autonomous management.

Each listed subsidiary confirms that the terms and conditions of transactions between the parent company and the subsidiary are reasonably determined on the basis of general contract terms and conditions with other customers, market prices, or other reasonable criteria and that the interests of the subsidiary are not harmed. Our subsidiaries listed on the Prime Market of the Tokyo Stock Exchange (a newly classified market for large companies from April 2022) have established a system to set up a special committee if a significant parent-subsidiary transaction or action occurs.

At present, Nippon Steel currently has five listed subsidiaries: NS Solutions Corporation, Sanyo Special Steel Co., Ltd., Krosaki Harima Corporation are listed on the Prime Market of the Tokyo Stock Exchange and Osaka Steel Co., Ltd. and Geostr Corporation are listed on the Standard Market of the Tokyo Stock Exchange (a new market for mid-sized companies). Significance of having the listed subsidiaries is stated in the Corporate Governance Report, “Chapter I. 5. Other Special Circumstances which may have Material Impact on Corporate Governance.”

Corporate Governance Report
https://www.nipponsteel.com/en/ir/library/pdf/governance/pdf/cg_report.pdf

Significance of having listed subsidiaries

Nippon Steel has nine listed subsidiaries primarily for the purpose of contributing to the Company's consolidated profits: Godo Steel Ltd., Topy Industries Ltd., Kyoei Steel Ltd., Nippon Denko Co., Ltd., Nichia Steel Works Ltd., NS United Kaiun Kaisha Ltd., Nippon Coke Industry Co., Ltd., Sanko Metal Industrial Co., Ltd., and Sanyu Co., Ltd. All these companies are part of the steelmaking and steel business segment of Nippon Steel's portfolio. Although Nippon Steel sends its employees as auditors to some companies from the perspective of appropriate risk management, there are no matters that require the approval of Nippon Steel nor any agreements related to governance with any of these companies. Moreover, since Nippon Steel holds less than a majority of the voting rights in each of these companies, the Company believes that the independence of each company is ensured and the risk of conflicts of interest is minimal.

Strategic shareholdings

Policy on strategic shareholdings

Nippon Steel, from the standpoint of sustainable growth and improvement of its corporate value in the mid-to long-term, believes that it is extremely important to maintain and develop the relationships of trust and alliance with its extensive range of business partners and alliance partners both in Japan and overseas, which have been cultivated through its business activities over the years. Accordingly, Nippon Steel shall continue to hold strategic shareholdings which are judged to contribute to maintaining and strengthening its business foundation such as the business relationships and alliance relationships between Nippon Steel and the investees, enhancing the profitability of both parties, thereby improving the corporate value of Nippon Steel and the Group.

Regarding companies for which Nippon Steel confirms, after sufficient dialogues, to be able to achieve the objectives described above without holding their shares, the Company intends to proceed with the sale of shares in such companies.

Examination of the appropriateness of the strategic shareholdings

Nippon Steel confirms the appropriateness of its strategic shareholdings by specifically examining all shareholdings to determine, among others, whether the purpose of each shareholding is appropriate and whether the benefit and risk associated with each shareholding is commensurate with the cost of capital.

The total market value of the shareholdings examined at the Board of Directors accounts for approximately 90% of the total market value

of the strategic shareholdings held by Nippon Steel on a consolidated basis (as of March 31, 2024).

The number of stocks held as strategic shareholdings by Nippon Steel on a non-consolidated basis was 495, as of October 1, 2012, when Nippon Steel & Sumitomo Metal Corporation was founded, while 252 stocks were held as of March 31, 2024 (the total value on the balance sheet was ¥269.7 billion).

Basic policy on the exercise of voting rights concerning strategic Shareholdings

Regarding the voting rights concerning each strategic shareholding, Nippon Steel exercises its voting rights upon comprehensively evaluating whether the agenda of the General Meeting of Shareholders of the investee company contributes to the improvement of the respective corporate values of Nippon Steel and the investee company. Specifically, Nippon Steel formulates criteria for the exercise of voting rights which set forth guidelines for judgment according to the type of agenda items such as the appropriation of surplus, the election of Directors and Audit & Supervisory Board Members, etc., and exercises its voting rights based on these criteria together with the results of the examination of the appropriateness of the strategic shareholdings mentioned above.

Policy for dialogues with shareholders and investors

With a view to achieving sustainable growth and improvement of Nippon Steel's corporate value in the mid-to long-term, Nippon Steel takes various measures to enhance constructive dialogues with the shareholders. The dialogues with the shareholders and investors are generally supervised by the Director responsible for General Administration and the Director responsible for Accounting and Finance, and the General Administration Division and the Accounting & Finance Division work in conjunction with other divisions of Nippon Steel to enhance the measures. Specifically, for shareholders, in addition to striving to actively provide information to the shareholders and sincerely responding to their questions and comments in the General Meeting of Shareholders, Nippon Steel holds management business briefings and plant tours, regularly in various locations. In addition, for institutional investors, through opportunities for dialogue such as explanation meetings, we are engaged in dialogue with people in appropriate fields according to the content of the explanation regarding our management strategy, business content, achievement, efforts to address sustainability issues, etc. Senior management including the President and an officer in charge of IR attend these dialogues, as necessary. The opinions of shareholders and investors obtained through these initiatives are promptly shared by the management team and each in-house sector and reported and fed back periodically to the Board of Directors.

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Board of Directors (as of July 2024)

Director



Representative Director, Chairman and CEO
Eiji Hashimoto

Apr. 1979: Joined Nippon Steel Corporation (NSC)
Apr. 2009: Director (under the Executive Management System), Director, Plate Division and Director, Structural Division of NSC
Jul. 2015: Managing Executive Officer, Vice Head of Global Business Development and Project Leader, Usiminas Project, Global Business Development Sector of NSC
Jun. 2016: Representative Director, Executive Vice President and Head of Global Business Development of NSC
Apr. 2019: Representative Director and President of NSC
Apr. 2024: Representative Director, Chairman and CEO of NSC



Representative Director, President and COO
Tadashi Imai

Apr. 1988: Joined Nippon Steel Corporation (NSC)
Apr. 2016: Executive Officer and Head of Works, Nagoya Works of NSC
Jun. 2020: Managing Director, Member of the Board of NSC
Feb. 2022: Managing Director, Member of the Board and Project Leader, Thail Steel Project, Global Business Development Sector; Deputy Project Leader, Zero-Carbon Steel Project; Deputy Project Leader, Next-Generation Hot Strip Mill Project of NSC
Apr. 2023: Representative Director and Executive Vice President, Head of Green Transformation Development, and Deputy Project Leader, Next Generation Hot Strip Mill Project of NSC
Apr. 2024: Representative Director, President and COO of NSC



Representative Director, Vice Chairman and Executive Vice President
Takahiro Mori

Apr. 1983: Joined Nippon Steel Corporation (NSC)
Jun. 2016: Vice President of Usiminas Siderúrgicas de Minas Gerais S.A. - USIMINAS
Apr. 2020: Managing Executive Officer, Head of Unit, Plate Unit, Head of Unit, Pipe & Tube Unit, Project Leader, VSB Project, Global Business Development Sector of NSC
Apr. 2021: Executive Vice President, Head of Global Business Development, and Project Leader, India Iron and Steel Project, Global Business Development Sector of NSC
Jun. 2021: Representative Director and Executive Vice President, Head of Global Business Development, and Project Leader, India Iron and Steel Project, Global Business Development Sector of NSC
Jun. 2024: Representative Director, Vice Chairman and Executive Vice President
Head of Global Business Development; Project Leader, India Project, Global Business Development Sector; Project Leader, USS Project of NSC



Representative Director and Executive Vice President
Naoki Sato

Apr. 1983: Joined Nippon Steel Corporation (NSC)
Apr. 2018: Managing Executive Officer and Head of Works, Kashima Works of NSC
Apr. 2020: Executive Vice President and Head of Works, East Nippon Works of NSC
Jun. 2021: Representative Director and Executive Vice President, Project Leader, Next-Generation Hot Strip Mill Project, and Deputy Project Leader, India Iron and Steel Project, Global Business Development Sector of NSC
Apr. 2024: Representative Director and Executive Vice President Deputy Project Leader, India Project, Global Business Development Sector; Deputy Project Leader, Thai Steel Project, Global Business Development Sector; Deputy Project Leader, USS Project of NSC



Representative Director and Executive Vice President
Takashi Hirose

Apr. 1986: Joined Nippon Steel Corporation (NSC)
Apr. 2018: Executive Officer, Director, Plate Division of NSC
Apr. 2019: Managing Executive Officer, Head of Unit, Plate Unit and Vice Head of Unit, Flat Products Unit of NSC
Apr. 2020: Managing Executive Officer, Head of Unit, Flat Products Unit, and Project Leader, Shanghai-Baoshan Cold-rolled & Coated Sheet Products Project, Global Business Development Sector of NSC
Jun. 2022: Representative Director and Executive Vice President, Head of Unit, Flat Products Unit, Deputy Project Leader, Next-Generation Hot Strip Mill Project of NSC
Apr. 2024: Representative Director and Executive Vice President Deputy Project Leader, Next-Generation Hot Strip Mill Project of NSC



Representative Director and Executive Vice President
Kazuhisa Fukuda

Apr. 1986: Joined Nippon Steel Corporation (NSC)
Apr. 2018: Managing Executive Officer and Head of Works, Hirohata Works of NSC
Apr. 2020: Managing Executive Officer and Head of Works, Setouchi Works of NSC
Apr. 2022: Executive Vice President and Head of R & D Laboratories of NSC
Jun. 2023: Representative Director and Executive Vice President, and Head of R & D Laboratories of NSC



Representative Director and Executive Vice President
Hirofumi Funakoshi

Jul. 1987: Joined Nippon Steel Corporation (NSC)
Apr. 2018: Executive Officer of NSC
Apr. 2019: Executive Officer and Head of Division, Corporate Planning Division of NSC
Apr. 2022: Managing Executive Officer, and Vice Head of Green Transformation Development of NSC
Jun. 2023: Representative Director and Executive Vice President of NSC



Representative Director and Executive Vice President
Hiroyuki Minato

Apr. 1989: Joined Nippon Steel Corporation (NSC)
Apr. 2018: Executive Officer and Head of Division, Technical Administration & Planning Division of NSC
Apr. 2020: Executive Officer and Head of Works, Muroran Works of NSC
Apr. 2021: Managing Executive Officer and Head of Works, Muroran Works of NSC
Jun. 2024: Representative Director and Executive Vice President Project Leader, Next-Generation Hot Strip Mill Project; Project Leader, Electric Furnace Project of NSC



Outside Director
Tetsuro Tomita Independent Director

Apr. 1974: Joined Japanese National Railways
Jun. 2003: Executive Director and Deputy Director General of Corporate Planning Headquarters of East Japan Railway Company
Jun. 2008: Executive Vice President and Representative Director, Director General of Life-Style Business Development Headquarters of East Japan Railway Company
Jun. 2012: President and Representative Director of East Japan Railway Company
Apr. 2018: Chairman and Director of East Japan Railway Company
Jun. 2020: Director, Member of the Board (Outside Director) of Nippon Steel Corporation
Apr. 2024: Advisor of East Japan Railway Company



Outside Director
Kuniko Urano Independent Director

Apr. 1979: Joined Komatsu Ltd.
Apr. 2011: Executive Officer, General Manager of Corporate Communications Department of Komatsu Ltd.
Apr. 2014: Executive Officer, General Manager of Human Resources Department of Komatsu Ltd.
Jun. 2018: Director and Senior Executive Officer of Komatsu Ltd.
Jun. 2021: Advisor of Komatsu Ltd.
Jun. 2022: Director, Member of the Board (Outside Director) of Nippon Steel Corporation



Board of Directors

Directors who are Audit & Supervisory Committee Members



Director, Member of the Board
(Senior Audit & Supervisory Committee Member) (Full time)

Kazumasa Shinkai

Apr. 1987: Joined Nippon Steel Corporation (NSC)
Apr. 2018: Executive Officer and Head of Division, General Administration Division of NSC
Apr. 2021: Managing Executive Officer and Head of Division, General Administration Division of NSC
Apr. 2023: Managing Executive Officer of NSC
Jun. 2024: Director, Member of the Board (Senior Audit & Supervisory Committee Member) (Full time) of NSC



Director, Member of the Board
(Senior Audit & Supervisory Committee Member) (Full time)

Eiji Sogo

Apr. 1989: Joined Nippon Steel Corporation (NSC)
Apr. 2019: Executive Officer and Head of Division, Human Resources Division of NSC
Apr. 2022: Managing Executive Officer and Head of Division, Human Resources Division of NSC
Apr. 2023: Managing Executive Officer of NSC
Jun. 2024: Director, Member of the Board (Senior Audit & Supervisory Committee Member) (Full time) of NSC



Outside Director,
Member of the Board (Audit & Supervisory Committee Member)

Kenji Hiramatsu

Apr. 1979: Joined Ministry of Foreign Affairs of Japan
Apr. 2015: Ambassador of Japan to the Republic of India
Jan. 2016: Ambassador of Japan to the Republic of India and Ambassador of Japan to the Kingdom of Bhutan
Sep. 2019: Ambassador of Japan to the Kingdom of Spain
Nov. 2022: Retired from the Ministry of Foreign Affairs of Japan
Dec. 2022: Chairman of the Institute for International Strategy, The Japan Research Institute, Limited
Jun. 2024: Director, Member of the Board, Audit & Supervisory Committee Member (Outside Director) of Nippon Steel Corporation



Outside Director,
Member of the Board (Audit & Supervisory Committee Member)

Aiko Sekine

Apr. 1981: Citibank, N.A., Tokyo Branch
Sep. 2006: Partner of Arata Audit Corporation (currently PricewaterhouseCoopers Japan LLC)
Jul. 2016: Chairman and President of Japanese Institute of Certified Public Accountants
July 2019: Advisor of Japanese Institute of Certified Public Accountants
Sep. 2020: Professor of Waseda University, Faculty of Commerce
Jun. 2024: Director, Member of the Board, Audit & Supervisory Committee Member (Outside Director) of Nippon Steel Corporation



Outside Director,
Member of the Board (Audit & Supervisory Committee Member)

Sumiko Takeuchi

Apr. 1994: Joined Tokyo Electric Power Company, Incorporated
Jan. 2012: Director and Senior Fellow of International Environment and Economy Institute
Oct. 2018: Co-representative of U3Innovations LLC
Apr. 2020: Specially Appointed Professor of Tohoku University
Jun. 2024: Director, Member of the Board, Audit & Supervisory Committee Member (Outside Director) of Nippon Steel Corporation

Skill Matrix of Directors

Nippon Steel believes that its Board of Directors, as a whole, must have the necessary skills and experience based on the Group's corporate philosophy and medium-to long-term management plan, etc. The main skills and experience possessed by each Director are as shown in the table on the right.

Name	Position	Corporate Planning / Business strategy	Finance / Accounting, Monetary / Economy	Personnel / Labor affairs / HR Development	Governance / Risk Management / Legal / Compliance	Technology / R&D	Sales / Purchase / Marketing	Global	Environment / Sustainability	Public Administration / Public Policy
Directors (excluding Directors who are Audit & Supervisory Committee Members)										
Eiji Hashimoto	Representative Director, Chairman and CEO	●			●		●	●	●	
Tadashi Imai	Representative Director, President and COO	●			●	●			●	
Takahiro Mori	Representative Director, Vice Chairman and Executive Vice President	●	●				●	●		
Naoki Sato	Representative Director and Executive Vice President				●	●			●	
Takashi Hirose	Representative Director and Executive Vice President	●					●	●		
Kazuhisa Fukuda	Representative Director and Executive Vice President				●	●			●	
Hirofumi Funakoshi	Representative Director and Executive Vice President	●		●	●				●	
Hiroyuki Minato	Representative Director and Executive Vice President				●	●			●	
Tetsuro Tomita	Director (Outside Director)	●		●	●			●		
Kuniko Urano	Director (Outside Director)			●	●				●	
Directors who are Audit & Supervisory Committee Members										
Kazumasa Shinkai	Senior Audit & Supervisory Committee Member (full-time)			●	●		●		●	
Eiji Sogo	Senior Audit & Supervisory Committee Member (full-time)	●		●	●		●			
Kenji Hiramatsu	Audit & Supervisory Committee Member (Outside Director)				●			●	●	●
Aiko Sekine	Audit & Supervisory Committee Member (Outside Director)		●		●			●		
Sumiko Takeuchi	Audit & Supervisory Committee Member (Outside Director)				●				●	●

* The check marks in the table indicate the main skills and experience (up to four in principle) possessed by each Director, based on their career history and experience.



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Message from Outside Director



It is important to listen
directly to the real voices on
the ground and to deepen
the dialogue.

Outside Director
Kuniko Urano

I was appointed as an outside director of Nippon Steel in June 2022. Until then, I had spent more than 40 years at Komatsu Ltd., a machinery manufacturer, working in production and logistics departments, as well as in human resources, public relations, CSR, and other areas. Despite differences in size and overseas sales ratios, there are many common features that should be valued, such as the basic principles of safety first, high quality and reliability based on development and production technologies, and the importance of cooperation with the local community. At board meetings and other meetings, I try to frankly convey what is expected of Nippon Steel, based on my experience and by considering my perspective as a user of products and infrastructure as well as my impression of the company as an ordinary citizen. I also believe that the gender angle is important for how diversity and inclusion can be linked to corporate growth, and I take every opportunity to communicate on this point as well.

In 2020, Nippon Steel transitioned to a company with an Audit

& Supervisory Committee in order to respond to the speed and magnitude of changes in the business environment and society, and to create a structure that contributes to faster business execution while ensuring a high level of governance. The Board of Directors is designed to facilitate discussion from a variety of perspectives, focusing on the company's basic policies, progress and decisions on important matters, and risk management, including the effectiveness of internal controls. I feel that a virtuous cycle of constant improvement has been established through the evaluation of effectiveness.

The Medium- To Long-term Management Plan announced in fiscal 2021 calls for (1) restructuring the domestic steel business and strengthening group management, (2) promoting a global strategy to deepen and expand overseas business, (3) taking on the challenge of becoming carbon neutral, and (4) promoting a digital transformation strategy. These four themes are deeply interrelated, and if any one of them were missing, our future would

likely end up being different from what society (all stakeholders) expects of us. The difficulty of achieving this goal is also a source of opportunity, and I am convinced that we will continue to advance without sanctuary as we have in the past, and that the management team will always be ready and specific in encouraging employees to take on difficult challenges.

Nippon Steel's business and each of its initiatives can be characterized by a very long lead time from decision to fruition. Moreover, the future will see an increase in the importance of broadening and deepening alliances. Our activities show that we are always earnest in our efforts to identify changes in the external environment, including society, as well as domestic and global competitive axes, and to objectively evaluate not only our own technologies and resources, but also our internal culture. As the internal and external environment changes drastically in a short period of time, the practice of drawing multiple lines and multiple scenarios has been embedded at Nippon Steel, as a result of active discussions based on the diverse knowledge, experience, and networks of our executive departments, I believe this will continue to be a great strength for us. Another strength to be sustained is the absence of gaps in awareness and understanding between the head office divisions/staff divisions and on-site operations. In other words, if anyone feels discomfort, that person immediately confronts and works with others at Nippon Steel. I believe this behavior is well established.

Many companies are now focusing on investing in people. In addition to investing in systems, this should all start with ensuring that all employees feel a sense of fulfillment and growth in their jobs and workplaces. To this end, I believe that there is nothing better than simple but steady activities of directly listening to the real voices on the ground and deepening dialogue.

The sum total of the Group's employees has unlimited potential. I am proud of our efforts in the four pillars to lead us to overcoming social issues. Our double efforts to achieve high goals and conduct earnest, steady activities will certainly not be an easy journey but I am confident that we will keep on making progress toward becoming "the best steelmaker with world-leading capabilities." As an outside director, I will do my utmost to contribute to this journey.



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I will do my best to contribute
to making Nippon Steel become
more globally competitive and to
promote sustainable management
that addresses environmental
issues and social responsibility

Kenji Hiramatsu
Director, Member of the Board
(Audit & Supervisory Committee Member)

I have just been appointed as Outside Director of Nippon Steel. I have served in the Ministry of Foreign Affairs for more than 43 years, during which time I accumulated experience on a broad range of topics including security issues, economic diplomacy, and relations with the Korean Peninsula, climate change negotiations, SDGs, women’s empowerment, and relations with Southeast Asia, Europe, and the United States.

Through my career I became convinced that Japan’s economic and technological strengths underpin Japanese diplomacy, and that the united efforts of the public and private sectors are indispensable to hone these strengths. In India, where I served as an Ambassador, many people from Japanese companies, who had high interests in dynamic India, came to consult with me. One such company was Nippon Steel. They decided to acquire Essar, a major steel company in India, and it was a visionary deal that foresaw the potential huge demand for steel in India. Also, when I was serving as the government representative for climate change negotiations, I had in-depth discussions with Nippon Steel’s people on how to harmonize global warming countermeasures with industrial development. Currently, as Chairman of the Institute for International Strategy, The Japan Research Institute, Limited, I closely follow and analyze the rapidly changing international situation. The world is now at a historic turning point and geopolitical perspectives are becoming increasingly important even for formulating corporate strategy. I hope that my experience will be of use to Nippon Steel, which is actively expanding its overseas business.

Nippon Steel is actively engaged in the development of high-value-added products and advanced technologies for CO₂ emission reduction. I would like to visit the front line of Nippon Steel’s technical development at an early date. In addition, I have strived, in my experience in organizational management, to commit how to motivate young people and promote women’s empowerment. I intend to exchange views on these points too with those involved at Nippon Steel.

I look forward to working with you.



Leveraging my experiences as an
accounting and auditing expert,
I am looking forward to being
engaged with many people and
contributing to raising Nippon
Steel’s corporate value

Aiko Sekine
Director, Member of the Board
(Audit & Supervisory Committee Member)

In June 2024, I was appointed as Outside Director of Nippon Steel.

As a certified public accountant, I was engaged in auditing the financial statements of listed companies in Japan and overseas at an auditing firm. I also served as a board member of the Japanese Institute of Certified Public Accountants (JICPA), and was involved in establishing standards related to accounting and auditing. After serving as Chairman of the JICPA for three years from July 2016, I became a professor at Waseda University’s Faculty of Commerce in September 2020. Nowadays I tell university students in particular how important accounting and auditing are in society. Further, I have served as an outside director and a member of various conferences in Japan and overseas.

During my career of almost 40 years, I have worked at various companies and organizations as an accounting and auditing expert. What I have found important is to visit the fields and to communicate with various people. Auditing of corporate financial statements tends to be thought of as just looking at numbers, but accounting represents the actual state of an organization with numbers, and it is crucially important to understand a company and its environment in preparing financial statements and conducting audits. Moreover, through my engagement with various organizations, I strongly feel the importance of organizational culture and governance. I believe that these factors have a significant impact on the enhancement of corporate value.

With this in mind, through communication with other members of the Board of Directors and Audit & Supervisory Committee, as well as with various people, including on-site personnel, and with strong intent to utilize my experience with various organizations, I am eager to get to know Nippon Steel more deeply. Nippon Steel is facing a major turning point, and is aiming to become the world’s best steelmaker with world-leading capabilities. I would like to contribute to the company’s development from an external standpoint.



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As an expert in energy and the environment, I will contribute to Nippon Steel’s efforts to realize GX and improve competitiveness, utilizing its technological development capabilities

Sumiko Takeuchi
Director, Member of the Board
(Audit & Supervisory Committee Member)

I assumed the position of Outside Director at the 100th Ordinary General Meeting of Shareholders. After graduating from university, I worked at Tokyo Electric Power Company (TEPCO) mainly on field work and in the environmental division. I then became an independent consultant, and am currently involved in research and advocacy on energy and environmental policy. I have served in a number of public positions such as the government’s GX Executive Committee and the Regulatory Reform Promotion Council, as well as teaching at universities. In addition to providing insight based on policy theories, I have wanted to promote the transition from an industrial society to a sustainable society. So, I founded a company that supports startups in the environment, energy, and infrastructure fields, and I am now serving as its co-representative.

Japan has experienced gradually weakening of its industrial competitiveness since the bursting of the economic bubble. I believe that GX (Green Transformation) is the last chance to reverse this trend and regain strength in manufacturing. At the GX Executive Committee, we are discussing this as a “growth strategy” that focuses not only on CO2 reduction but also on the transformation of the industrial structure and the restructuring of industrial locations. The steel industry is called a “difficult sector to reduce emissions”, as it not only harnesses energy, but also use coal as its raw material. However, Nippon Steel’s technological development capabilities are sufficient to overcome this challenge. I have heard that employees involved in this effort are very highly motivated, and I feel encouraged.

GX will be a social transformation that surpasses the industrial revolution experienced by mankind in the 18th century. It cannot be achieved by the efforts of individual companies alone; rather, it must be tackled in collaboration between industry, government, and academia. Nevertheless, at the core of that is the industry that provides solutions, and Nippon Steel is in a position to lead the way.

As a material industry that supports society, it is an extremely difficult challenge to continue stably providing high-performance but affordable products while simultaneously advancing with major reforms. I am so pleased to take part in this endeavor to strengthen competitiveness by taking GX and DX as opportunities.



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Overview of the Group’s Business

The Nippon Steel Group’s business structure consists of steelmaking, engineering, chemicals and materials, and system solutions.

The steelmaking and steel fabrication business covers the upstream and downstream of the steel industry value chain, as well as domestic and overseas markets. Nippon Steel Corporation, the operating holding company, is engaged in the core domestic steelmaking business, while group companies are engaged in the overseas steelmaking business, raw materials business, and other steel businesses which comprise functional, trading, secondary processing, stainless steel, and electric arc furnace.

The “Three non-steel companies” are engaged in the engineering, chemical and materials, and system solutions, perform a supporting function in Nippon Steel’s value chain for the steelmaking business and also operate businesses outside the Group by utilizing the technologies, products, and services that have been cultivated in the value chain of the steelmaking business.

We share important strategies throughout the Group and aim to maximize the value of the Group.

(As of the end of March 2024)

Segment		Business overview	Number of Group companies		Number of employees (consol.)
Steelmaking and Steel Fabrication Business	(1) Domestic steel business	Steel products of the six mills in Japan are sold for domestic and export markets. This is a core business of the Nippon Steel Group as these mother mills efficiently produce high-grade steel for a wide range of uses.	1 company (Nippon Steel Corporation)		28,543
	(2) Overseas steel business	We have crude steel production capacity of 19 million tons and steel production capacity of 37 million tons at overseas production bases of approximately 50 consolidated subsidiaries and equity method affiliates in more than 15 countries. We are developing our business per two models: an integrated steelworks and a downstream processing base.	Consolidated subsidiaries (G/GJ Steel, NS-SUS, etc.) Equity method affiliates (AM/NS India, etc.)	467 compa-nies	68,773
	(3) Raw materials business	We have invested in mines that produce iron ore, coking coal, and other raw materials used in the steelmaking busi-ness. This business contributes to stability of the earnings structure by securing stable procurement of high-quality raw materials and mitigating the impact of fluctuations in raw material market prices on consolidated results.	Iron ore: Robe River, etc. Coking coal: Moranbah North, Elk Valley Resources, etc.		
	(4) Other steel businesses	Other group companies support the steelmaking and steel fabrication business, from upstream to downstream in a variety of areas in the steel industry's value chain, and enhance the value of these businesses. They consist of "func-tional" (equipment and construction, materials and equipment, subcontractors, slag recycling) companies, trading companies, and secondary processing, stainless steel and electric arc furnace companies.	Nippon Steel Texeng, Nippon Steel Trading, Nippon Steel Plate, Nippon Steel Stainless Steel, Sanyo Special Steel, etc.		
(5) Three non-steel companies Engineering and construction		In addition to supporting the steelmaking business through the design and construction of steelmaking facilities, we support infrastructure in Japan and overseas in a variety of fields, including the construction of plants related to the environment and energy, skyscrapers, and huge steel structures.	34 companies (Nippon Steel Engineering, etc.)		4,997
Chemicals & materials business		In addition to the coal chemicals business, by recycling by-products generated in the steelmaking business, we will contribute to the realization of a prosperous society and the well-being of the global environment through advanced chemical and material technologies in the chemicals business and the functional materials business.	24 companies (Nippon Steel Chemical & Material, etc.)		3,454
System Solutions Business		With its track record of supporting the huge operation systems of steelworks 24 hours a day, 365 days a year, this business provides optimal and stable systems utilizing cutting-edge IT on behalf of a wide range of customers in the manufacturing industry as well as in finance, distribution, and the public sector.	21 companies (NS Solutions, etc.)		7,872
Total			548 companies Nippon Steel, 434 consolidated subsidiaries, 113 equity-method affiliates		113,639



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The domestic steel business, which is the core business of our Group, is directly operated by Nippon Steel Corporation, an operating holding company. Through enduring partnerships with our customers, we have developed the world's most advanced product and solution delivery capabilities, cultivated by responding to our customers' demanding requirements. In addition, we have established an efficient and reliable production and supply system for high-grade steel. This has been made possible by integrating our large-scale blast furnaces, coastal steel mills, and exceptional facilities and operating technologies. Our objective is to transform into a carbon-neutral steel product manufacturing process by 2050.

Value delivered by steelmaking

Compared to other materials, steel is used in a wider range of applications and in significantly larger quantities. From large to small applications, steel is intricately woven into every facet of society, undoubtedly asserting its dominance as the most important material.

Steel products offer a wide variety of properties and unlimited potential. Steel can be tailored to meet specific requirements to achieve a range of properties such as strength, formability, weldability or corrosion resistance. This can be accomplished by adding small amounts of various alloys such as manganese and vanadium, controlling the crystal structure through heat treatment or zinc and tin plating.

Steel products that exhibit these properties are referred to as "high-grade steel." High-grade steel helps create value for customers in their steel processing operations. Its multiple benefits include weight reduction, omission of work processes, increased material yield, extended product life, and elimination of hazardous substances and maintenance. These outcomes help address societal challenges such as achieving carbon neutrality, reducing environmental impact, ensuring safe and healthy living conditions, and strengthening national resilience.

Nippon Steel is at the forefront of the world's steel producers, with leading technology in the field of high-grade steel.

(1)Domestic steel business

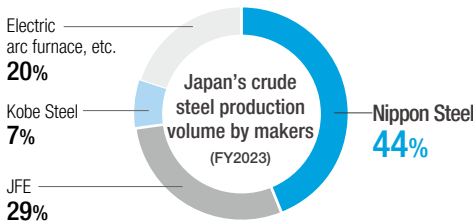
Production share

Nippon Steel is Japan's top steelmaker, dominating roughly half of the market.

In global terms, former Nippon Steel had the No. 1 share from 1970 to 2000 (except 1998 and 1999). Subsequently, there were consolidations and reorganizations of global steelmakers, and the emergence, consolidation, and reorganizations of Chinese steelmakers, along with China's rapid growth in steel demand and production volume. In 2023 Nippon Steel became No. 4 in the world.

We now aim at "becoming the best steelmaker with world-leading capabilities," not the largest in scale, but by using our three key driving forces, "technology," "cost," and "being global."

[Japan's crude steel production volume by makers]

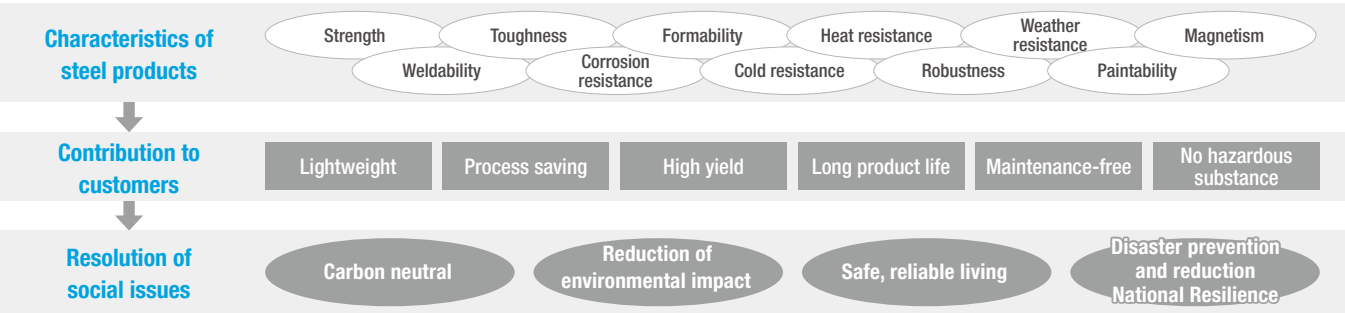


[(Reference)World ranking in crude steel production volume]



(source: worldsteel)

[Ways in which the supply of high-grade steel can contribute to the solution of social issues]





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Sales

Product expertise honed by working with customers in a variety of fields

In terms of Nippon Steel's sales by industry, the manufacturing sector represents approximately 60%, of which roughly 30% is the automotive sector, and the civil engineering and construction sector occupies the remaining 40%. The sales contracts to the manufacturing sector tend to have a higher portion of direct contract-based sales, based on our long-term business relationships with customers.

We carry out R&D activities jointly with these customers, develop and manufacture steel products with high functionality, and make proposals for solutions and improvements, such as relating to component design and manufacturing method, in addition to supply of materials, responding to their needs. Moreover, we have established an overseas supply network of steel products, to satisfy needs arising from the customers' global expansion. We have thus strived hard to be a partner contributing

to these customers' value creation. The high-grade steel product technology and solution proposal capacity of Nippon Steel have been developed by responding to needs of internationally competitive manufacturers in Japan. Together with our global production framework, which supports the customers' global development, they have become a part of Nippon Steel's strength.

Strong presence in emerging Asia

Out of Nippon Steel's steel products produced in Japan, roughly 50 to 60% are consumed in Japan and the remaining 40 to 50% are exported. ASEAN countries, South Korea, China, Taiwan, and elsewhere in Asia represent about 60% of the exports. Being closely located to the Asian market with its high growth potential in steel demand is one of advantages of Nippon Steel.

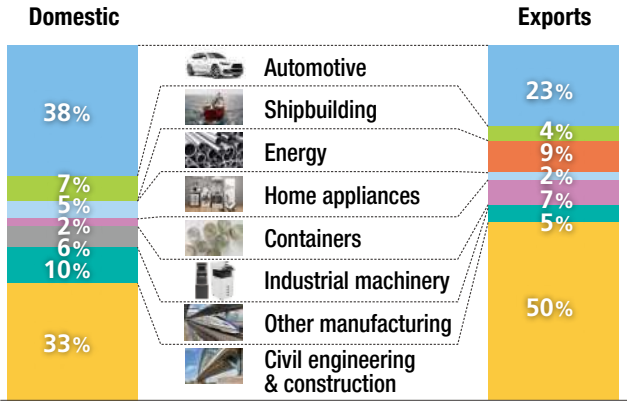
Sales contracts of steel products

Our contracts to sell steel products to customers can be categorized into two types: direct contract-based sales and spot market sales.

In the case of direct contract-based sales, a customer gives a specific order (price, volume, specifications, etc.) to Nippon Steel, which then produces and sells steel products that meet the specifications and needs of the customer, based on the order. A trading company, as an intermediary, is involved in contracts. The sales price of the steel product is determined through direct negotiations with a customer.

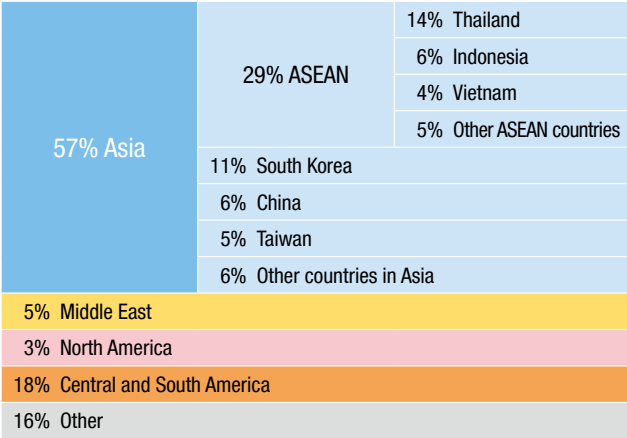
A spot market sales contract is a deal wherein a steelmaker sells steel products to a distributor or a trading company without end users being specified. The retailers and trading firms stockpile the steel products which are purchased at their responsibility and risk, and sell them by their own sales efforts, considering the market and other conditions.

[Shipment breakdown by customer sectors]

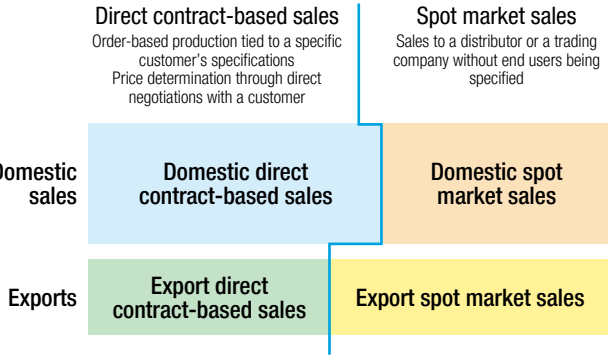


* Number of non-consolidated order intake in FY2023 (excludes semi-finished products)

[Composition by export destination]



[Nippon Steel's sales contracts of steel products]





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Production

Steel product manufacturing process

The steelmaking process is divided into the upstream process, to melt and reduce iron ore at high temperature, and to solidify the metal, and the downstream process, to make it into products of shapes and properties that meet needs of customers.

■ Upstream steelmaking process

The upstream process includes the ironmaking process to produce pig iron which is made mainly in a blast furnace; and the steelmaking process that uses pig iron, scrap, alloys, and other materials to manufacture steel products of diverse features. A large area of level land and a massive amount of initial investment are required for the upstream process, which needs massive upstream facilities for diverse processes including reception of raw materials, distributing a high level of supply of energy, and treatment of by-products. Moreover, a blast furnace once blown in will be kept operating ceaselessly for 24 hours a day and 365 days a year for around 15–20 years, with shutdowns for only a few times of few

day intervals a year. This also means a 24-hour-a-day operation of most other steelmaking facilities as well, which is realized by four teams of workers engaged in three shifts.

■ Downstream process

The downstream process is divided into processes for rolling, coating, refining and inspection, enabling manufacturing of products with features required by customers.

Effective production of high-grade steel at manufacturing bases and R&D bases in Japan

In Japan, six steelworks of Nippon Steel Corporation have 13 manufacturing bases, which we call areas, in aggregate. We also have group companies' factories or mills using electric arc furnaces and for secondary processing of steel products. The Nippon Steel Group's domestic crude steel production capacity totals about 47 million tons per year. In addition to three large-scale research centers, R&D laboratories at each steelworks put research outcome from the research centers to practical use in advanced technology, by improving equipment closely with

the manufacturing sites and developing products closely with customers. Nippon Steel Corporation's manufacturing bases and R&D bases in Japan have had a close working relationship with customers for many years. They are a source of value creation that is continually generating operational, equipment, and product technologies—our strengths. We call them mother mills, a base of value creation in our business development.

Efficient, high-grade steel production in large blast furnace, seaside integrated steelworks

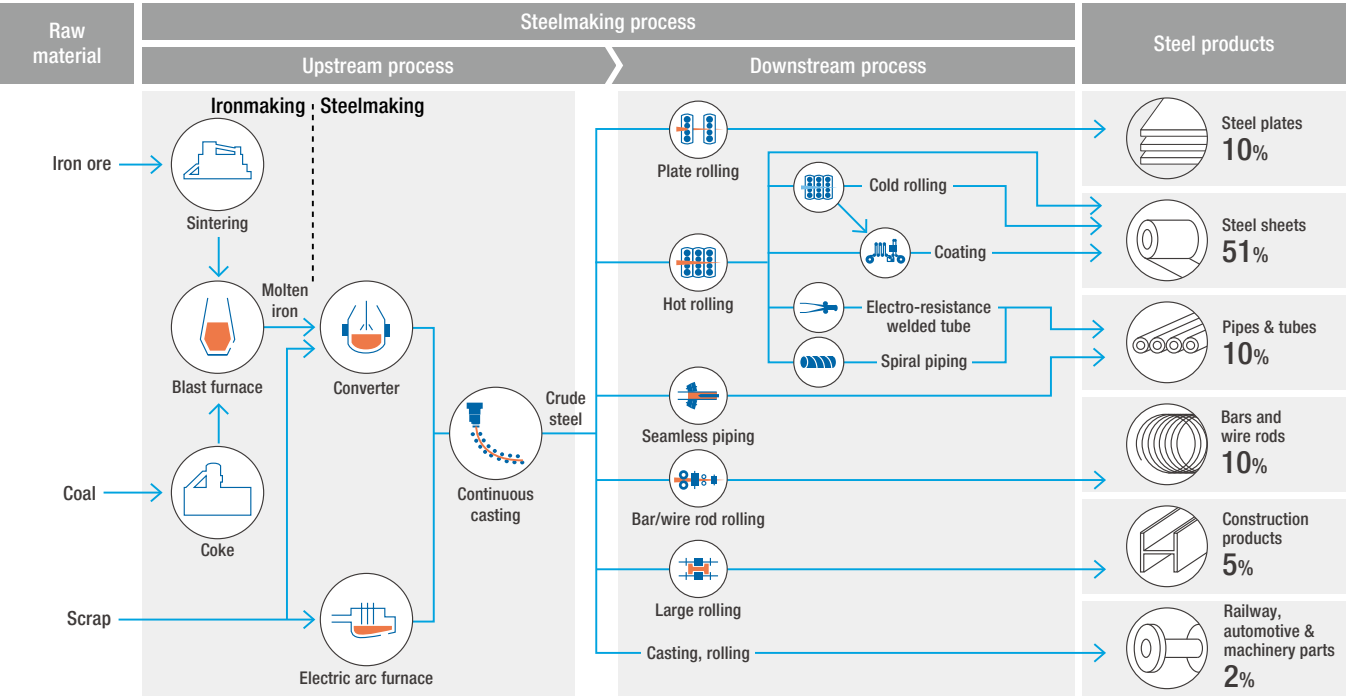
All of Nippon Steel Corporation's large blast furnace integrated steelworks in Japan are located in seaside areas, appropriate locations for import of raw materials and export of product shipments. From raw material landing places to upstream and downstream processing facilities, product warehouses, and shipping quays, all the sites are efficiently laid out to comprise a modern steelwork. Most of our 11 blast furnaces (as of the end of FY2023)—the main facilities of the upstream process—are immense, having an average furnace capacity of approximately 4,900m³. In particular, the No. 1 and No. 2 blast furnaces (5,775 m³) in Oita are among the world's largest.

The large blast furnace and seaside integrated steelworks we operate are of a high-efficiency production model, originated in Japan. Our domestic manufacturing bases have established this model, ahead of other countries, and have realized high productivity, cost competitiveness, mass production and stable supply of high-grade steel products, and high quality, using long accumulated operational and equipment technology.

The top-runner approach for continuous improvement in technology level

Our top-runner approach is that all steelworks share their operational and technical knowledge and experience as well as daily and monthly KPI data and arrangements work to have newly set precedents and methods, and groundbreaking advances transferred to and shared by all manufacturing bases. The PDCA system is in place, enabling the enhancement of technical levels. All the steelworks are also connected via a common facility management system. Sharing enormous information by utilizing the DX technology, such as on the problem occurrence rate, component product life, and installation or engineering work schedule, they seek to achieve more efficient, optimal maintenance and repair.

[Steel product manufacturing process]





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Leveraging the strengths cultivated in “mother mills” in Japan, in overseas markets, Nippon Steel is expanding its plants for integrated manufacturing and downstream processes in the centers of demand, and thereby seeks to ensure that local demand is captured in “districts and areas where demand is promisingly expected to grow” and in “sectors in which our technologies and products are appreciated.” At present, the Group’s overseas crude steel production capacity is approximately 19 million tons per year and its steel product capacity is approximately 37 million tons.

Capturing local demand in emerging regions

Global steel demand is expected to continue to grow at a moderate pace. Steel demand is expected to grow steadily in the future, especially in the large and high-growth market of Asia (India, ASEAN and others), in line with infrastructure development, progressing urbanization, and industrialization driven by the growth of automotive and other industries.

In order to satisfy such overseas demand, we export high-grade steel and other steel products from Japan, and in “areas where demand is promisingly expected to grow,” as well as “sectors in which our technologies and products are appreciated,” we satisfy demand through local production in 1) overseas production bases for downstream processes such as cold rolling and plating, and 2) integrated production bases for upstream processes (at blast furnaces, electric arc furnaces, etc.) and downstream processes (rolling, etc.)

We are developing our overseas steelmaking business in a variety of locations with priority bases in ASEAN (our home market), India (where demand is growing), and the United States (the largest market for high-grade steel). As an insider in these markets, we will contribute to their economic growth and solving their social challenges.

(2) Overseas steel business

Integrated steel mills

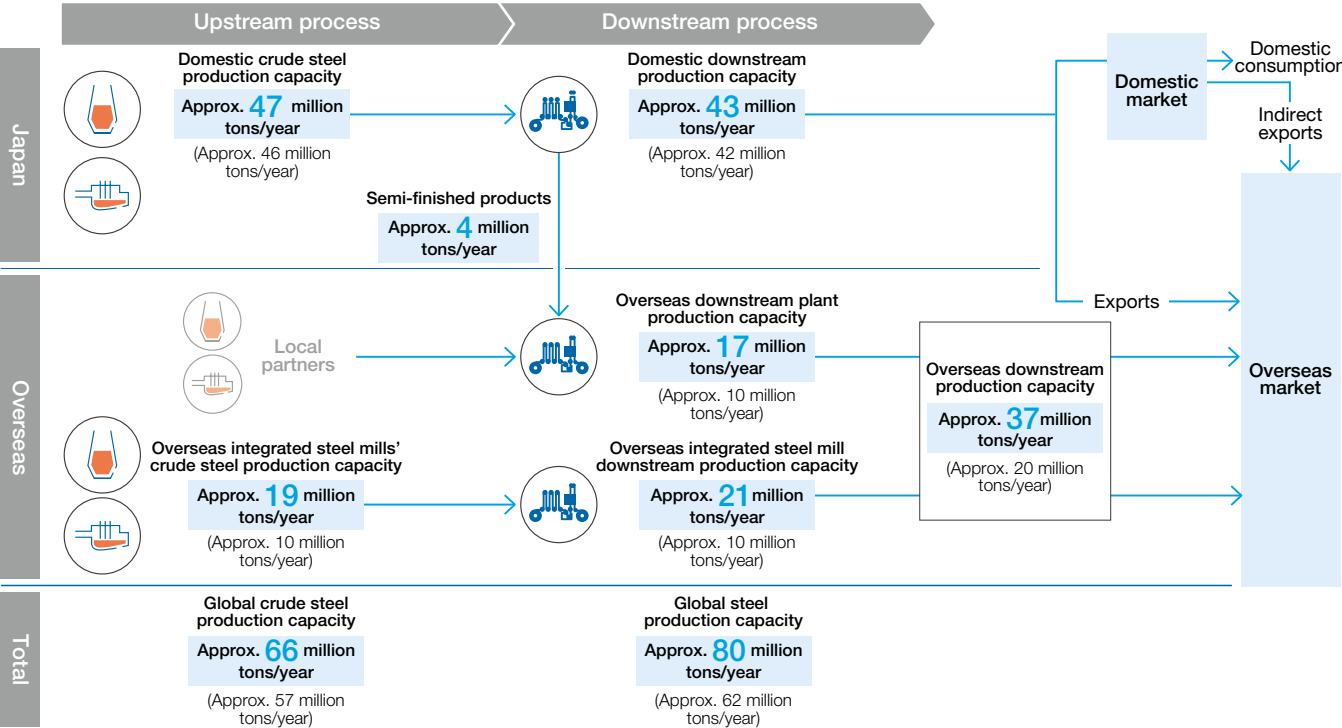
We have established an integrated production framework in key overseas markets to capture the growing demand for steel in emerging regions/countries and to add value through integrated production. Our basic expansion policy is focused on capacity expansion of existing facilities and the acquisition of and capital participation in (brownfield investment) integrated steel mills. The aim is to maintain the supply/demand balance in the market amid the trend of overcapacity in crude steel production and to avoid the risks associated with new startups.

Downstream plant

To meet the demand for high-grade steel for automobiles, home appliances and other products from local production facilities of Japan-based customers, semi-finished products are supplied from Japan or by local joint venture partners to local processing plants that supply cold rolled products, plated products and steel pipe products, etc. to customers there.

[Global Production Framework*]

Simple aggregation of the nominal capacity of each company. Figures in parenthesis reflect the equity ratio of companies with less than 50% ownership.



* Includes the nominal full capacity of companies with a 30% or more stake (including USIMINAS) subject to the crude steel production standard of the World Steel Association and equity-method affiliates with less than 30% stake to which Nippon Steel plays a significant role in supplying materials.



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(3) Raw material business

Nippon Steel had made minor investments in raw material mines owned and operated by major resource companies; the investments have supported reliable procurement of raw materials. We used to procure approximately 20% of the iron ore and coking coal we use from invested mines, but this proportion has increased to about 30% for coking coal after we made 20% investment in Elk Valley Resources Ltd. (EVR JV), a Canadian coking coal company, in January 2024.

These investments have made a significant contribution to consolidated earnings in the face of continued high market prices for raw materials. We have thus materialized a consolidated profit structure, which is less susceptible to the external environment.

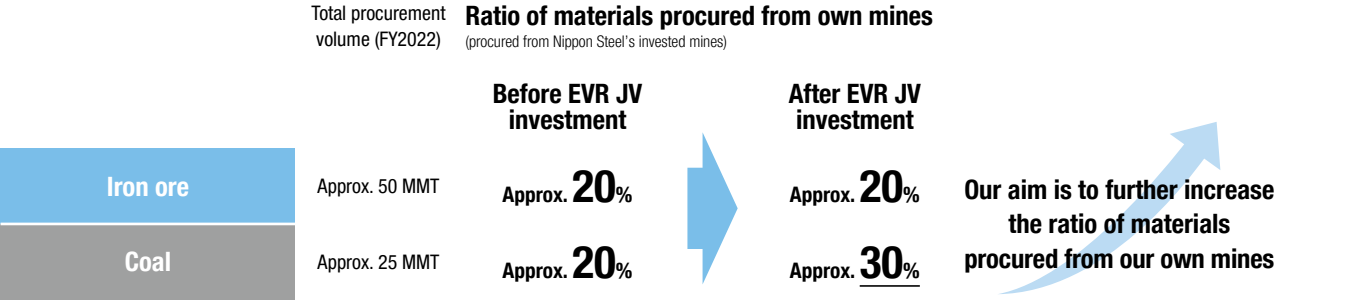
Going forward, we intend to increase our investment and transform this endeavor into a comprehensive “business.” Our goal is to go beyond procurement and create an integrated business framework that spans raw materials, manufacturing, and distribution. By leveraging our understanding of user needs and our expertise in raw material utilization technologies, we will work to ensure the stable procurement of quality raw materials and mitigate the impact of future market fluctuations in the raw material market.

[Invested mines of Nippon Steel]

			Year participated	Nippon Steel's ownership	Major shareholder	Production capacity (mn tons/year)
Iron ore and pellet	Australia	Robe River	1977	14.0%	Rio Tinto 53.0%	70
	Brazil	NIBRASCO	1974	33.0%	VALE 51.0%	10
Coal The carbon-neutral steel production process also requires a certain amount of coking coal.	Australia	Moranbah North*	1997	6.25%*	Anglo American 88.0%	12
		Warkworth	1990	9.5%	Yancoal 84.5%	8
		Bulga	1993	12.5%	Glencore 85.9%	7
		Foxleigh	2010	10.0%	Middlemount South 70.0%	3
		Boggabri	2015	10.0%	Idemitsu Kosan 80.0%	7
		Coppabella and Moorvale	1998	2.0%*	Peabody 77.3%	5
	Canada	Elk Valley Resources	2024	20.0%	Glencore 77.0%	27
Alloy (niobium)	Brazil	CBMM	2011	2.5%	Moreira Salles 70.0%	0.15

* Including the following equity stake owned by Nippon Steel Trading Co., Ltd.: Moranbah North 1.25%, Coppabella and Moorvale 2.00%

[Trends in the proportion of own mines]





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(4) Other group companies

Nippon Steel Corporation's other group companies support the domestic steel business in various areas, from upstream to downstream in the steelmaking and steel fabrication value chain and enhance value therein. In the same way as Nippon Steel, these companies have achieved stable earnings by strengthening their structure through restructuring and integration, streamlining facilities and improving margins.

Functional companies (focusing on materials, equipment and construction, operation, maintenance and logistics, by-product recycling)

Nippon Steel's steel business is supported by a group of companies engaged in the production, logistics and equipment of steelworks.

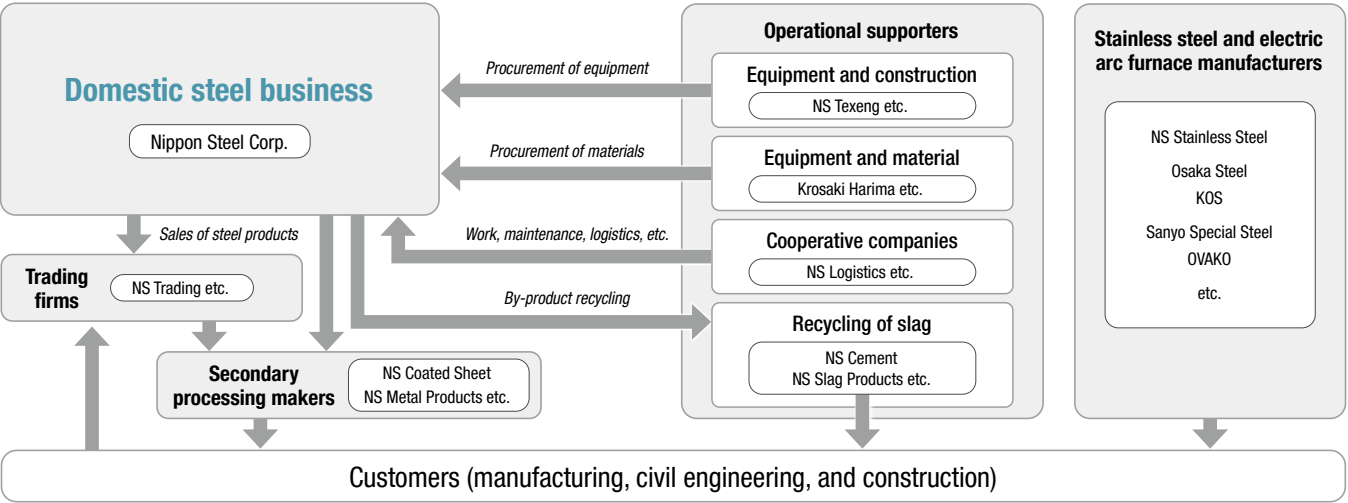
Major functional subsidiaries	Nippon Steel's ownership	Business description
Nippon Steel Texeng	100%	Engineering, maintenance, and operation of machinery, electrical instrumentation, systems, and construction of steel production facilities
Krosaki Harima	42.88%	Manufacture and sale of all refractory materials; and design, installation, building and repair of various kiln furnaces
Nippon Steel Logistics	100%	Marine transport, factory transport and work subcontracting, port transport, warehousing, truck transportation, and customs services
Nippon Steel Slag Products	100%	Manufacture and sale of steel slag products

Trading companies

Nippon Steel Trading serves as the core trading company of the Nippon Steel Group. The company became a subsidiary in April 2023 and a privately held company in June of the same year, further strengthening collaboration with Nippon Steel.

Major trading subsidiary	Nippon Steel's ownership	Business description
Nippon Steel Trading	80%	Sales, exports and imports of steel products and other products

[Steelmaking value chain and other group companies]



Secondary processors

Secondary processing companies of the Nippon Steel Group are engaged in manufacturing and sales of higher-value-added secondary processed products, which respond to end customers' needs, mainly using steel products of Nippon Steel as material and the Group's advanced technologies.

Major secondary processing subsidiaries	Nippon Steel's Ownership	Business description
Nippon Steel Coated Sheet	100%	Galvanized sheets, colored galvanized sheets, coated steel sheets, construction materials
Nippon Steel Metal Products	100%	Construction materials, civil engineering materials, colored galvanized sheets
Nippon Steel Pipe	100%	Carbon steel pipes for machine structure, welded stainless steel pipes, carbon steel pipes for building structure
Nippon Steel Drum	100%	Drums
Nippon Steel SG Wire	100%	Piano wires, coated wires, oil tempered wires
Nippon Steel Welding & Engineering	100%	Welding materials, plasma devices, optical fiber products
Nippon Steel Stainless Steel Pipe	100%	Seamless stainless steel pipes
Nippon Steel Bolten	84.96%	High-tension bolts
Nippon Steel Wire	51.04%	Steel wires for cold heading, hard steel wires, high carbon chrome bearing steel wires
Geostr	40.37%	RC segments, steel segments, other civil engineering RC products

Stainless steel and electric arc furnace manufacturers

The electric arc furnace (EAF) manufacturers of the Nippon Steel Group manufacture and sell distinctive products and have top-class competitiveness in their respective fields.

Major stainless steel/ EAF steelmaking subsidiaries	Nippon Steel's ownership	Business description
Nippon Steel Stainless Steel	100%	Manufacture and sale of stainless steel
Nippon Steel Structural Shapes	100%	Manufacture and sale of H-beams
Osaka Steel	60.62%	Manufacture and sale of equal angles, channels, I beam, round bars, deformed bars, joints for reinforcing bars, rails, elevator guide rails, rim bars, colored angles, etc.
Sanyo Special Steel	52.95%	Manufacture and sale of special steel materials and pipes
Oji Steel	51.49%	Manufacture and sale of flat bars, square bars, and steel blocks



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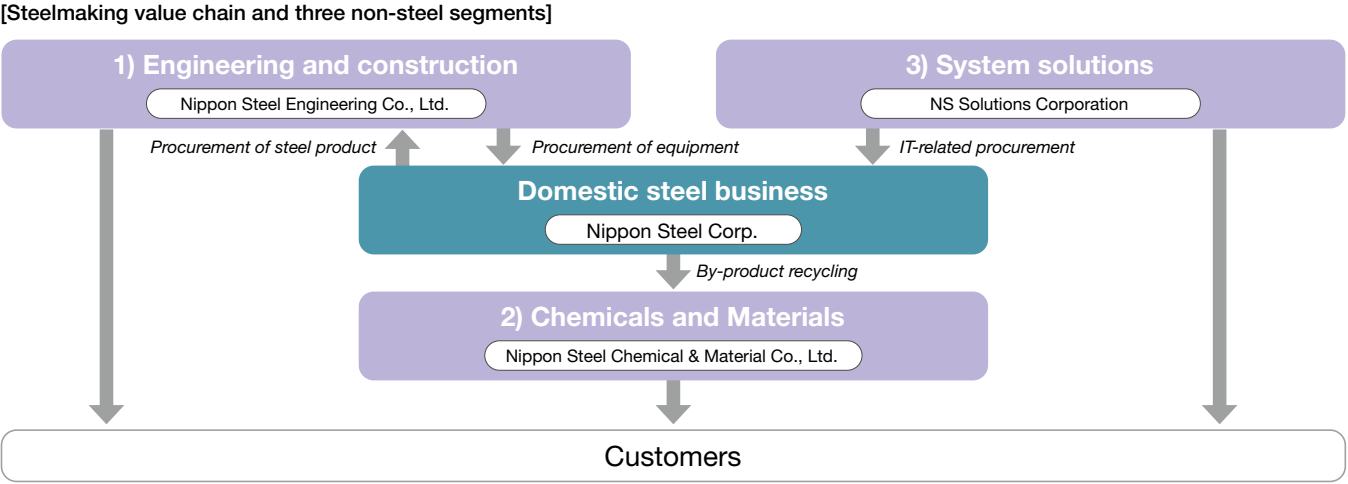
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Overview of the Group's Business

(5) Three non-steel segments

Three non-steel segments, which originally were parts of Nippon Steel’s steel business, support the steel business and create synergies.

The accumulated technology, products, and services that these companies acquired are used as appropriate for the business pursuit of companies outside the Nippon Steel Group.



	1) Engineering and construction	2) Chemicals and Materials	3) System solutions
Segment companies	Nippon Steel Engineering	Nippon Steel Chemical & Material	NS Solutions
Synergies with the steelmaking business	Design and construction of steelmaking facilities	By-product recycling Use of development seeds and basic technologies Multi-material capability	Provision of IT solutions
Sales (FY2023)	¥ 409.2 billion	¥ 260.8 billion	¥ 311.5 billion
% of sales to the steelmaking business	About 10-20%	Less than 10% (Manufacture of coal chemical products from tar, a by-product of steel mill)	About 20%
History and business overview	The company started as an engineering division of Nippon Steel (currently Nippon Steel Corporation) in 1974 and spun off as an independent company in 2006. We support infrastructure in Japan and overseas in a variety of fields, from the construction of environment and energy-related plants to super-high-rise buildings and huge steel structures.	In October 2018, the businesses of Nippon Steel & Sumikin Chemical and Nippon Steel & Sumikin Materials were merged to form Nippon Steel Chemical & Material. By combining the material design and manufacturing technologies of Nippon Steel & Sumikin Chemical (as aromatic chemical synthesis, refining and compounding) with the material technologies of Nippon Steel & Sumikin Materials (thin foils, fine wires, and fine particles), the company plays a part in strengthening the comprehensive material support capabilities of the Nippon Steel Group.	The Electronics and Information Communication Division and the Information Systems Division of Nippon Steel (now Nippon Steel Corp.) were established in 1986 and integrated and merged with Nippon Steel Computer Systems (established in 1980) to form ENICOM (Nippon Steel Information & Communication Systems) in 1988, and then became the current NS Solutions Inc. in 2001. Based on its many years of supporting systems in the steel industry 24 hours a day, 365 days a year, the company provides an optimal stable system that utilizes cutting-edge IT for a wide range of customers including financials, retailers, and the public sector beside the steel industry.



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1) Engineering and construction

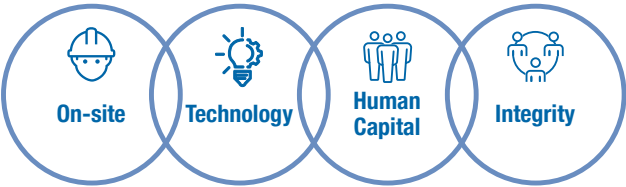
Nippon Steel Engineering Co., Ltd.

Our Mission, Our Values and Our Vision

Our Mission

Leveraging technologies and ideas that go one step ahead, we will provide optimal engineering solutions to our clients so that we can contribute to the development of global society and industries.

Our Values



Our Vision

- 1 Provide optimal solutions to social and customer issues
Create and provide optimal solutions that include not only EPC, but also services and component supply
- 2 Contribute to decarbonization and national resilience
Social implementation of technologies and services for decarbonization and building resilient and disaster-resistant cities
- 3 Improve productivity and implement business innovation
Every single employee will refine his or her aspirations and continue to improve productivity and implement business innovation

Our Business

We are involved in numerous projects in Japan and overseas, utilizing our comprehensive engineering skills. Our mission is to actively promote DX and contribute to the realization of a carbon-neutral society and the creation of resilient, disaster-resistant communities through our business activities.

Environment and energy

We are contributing to the creation of a sustainable, circular economy through engineering, procurement and construction (EPC) as well as operation and maintenance (O&M) of environmental and energy-related facilities and plants.

FY2023 consolidated revenue ¥268.2 bn

Japan's first jacket type foundation (Ishikari Bay offshore wind power plant), supporting an 8MW wind turbine

Urban infrastructure

As a steel engineering company with a thorough knowledge of the material steel, we support the creation of resilient and disaster-resistant cities by making full use of "Steel × Ideas = Power."

FY2023 consolidated revenue ¥112.8 bn

NS-SSB®, an iron seismic isolation device that utilizes the principle of a pendulum to loudly and slowly absorb vibrations and energies caused by earthquakes

Steelmaking plants

We provide plants that realize the three ecos of the steel industry (Eco Process, Eco Products, and Eco Solutions) to customers in Japan and overseas.

FY2023 consolidated revenue ¥39.2 bn

Coke dry quenching equipment (CDQ) recovers thermal energy from coke and contributes to reducing CO₂ emissions from steelworks

1: Nippon Steel Corporation took over the steelmaking plant business of Nippon Steel Engineering Co., Ltd. (excluding coke dry quenching equipment business, etc.) on October 1, 2023, through a simple absorption-type split.
2: Since the above consolidated revenues by sector are before adjustment of inter-sectoral transaction value, the combined amount differs ¥11 billion in total from the revenue of ¥409.2 billion of Nippon Steel Engineering Co., Ltd.

[Major Group companies of Nippon Steel Engineering Co., Ltd.]

Domestic subsidiaries	Nippon Steel Pipeline & Engineering Co., Ltd., Nippon Steel Environmental & Energy Solutions Corporation
Overseas subsidiaries	Nippon Steel Plant Engineering (Shanghai) Co., Ltd. (China), Beijing JC Energy & Environment Engineering Co., Ltd. (China), THAI NIPPON STEEL ENGINEERING & CONSTRUCTION CORPORATION, LTD. (Thailand), NS-OG ENERGY SOLUTIONS (THAILAND) LTD. (Thailand), NIPPON STEEL ENGINEERING INDIA PRIVATE LIMITED (India), PNS ADVANCED STEEL TECHNOLOGY, INC. (Philippines)



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Synergies in the Nippon Steel Group

The Engineering and Construction business aims at equipping society with CO₂ capture, CCS, hydrogen and ammonia technologies, jointly taking on the challenge of “Nippon Steel Carbon Neutral Vision 2050.”

We will propose solutions to the diverse needs of society and industry by utilizing the steel products, various other products and services of the Nippon Steel Group and our engineering capabilities, including design, procurement and construction methods.

Future risks and opportunities, and business strategy

Risks

- Long-term contraction of domestic market
- Impact of Japan's declining labor population on supply chains (future concerns about stable procurement of goods/services, quality/delivery, etc.)

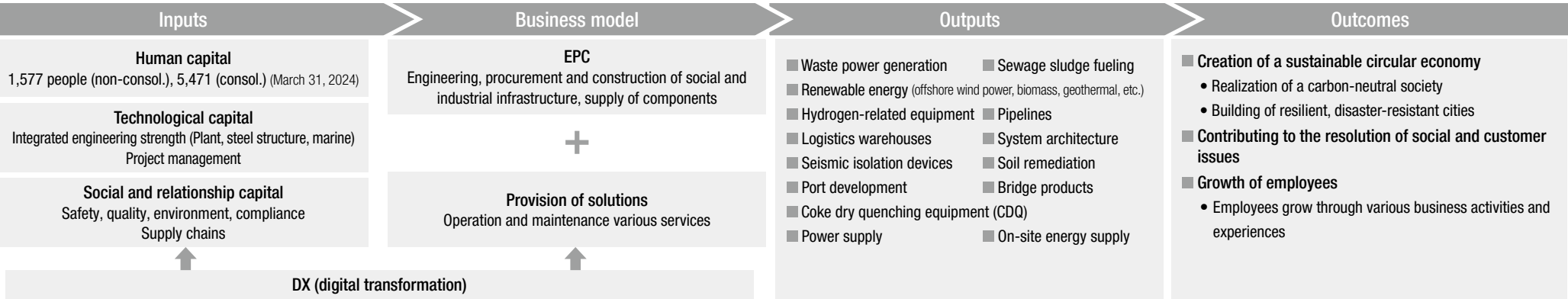
Opportunities

- Global acceleration of carbon neutral promotion in all kinds of industries
- Increasing needs for building resilient, disaster-resistant cities and maintaining and renewing aging social and industrial infrastructure
- Accelerated progress and social implementation of digital technology

Business strategy

- Efforts in growth areas toward carbon neutrality (CN)
 - Obtaining a solid market position in the CN-related business area
 - Offshore wind force (including O&M), CO₂ recovery (ESCAP™), storage and utilization, hydrogen and ammonia-related facilities (pipelines, receiving, shipping, storage facilities, etc.), utilization of biomass, etc.
 - Development of renewable energy power supply business (expansion and sophistication of energy management system including storage battery technology, etc.)
 - Expansion of Zero Emission Building (ZEB), the highest rank contributing to CO₂ reduction in large-scale logistics facilities, etc.
- Initiatives for enhancing resilience and the area of aging infrastructure
 - Expansion of material sales business for seismic isolation devices, system construction, etc.
 - Responding to needs for renewal, maintenance, and repair of aging infrastructure in the fields of bridge products, gas pipes, and water works
- Development of new service-type businesses for needs for manpower reduction and CO₂ emission reduction
 - Development of smart cleaning service (cleaning of plant equipment, piping, etc. using ultrasonic waves and prevention of adhesion of dirt)
 - Deployment of next-generation aquaculture production system
- Smarter engineering operations using digital technology to improve productivity

The value creation process



Sustainability initiatives

We hold meetings of the Sustainability Committee, chaired by the president, four times a year.

Based on the Sustainability Policy (Quality, Health & Safety, Compliance, Environment, Procurement, Human Rights, Human Resources, and Social Contribution), we are also implementing the PDCA cycle of activities in cooperation with Group companies.

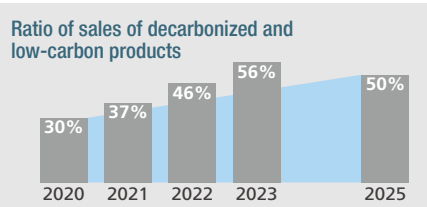
Our six priority SDGs

Among the 17 Sustainable Development Goals (SDGs), we have identified six priority goals that the Nippon Steel Engineering Group can make a significant contribution to through the execution of our business activities.



Contributing to CO₂ emissions reduction through decarbonization and low-carbon products

We have set a goal of achieving a sales composition ratio of more than 50% for decarbonized and low-carbon products by 2025 (its effect on CO₂ emissions reduction is equivalent to 32 million t-CO₂/year).





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2) Chemicals and materials Nippon Steel Chemical & Material Co., Ltd.

Our Mission

To realize an affluent society and contribute to the global environment through advanced chemical and material technologies
To realize co-creation and co-prosperity with customers as well as the growth and happiness of employees

The Nippon Steel Chemical and Material Group, created through the business integration in October 2018, is developing its business activities with the basic philosophy of "Master Materials, Pioneer the Future," aiming to realize an affluent society through advanced chemical and material technologies, contribute to the global environment, and achieve co-creation and co-prosperity with customers and the growth and happiness of employees.

Nippon Steel Chemical & Material Group Mission

Basic Principles

We will contribute to the global environment by providing products and services that enrich people's lives through our own development and accumulation of advanced chemical and material technologies and through the sophisticated and diverse use of materials.

Master Materials, Pioneer the Future
For Your Dream & Happiness

Action guidelines

- Trust : We follow the laws and social rules, always consider things from the perspective of society and our customers, and aim to earn the trust of society and our customers.
- Challenge : We hope that both ourselves and the company will grow together, and we will continue striving for our targets, being fully aware of our roles and never forgetting our high aspirations.
- Contribution : We will respect the diversity and individuality of every employee, and by supporting and encouraging each other through friendly rivalry, we will produce the best results as an organization and team and contribute to society.

Management Principles

We will develop corporate activities with emphasis on the following items, conduct fair and transparent management, and continue to grow as a company that is widely trusted by society.

- Contribution to the global environment
- Co-creation and co-prosperity with customers
- Realization of a society that is healthy and rich in humanity
- Realization of the growth and happiness of employees

Our Business

In order to contribute to the development of growth fields such as high-speed communications, semiconductors, and automotive devices while steadily responding to the needs of global environmental measures, we will further enhance our long-accumulated comprehensive capabilities.

Coal chemicals

Pitch coke, pitch, naphthalene, phthalic anhydride, carbon black, industrial gases

FY2023 consolidated revenue ¥58.0 bn



Needle coke for electric furnace electrodes

Chemical products

Aromatic chemicals, styrene monomers, bisphenol A, divinylbenzene, functional chemicals, lubricating materials

FY2023 consolidated revenue ¥110.0 bn



Various chemicals

Functional materials/composite materials

Circuit board materials, epoxy resins, display materials, metal foils, metal carriers for exhaust gas purification, fillers for semiconductor encapsulants, bonding wire for semiconductors, carbon fiber composite materials, pitch-based carbon fibers, porous carbon materials

FY2023 consolidated revenue ¥93.0 bn



Bonding wire for semiconductors, and pitch-based carbon fiber

Major Group companies of Nippon Steel Chemical & Material Co., Ltd.

Nippon Steel Carbon Co., Ltd.

NS Styrene Monomer Co., Ltd.

Nippon Steel Functional Material Manufacturing Co., Ltd., Nippon Steel Epoxy Manufacturing Co., Ltd., Nippon Micrometal Corporation, Nippon Graphite Fiber Co., Ltd.



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Synergies in the Nippon Steel Group

For more than 100 years, we have been working to increase added value through the effective use of steel by-products, and our accumulated technologies for utilizing the various active ingredients contained in coal tar are now also used in the technologies of our functional materials and carbon fiber composite materials businesses, which have grown to become our core businesses.

Increase in added value through effective use of steel by-products



Using steel by-products such as coal tar and coke-oven gas as raw materials, we produce needle coke for electric furnace electrodes, carbon black for automobile tires, and various chemicals.

Picture: Needle coke, carbon black, etc.

In addition, based on the inorganic high-performance materials owned by our group, we are developing various application products, and we are also producing remarkable results from research and development collaboration utilizing the advanced technology of Nippon Steel R&D Laboratories (RE).

Expansion from Group materials to application products



We supply high-performance metal foil based on unique stainless steel materials supplied by the Nippon Steel Group, as well as applied products such as hard disk drive (HDD) suspension materials and metal carriers for exhaust gas purification.

Picture: High-performance metal foil, HDD suspension, metal substrates

Future risks and opportunities, and business strategy

Risks

- Climate change such as global warming and deterioration of the global environment
- Soaring raw material and fuel prices and supply instability
- Intensifying development competition and obsolescence of existing products

Opportunities

- Realization of carbon neutrality, and development of materials and technologies contributing to global environmental protection
- Development of distinctive and differentiated technologies and products
- Efforts to improve productivity and diversify raw material and fuel sources

Business strategy

- Through stable production and quality improvement of “needle coke” used in steelmaking electric furnaces, we will contribute to the realization of carbon neutrality by producing high-grade steel in large electric furnaces.
- We will continue to develop differentiated products that make full use of our unique advanced chemical and material technologies. Semiconductor peripheral materials such as bonding wires, ceramic particles, circuit boards, functional resins, and high-performance metal foils are indispensable for the refinement and sophistication of various electronic devices, the progress of CASE, and the spread of 5G/6G communications. We will develop these various materials and members and provide them to society.
- By improving the production process and building an optimal business portfolio, we will establish a system that can flexibly respond to changes in the business environment.

Value creation process



Sustainability initiatives

Earning the trust of stakeholders
Ensuring compliance and strengthening product safety

Manufacturing that prioritizes safety, the environment, disaster prevention, and quality
As manufacturing companies, the Nippon Steel Chemical & Material Group has clearly established the guiding principle that “safety, environment, disaster prevention, and quality take priority over production, shipments, and cost” and is working to earn the continued trust of all stakeholders, including customers, suppliers, local communities, society, and employees and their families.

Promoting responsible care activities
Responsible Care (RC) activities are activities in which manufacturing companies voluntarily ensure that the environment, safety, and human health are not harmed from product development through manufacturing, distribution, use, and final consumption to disposal, while disclosing the results of their activities and communicating with society. The Nippon Steel Chemical & Material Group has established the Responsible Care Committee, which deliberates and decides on important matters related to RC activities, including the Environmental Management Policy, RC Activity Policy, and the company-wide RC Activity Promotion Plan, and implements company-wide cross-sectional activities.

- RC activity promotion items
Occupational safety and health, environmental preservation, security and disaster prevention, and product safety



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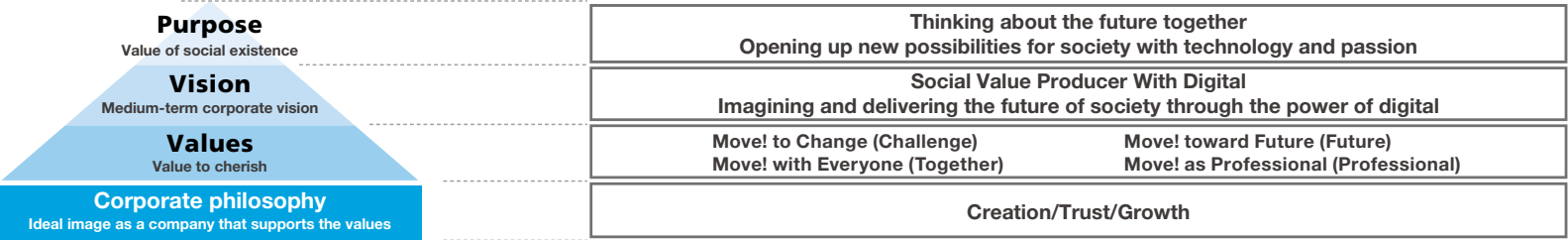
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3) System solution

NS Solutions Corporation

Purpose/Vision/Values



Our Business

With our comprehensive capabilities backed by cutting-edge technology and deep business knowledge, we will produce solutions that are truly valuable to our customers and the future society.

Business Solutions

This segment consists of 1) "Manufacturing, Nippon Steel Group," which is mainly engaged in digitalization of the manufacturing sector; 2) "Retail and Services, Digital Platformer," which supports the distribution and retail sector and digital platformers, and 3) "Financial Services."

FY2023 consolidated revenue **¥231.5 bn** (including ¥62.5 bn for Nippon Steel)

Consulting & Digital Services

The segment consists of 1) the domain of IT infrastructure solutions and large-scale IT infrastructure engineering, which has long been provided for the public sector and 2) horizontal versatile solutions such as AI solutions and other digital services. These include "Digital Workplace Solutions" and "IT Outsourcing," which are the areas of focus.

FY2023 consolidated revenue **¥79.1 bn**

Four key areas of focus

<p>Digital manufacturing</p> <p>Supporting the promotion of digital transformation of Nippon Steel and the manufacturing industry by utilizing the strength of having a field of Nippon Steel</p>	<p>Platformer support</p> <p>Providing professional services for platformers such as Internet service and electronic commerce (EC) operators</p>	<p>Digital workplace solutions</p> <p>Consistently providing services/ products from consulting to the introduction of IT tools such as secure telework environments and electronic contract systems for realization of new ways of working</p>	<p>IT outsourcing</p> <p>Providing integrated operations from IT infrastructure including data centers, and responding to new needs such as multi-cloud and zero trust</p>
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[Major Group companies of NS Solutions Corporation]

Domestic subsidiaries	NS Solutions Hokkaido Corporation, NS Solutions East Japan Corporation, NS Solutions Chubu Corporation, NS Solutions Kansai Corporation, NS Solutions Kyushu Corporation, NS Solutions BizTech Corporation, NSSLC Service Corporation, Network Value Components Ltd., NS Financial Management Consulting, Inc., Financial Engineering Group, Inc., Act., NCI Systems Integration, Inc., NIPPON STEEL Hitachi Systems Solutions, Inc.
Overseas subsidiaries	NS Solutions (Shanghai) Co., Ltd., NS Solutions Asia Pacific Pte. Ltd., Thai NS Solutions Co., Ltd., PT. NSSOL SYSTEMS INDONESIA, PT. SAKURA SYSTEM SOLUTIONS, NS Solutions USA Corporation, NS Solutions IT Consulting Europe Ltd.



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NIPPON STEEL CORPORATION
INTEGRATED REPORT 2024

Overview of the Group's Business (5) Three non-steel segments 3) System solution

Synergies in the Nippon Steel Group

For the steelmaking industry, computer systems are an important foundation for supporting all business activities, such as receiving orders, production, shipping, and quality control, and for utilizing various data.

Accumulation of knowledge and ensuring the continuity of human resource supply by NS Solutions Corporation is essential for Nippon Steel to differentiate itself in the steel industry and maintain its competitiveness.

Nippon Steel Corporation accounts for approximately 20% of NS Solutions' consolidated sales, making it the company's largest customer.

While NS Solutions is contributing to Nippon Steel' DX by the power of advanced and cutting-edge installment, the company is continuing to enhance its corporate value by acquiring clients including Japan's leading global manufacturers, Internet service platform providers, major financial institutions, and government agencies through synergies such as customer trust and stable human resource recruitment capabilities in the Nippon Steel brand.

Future risks and opportunities, and business strategy

Risks

- Shortage of IT personnel due to the declining domestic working population
- Reduced barriers for companies to become involved in digital business, and customers' increased in-house production
- Major changes in customer behavior due to sudden changes in global economic situations

Opportunities

- Innovation in system development and operation through innovative technologies such as generative AI
- Expansion of digital services through industry cloud adoption
- Full-scale development of platforms to promote information distribution and utilization across industries

Business strategy

“Social Value Producer with Digital,” a new concept report compiled by NS Solutions, reflects our willingness to more actively participate in society and unleash new possibilities by ourselves with the aid of digital technology. Until now, we have worked to solve customer issues as a partner that stands close to customers. From now on, however, we aim to be a “producer” who creates new systems for the world in collaboration with many related parties, and who brings new value to society. To achieve this, we will focus on the following three points.

- Realization of a variety of ways to deliver value

We will provide new value through three business models, using assets accumulated through the conventional SI model as the core.

1. Provide sustainable IT services through the next-generation SI model
2. Provide best practices through asset utilization models
3. Provide a platform for co-creation and co-existence through a platform provision model

- Utilize and strengthen our long-accumulated knowledge and technological capabilities

Shift to a new business model by strengthening human capital and utilizing the entire field of Nippon Steel Group companies, with our accumulated technologies and knowledge as the core.

- Expand value proposition

Expand value provision targets into new markets for NS Solutions, in addition to seeking growth in the existing market domains.

NSSOL 2030 Vision

Imagine and deliver the future of society through the power of digital

Target structure (Aim: by the early 2030s)

Sales: The 500 billion yen level	Operating profit: 100 billion yen level
Operating margin: 20% level	ROE: 15% level

The value creation process



Sustainability initiatives

Materiality	Main initiatives	Main SDGs
Remediation of social challenges through IT	<ul style="list-style-type: none">● Contribute to the improvement of operational efficiency through the introduction of business systems and IT in various manufacturing industries, as well as measures against the declining working population.● Contribute to the establishment and improvement of the national life infrastructure through system development and other activities for government and public offices, research institutes, financial institutions, railway and telecommunications service providers, platformers, etc.● Contribute to solving local issues by supporting the promotion of DX and smart cities at local governments.	<div>3</div> <div>9</div> <div>11</div> <div>17</div>
Steady provision of IT services as social infrastructure	<ul style="list-style-type: none">● Provide robust and efficient IT services that apply advanced technologies such as cloud native.	<div>12</div>
Creation of opportunities for diverse human resources to play active roles	<ul style="list-style-type: none">● Create female managerial positions through measures to develop female leaders.● Promote various D&I measures, such as the establishment of dedicated portals to promote mutual understanding among employees with diverse attributes and characteristics.● Promote “self-selected” skill development (establishing an autonomous training system, etc.)	<div>5</div> <div>8</div> <div>10</div>
Reduction of environmental impact*	<ul style="list-style-type: none">● Continue to steadily promote the achievement of the Scope 1+2 reduction target of GHG emissions, and promote the introduction of green power.● Provide cloud services through highly energy-efficient data centers.	<div>7</div> <div>13</div>
Pursuit of governance and compliance as a trusted member of society	<ul style="list-style-type: none">● Further enhance corporate governance as a company with an audit and supervisory committee.● Thoroughly implement the Global Business Conduct.● Strengthen the risk management system.	<div>16</div>

* April 2022: Announced support for the TCFD. Aim to reduce Scope 1 and 2 of GHG emissions by half in FY2030 vs. FY2018 and to achieve carbon neutrality by FY2050.



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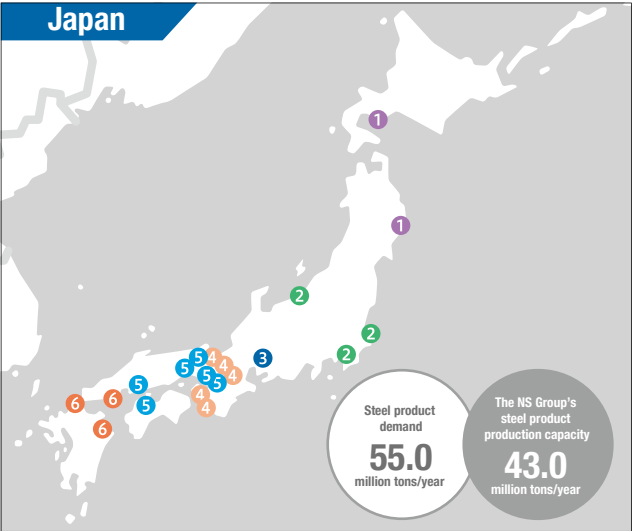
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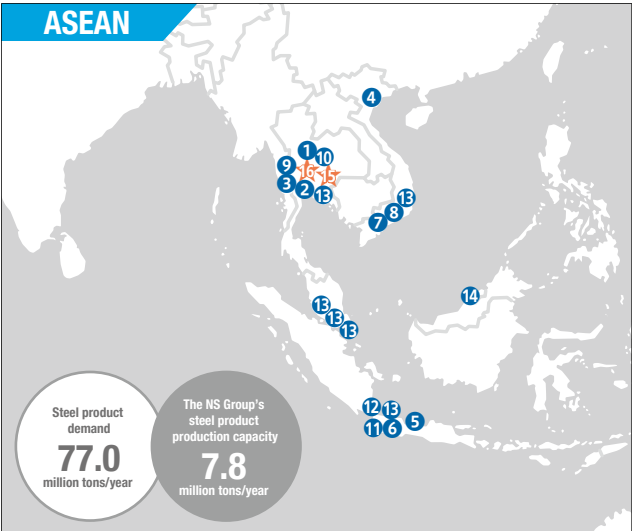
> Global Production System

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Global Production System (Steel Production Bases) (As of March 2024)

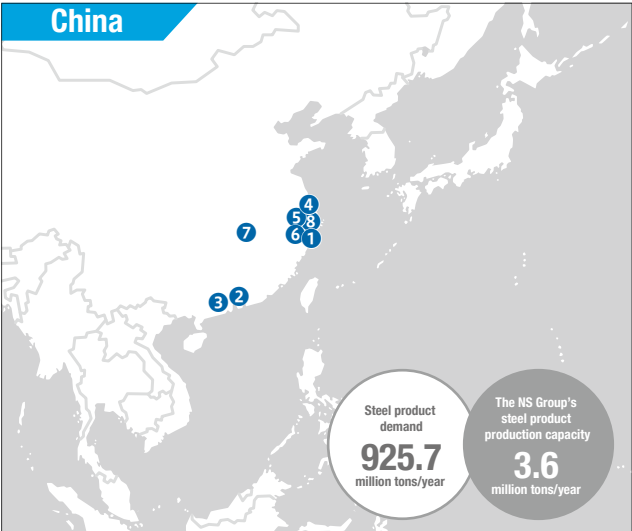


Names of steelworks	Names of areas	Product
① North Nippon Works	Muroran Area	Bars & wire rods
	Kamaishi Area	Bars & wire rods
② East Nippon Works	Naoetsu Area	Titanium & special stainless steel
	Kashima Area	Flat products, Pipes & tubes
	Kimitsu Area	Flat products, Bars & wire rods, Pipes & tubes, Plates
③ Nagoya Works	—	Flat products, Pipes & tubes
④ Kansai Works	Wakayama Area	Pipes & tubes, Structural shapes
	Osaka Area	Railway, Automotive & machinery parts
	Amagasaki Area	Pipes & tubes
⑤ Setouchi Works	Hanshin Area	Flat products
	Hirohata Area	Flat products
	Kure Area	Flat products (Stopped commercial production in September 2023)
⑥ Kyushu Works	Yawata Area	Flat products, Bars & wire rods, Structural shapes, Rails, Titanium
	Oita Area	Flat products, Plates, Pipes & tubes



Establishment	Company	Product	Steel production capacity (10,000 tons/year)	Investment ratio; partner (%)
① 1963*1	NSPT	Pipes & tubes	16	59
② 1995*2	NS-SUS	Flat products/tinplates	100	95
③ 1997*3	NSSPT	Bars & wire rods	10	67
④ 1997	VNSP	Pipes & tubes	5	60
⑤ 2005	INSP	Pipes & tubes	4	61
⑥ 2009*4	LATINUSA	Tinplates	16	39 Krakatau
⑦ 2009	CSVC	Flat products	120	34 CSC
⑧ 2010	NPV	Pipes & tubes	6	80
⑨ 2011*4	TSW	Bars & wire rods	2	51
⑩ 2012	TPP	Bars & wire rods	1	80
⑪ 2012	KNSS	Flat products	48	85 ⁵ Krakatau
⑫ 2012	KOS	Structural shapes Concrete steel bars	50	86 ⁵ Krakatau
⑬ 2013*6	NSBS	Flat products	96	50 BlueScope
⑭ 2015	VAM®BRN	Pipes & tubes		60 Vallourec
★ 2022*4	G Steel	Flat products	158	60
★ 2022*4	GJ Steel	Flat products	150	58

*1 TSP invested by former Sumikin in 1963 and SNP invested by former Nippon Steel in 1994 merged in 2016 and renamed NSPT
*2 Invested in 1988 in a tinplate maker STP, which was integrated and absorbed
*3 SP invested by former Sumikin in 1997 and NBC Thailand invested by former Nippon Steel in 2006 merged in 2013 and renamed NSSPT
*4 Acquisition year
*5 Economic equity including preferred stock (equity ratio with voting rights of KNSS: 80%, KOS: 80%)
*6 Equity participation year



Establishment	Company	Product	Steel production capacity (10,000 tons/year)	Investment ratio; partner (%)
① 2001	Ningbo Sanyo Special Steel Products Co., Ltd.	Bars & wire rods	3	89
② 2003	Huizhou Nippon Steel Forging	Crankshafts	2.1 mn units	60
③ 2003	Nippon Steel Pipe Guangzhou*1	Pipes & tubes	2	66
④ 2004	BNA*2	Flat products	262	50 Baoshan Iron & Steel Co., Ltd.
⑤ 2004	Nippon Steel Pipe Wuxi	Pipes & tubes	2	81
⑥ 2009*3	Suzuki Garphyttan	Bars & wire rods	1	100
⑦ 2011	WINSteel	Tinplates	80	50 Wuhan Iron and Steel (Group) Corp.
⑧ 2013	NSCh	Bars & wire rods	4	50

*1 Stopped commercial production in September 2024
*2 Sale of equity interest in August 2024
*3 Acquisition year

Legends of world map

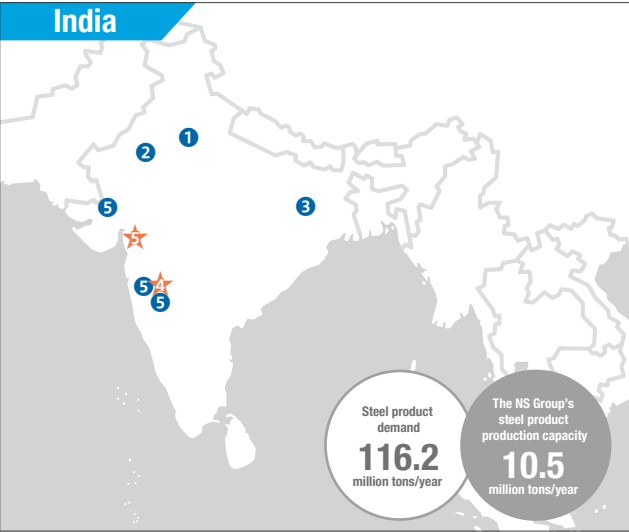
★ Integrated steel mill

● Downstream process

The steel product demand for each region is assumed using results for 2022 announced by the World Steel Association.
As for indirect equity through subsidiaries, their investment ratios stated here do not take into account the parent company's investment ratio of these subsidiaries unless otherwise stated.

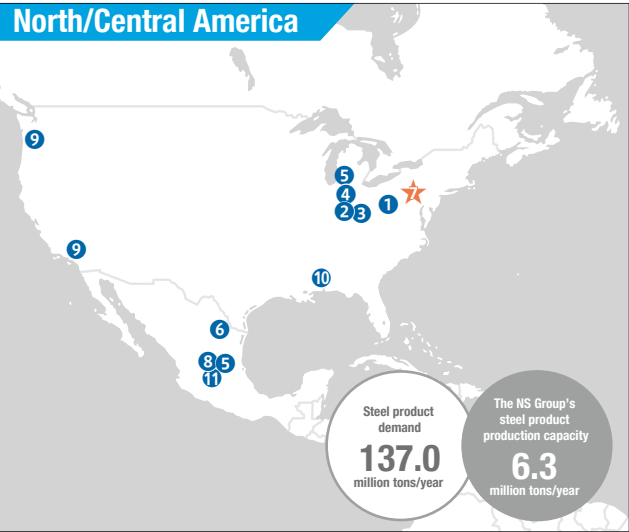


Global Production System (Steel Production Bases)



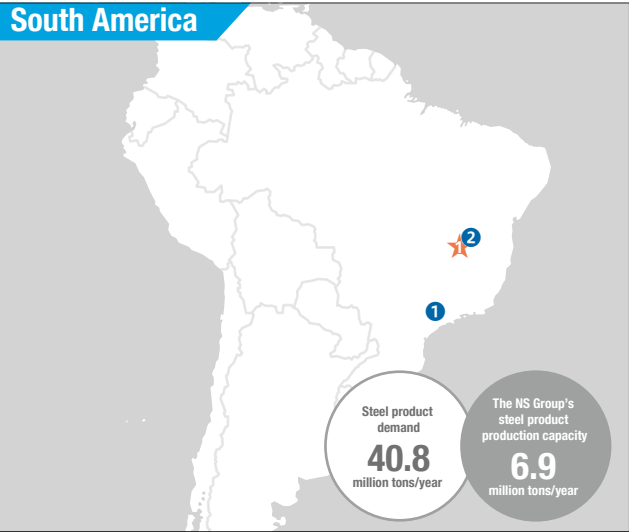
Establishment	Company	Product	Steel production capacity (10,000 tons/year)	Investment ratio; partner (%)	
1	2010	SMAC	Crankshafts	2.2 mn units	<div><div></div></div> 40
2	2010	NSPI	Pipes & tubes	2	<div><div></div></div> 86
3	2012	JCAPCPL	Flat products	60	<div><div></div></div> 49 Tata Steel
★	2012*1	SSMI	Bars & wire rods	24	<div><div></div></div> 85
★	2019*2	ArcelorMittal Nippon Steel India	Flat products, Plates, Pipes & tubes	960	<div><div></div></div> 40*3 ArcelorMittal

*1 Equity participation year
*2 Equity participation year
*3 Investment ratio in AM/NS Lux (holding company)



Establishment	Company	Product	Steel production capacity (10,000 tons/year)	Investment ratio; partner (%)	
1	1984	Wheeling-Nippon Steel	Flat products	60	<div><div></div></div> 100
2	1989	NSPA	Pipes & tubes	8	<div><div></div></div> 80
3	1990	ICI	Crankshafts	4.0 mn units	<div><div></div></div> 80
4	1996	IPF	Bars & wire rods	4	<div><div></div></div> 100
5	2009*1	Suzuki Garphyttan	Bars & wire rods	2	<div><div></div></div> 100
6	2010	Tenigal	Flat products	40	<div><div></div></div> 49 Ternium
★	2011*1	Standard Steel	Car wheels Car axle	20	<div><div></div></div> 65*2
8	2012	MNSP	Pipes & tubes	2	<div><div></div></div> 74
9	2013*3	NSBS	Flat products	44	<div><div></div></div> 50 BlueScope
10	2014*1	AM/NS Calvert	Flat products	440*4	<div><div></div></div> 50 ArcelorMittal
11	2015	SMM	Bars & wire rods	2	<div><div></div></div> 91

*1 Acquisition year
*2 Investment ratio in Standard Steel Holdings
*3 Equity participation year
*4 5.3 million tons/year in steel production capacity, including the outsourced rolling process of stainless steel



Establishment		Company	Product	Steel production capacity (10,000 tons/year)	Investment ratio; partner (%)
★	1958	USIMINAS	Flat products, Plates	690	■12*1 Ternium
②	1999	UNIGAL *2	Flat products	103	■30 Usiminas

*1 Economic equity including preferred stock (shareholding ratio with voting right is 22%)
*2 Excluding UNIGAL's capacity from the regional total due to semi-finished products being supplied by USIMINAS

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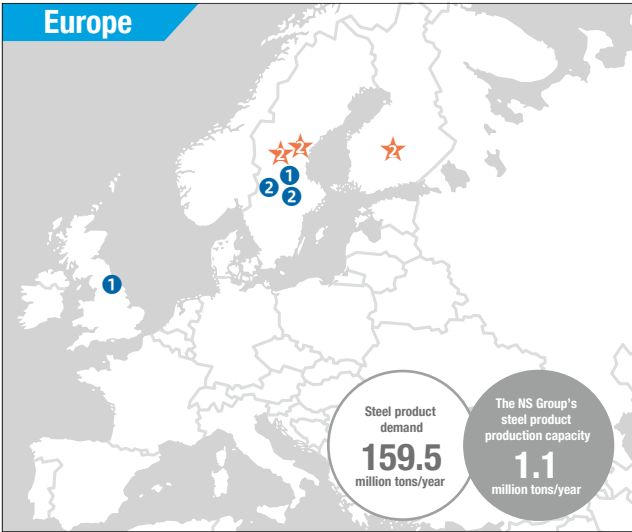
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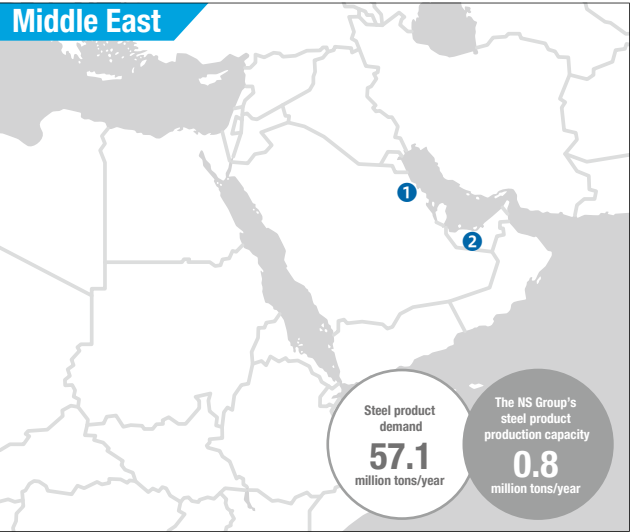


Global Production System (Steel Production Bases)



Establishment	Company	Product	Steel production capacity (10,000 tons/year)	Investment ratio; partner (%)
1	2009*1	Suzuki Garphyttan*2	Bars & wire rods	3100
2	2018*1	Ovako	Bars & wire rods	110100

*1 Acquisition year
*2 Suzuki Garphyttan includes KTS Wire.



Establishment	Company	Country	Product	Steel production capacity (10,000 tons/year)	Investment ratio; partner (%)	
1	1978	NPC	Saudi Arabia	Pipes & tubes	43	35
2	2005	AGIS*	UAE	Flat products	40	20

* A company to which Nippon Steel plays an important role in supply of semi-finished products is added in the Group's worldsteel-based steel product production capacity.

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Nippon Steel Group's brand mark



As a global steelmaker with origins in Japan, Nippon Steel is incorporating a diversity of DNAs of people and companies, and growing into the future. Keeping that determination in mind, we renamed ourselves as “Nippon Steel Corporation” on April 1, 2019. On that occasion, a common brand mark for Nippon Steel and the Nippon Steel Group companies was adopted in order to unify the branding of the entire group.

The brand mark is a combination of the corporate mark and the English logo. The font used in English is a roundish typeface, representing a strong but yet flexible image of steel.

Brand system

We take a strategy to use “ **NIPPON STEEL**” as a master brand to strengthen and disseminate our group identity, and to endorse our domain brand and product brand for the enhancement of the reliability and value of our products. Concerning the Nippon Steel Carbon Neutral Vision 2050 initiatives, we established an activity logo “ **NIPPON STEEL Green Transformation Initiative**” in order to demonstrate our aggressive efforts for the realization of a carbon neutral society.

We are also strategically building domain brands that express the value (products and solutions) presented in our business domains, as well as product lines and brands that showcase their characteristics and value. The aim is to enable our customers to better identify the technological advances and environmental value of our products and solutions.

Our Thoughts incorporated in the corporate logo



Aiming to become the best steelmaker with world-leading capabilities

Aiming at the summit

Representing the unlimited future of steel

The triangle in the logo represents a blast furnace and the people who create steel. It reflects the fact that steel, indispensable for civilization, brightens the world. The center point can be viewed as a peak, which represents the best steelmaker. It can be also viewed as the destination of a road, which represents the unlimited future of steel as a material. The blue color represents leading technology and reliability.





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Products and Applications

The Nippon Steel Group manufactures almost all types of steel products manufactured in the world and has a comprehensive supply system, which includes secondary processed products. Applications also extend to the manufacturing, resources and energy, civil engineering and construction and all other industry sectors.

What we offer includes materials that bring out diverse properties and infinite potential of steel, solutions such as for customer-specified component design and production method, and diverse secondary products. Steadily, globally, and over a long time we provide products and services that respond to customers' needs, contributing to their value creation and to sustainable growth of society.

Steel sheets

Hot-rolled sheets

Cold-rolled sheet

Electrical steel sheet

Galvanized steel sheet

Electrolytic tinplate

Flat products

Plates

Bars & wire rods

Bars

Wire rods

Construction products

Structural shapes

Steel pipe piles

Rails

Steel sheet piles

Product types

Wealth of product groups (1)

Major applications and product examples

Automotive

High-tensile steel sheets

High strength

Workability

Lightweight

Electrical appliances, office equipment

VIEWKOTE™ (pre-painted steel sheets)

Corrosion resistance

Process saving

Appearance design

Containers

CANSUPER™ (tin-free steel)

Corrosion resistance

Printability

Lacquer adherence

Energy

Grain-oriented electrical steel sheets

Low iron loss

Energy saving

Civil engineering and construction

ZEXEED™

Corrosion resistance

Process saving

High-corrosion resistance in the plane and end surfaces

Shipbuilding

NSafe™-Hull (highly ductile steel plates)

Absorbing collision energy

Preventing oil spill

Industrial machinery

ABREX™ (abrasion resistant steel plates)

Abrasion resistance

Weldability

Workability

Energy

7% nickel steel

Energy saving

Ultra-low-temperature strength and toughness

Civil engineering and construction

CORSPACE®

Rationalizing of painting

Reduction in frequency to paint

Automotive

Steel cords for tires

Ultra-lightweight

High strength

Durability

Automotive

Steel for high-strength gears

High strength

Lightweight

Durability

Automotive

Steel for high-strength suspension springs

High strength

Lightweight

Durability

Industrial machinery

Steel for high-function bearings

Corrosion resistance

Abrasion resistance

Rolling fatigue strength

Civil engineering and construction

Steel for high-tension bolts

High strength

Durability

Lightweight

Railway

150-meter rails

No need of welding

Reduction in rail maintenance

Enhanced passenger comfort

Civil engineering and construction

NSHyper Beam™

Uniform depth and width within a same size series

Design simplification

Enhanced processing

Civil engineering and construction

Hat-type sheet piles

Space saving

Workability

Reduction in construction time

Civil engineering and construction

NM segment

Structural reliability

Reduction in construction time

Reduction in waste soil




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Products and Applications

←Major applications and product examples→


Pipes and tubes



Welded pipes and tubes

Seamless pipes and tubes

Railway, automotive and machinery parts

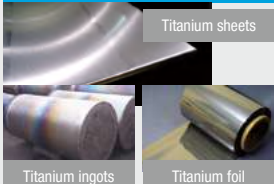


Bogie trucks

Railway wheels

Crankshafts

Titanium

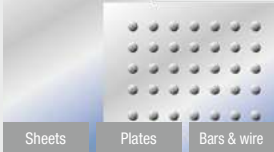


Titanium sheets

Titanium ingots

Titanium foil

Stainless steel (Nippon Steel Stainless Steel)



Sheets

Plates

Bars & wire


Automotive

Pipes and tubes for hydroforming
(Pipes and tubes for suspensions)

Closed-section structure

High strength

Lightweight




Energy

Pipes & tubes for power generation

High-temperature strength

High-temperature corrosion resistance




Civil engineering and construction

Pipes and tubes for structures

High strength

Corrosion resistance

Appearance design




Railways and aircraft

Railway wheels

High strength

Sound insulation

Brake heat resistance




Bogie trucks

Durability

Comfortable rides

Less maintenance



Automotive


Titanium alloys for mufflers

Corrosion resistance

Lightweight

High strength

Workability




Aircraft

Titanium alloys for aircraft

Lightweight

High-specific strength

Corrosion resistance



Construction


TranTixxii™

Appearance design

Corrosion resistance

Lightweight

Workability




Civil engineering

TP method and Titanium foil method

Corrosion resistance

Workability

Maintenance free




Automotive

Stainless cold-rolled sheets

Corrosion resistance

High-temperature resistance

Lightweight




Electrical appliances, office equipment

Stainless cold-rolled sheets

Corrosion resistance

Workability

Appearance design




Energy

Stainless plates

Corrosion resistance

High strength




Civil engineering and construction

Stainless cold-rolled sheets

Corrosion resistance

Lightweight

Appearance design



Wealth of product groups (2)



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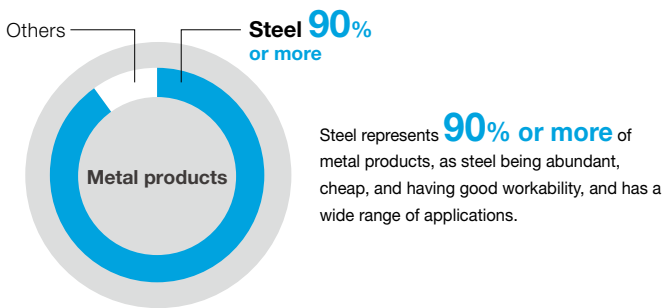
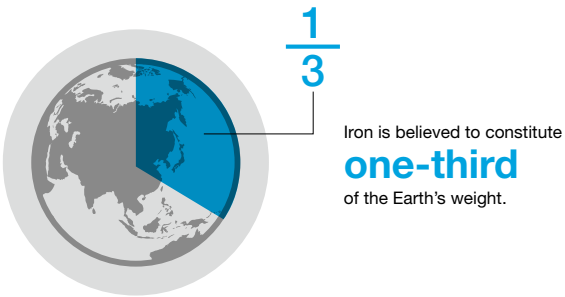
External Awards

Attractiveness of Steel

Steel is one of the most familiar materials and is indispensable for our daily lives. Thanks to its diverse properties and infinite potential, steel will continually contribute to a sustainable society.

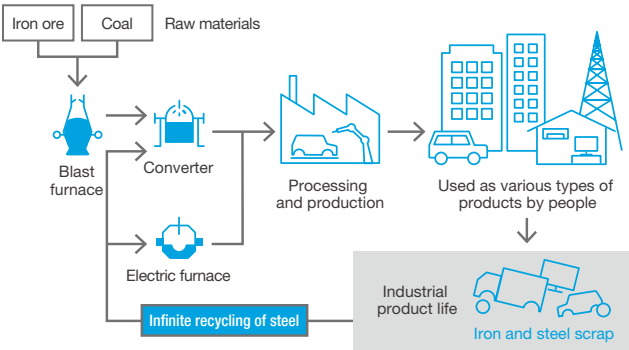


Steel is an abundant, sustainable material that can be reborn endlessly



“Steel” as endlessly reborn in new steel products

Steel is easily sorted from a mixture with other materials and can be endlessly recycled without causing deterioration in quality — quite a unique characteristic. Steel is a perfect material for recycling as it can be recycled endlessly into all kinds of steel products after the end of its product life.



Diverse properties and a wide range of applications

Due to diverse advantages such as strength and easiness to work, steel has been used in a wide range of applications and deserves recognition as the most outstanding material for the infrastructure of society, a material that supports people's lives and overall economic development.

Steel is close to us and we cannot live without steel products. Steel is for here for all of us now and will be with us in the future.

[Diverse properties that support a wide range of applications]

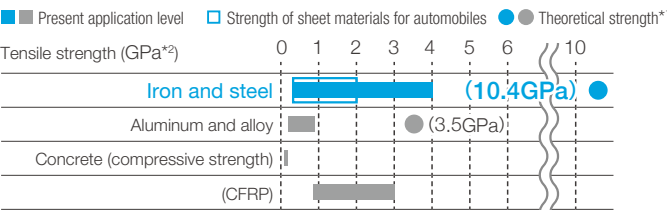
Strength	Weldability	Heat resistance
Toughness	Paintability	Cold resistance
Robustness	Magnetism	Weather resistance
Workability	Corrosion resistance	

Infinite potential

Steel is a material with immense potential due, in part, to it having a much higher theoretical strength than other materials.

In addition to the adjustment of carbon and other components, the combination of temperature and rolling in the manufacturing stage and the addition of alloys enable steel to be a unique material whose properties can be greatly diversified. Further development and mastery of its optimal use will allow us to pursue new steel possibilities.

[Potential capacity and present application level of material strength]



*1: Theoretical strength is said to be 1/5 to 1/7.5 of the modulus of rigidity. The above data uses 1/7.5.
*2: Gigapascal (GPa) is a unit to measure tensile strength. Giga denotes a factor of one billion (10⁹)



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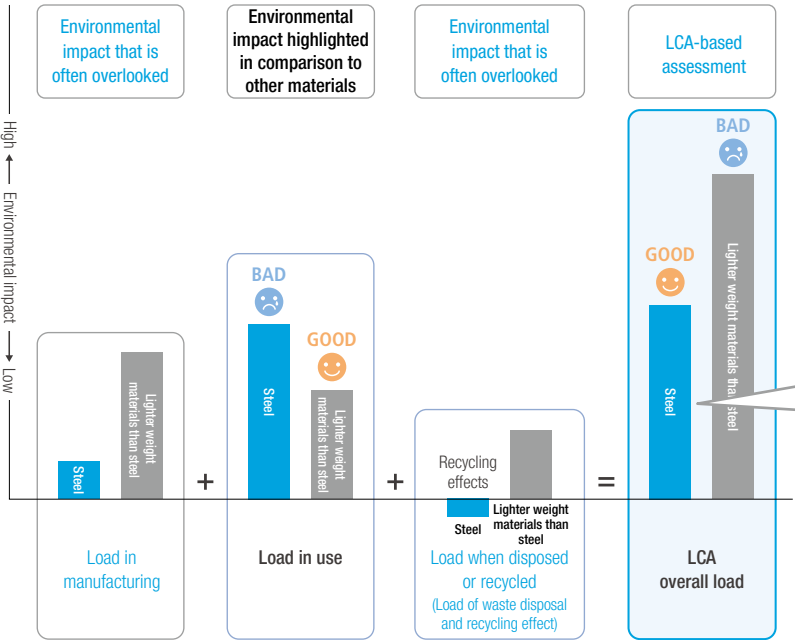
Attractiveness of Steel

Steel as an outstanding material from the Life Cycle Assessment (LCA) perspective

Importance of Life Cycle Assessment (LCA)

The Life Cycle Assessment method (LCA) is a way of thinking to evaluate environmental impact of a product over its entire life cycle. While many aspects of environmental impact cannot be seen, the LCA is an attempt to visualize the impact over the life cycle of a product, from production of its raw material to use, disposal and recycling of the end product.

From the LCA perspective, steel's environmental impact can be said to be extremely low relative to other materials. In order to continue to supply steel as a sustainable material, while taking advantage of its excellent LCA characteristics, we aim to realize carbon-neutral steel production process.



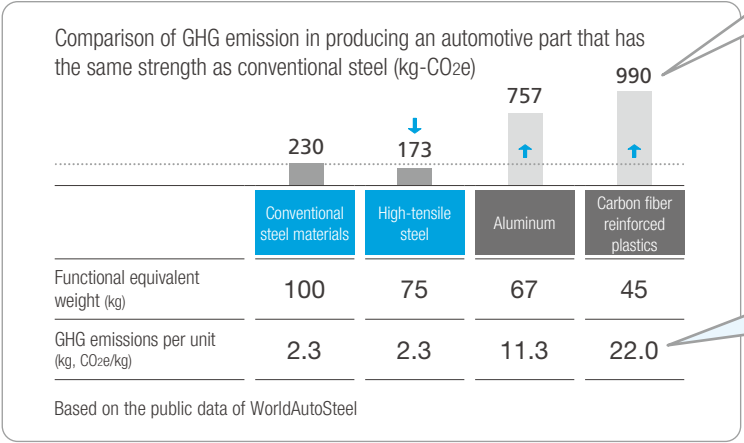
The overall life cycle should be considered.

Some materials have low environmental impact in use but may have high environmental impact in the overall life cycle.

Steel's environmental impact in production is extremely lower than other materials, some of which are lighter than steel.

Moreover, high-tensile steel is about 25% lighter than conventional steel and has a lower environmental impact.

Going forward, with the aim to further reduce environmental impact on climate change, Nippon Steel will make development toward carbon neutrality in steelmaking process.





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Environmental impact of steel made via the BF and EAF routes, using an LCA approach

The blast furnace (BF) route to reduce iron ore to make steel may appear to generate a higher environmental impact than the method that melts steel scrap in an electric arc furnace (EAF) to make steel. However, the BF route creates steel products that generate steel scrap that, through recycling, has an effect of CO2 emission reduction. As that scrap recycling effect offsets, the CO2 emissions in the BF process, environmental impact of the BF and EAF routes in total terms are the same as steel is repeatedly recycled.

This approach is recognized in the ISO 20915 and the JIS Q 20915 and is becoming a global standard.

Efforts to disclose environmental data on our products

■ SuMPO EPD (Environment Product Declaration)'s calculation and disclosure

Since 2019, we have been actively disclosing data such as our products' LCA-based data on emissions to the environment through SuMPO EPD (formerly known as EcoLeaf).

An EPD is an environmental label that is compliant with the international standard ISO 14025. It calculates the environmental impact (CO2 emissions, and others) of each product in accordance with the ISO 20915 standard, including raw material extraction and transportation, product manufacturing, and recycling effects. The result is issued for each product after verification and certification by a third party (SuMPO).

EPDs disclose information on the global warming potential (GWP) and other various environmental impact values. When calculating CO2 emissions upstream of Scope 3 at customers who purchase our products, more realistic primary data rather than secondary data such as databases can be used.

*SuMPO EPD is managed and operated by the Sustainable Management Promotion Organization (a general incorporated association). The name was changed from "EcoLeaf" to "SuMPO EPD" in April 2024.



URL search for Nippon Steel's EPD certification
<https://ecoleaf-label.jp/en/epd/search?keyword=Nippon%20Steel>

■ Status of EPD certification

To date, we have obtained more than 60 SuMPO EPD certifications covering almost all of our products, which overwhelmingly exceeds the number issued by other companies in the same industry.

EPDs are also used as the basic data for emission reductions required by NSCarbolex™ Neutral. Since we have disclosed EPDs for almost all of our products, NSCarbolex Neutral is applicable to almost all of our products.

[Certified products] (as of June 2024)

- Seamless, high-frequency welded OCTG/line pipes
- Welded light gauge steel H sections
- Steel plates for building structures
- Tinplate, tin-free steel and laminated steel sheets
- High-tensile strength steel sheets for building structures
- Steel bars and wire products
- Structure steel plates
- Steel sheet products
- Process-omission steel bar products
- Process-omission steel wire products
- Steels for containers and packaging
- Rail products
- Electrical steel sheets
- Nickel plated steel sheets
- Steel sheet pile products
- Domestic general-purpose steel pipes and tubes (for piping and structural use)
- Titanium sheets
- High-alloy OCTG and line pipes
- Welded steel pipes for mechanical use
- Spiral welded steel pipe piles and spiral welded steel pipe sheet piles
- Titanium plates



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Contribution to SDGs

The Nippon Steel Group is committed to SDGs through continually supplying steel, a basic element supporting society, in various parts of the world by using its world-leading manufacturing capability.

Steel contributes to make our life more convenient and pleasant, by being used everywhere in our life and society, and as an indispensable part of resilient infrastructure against natural disasters caused by earthquakes, abnormal weather driven by climate change, and other factors. Steel is also an indispensable material element for achieving SDGs, as it helps reduce environmental impact due to its weight reduction, extension of its product life, and others on top of being abundantly available and able to be recycled.

As a supplier of steel, we strive to implement our Three Ecos and innovative technologies and to advance the Carbon Neutral Vision as measures against climate change. We also promote sustainable measures so as to not waste resources. These measures include use of by-product gases generated in steelmaking, reuse of recycled water, and recycling of by-products and waste generated in and out of the Company.

[Examples of specific initiatives]



- Job creation through establishment of operating companies in emerging countries [P.27](#)
- Reduction of vulnerability to disaster based on use of Nonframe method (construction method to stabilize slopes without damaging the natural environment)



- Use of converter slag fertilizer, a by-product of steelmaking, to improve farming productivity and salt damage in farmland [P.97](#)
- Provision of titanium and stainless steel, which have excellent seawater corrosion resistance, for seawater desalination plants, securing agriculture water



- Promotion of air, water, soil risk management and chemical substance management [P.82](#)
- Development and provision of steel products that contain no substances of concern, such as lead and hexavalent chromium



- Promotion of employee training to raise skills (i.e., OJT, Off-JT, sending trainees to Junior College for Industrial Technology), hosting technology triathlon [P.109](#)
- Study sessions for teachers, internship for students [P.115](#)



- Improvement of working environment for women, support for career formation and work-life balance [P.110](#)
- Increase in female employment and the number of female employees in management [P.110](#)
- Prevention of harassment [P.112](#)



- Recycling and reuse of limited water resources [P.93](#)
- Promotion of water quality risk management [P.80](#)
- Provision of titanium and stainless steel for seawater desalination plants
- Provision of lining steel pipes for delivery of clean water



- Efficient use of energy, such as 100% use of by-product gases [P.93](#)
- Provision of materials for fuel cells that produce energy from hydrogen
- Development and provision of steel materials for high-pressure hydrogen to support a hydrogen-oriented society [P.43](#)



- Promotion of diversity & inclusion [P.110](#) (i.e., female empowerment, how to work and how to take time off from work, health promotion, and employment of the elderly and the disabled)
- Promotion of DX to improve workstyle, productivity, worker safety management, etc. [P.52-57](#)



- Pursuit of Eco Processes to help raise resource/energy efficiency and reduce environmental impact [P.93](#)
- Introduction of advanced technologies through bilateral cooperation (India, ASEAN, etc.and others) [P.87](#)
- Use of steel slag in road materials and materials for civil engineering [P.91](#)



- Thorough compliance training, such as for the Anti-Monopoly Act
- Eliminating unfair discrimination, based on the respect on human rights [P.113](#)
- Expanded hiring of women and non-Japanese [P.108](#)



- Provision of various indispensable Eco Products for daily lives [P.148-149](#)
- Provision of earthquake-resistance steel products
- Development of Nonframe method, which protects houses from disaster while maintaining views of nature



- Promotion of air, water, soil risk management and chemical substance management [P.79-82](#)
- Full recycling of by-products, including slag, dust, and sludge [P.91](#)
- Promotion of recycling of waste plastics [P.92](#)



- Promotion of measures against climate change by implementing the Carbon Neutral Vision [P.36-46](#)
- Development and provision of Eco Products, such as high-tensile, light-weighted, energy-efficient steel sheets and light-weight railway wheels and axles for high-speed railways [P.43](#)



- Regeneration of seaweed beds with the use of steel slag [P.88](#)
- Promotion of sea area environmental improvement with the use of steel slag [P.96](#)
- Voluntary clean-up activities at seashore nearby steelworks [P.116](#)
- Collaboration with an NPO, "Mori wa Umi no Koibito" [P.115](#) (participation in tree-planting)



- Promotion of air, water, soil risk management and chemical substance management [P.82](#)
- "Creation of Hometown Forests" to promote greenery within steelworks [P.96-97](#)
- Site cleaning activities around steelworks [P.116](#)



- Bribery prevention guidelines to be established and made well known [P.118-122](#)
- Elimination of antisocial forces
- Thorough confirmation of no use of conflict material [P.105](#)
- Thorough management of security export control



- Eco solutions to transfer and spread environmental, energy-saving technologies to emerging markets [P.87](#)
- Japan-India and Japan-ASEAN regular exchanges among public and private steel-related parties [P.87](#)
- Support for human resources development to build an energy management system in emerging countries



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Consolidated Statements of Financial Position

	<Millions of yen>	March 31, 2023	March 31, 2024
ASSETS			
Current assets			
Cash and cash equivalents		670,410	448,892
Trade and other receivables		1,062,384	1,587,979
Inventories		2,085,971	2,276,665
Other financial assets		28,176	33,927
Other current assets		223,575	212,919
Total current assets		4,070,518	4,560,384
Non-current assets			
Property, plant and equipment		3,183,638	3,380,436
Right-of-use assets		83,935	100,601
Goodwill		65,062	70,207
Intangible assets		157,444	177,853
Investments accounted for using the equity method		1,210,542	1,537,936
Other financial assets		528,794	675,942
Defined benefit assets		124,628	127,579
Deferred tax assets		136,349	75,893
Other non-current assets		6,185	7,791
Total non-current assets		5,496,581	6,154,242
Total assets		9,567,099	10,714,627

	<Millions of yen>	March 31, 2023	March 31, 2024
LIABILITIES AND EQUITY			
Liabilities			
Current liabilities			
Trade and other payables		1,592,137	1,890,718
Bonds, borrowings and lease liabilities		403,028	541,495
Other financial liabilities		5,878	7,036
Income taxes payable		51,917	80,269
Other current liabilities		40,839	62,353
Total current liabilities		2,093,802	2,581,874
Non-current liabilities			
Bonds, borrowings and lease liabilities		2,296,322	2,170,148
Other financial liabilities		323	146
Defined benefit liabilities		185,441	116,309
Deferred tax liabilities		37,685	140,532
Other non-current liabilities		307,105	349,737
Total non-current liabilities		2,826,879	2,776,874
Total liabilities		4,920,682	5,358,748
Equity			
Common Stock		419,524	419,799
Capital surplus		399,366	398,914
Retained earnings		3,079,144	3,525,585
Treasury stock		(58,054)	(58,149)
Other components of equity		341,173	491,576
Total equity attributable to owners of the parent		4,181,155	4,777,727
Non-controlling interests		465,261	578,150
Total equity		4,646,417	5,355,878
Total liabilities and equity		9,567,099	10,714,627



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Consolidated Statements of Profit or Loss

	March 31, 2023	March 31, 2024
<Millions of yen>		
Sales revenue	7,975,586	8,868,097
Cost of sales	(6,682,028)	(7,481,331)
Gross profit	1,293,557	1,386,765
Selling, general and administrative expenses	(579,411)	(730,388)
Share of profit in investments accounted for using the equity method	102,915	144,326
Other operating income	181,497	178,085
Other operating expenses	(82,102)	(109,131)
Business profit (loss)	916,456	869,657
Losses on reorganization	(32,810)	(90,995)
Operating profit (loss)	883,646	778,662
Finance income	8,091	21,540
Finance costs	(24,888)	(36,230)
Profit (loss) before income taxes	866,849	763,972
Income tax expense	(128,117)	(176,074)
Profit (loss) for the year	738,732	587,898
Profit (loss) for the year attributable to		
Owners of the parent	694,016	549,372
Non-controlling interests	44,715	38,526
Profit (loss) for the year	738,732	587,898
Earnings (loss) per share		
Basic earnings (loss) per share (Yen)	753.66	596.59
Diluted earnings per share (Yen)	671.89	527.96

Consolidated Statements of Comprehensive Income or Loss

	March 31, 2023	March 31, 2024
<Millions of yen>		
Profit (loss) for the year	738,732	587,898
Other comprehensive income		
Items that cannot be reclassified to profit or loss		
Changes in fair value of financial assets measured at fair value through other comprehensive income	32,577	125,783
Remeasurements of defined benefit plans	16,567	17,570
Share of other comprehensive income of investments accounted for using the equity method	1,355	9,179
Subtotal	50,500	152,533
Items that might be reclassified to profit or loss		
Changes in the fair value of cash flow hedges	(7,779)	1,570
Foreign exchange differences in translation of foreign operations	88,768	81,716
Share of other comprehensive income of investments accounted for using the equity method	56,700	(12,886)
Subtotal	137,688	70,400
Total other comprehensive income, net of tax	188,188	222,933
Total comprehensive income for the year	926,920	810,831
Comprehensive income for the year attributable to		
Owners of the parent	874,564	748,961
Non-controlling interests	52,356	61,870
Total comprehensive income for the year	926,920	810,831



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		JGAAP			
FY		2014	2015	2016	2017
Operating Results (End of fiscal year) <Millions of yen>					
Net sales	Nippon Steel*1	5,610,030	4,907,429	4,632,890	5,668,663
	Sumitomo Metals	—	—	—	—
Ordinary profit (loss)	Nippon Steel	451,747	200,929	174,531	297,541
	Sumitomo Metals	—	—	—	—
Profit (loss) before income taxes	Nippon Steel	376,188	230,778	181,692	289,860
	Sumitomo Metals	—	—	—	—
Profit (loss) attributable to owners of parent	Nippon Steel	214,293	145,419	130,946	195,061
	Sumitomo Metals	—	—	—	—
Capital expenditure*2	Nippon Steel	304,389	304,643	351,038	411,930
	Sumitomo Metals	—	—	—	—
Depreciation and amortization*3	Nippon Steel	320,046	308,276	304,751	340,719
	Sumitomo Metals	—	—	—	—
Research and development costs	Nippon Steel	62,966	68,493	69,110	73,083
	Sumitomo Metals	—	—	—	—
Financial Position (End of fiscal year) <Millions of yen>					
Total assets	Nippon Steel	7,157,929	6,425,043	7,261,923	7,592,413
	Sumitomo Metals	—	—	—	—
Shareholders' equity*4	Nippon Steel	2,978,696	2,773,822	2,948,232	3,145,450
	Sumitomo Metals	—	—	—	—
Total net assets*4	Nippon Steel	3,547,059	3,009,075	3,291,015	3,515,501
	Sumitomo Metals	—	—	—	—
Interest-bearing debt*5	Nippon Steel	1,976,591	2,008,263	2,104,842	2,068,996
	Sumitomo Metals	—	—	—	—
Cash Flows (End of Fiscal year) <Millions of yen>					
Cash flows from operating activities	Nippon Steel	710,998	562,956	484,288	458,846
	Sumitomo Metals	—	—	—	—
Cash flows from investing activities	Nippon Steel	(263,667)	(242,204)	(343,738)	(353,419)
	Sumitomo Metals	—	—	—	—
Cash flows from financing activities	Nippon Steel	(451,843)	(337,555)	(135,054)	(89,190)
	Sumitomo Metals	—	—	—	—
Amounts per Share of Common Stock*6 <yen>					
Profit (loss) attributable to owners of parent per share	Nippon Steel	23.48	158.71*7	147.96	221.00
	Sumitomo Metals	—	—	—	—
Cash dividends per share	Nippon Steel	5.5	45.0*8	45	70
	Sumitomo Metals	—	—	—	—

*1 Up to September 2012 for Nippon Steel; October 2012 to March 2019 for Nippon Steel & Sumitomo Metal (NSSMC); from April 2019 for Nippon Steel.

*2 Only for "Tangible fixed assets," construction base.

*3 The amounts stated for "Sumitomo Metals" for fiscal 2011 and before are only for "Tangible fixed assets." The amounts stated for "Nippon Steel" and the amounts for "Sumitomo Metals" for the first half of fiscal 2012 (April 1 to September 30) include "Intangible fixed assets" excluding "Goodwill."

*4 "Shareholders' equity" stated here is the sum of "Shareholders' equity" as stated in the balance sheet and "Accumulated other comprehensive income." The difference between "Shareholders' equity" and "Total net assets" is "Non-controlling interests in consolidated subsidiaries."

		IFRS					
		2018	2019	2020	2021	2022	2023
Operating Results (End of fiscal year) <Millions of yen>							
Revenue		6,177,947	5,921,525	4,829,272	6,808,890	7,975,586	8,868,097
Business profit		336,941	(284,417)	110,046	938,130	916,456	869,657
Profit before income tax		248,769	(423,572)	(8,656)	816,583	866,849	763,972
Profit for the year attributable to owners of parent		251,169	(431,513)	(32,432)	637,321	694,016	549,372
Capital expenditure		440,830	481,310	474,489	407,448	437,622	457,358
Depreciation and amortization		408,616	417,339	290,863	330,611	340,171	363,002
Research and development costs		72,043	77,691	65,336	66,431	70,555	72,743
Financial Position (End of fiscal year) <Millions of yen>							
Total assets		8,049,528	7,444,965	7,573,946	8,752,346	9,567,099	10,714,627
Total equity attributable to owners of parent		3,230,788	2,641,618	2,759,996	3,466,799	4,181,155	4,777,727
Total equity		3,607,367	2,996,631	3,131,387	3,897,008	4,646,417	5,355,878
Interest-bearing debt		2,369,231	2,488,741	2,559,232	2,653,396	2,699,351	2,711,644
Cash Flows (End of Fiscal year) <Millions of yen>							
Cash flows from operating activities		452,341	494,330	403,185	615,635	661,274	1,010,159
Cash flows from investing activities		(381,805)	(345,627)	(389,035)	(378,866)	(366,580)	(710,654)
Cash flows from financing activities		(42,900)	(14,582)	52,694	(61,304)	(197,655)	(543,945)
Amounts per Share of Common Stock <yen>							
Basic earnings per share		281.77	(468.74)	(35.22)	692.16	753.66	596.59
Cash dividends per share		80	10	10	160	180	160

*5 The amounts of "Outstanding borrowings" (the sum of "Borrowings," "Corporate bonds," and "Commercial paper") are stated.

*6 On October 1, 2015, NSSMC performed a 1-for-10 share consolidation.

*7 Profit attributable to owners of parent per share for fiscal 2015 is calculated assuming the 1-for-10 share consolidation was performed at the beginning of the year
*8 The interim dividend for fiscal 2015 would be converted into ¥30 based on this share consolidation, and after adding the fiscal 2015 year-end dividend of ¥15 the annual dividend for fiscal 2015 works out to be ¥45 per share.
Figures in parentheses indicate negative figures.



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		JGAAP			
	FY	2014	2015	2016	2017
Financial Indices					
Return on sales ((Ordinary profit / Net sales) × 100) <%>	Nippon Steel*1 Sumitomo Metals	8.1% —	4.1% —	3.8% —	5.2% —
Return on equity ((Profit attributable to owners of parent / Shareholders' equity [average for the period]) × 100) <%>	Nippon Steel Sumitomo Metals	7.6% —	5.1% —	4.6% —	6.4% —
Shareholders' equity ratio ((Shareholders' equity / Total assets) × 100) <%>	Nippon Steel Sumitomo Metals	41.6% —	43.2% —	40.6% —	41.4% —
Number of shares issued as of the end of the period*2 <In thousands>	Nippon Steel Sumitomo Metals	9,503,214 —	950,321 —	950,321 —	950,321 —
Share price at the end of the period*2 <Yen>	Nippon Steel Sumitomo Metals	302.5 —	2,162.0 —	2,565.0 —	2,336.5 —
Consolidated Net Sales by Industry Segment*3 <Millions of yen>					
Steelmaking and steel fabrication		4,939,239	4,283,923	4,052,261	5,017,245
Engineering and construction		348,699	315,727	267,545	294,268
Urban development		—	—	—	—
Chemicals		212,777	181,823	174,227	200,767
New materials		36,449	36,280	34,519	37,050
System solutions		206,032	218,941	232,512	244,200
Elimination of inter-segment transactions		(133,168)	(129,267)	(128,175)	(124,868)
Consolidated Profit by industry segment*3 <Millions of yen>					
Steelmaking and steel fabrication		401,987	160,088	138,017	245,708
Engineering and construction		18,758	12,163	6,838	9,110
Urban development		—	—	—	—
Chemicals		6,898	1,093	4,518	15,480
New materials		2,482	3,073	1,786	1,919
System solutions		16,565	19,493	22,113	23,292
Elimination of inter-segment transactions		5,053	5,017	1,256	2,030
Non-Financial Performance					
Crude steel production <Ten thousand tons>	Nippon Steel (Consolidated)	4,732	4,453	4,517	4,682
	Nippon Steel (Non-consolidated)*4	4,496	4,217	4,262	4,067
	Sumitomo Metals (Non-consolidated)*5	—	—	—	—
Steel products shipments (Non-consolidated) <Ten thousand tons>	Nippon Steel	4,188	3,962	3,978	3,779
	Sumitomo Metals*6	—	—	—	—
Average steel selling price (Non-consolidated) <Thousands of yen per ton>	Nippon Steel	87.2	77.1	72.6	84.7
	Sumitomo Metals*6	—	—	—	—
Export ratio (Value basis, non-consolidated)*7 <%>	Nippon Steel	47%	45%	42%	41%
	Sumitomo Metals*6	—	—	—	—
Number of employees (consol.)	Nippon Steel	84,447	84,837	92,309	93,557
	Sumitomo Metals	—	—	—	—

*1 Up to September 2012 for Nippon Steel; October 2012 to March 2019 for Nippon Steel & Sumitomo Metal (NSSMC); from April 2019 for Nippon Steel.
*2 On October 1, 2015, NSSMC performed a 1-for-10 share consolidation.
*3 Figures for fiscal 2012 and earlier are for Nippon Steel. Figures in parentheses indicate either negative figures or elimination.
Following the business integration of Nippon Steel City Produce, Inc. and Kowa Real Estate Co., Ltd. on October 1, 2012, the business segment classification has been changed to include the results for "Urban development" in "Elimination of inter-segment transactions" for "Net sales by segment" and "Profit (loss) by segment" from fiscal 2012.
*4 "Crude steel production" of Nippon Steel from October 2012 to March 2018 includes that of Nippon Steel & Sumikin Koutetsu Wakayama Corporation.

	IFRS					
	2018	2019	2020	2021	2022	2023
Financial Indices						
Return on sales ((Business profit / Revenue) × 100)	5.5%	△4.8%	2.3%	13.8%	11.5%	9.8%
Return on equity	7.9%	△14.7%	△1.2%	20.5%	18.1%	12.3%
Ratio of total equity attributable to owners of the parent	40.1%	35.5%	36.4%	39.6%	43.7%	44.6%
Number of shares issued as of the end of the period	950,321	950,321	950,321	950,321	950,321	950,549
Share price at the end of the period	1,954.0	925.4	1,886.5	2,171.0	3,120.0	3,668.0
Consolidated revenue by industry segment <Millions of yen>						
Steelmaking and steel fabrication	5,454,536	5,257,344	4,228,449	6,153,632	7,245,547	8,076,345
Engineering and construction	356,707	340,404	324,468	279,260	352,231	409,233
Chemicals	247,067	215,733	178,678	249,816	274,586	260,834
System solutions	267,503	273,294	252,476	271,325	292,513	311,572
Internal revenue or transfer among industry segments	(147,867)	(165,251)	(154,799)	(145,144)	(189,292)	(189,887)
Consolidated business profit by industry segment <Millions of yen>						
Steelmaking and steel fabrication	274,672	(325,341)	63,522	871,051	861,443	821,065
Engineering and construction	9,474	10,717	17,708	6,302	11,674	(1,340)
Chemicals	25,095	18,477	7,631	25,377	16,170	15,390
System solutions	26,576	26,162	23,948	30,859	32,111	35,588
Elimination of inter-segment transactions	1,122	(14,433)	(2,764)	4,539	(4,944)	(1,046)
Non-Financial Performance						
Crude steel production (Consolidated)	4,784	4,705	3,765	4,446	4,032	4,051
Crude steel production (Non-consolidated)	4,100	3,954	3,300	3,868	3,425	3,499
Steel products shipments (Non-consolidated)	3,797	3,631	3,122	3,556	3,147	3,203
Average steel selling price (Non-consolidated)	89.9	87.3	86.1	117.7	148.9	144.8
Export ratio (Value basis, non-consolidated)	40%	40%	36%	42%	43%	44%
Number of employees (Consolidated)	105,796	106,599	106,226	106,528	106,068	113,639

*5 "Crude steel production" of Sumitomo Metals includes those of Sumitomo Metals (Kokura), Ltd. (merged with Sumitomo Metals on January 1, 2012) and of Sumikin Iron & Steel Corporation.
*6 "Steel products shipments," "Average steel selling price," and "Export ratio" of Sumitomo Metals include those of Sumitomo Metals (Kokura), Ltd. (merged with Sumitomo Metals on January 1, 2012),Sumitomo Metals (Naoetsu), Ltd. (merged with Sumitomo Metals on January 1, 2012), and Sumikin Iron & Steel Corporation.
*7 "Export ratio" of Nippon Steel indicates the ratios of exports to total steel sales. "Export ratio" of Sumitomo Metals indicates the ratios of exports to total net sales. Figures in parentheses indicate negative figures.



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Stock-Related Information

Total Shareholder Return, Stock Price and Market Cap, and Strategic Shareholdings

Fiscal year	2019	2020	2021	2022	2023
Total shareholder return (TSR) <Unit: %> ^{*1}	47.9	97.6	120.3	178.1	214.3
(Comparative indicator: Dividend-included TOPIX) <Unit: %>	(90.5)	(128.6)	(131.2)	(138.8)	(196.2)
Highest share price <Unit: ¥> ^{*2}	2,081.0	1,954.0	2,381.0	3,294.0	3,847.0
Lowest share price <Unit: ¥> ^{*2}	857.0	798.1	1,690.5	1,838.0	2,705.5
Market capitalization (fiscal year end) <Unit: ¥ billion>	879.4	1,792.8	2,063.1	2,965.0	3,486.6
Strategic shareholdings <Number of different stocks held>	308	301	284	264	252
Amount reported on the balance sheet <Unit: ¥ billion>	237.8	262.6	255.9	219.2	269.7
(Ref) Nikkei Stock Average (fiscal year end) <Unit: ¥>	18,917.01	29,178.80	27,821.43	28,041.48	40,369.44

^{*1} Total shareholder return is obtained by dividing the return (dividends and capital gains) from stock investment by the invested amount (share price).
TSR = (Share price at the end of each fiscal year + Cumulative per-share dividends paid since FY2019) / Share price at the end of FY2018
^{*2} The Company's share price is based on that of the First Section of the Tokyo Stock Exchange up to April 3, 2022 and that of the Prime Market of the Tokyo Stock Exchange from April 4, 2022.

Stock data (as of March 31, 2024)

Head Office
2-6-1, Marunouchi, Chiyoda-ku, Tokyo 100-8071, Japan
Phone: +81-3-6867-4111
URL: <https://www.nipponsteel.com/en/>

Inception
April 1, 1950

Common Stock
¥419,799 million

Stock Code
5401

Common Shares (Issued)
950,321,402 shares

Common Shares (Authorized)
2,000,000,000 shares

Number of Shareholders
629,748

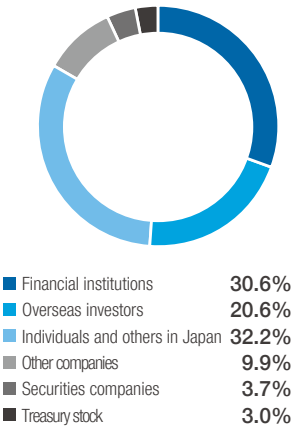
Listings
Tokyo Stock Exchange Prime Market
Nagoya Stock Exchange Premier Market
Fukuoka Stock Exchange
Sapporo Securities Exchange

ADR Information
Type: Sponsored Level-1 ADR program
Trading market: OTC (Over-the-counter)
ADR ratio: 3 ADR:1 Share of common stock
Ticker symbol: NPSCY
CUSIP number: 65461T101
Depositary Bank: The Bank of New York Mellon
Contact for inquiries regarding our ADR program:
BNYMellon Shareowner Services
P.O. Box 43006, Providence, RI 02940, USA
U.S. toll Free : 888-BNY-ADRS (888-269-2377)
International Callers : +1-201-680-6825
Email: shrrelations@cpushareownerservices.com
Website: <https://www.adrbnymellon.com/>

Registration Agent
Sumitomo Mitsui Trust Bank, Limited
1-4-1, Marunouchi, Chiyoda-ku, Tokyo, Japan
Phone inquiries 0120-785-401
(Toll-free for domestic phone calls only)
+81-3-3323-7111 (Outside Japan)

Number of Shares per Trading Unit
100 shares

Share Ownership by Category
Ratio of shares held to the total number of common shares (issued)



[Principal Shareholders]

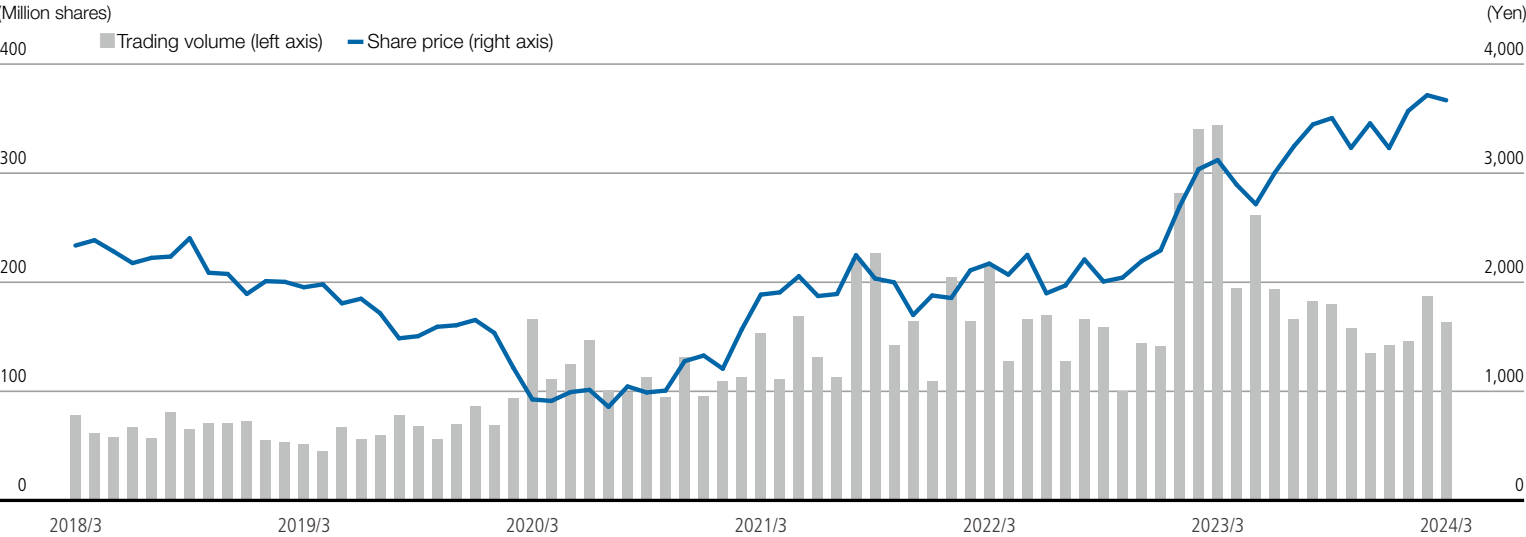
Name	Shares owned (Thousands)	Shareholding ratio*
The Master Trust Bank of Japan, Ltd. (Trust Account)	119,863	13.0
Custody Bank of Japan, Ltd. (Trust Account)	46,803	5.1
Nippon Life Insurance Company	19,179	2.1
STATE STREET BANK WEST CLIENT - TREATY 505234	17,424	1.9
Meiji Yasuda Life Insurance Company	13,712	1.5
J.P. Morgan Securities Japan Co., Ltd.	12,859	1.4
Nippon Steel Group Employee Shareholding Association	12,337	1.3
Mizuho Bank, Ltd.	11,046	1.2
Sumitomo Mitsui Banking Corporation	10,252	1.1
MUFG Bank, Ltd.	8,933	1.0

*The shareholding ratio is calculated after treasury stock owned by Nippon Steel Corporation is excluded from the number of common shares (issued).



Stock-Related Information

[Share price]



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External Awards

Award name	Sponsor	Detail
JSTP Medal (its highest award)	Japan Society for Technology of Plasticity (a general incorporated association)	Development of cold forming technology for ultra-high-tensile steel sheet (Nippon Steel)
La Liste Ethical & Sustainability Award	La Liste	Nippon Steel received the world's first "special award" outside of the food category for its contribution to the improvement of the marine environment and biodiversity through the “Creation of Sea Forests,” which is aligned with the philosophy of La Liste (a world-class restaurant site) to maintain and develop food culture. (Nippon Steel)
The 70th Okochi Memorial Production Prize	Okochi Memorial Foundation (a public interest incorporated foundation)	Development of coke strength improvement technology that contributes to low-carbon blast furnaces and cost reduction (Nippon Steel)
The 56th Ichimura Prize in Industry against Global Warming for Excellent Achievement	Ichimura Foundation for New Technology (a public interest incorporated foundation)	High-efficiency, dedicated woody biomass-fired power generation technology that contributes to carbon neutrality (IHI, Nippon Steel)
iF Design Award 2024	If International Forum Design (Germany)	Nippon Steel was recognized for its development of a product (designing titanium TranTixxi) that combines titanium's characteristics with beauty and exceptional environmental performance using proprietary technologies. The world's first non-ferrous metal material that has won this award.
2024 Commendation for Science and Technology by the Minister of Education, Culture, Sports, Science and Technology (Development Category)	Ministry of Education, Culture, Sports, Science and Technology (MEXT)	Development of highly ductile steel plate for ships with excellent collision safety (National Institute of Maritime, Port and Aviation Technology, Imabari Shipbuilding, Nippon Steel)
2024 AMPP Fellow Honor Award	AMPP (The Association for Materials Protection and Performance, USA)	Recognition of the contributions to the advancement of the industry through the development of high-performance materials and applied technologies related to corrosion control in the field of energy, including petroleum and gas development, as well as significant contributions over many years to the operation of the committees for establishment of testing method standards and academic conferences
2024 National Commendation for Invention “Invention Award”	Japan Institute of Invention and Innovation (a public interest incorporated association)	Invention of chromium resource recycling and environmentally harmonized steelmaking process of stainless steel (Nippon Steel)
54th Japan Welding Engineering Society Award “Welding Notable Invention Award”	The Japan Welding Engineering Society (a general incorporated association)	Invention of a method for producing steel sheets, tailored blanks, and steel pipes (Patent No. 7056738) Outline of patent: A patent for tailored blanks of aluminized hot-stamped steel sheets (Nippon Steel)

Disclaimer regarding the Integrated Report 2023

This integrated report is not a disclosure document statutory required by the Act on Financial Instruments and Exchange and other laws and does not guarantee the accuracy and completeness of the information. This report contains statements that constitute forward-looking statements including expectations based on the assumptions, projections, and plans as of the published date of this report. It should be noted that actual business results and other matters could differ materially from the details contained in this report. This report is not prepared for the purpose of providing the basis for an investment decision.

In addition, the information concerning details of products and services, which is stated in the report, is for the purpose of explaining their features and functions, and does not warrant individual products and services.

The Company is not responsible for any damages or loss incurred due to the information available in this report.

Contact us

If you have any inquiries about the Integrated Report 2024, please contact:

Nippon Steel Corporation
Please use the “Contact Us” function on Nippon Steel's website:
<https://www.nipponsteel.com/en/contact>

This report is available for download in PDF format.



Independent Assurance Report

To the Representative Director, President and COO of Nippon Steel Corporation

We were engaged by Nippon Steel Corporation (the “Company”) to undertake a limited assurance engagement of the environmental performance indicators marked with ★(the “Indicators”) for the period from April 1, 2023 to March 31, 2024 included in its Nippon Steel Intergrated Report 2024 (the “Report”) for the fiscal year ended March 31, 2024.

The Company’s Responsibility

The Company is responsible for the preparation of the Indicators in accordance with its own reporting criteria (the “Company’s reporting criteria”), as described in the Report.

Our Responsibility

Our responsibility is to express a limited assurance conclusion on the Indicators based on the procedures we have performed. We conducted our engagement in accordance with the ‘International Standard on Assurance Engagements (ISAE) 3000, Assurance Engagements other than Audits or Reviews of Historical Financial Information’ and the ‘ISAE 3410, Assurance Engagements on Greenhouse Gas Statements’ issued by the International Auditing and Assurance Standards Board. The limited assurance engagement consisted of making inquiries, primarily of persons responsible for the preparation of information presented in the Report, and applying analytical and other procedures, and the procedures performed vary in nature from, and are less in extent than for, a reasonable assurance engagement. The level of assurance provided is thus not as high as that provided by a reasonable assurance engagement. Our assurance procedures included:

- Interviewing the Company’s responsible personnel to obtain an understanding of its policy for preparing the Report and reviewing the Company’s reporting criteria.
- Inquiring about the design of the systems and methods used to collect and process the Indicators.
- Performing analytical procedures on the Indicators.
- Examining, on a test basis, evidence supporting the generation, aggregation and reporting of the Indicators in conformity with the Company’s reporting criteria, and recalculating the Indicators.
- Visiting the Company’s Nagoya Works selected on the basis of a risk analysis.
- Evaluating the overall presentation of the Indicators.

Conclusion

Based on the procedures performed, as described above, nothing has come to our attention that causes us to believe that the Indicators in the Report are not prepared, in all material respects, in accordance with the Company’s reporting criteria as described in the Report.

Our Independence and Quality Management

We have complied with the Code of Ethics for Professional Accountants issued by the International Ethics Standards Board for Accountants, which includes independence and other requirements founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality and professional behavior. In accordance with International Standard on Quality Management 1, we design, implement and operate a system of quality management including policies or procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements.

/s/ Kazuhiko Saito
Kazuhiko Saito, Partner, Representative Director
KPMG AZSA Sustainability Co., Ltd.
Tokyo, Japan
October 18, 2024

Notes to the Reader of Independent Assurance Report:
This is a copy of the Independent Assurance Report and the original copies are kept separately by the Company and KPMG AZSA Sustainability Co., Ltd.



NIPPON STEEL CORPORATION

2-6-1, Marunouchi, Chiyoda-ku, Tokyo 100-8071, Japan