



Nippon Steel Integrated Report 2021

Nippon Steel Corporation Integrated Report 2021 (April 2020 to March 2021)



NIPPON STEEL CORPORATION

Corporate vision

Aiming to become the best steelmaker with world-leading capabilities

Contribute to sustainable development goals (SDGs) in society by providing excellent products and services



Lead the global steel industry by pursuing cutting-edge technology and product capabilities



Be there to support Japanese industries' competitiveness



Realize a virtuous cycle of environmental sustainability and corporate growth



Promote diversity & inclusion and create a company where diverse employees are empowered, and feel proud and fulfilled

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.

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.

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.

Editorial Policy

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This Integrated Report 2021 presents the fact that Nippon Steel is committed to keep growing with the aim of becoming the best steelmaker with world-leading capabilities. It summarizes where we are going (our vision), how we are going there (our roadmap to the future), and what our strengths are toward achieving our vision (our strengths). In addition to updating the changes from the 2020 version, we have prepared this report from the following two perspectives:

- 1- The entire Integrated Report (IR) is constituted along the lines of the value creation process model of the International IR Framework, developed by the International Integrated Reporting Council (IIRC). The overview can be seen in “The value creation process and Nippon Steel’s strengths” on pages 39 and 40.
- 2- Concerning the Environmental and Social aspects of ESG (Environmental, Social, Governance), the key points are presented in relation to factors in the value creation process in this Integrated Report, while details on initiatives are presented in the Nippon Steel Sustainability Report 2021.

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 2020 (April 1, 2020 – March 31, 2021)

Organizations covered
Nippon Steel Corporation and Nippon Steel Group companies (499 companies as of March 31, 2021 comprised of 389 consolidated subsidiaries and 110 equity-method affiliates)

Publication date
September 2021

- 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)

In preparing this report, we have referred to the following guidelines and materials in identifying materiality among ESG initiatives.

- Global Reporting Initiative (GRI) Standards
- ISO 26000
- Various ESG ratings and evaluations

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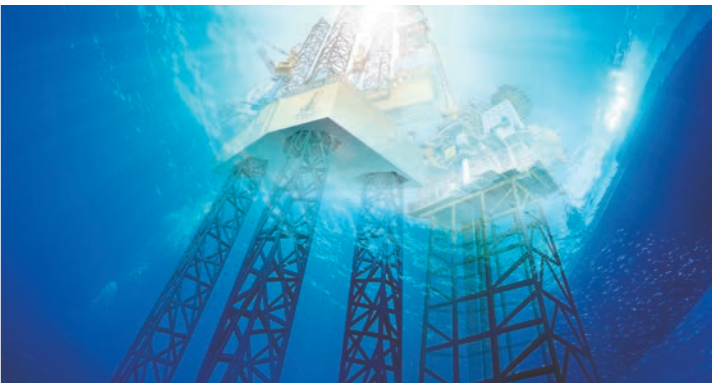
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Message from the President

In March 2021, Nippon Steel announced a new medium- to long-term management plan, with the aim of continually growing to become “the best steelmaker with world-leading capabilities” that contributes to Japan's industrial competitiveness from the present and into the future. With the subsequent efforts to restore profitability, the foundation for achieving this plan has been prepared. By steadily implementing this plan, we intend to achieve our target of a global crude steel capacity of 100 million tons by combining the efforts of our strong domestic mother mills and overseas local mills.

We are also taking up the challenge of reducing CO₂ emissions through the development of breakthrough technologies and other efforts, as a corporate and industrial leader on the path to a decarbonized society. We intend to lead the global steel industry, by winning development competition with Europe, the United States, China, and South Korea while also pursuing a virtuous cycle of environmental sustainability and corporate growth, and improving corporate value.

Efforts taken for swift recovery in profitability

After I became president in April 2019, swift recovery in profitability has been our first priority and we have made our best possible effort to achieve it, on both the hard side, such as equipment, and the soft side, such as management. The biggest challenge we faced was to free the domestic steel business from the constraint of a loss-making structure. Under the strong sense of crisis that radical changes in the profit structure, namely large-scale structural reform, are inevitable in order to turn the situation around, I had numerous direct dialogues with our people on the two workfronts, namely, those in manufacturing and those in sales. I worked with the management team and other staff to formulate action programs. The results of the study were announced in February 2020 as our first big step in structural reform. We have decided to significantly reduce fixed costs by no-holds-barred selective concentration on certain products and facilities, and focusing investment on competitive facilities.

According to our initial plan for fiscal 2020 (established in February 2020), we had a good prospect of getting out of the red, thanks to a significant reduction in fixed costs and improvement in variable costs. Unfortunately, in the first half, the collapse of economic activities, prompted by the COVID-19 outbreak, resulted in a significant deficit, but we returned to profitability in the second half, with a delay of six months. **Fig. 1** While we recorded a significant loss in the first half of fiscal 2020 due to the sharp decline in demand caused by the COVID-19 outbreak, I am pleased that we were able to respond promptly and move quickly to the minimum-cost operation stance we decided to take, calling for consolidating production facilities through structural reform. **Fig. 2**

With regard to existing overseas businesses, we concentrated operations, narrowed our focus to certain businesses and withdrew from other businesses which would not be economically viable for us to continue, and

focused on markets where demand is steadily growing or sectors where our technology and products are being utilized. Specifically, we acquired Essar Steel, an integrated steel mill in India, decided to build a new electric arc furnace at AM/NS Calvert in the United States, sold VSB, a seamless steel tube joint venture in Brazil, and consolidated the tin business. These efforts have resulted in generating record-high profits in the overseas business in the second half of fiscal 2020, making this part a major profit contributor. **Fig. 3**

As a result of these efforts to improve profits in domestic and overseas steel business, we achieved consolidated business profit of ¥110 billion for the full fiscal year 2020, despite a significant decrease in production volume, which was made unavoidable by the difficult environment.

For fiscal 2021, we are forecasting consolidated business profit of ¥600 billion which will be record-high profits, renewing the post-integration high profits in fiscal 2014

(since our business integration into the current form in 2012; **Fig. 4**). While a post-COVID-19 recovery in demand is expected in fiscal 2021, the external environment seems worse than that of fiscal 2014. Despite the severe environment, we will strive for achieving record-high profits by ensuring a return to profitability. The driving forces are cost improvement by promoting new structural measures and stabilization of overseas business profits. With regard to our challenge to improve tired (long-term contract) sales prices*, we will continue to earnestly ask our customers for a fair allocation of cost burden for raw materials and commodities among players in the supply chain and reflection in steel prices of our high value-added product qualities and solutions to keep our stable supply of, and R&D and investment in high-quality products that customers demand.

* Prices of order-made steel products for customers

Fig. 1 Profit/loss, domestic steel business of the parent (non-consol.)

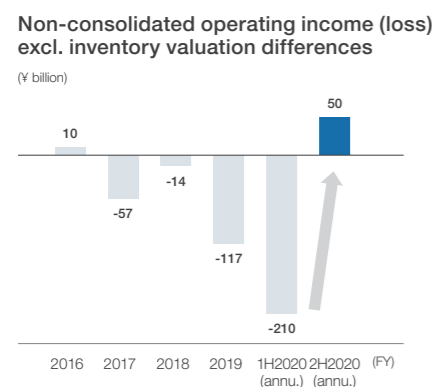


Fig. 2 Prompt adjustment in blast furnace operations

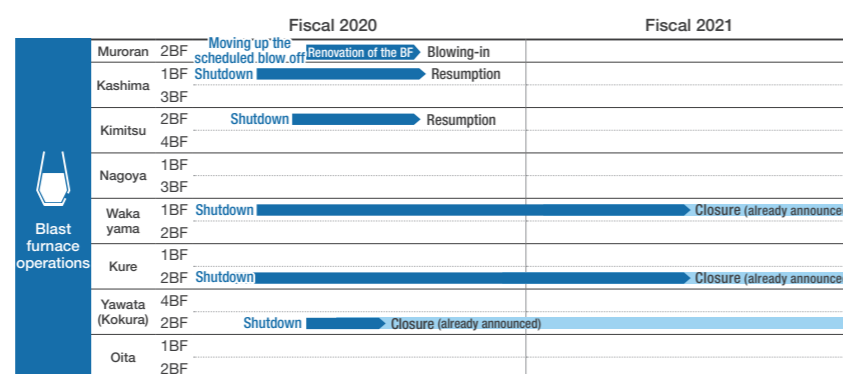


Fig. 3 Profit contribution of the overseas business

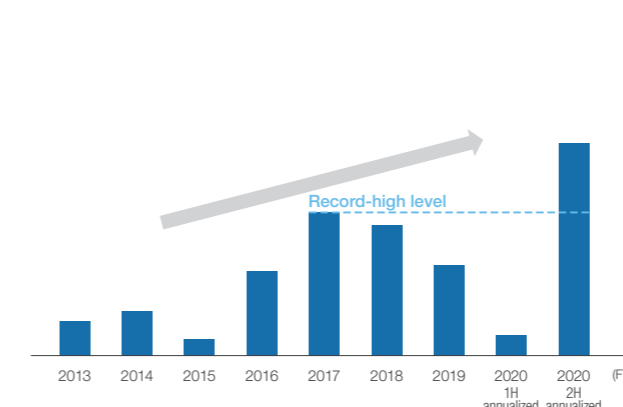
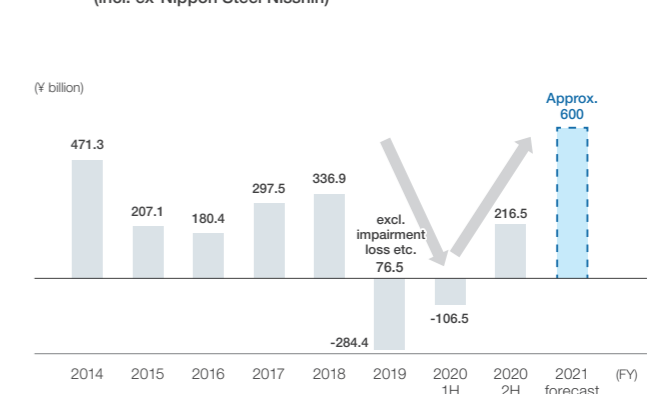


Fig. 4 Consolidated business profit and loss (incl. ex-Nippon Steel Nisshin)



Changes in the steelmaking business environment and Nippon Steel's Medium- to Long-Term Management Plan

Medium- to long-term changes in the steelmaking business environment

Global steel demand is expected to steadily increase, particularly in the Asian region, including India [Fig. 5](#), with a significant growth in demand for high-grade steel, including demand derived from efforts on behalf of carbon neutrality. In Japan, however, steel demand is expected to continue decreasing due to the declining population and an increase in overseas local production by Japanese customers. Moreover, the COVID-19 pandemic has accelerated the trend of "local production and local consumption" and "favoring domestic production." The globally-connected markets are likely to reverse direction, shifting toward being divided. Competition in overseas markets is likely to intensify, mainly because demand in China, which accounts for 60% of the world's steel production, is peaking.

As global awareness of climate change is growing, the realization of carbon neutrality will be expressed in an all-out battle involving public and private sectors of various nations. We believe that the establishment of zero-carbon steel technology, ahead of other countries, will be a key to determine competitiveness, profitability, and brand strength in the future steel industry.

Nippon Steel Group Medium- to Long-Term Management Plan

In light of these changes in the business environment, we announced in March 2021 a new medium- to long-term management plan, with the aim of continually growing to become "the best steelmaker with world-leading capabilities" that contributes to Japan's industrial competitiveness from the present and into the future. The plan consists of four major strategies:

1 Rebuild domestic steel business and strengthen our group's management

business. It is an unprecedented large-scale structural reform, more drastic than the measures announced in February 2020. This is needed to build a resilient profit structure that will ensure profits even in the event of a further deterioration in the business environment. We will reduce the number of blast furnaces from 15 to 10 and crude steel production capacity by 10 million tons,

equivalent to approximately 20% of total capacity, and rationalize the workforce by more than 20% to improve labor productivity. The structural reform combined with the previously-announced measures is estimated to have an impact of around ¥150 billion. Although this is a very challenging plan, we had devised and developed it based on numerous direct dialogues with our people in manufacturing and sales. I firmly believe that we can complete it by fiscal 2025.

This series of measures is not intended to merely arrive at a lower equilibrium. We are now at the stage to invest a large amount of money, such as for renewal of aging facilities and for strategic investments aimed at supplying high-grade steel products, which is needed in a carbon-neutral society and we find it difficult to further reduce the total fixed cost. We will therefore continue to work toward a more advanced order mix with a higher proportion in high value-added products that ensures profitability to us. While the volume of domestic production will decrease, we plan to increase revenues and profit, and significantly improve labor productivity.

Let me share with you examples of our strategic investments. Electric vehicles, which are heavier than conventional vehicles due to batteries, require materials that contribute to weight reduction, and the need for high-grade electrical steel sheets for drive motors is greatly increasing. Our top-quality electrical steel sheets are also essential for electrical power saving. We have therefore decided to install a new next-generation hot strip mill at the Nagoya Works for stable, economical mass production of state-of-the-art ultra-high-tensile steel sheets, and to work on measures to improve the capacity and quality of electrical steel sheets at the Setouchi Works Hirohata Area and the Kyushu Works Yawata Area. The need for carbon neutrality and digital transformation is also robust and is unlikely to turn around and decline. By responding to new, non-reverting needs such as carbon neutrality and digital transformation, we will make the advanced order mix and a profit-generating production structure that is independent of production volume.

2 Promote a global strategy to deepen and expand our overseas business

By further deepening and expanding our overseas operations, along with the expansion of the consolidated profit base, we intend to establish global capability of 100 million-tons of crude steel production. In so doing, we will thereby maintain our position as a major player in the expanding global steel industry. Over the mid- to long-term, steel demand in Asia and other parts of the world will grow, while the COVID-19 pandemic has accelerated the trend of

"local production and local consumption" and "favoring domestic production." In this environment, our main focus will be the integrated steelmaking business, which allows us capture the entire local demand as potential market. We will shift into high gear in full-scale overseas business that will ensure higher added value. With regard to ArcelorMittal Nippon Steel India (AM/NS India), an acquired integrated steelmaker in India, we consider to expand its capacity, including the construction of a second steel mill. In Asia, particularly ASEAN, acquisition of or equity participation in an integrated steel mill is under consideration. [Fig. 6](#)

3 Taking on the challenge of zero-carbon steel

The Challenge of Zero-Carbon Steel has two aspects. One is the provision of our technology and products to those who can benefit from them, and can contribute to the realization of a green society. This also presents business opportunities to us. That is why we have decided, as advance investments, to implement measures to improve the capacity and quality of electrical steel sheets, and to invest in the construction of a next-generation hot strip mill in the Nagoya Works.

Another challenge is the development of a new production process that will promote CO2 emission reduction in manufacturing processes. Breakthrough technology development, including development in unexplored areas, is needed. With all integrated steelmakers using blast furnaces in the world including China, we face the enormous challenge of our connections to the environment. We are taking on this challenge as Nippon Steel's paramount priority issue and as an opportunity to reestablish outstanding industrial superiority by taking advantage of our world's best technology development capabilities and by implementing technologies ahead of other steelmakers. We endeavor to provide "green steel" products to our customers at the earliest time. This, we hope, will also further strengthen our position in customer relationships.

Through development and practical implementation of breakthrough technologies ahead of other countries, we aim to reduce CO2 emissions by 30% compared to 2013 in 2030 and achieve carbon neutrality in 2050 (Figure 7). Zero-carbon steel, however, cannot be achieved by the efforts of the steel industry alone. As prerequisite, we need government support for research and development and equipment implementation, establishment of a hydrogen supply infrastructure, realization of carbon-free power supplies, and establishment of a system that enormous costs will be borne by society as a whole.

4 Promote digital transformation strategies

We have been attentively collecting and analyzing the vast amounts of data generated at manufacturing and business sites to reduce costs and improve quality. These accumulated data are our strength. Aiming to become a digital advanced company in the world steel industry, we will make full use of our treasure chest of vast, sophisticated data and digital technologies, innovate our production and business processes, accelerate decision-making from the management level to our people on the frontline, and strengthen problem-solving capabilities.

In closing

We are committed to achieving both environmental sustainability and corporate growth. Specifically, we will steadily carry out the management plan and build a global 100 million-ton crude steel production structure that comprises our strong domestic and overseas local mills. At the same time, we will tackle the Nippon Steel Carbon Neutral Vision 2050 - the Challenge to Zero-Carbon Steel. Moreover, we will work on digital transformation to streamline operations and decision-making, and make earnest efforts toward diversity and inclusion to create a company where diverse employees feel proud and fulfilled.

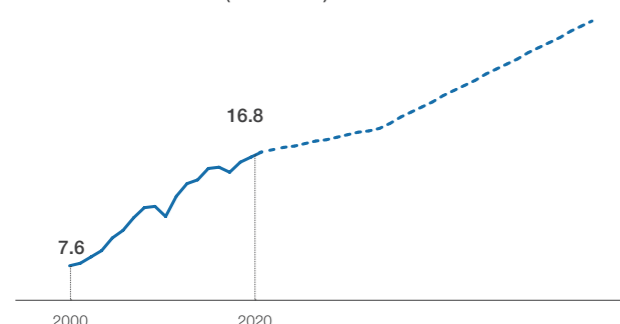
We declare in our Management Principles that we are dedicated to pursuing world-leading technology and manufacturing capabilities, and to provide products and services that benefit society. This precisely echoes the concept of the Environment, Social, and Governance (ESG). I recognize that ESG initiatives are one of the priority issues and form part of the base that supports the very existence and growth of our company. We intend to steadily promote its execution and follow-up of our materiality in ESG issues, by checking the Key Performance Indicators (KPI), and to strive to contribute to achieving sustainable development goals (SDGs), as well as improvement of our corporate value.

I would like to thank all our stakeholders for their continued understanding and support of Nippon Steel Corporation.



Fig. 5 Steel demand forecasts

Global steel demand (100 MMT/Y)



Steel product demand forecasts (MMT/Y)

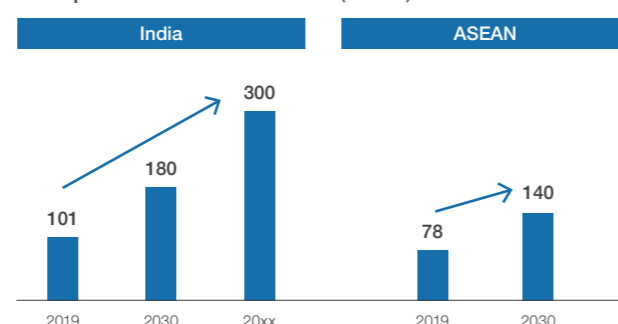


Fig. 6 Toward global 100 million-ton crude steel production structure

Long-term vision (MMT/Y)

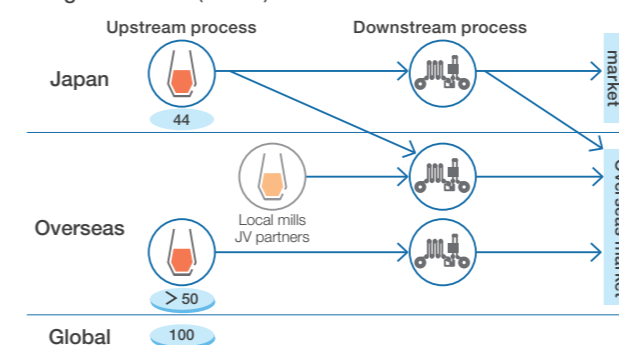
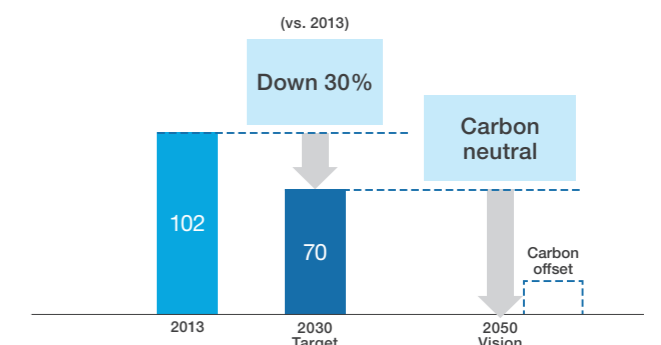


Fig. 7 Nippon Steel's CO2 emission reduction scenario

(MMT/Y)



Nippon Steel's history of development

Nippon Steel has been growing as a global leading steelmaker for many decades, overcoming changes in the business environment and crises many times through industry consolidation, rationalization efforts, product development, global expansion, and other ways. "We continually anticipate and address future changes, innovate from within, and pursue unending progress," as defined in our Management Principles. We aim to continually grow to become "the best steelmaker with world-leading capabilities" that contributes to Japan's industrial competitiveness from the present and into the future.

While providing products and solutions that contribute to world sustainable growth, we strive to enhance corporate value and also contribute to realization of the United Nations' Sustainable Development Goals (SDGs).



Risks and opportunities, and business strategy

Risks and opportunities

Steel supply/demand environment

Increase in steel demand globally, but mainly in Asia

Growth in demand for high-grade steel, including new demand related to carbon neutrality

Decline in domestic demand and expanded capacity of new steel mills in the coastal area of East Asia, causing intensifying competition and deteriorating export profitability

Increasing market volatility in prices of raw materials and products, driven by the supply/demand trend in China, accounting for the majority of the global market

Climate change

Realization of a carbon neutral society as a major social issue

Establishment of zero-carbon steel technology as an opportunity to re-establish overwhelming superiority in the global steel industry

Business strategy

1 Rebuilding our domestic steel business and strengthening our Group's management

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2 Promoting a global strategy to deepen and expand our overseas business

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3 Taking on the challenge of Zero-Carbon Steel

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4 Promoting digital transformation strategies

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Japanese and global economy



Nippon Steel's response



Domestic re-organization

Domestic production framework

Global production framework

Product technology

Process technology

Leading the world in process innovation, energy efficiency, and high-grade steel technology

- Switch from open-hearth furnaces to converters
- Development of larger blast furnaces
- Progress in using the continuous casting technology
- Technical assistance to Posco in South Korea
- Technical assistance to Shanghai-Baoshan Steel in China
- Development of the world's first continuous annealing furnace
- Installation of activated coke-type, dry desulfurization equipment to greatly reduce emissions of SOx and NOx
- Oil-less operation of all blast furnaces
- Developed a Continuous on-Line Control (CLC) Process for cooling steel plates
- 1988 Fire-resistant steel
- 1988 High-strength steel wire rods for Akashi-kaiyō Bridge cables

Technology development that supports the "global environmental" era

- 2000 Developed a waste plastics recycling process using coke ovens
- 2005 Developed the next-generation CLC-μ Process for cooling steel plates
- 2010 Started use of biomass resources in power stations
- 2014 Completed construction of the first commercial model of an energy-efficient CO₂ separation and recovery facility
- 2016 Started a blast furnace test of the COURSE50 project

Nippon Steel’s risks, opportunities, and strategies: The Medium- to Long-term Management Plan

With the aim of 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, Nippon Steel has adopted a new medium- to long-term management plan. This change takes into account long-term, structural changes in the steel supply/demand environment and the role that the steel industry is to properly play in solving social challenges, such as the realization of carbon neutrality.

Nippon Steel’s strategy

Four pillars of the Medium- to Long-term Management Plan

Measures for all four pillars have been implemented according to a roadmap, and based on our long-term outlook. With regard to rebuilding of our domestic steel business and strengthening our group’s management, we plan to complete measures by the end of fiscal 2025 in order to establish an efficient and strong production framework at an early stage, and to rebuild the earnings base of our domestic mother mills.

Rebuilding our domestic steel business and strengthening our Group’s management

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Rebuilding our domestic steel business and early recovery of profitability

Promoting a global strategy to deepen and expand our overseas business

P.27-28

Achieving 100 million tons of global crude steel capacity per annum

Taking on the challenge of zero-carbon steel

P.29-34

2050 Carbon Neutral

Promoting digital transformation strategies

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Strengthening of decision-making and problem-solving capabilities

Risks / Opportunities

Steel supply/demand environment

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- Increase in steel demand globally, but mainly in Asia
- Growth in demand for high-grade steel, including new demand related to carbon neutrality
- Decline in domestic demand and expanded capacity of new steel mills in the coastal area of East Asia, causing intensifying competition and deteriorating export profitability
- Increasing market volatility in prices of raw materials and products, driven by the supply/demand trend in China, accounting for the majority of the global market

Climate change

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- Realization of a carbon neutral society as a major social issue
- Establishment of zero-carbon steel technology as an opportunity to re-establish overwhelming superiority in the global steel industry

Investment Plan and Financial Targets

The Medium- to Long-term Management Plan includes the following investment plan for fiscal 2021-2025 and the financial targets for fiscal 2025.

Investment Plan and Financial Targets

Investment plan (FY2021-2025)	Capital expenditures	¥2,400 billion over 5 years
	Business investments	¥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 less

Assumption Non-consolidated crude steel production of about 38 million tons/year

Investment plan (FY2021-2025)

Capital expenditures

Capital expenditures of ¥2,400 billion will be implemented over the next five years. Investment for maintenance and upgrades will be devoted exclusively to facilities needed such attention. At the same time, aggressive investments will be made to upgrade the remaining facilities for achieving higher productivity and cost competitiveness, and to improve the capacity and quality of strategic products and add more value to them. These investments will be compliant with our program for production facility structural improvements.

Profit and financial targets, and shareholder return (FY2025)

Profit targets

The targets for fiscal 2025 are ROS (Return on Sales) of around 10% and ROE (Return on Equity) of around 10%.

In the main steelmaking business, we assume that the production and shipment volume will be lower than the present levels, but we plan to increase total marginal profit. We will do this by improving average marginal profit and by making our order mix more sophisticated and improving long-term contract prices and variable cost controls. Fixed costs were drastically reduced in fiscal 2020 by implementing fixed cost reduction measures, including the effects of the production facility structural reform, despite an expected increase in depreciation costs due to investment to renew facilities and to strengthen strategic product offerings. We intend to maintain restraint on fixed cost and both improve the breakeven point and increase profits even if and when production and shipment volume declines.

As for our steelmaking group companies, efforts have been made to 1) expand profits from their overseas

Financial soundness

We aim to acquire and secure sufficient financial strength (an A rating by international credit rating) as will be necessary for our large-scale investment in zero-carbon steel-related equipment and other key areas which is scheduled to start in fiscal 2025. Our goal for fiscal 2025 is to maintain the D/E at 0.7 or lower – the level at the start of the Medium- to Long-term Management Plan (March 2021) –

Business investments

In promotion of definite capacity expansion of AM/NS/India and in preparation for potential acquisition of, or equity participation (brownfield investment) in integrated steel mills in China or ASEAN, business investments over the next five years are expected to be around ¥600 billion. These investments will be made toward establishing a global crude steel capacity of 100 million tons.

operations, 2) strengthen competitiveness and profitability in their domestic Group companies, 3) deepen alliances and strengthen the management base, 4) enhance profitability of the overall Group and Nippon Steel’s products business units and 5) optimize the group structure by “selecting and concentrating,” with the aim to increase profits.

Each of the non-steel segments is also making the following efforts to increase profits:

- Engineering and Construction: Expand its stable earnings base in operation and maintenance business, and strengthen the engineering procurement and construction (EPC) business in areas such as renewable energy infrastructure development and renewal.
- Chemicals and Materials: Concentrate resources in the electronic materials field and expand doing business in key products.
- System solutions: Focus on the DX business area and continually grow business.

even in the case of a worsening business environment.

With regard to shareholder return, we will maintain our current dividend distribution policy based on the allocation of profits in accordance with operating and financial performance, and by taking into account funds needed to invest for improving corporate value, performance forecasts, consolidated financial position, and other factors.

Potential risks and opportunities in the steel market

In Japan steel demand is expected to continue declining, along with a declining population and overseas expanding production. Worldwide demand for steel, however, is expected to continue growing steadily, particularly in the Asian region including India.

Demand will continue to grow for high-grade steel as it is the kind of product that helps solve social challenges, such as the challenge of ensuring the satisfaction of conditions for the realization of a carbon-neutral society.

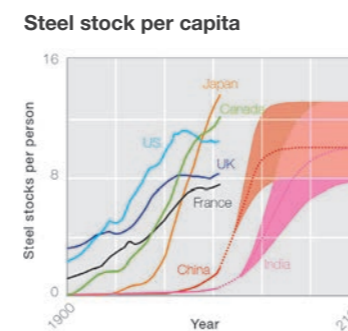
The world's steel demand keeps increasing, mainly in emerging countries

► Steel production is indispensable in “leaving no one behind” and realizing an affluent world

Steel products that have been manufactured have been stocked in society in the form of end products, such as in infrastructure (i.e., buildings and bridges), industrial equipment in plants or vessels, and consumer durables (i.e., vehicles and consumer electronics). The aggregate present steel stock per capita is about 4 tons for the world, and about 8 – 12 tons in developed countries. The level of per-capita steel stock can be said as a barometer of an affluent, safe, reliable life. The amount per capita is expected to reach 10 tons in China within the first half of the 21st century and in India by the end of the century.

Let's make an estimate. Assuming a global population growth (from approx. 7.4 billion in 2015 to 9.8 billion in 2050), economic growth mainly in emerging countries,

implementation of SDG initiatives, and 7 tons in steel stock required per capita in the world, the world's crude steel output that satisfies such demand can be estimated to be approx. 2.7 billion tons per year in 2050. An increase of this magnitude cannot be satisfied by steelmaking that uses recycled steel scrap and about 1.4 billion tons of steel per year is estimated to be made from iron ore using the blast furnace and other methods even in 2050.



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

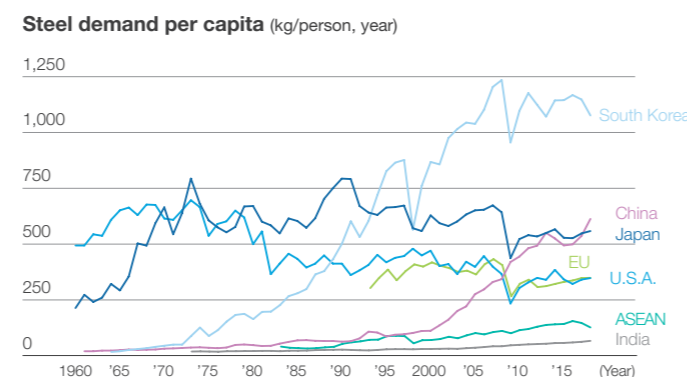
► Demand growth in emerging countries

Steel demand for each country or region changes along with economic growth. At the initial stage of economic development, construction demand for infrastructure facilities is robust and industrialization boosts steel demand from the manufacturing industry. In export-oriented countries that ship large quantities of manufactured goods, demand for indirect exports increases and steel demand per capita remains at a high level. In the case of Japan, the annual steel demand per capita increased to approx. 800kg during the high-growth period when infrastructure was being actively built, and since then has been at around 500kg. In South Korea, where the manufacturing industry's export ratio is high, the same steel demand is as high as 1,000kg. China has already reached 500kg, while the U.S. and European countries have declined

to about 300kg, along with a decline in the ratio of the manufacturing industry in the overall economy.

In ASEAN countries, India, and other emerging countries, the annual steel demand per capita is about 100–200kg and is expected to increase. Along with population growth, a significant growth in steel demand can be anticipated.

In 2020, steel demand has decreased in various countries due to the impact of the COVID-19 outbreak. Particularly in emerging countries, it may take time before a recovery as their currency depreciation depressed their purchasing power and lower oil prices deteriorated the economy of resource-rich countries. Nevertheless, even with a delay, steel demand in emerging countries is expected to return to a growth path over the long term.



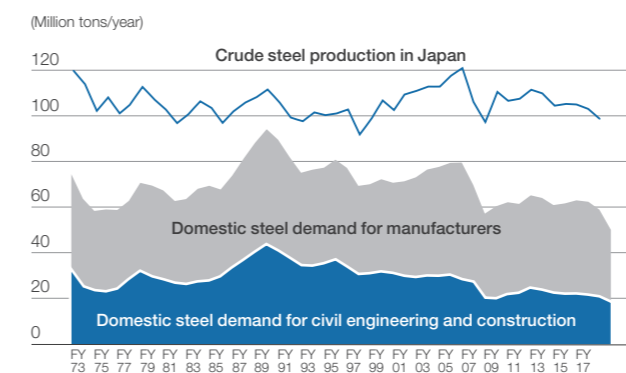
(Source: World Steel Association) Equivalent to crude steel

Japan's steel market anticipates a gradual decline

► Domestic demand

Japan's annual crude steel production passed 100 million tons for the first time in 1973 and has been in a range of 100–110 million tons up to now. Domestic steel demand peaked at around 90 million tons per year during the bubble period and has since been on a downtrend due to a fall in demand for civil engineering and construction after the bubble burst, manufacturers' overseas shift in production mainly in the strong-yen period after the 2008-2009 global financial crisis, and other factors. A decline in domestic demand has been offset by an increase in exports of steel products, thereby maintaining steel production at above 100 million tons.

About 100 million tons of steel products produced per year

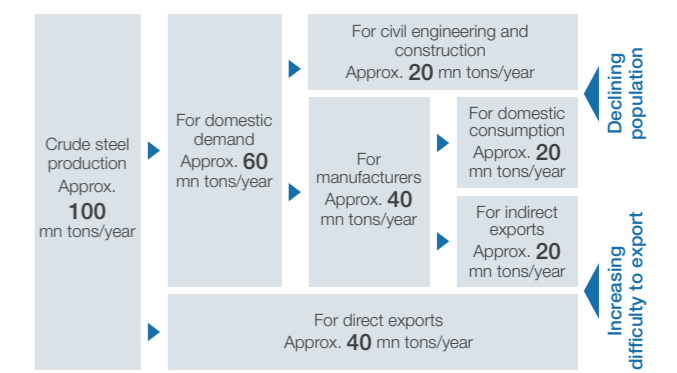


► Increasing difficulty to export

Direct exports of steel products are expected to be difficult in the future, due to intensifying competition with overseas emerging steelmakers and the ongoing trend of “local production and local consumption” and “favoring domestic production.” The trend may accelerate, driven by the economic impact of the COVID-19 crisis. On the back of

in Japan can be roughly broken down to 20 million tons for the domestic civil engineering and construction sector, 40 million tons for the domestic manufacturing industry, and 40 million tons for direct exports. Roughly half of 40 million tons for the domestic manufacturing industry, or 20 million tons, are exported in the form of vehicles, machinery, and other end products made of steel, hence equivalent to indirect exports.

There is a concern that Japan's declining and aging population is likely to depress or reduce domestic steel demand for the domestic civil engineering and construction sector and the manufacturing industry.



swift recovery (as of this writing) from the COVID-19 impact, Chinese major steelmakers are expected to expand their predominance and make the market more competitive. The supply chain disruption, caused by the COVID-19, may also speed up the above trend.

The high-grade steel market is promising with potential growth 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. Prime examples are Eco Products™, which contribute to preservation of resources and energy and reduction in environmental impact, and products that

provide solutions for national resilience, contributing to the creation of safe, reliable infrastructure, resilient in disasters.

In the changing social, industrial structure and progress in SDG initiatives in the world, properties required for materials are more diversified and advanced, and demand for those high-grade steel products is anticipated to increase both in quality and quantity.

Climate related actions

Nippon Steel recognizes climate change as a priority problem that threatens survival of the human race.

Adverse climate change would also severely affect our business environment and earnings.

To this end, in addition to efforts to reduce CO₂ emissions through energy conservation and energy efficiency improvements in the entire supply chain, we are committed to addressing climate change as the greatest priority management issue with the “Nippon Steel Carbon Neutral Vision 2050” as our own new measures.

ESG Materiality 1-(2)-①
Measures to prevent global warming

Nippon Steel's current energy-conservation initiatives (Eco Process)

P.49-50

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.

Thanks to the achievement from these continual efforts, as well as a decline in product output mainly due to the impact of the COVID-19 pandemic, the Nippon Steel Group consumed 896 petajoules (PJ) of energy in fiscal 2020, posting a significant reduction from fiscal 2019. The Group's energy-derived emissions also dropped significantly to 76 million tons (preliminary).

Despite steady positive impacts generated from efforts for energy conservation, the CO₂ emissions intensity has deteriorated mainly due to a decline in production efficiency caused by a decline in production in fiscal 2020 and the impact of heavy rain and operational troubles in fiscal 2018 and 2019, in addition to the impact of introducing energy-consuming large dust collectors and other equipment.

Meanwhile, the Japan Iron and Steel Federation (JISF), where we are actively involved as a core member, is promoting “three ecos” and further CO₂ emission reduction in its Action Plans for a Low-Carbon Society. We achieved the fiscal 2020 goal of the Eco Process one year ahead of plans in fiscal 2019, and are currently working on formulating goals for fiscal 2030.

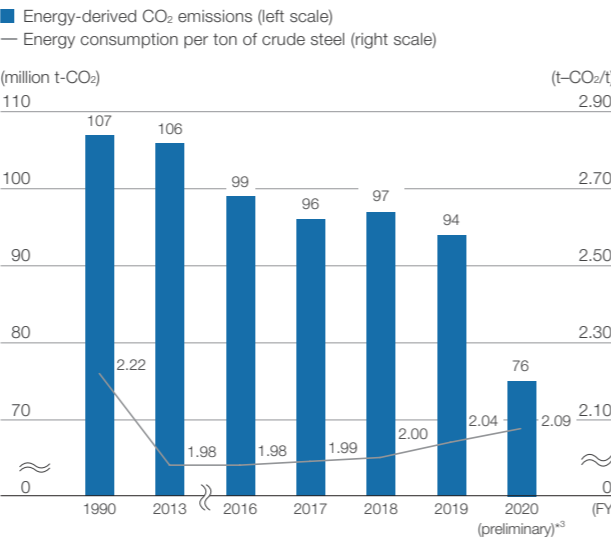
Japan Iron and Steel Federation's Action Plans for a Low-Carbon Society

(“Three ecos and innovative technology development”)

	Eco Process	Eco Products	Eco Solution
CO ₂ emission reduction plans	Aim at improving energy efficiency	Contribute to emission reduction when steel materials are used in final products	Contribute to worldwide energy reduction by technology transfer and diffusion
FY2020 results	3.30 million t-CO ₂	31.94 million t-CO ₂	68.57 million t-CO ₂
Phase I FY2021	3 million t-CO ₂ + α ^{*1,2}	34 million t-CO ₂	70 million t-CO ₂
Phase II FY2031	9 million t-CO ₂ ^{*1}	42 million t-CO ₂	80 million t-CO ₂

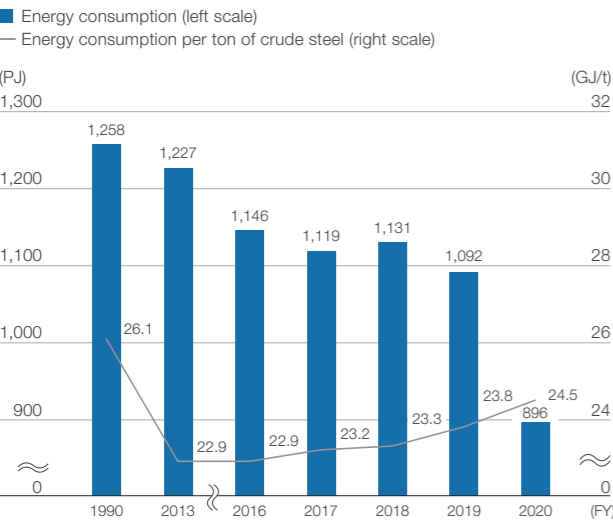
^{*1} The target reductions in CO₂ emission volume are set for fiscal 2005 as the base year and based on a certain crude steel production assumption.
^{*2} The primary focus is on a 3 million ton reduction in CO₂ emissions by steelmakers' own initiatives for efficient use of energy and other ways. Concerning collection of waste plastics and other ways, only an increase in the collected volume compared to fiscal 2005 is counted as the amount of reduction in emissions.

Nippon Steel Group's energy-derived CO₂ emissions^{*7}



^{*3} Preliminary figure: The amount of CO₂ per unit of purchased electricity from a General Electricity Utility in fiscal 2020 is assumed to be the same amount as in fiscal 2019.
^{*4} Excluding energy consumption and CO₂ emission associated with the IPP operation by the steelworks
^{*5} The amounts of energy consumption required for production of coke purchased by Nippon Steel and CO₂ emissions are included in the aggregate.
^{*6} 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.
^{*7} According to the change in the boundary of data collection, the amounts of energy consumption and CO₂ emissions in the past years have been revised retroactively.

Nippon Steel Group's energy consumption^{*7}



[Calculation method]
Based on the Action Plans for a Low-Carbon Society
[Conversion factor]
Source: METI, Agency for Natural Resources and Energy “Table of heat generation and carbon emission coefficient by energy source” (Revised January 31, 2020)
[Boundary of data collection]
Nippon Steel^{*4,5}, associated EAF mills (Osaka Steel, Sanyo Special Steel, Nippon Steel Stainless Steel, Oji Steel, Tokai Special Steel, Nippon Steel Structural Shapes Corporation, and Tokyo Kohetsu), and three Sanso Center companies^{*6}

CO₂ emissions in the value chain

CO₂ emissions originated 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.

	CO ₂ emissions (thousand tons-CO ₂)			Calculation method
	2018	2019	2020	
Scope 1 Direct emissions from owned sources associated with use of fuel	81,099 ^{*10}	78,384 ^{*10}	62,860 ^{*8}	Based on the Action Plans for a Low-Carbon Society. See the boundary of data collection stated below.
Scope 2 Indirect emissions from the generation of purchased energy	12,563 ^{*10}	11,878 ^{*10}	10,846 ^{*8}	
Scope 1 + 2 (Energy consumption per ton of crude steel: t-CO ₂ /t)	93,662 ^{*10}	90,261 ^{*10}	73,706 ^{*8}	
	1.93	1.97	2.01	
Scope 3 All indirect emissions (not included in scope 2) that occur in the value chain of the reporting company				
① Purchased goods and services	17,280 ^{*11}	17,063 ^{*11}	14,379	Calculated using method ^{*12} below for purchased iron ore, coking coal, coke, and oxygen
② Capital goods	1,516	1,656	1,632	[Amount of capital expenditures] X [Emission factor]
③ Fuel and energy related activities not included in Scope 1 or 2	368	305	291	[Amount of electric power procured and fuel used] X [Emission factor]
④ Transportation and distribution (upstream)	775	683	629	[Transportation distance reported in the Energy Saving Law document] X [Emission factor]
⑤ Waste generated in operations	5	5	4	[Amount of waste] X [Emission factor]
⑥ Business travel	3	4	4	[Number of employees] X [Emission factor]
⑦ Employee commuting	13	13	14	[Number of employees] X [Emission factor]
⑮ Investments	1,231	1,208	1,125	[Emissions by subsidiaries and affiliates that emit GHG of over 10,000 tons] X [Equity stake of each company]
Crude steel production (domestic, consolidated-base, 10,000 tons)	4,850	4,589	3,663	

Scope 1 and 2
[Conversion factor]
Source: METI, Agency for Natural Resources and Energy “Table of heat generation and carbon emission coefficient by energy source” (Revised January 31, 2020)
[Boundary of data collection]
Nippon Steel, associated EAF mills (Osaka Steel, Sanyo Special Steel, Nippon Steel Stainless Steel, Oji Steel, and Tokai Special Steel, Nippon Steel Structural Shapes Corporation, and Tokyo Kohetsu)
^{*8} Preliminary figure: The amount of CO₂ per unit of purchased electricity from a General Electricity Utility in fiscal 2020 is assumed to be the same amount as in fiscal 2019.
^{*9} Excluding CO₂ emission associated with the IPP operation by the steelworks
^{*10} The breakdowns of Scope 1 and Scope 2 in the past years are retrospectively revised according to the change in the boundary of data collection and improved accuracy in data calculation.

Scope 3
[Source of emission factor]
The Ministry of the Environment's emissions unit value database for accounting of greenhouse gas emissions throughout the Supply Chain (ver. 3.1) (March 2021, Ministry of the Environment)
METI, Agency for Natural Resources and Energy “Table of heat generation and carbon emission coefficient by energy source” (Revised January 31, 2020)
[Boundary of data collection]
Nippon Steel
^{*11} Past figures are retroactively revised according to the change in calculation method.
^{*12} 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]

Contributing to the realization of a carbon neutral society through eco-products

In addition to promoting drastic technological innovation in the steel manufacturing process, we are contributing to the realization of a carbon neutral society by providing high-function steel products (Eco-Products) that help customers save energy and reduce CO₂ emissions when using final products. Specifically, we will provide high-performance electrical steel sheets for drive motors as well as ultra-high-tensile steel plates for lighter body weight of electric vehicles, to achieve significant CO₂ reduction effects when our products are used as manufactured products.

As measures to improve the capacity and quality of electrical steel sheets, we have decided to invest over 100 billion yen in total in the Kyushu Works Yawata Area and Setouchi Works Hirohata Area. In addition, in response to the growing demand for ultra-high-tensile steel sheets that achieve lighter weight and higher strength in automobiles, we have also begun to establish a new-generation hot-rolling mill in the Nagoya Works. We will continue to expand our capacity to develop and supply high-function products that meet the needs in the future carbon-neutral society.

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Contribution to the global value chain (Eco Solutions)

The Japanese steel industry, including Nippon Steel, contributes to reducing CO₂ emissions on a global scale by transferring Japan's excellent energy-saving technology overseas. Specifically, we are promoting bilateral energy conservation and environmental international cooperation with India and countries in Southeast Asia, through three ways: public-private partnership meetings; technologies customized

list; and assessment of steelworks on their status of energy saving. Noteworthy is the technology transfer for the Coke Dry Quenching (CDQ) equipment; use of this equipment has a significant effect on reducing CO₂ emissions. The transfer was made by Nippon Steel Engineering Co. of the Nippon Steel Group, contributing to CO₂ emission reduction of approximately 22.96 million tons globally by fiscal 2019.

Adaptation to climate change

In addition to taking mitigation actions against climate change, Nippon Steel is making initiatives to prepare and adapt to potential impacts of such change. We have many products that are used for a long time as construction material 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 changes also leads to business opportunities for Nippon Steel. In various steelworks in Japan and overseas, water storage tanks have been installed and an administration office is built on a piloti structure, which allows to create an open space with no walls on the lowest floor and makes the building less vulnerable to tsunami. This is a part of efforts of Nippon Steel to be well prepared for emergencies such as flooding and high waves.

Use of by-products and waste in CO2 reduction

Waste plastics

Using coke ovens at seven areas of Nippon Steel's five steelworks, about 200,000 tons of used plastic containers and packaging collected from general households nationwide are recycled 100%, in compliance with the Act for Promotion of Use of Recycled Resources. This contributes to reduction of about 600,000 tons of CO2 a year. In the future, we will consider further expanding the use of waste plastics.

a measure against climate change. Nippon Steel's approach is to use our own large water tank (sea laboratory), to develop methods for creating tidal flats, shallow bottoms, seaweed beds, etc. by utilizing steel slag, and improve the environment in coastal areas. We started by aggregating basic data in order to find out how much CO2 can be fixated.



Large water tank Sea Laboratory

Blast furnace cement

Use of blast furnace slag in production of cement enables us to reduce use of limestone and fuel, contributing to reduction of 320 kg in CO2 emission per one ton of cement (40% reduction compared to ordinary cement production).

Blue carbon

Nippon Steel has promoted scientific analysis on usefulness and safety of use of steel slag — a by-product from the steelmaking process. To improve this technology, we began a basic study on blue carbon (CO2 absorption and fixation in the marine ecosystem), which is getting more attention as

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

- Medium- to long-term growth in global steel demand is projected, largely influenced by population growth and economic growth in emerging countries, according to the Long-Term Vision for Climate Change Mitigation published by the Japan Iron and Steel Federation in 2018. Since scrap alone cannot meet all steel demand, pig iron production in the blast furnace route is expected to increase (from 1.22 billion tons in 2015 to 1.40 billion tons in 2050).
- As companies are increasingly required to respond to climate changes and to disclose related information, investors and other stakeholders are increasingly interested in the steel industry's response to risks, such as (1) potential significant reduction in CO2 emissions; (2) changing trends of steel users, including the automobile sector (i.e., increase in electric vehicles, shift to lightweight materials); and (3) adoption of carbon pricing that leads to an increase in operating cost.

- Upon identifying our potential risks and opportunities driven by climate change and considering their significance to our current business strategies, we made scenario analysis for a long-term span to 2050, while referring to the two scenarios (below 2°C warming scenario and 4°C warming scenario*) of the International Energy Agency (IEA), so as to utilize them for devising our future business strategies.
- In addition, we have formulated a new climate change countermeasure vision with the aim of achieving “carbon neutral in 2050” consistent with the 1.5°C warming scenario, and have decided to tackle development of breakthrough technologies aimed at zero-carbon steel as a top management challenge.

*1 The below 2°C warming scenario is a case wherein much-needed measures will be implemented to keep global average temperature increase below 2°C (1.75°C) compared to pre-Industrial Revolution times.
The 4°C warming scenario is a case that global average temperature will increase by 4 degrees, without taking any economic or additional measures against climate change.

TCFD scenario analysis

Scenario	Factor	Events	Impact to Nippon Steel	Nippon Steel's strategy
2°C	Transition factor 1 Advance in electric vehicles (EVs); decline in powertrain-related steel demand	Estimates for 2050*2 EVs: 911mn units (47% of total) Internal combustion engine vehicles (ICEVs): 1,017mn units (53%)	↑ Opportunities in demand growth of steel	■ Potential decline in the ratio of powertrain-related steel demand, driven by electrification, but potential increase in demand for the global cumulative number of vehicles and thereby an increase in steel demand. ■ Increase in demand for high-performance steel for EVs.
	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 of high-strength steel; capturing demand for other materials	■ Switch to other lightweight materials is possible but should not be significant as steel remains superior in environmental impact from the LCA viewpoint. ■ Increase in demand for high-strength steel, carbon fiber reinforced plastics (CFRP), titanium steel, etc.
	Transition factor 3 Increasing social demand for CO2 reduction (shift to lowcarbon steel)	Promotion of shift to lowcarbon steel	↑ Opportunities in demand growth for low-carbon steel	■ Increase in the ratio of use of scrap (25% to 47%*), due to more accumulation and generation of scrap; an increase in blast furnace steel production to continue up to 2050 to satisfy steel demand not satisfied by steel made of scrap ■ Increase in demand for low-carbon steel
	Transition factor 4 Increase in operating cost caused by adoption of carbon pricing	Adoption of carbon pricing	↓ Deprivation of funds for R&D, etc.	■ Significant impact of carbon pricing, which is an additional burden and deprives funds for R&D ■ Follow-up on the impact on carbon pricing discussions, including developments in the EU border adjustment measures
	Transition factor 5 Heightened needs for products and solutions associated with a hydrogen-oriented society	Increase in demand for hydrogen-related infrastructure and facilities	↑ Opportunities in demand growth for products of the Group	■ Profit growth by provision of the Group's products and solutions that support a hydrogen-oriented society [Ex] Stainless steel for high-pressure hydrogen (HPR19™); hydrogen station (Nippon Steel Engineering)
	Transition factor 6 Higher needs for energyefficient products and technology in the world	Eco-friendly technology solution to boost demand	↑ Opportunities in demand growth for eco-friendly technology	■ Profit growth, driven by our Group's long-proven energy-saving technology solutions [Ex] Dissemination of CDQs, all of which are handled by Nippon Steel Engineering, into emerging countries
4°C	Physical factor 1 Suspension of operation by raw material suppliers, due to abnormal weather	Difficulty to procure raw materials, caused by abnormal weather	↓ Limited impact by taking measures for risks	■ Limited assumed risk in securing stable procurement of raw materials by taking the following measures: — Material sourcing from multiple regions in the world — Keeping raw material inventories in steelworks and ships
	Physical factor 2 Suspension of operation and shipment, due to abnormal weather	Difficulty in operation, caused by a natural disaster	↓ Limited impact by taking appropriate measures	■ BCP measures have been adopted. Limited risks in production disruption caused by natural disaster. Excessively abnormal weather may result in suspension of operation, 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.

*2 Source for EV-related data: IEA ETP2017 B2DS
EVs only refer to battery electric vehicles (BEVs) with no internal combustion engine (ICE). ICEVs include plug-in hybrid vehicles (PHVs).
*3 The ratio of the use of the EAF route is calculated from the estimated crude steel production in the JISF's paper “A challenge towards zero-carbon steel.”

Restructuring of domestic steelmaking business and strengthening of group management

Nippon Steel is earnestly promoting the strengthening of the domestic steelmaking business with emphases based on three key strategies: 1) concentrated production of strategically selected products and equipment; 2) shift to a more sophisticated order mix by actively investing in strategic products; and 3) renewal and improvement of facilities. Our domestic steelworks are positioned as mother mills which play a core role in our global steelmaking business strategy and we aim to establish an optimal production system which enables us to efficiently produce top-class products.

We are also strengthening our Group management in order to improve consolidated business profitability and maximize corporate value.

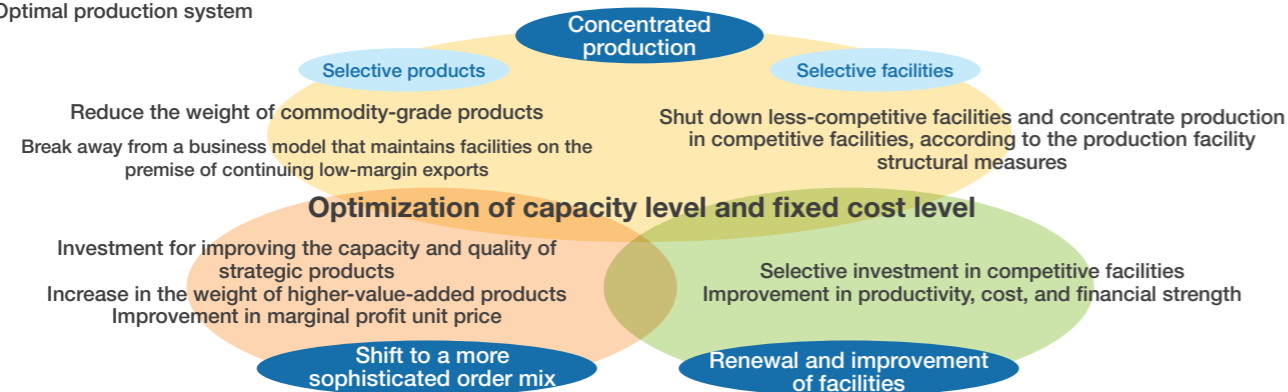
Restructuring of domestic steelmaking business and early recovery in profitability

At the time when steel demand is expected to decrease in Japan while competition in overseas markets intensifies, we are approaching a time when our main steelworks' aging facilities require large-scale, renewal investment. This equation would make it difficult for us to continue the current business model of "maintaining the scale of domestic production and offsetting shrinking domestic demand by boosting exports."

Responding to such circumstances, we are vigorously promoting the strengthening of the domestic steelmaking business with emphases based on three key strategies: 1) concentrated production of strategically selected products and

equipment; 2) shift to a more sophisticated order mix by actively investing in strategic products; and 3) renewal and improvement of facilities to ensure that technological capabilities are linked to profits, as we aim to establish an optimal production system in which domestic steelworks, as mother mills, produce top-grade products and play a core role in our global steelmaking business strategy. We will thus reestablish cost competitiveness that surpass our competitors, secure proper margins', and strengthen the profit base of our domestic steelmaking business.

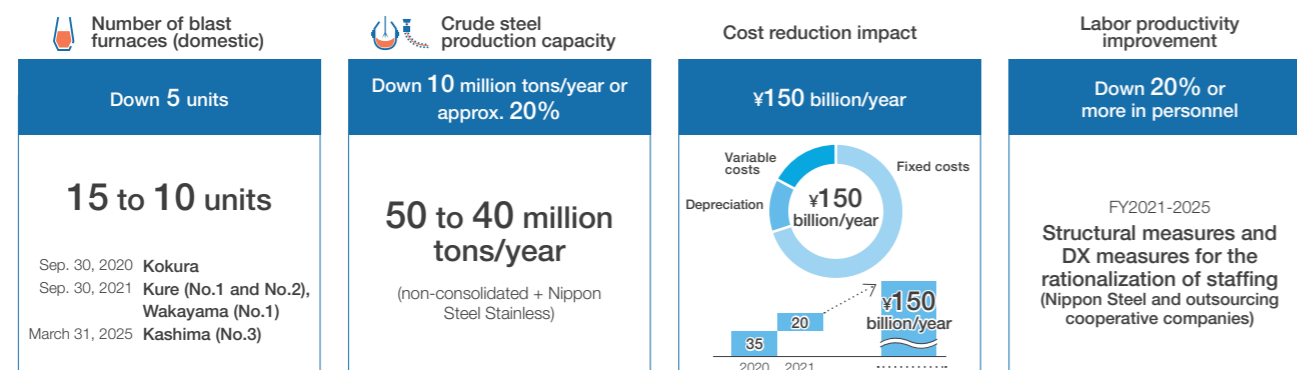
Optimal production system



1 Concentrated production

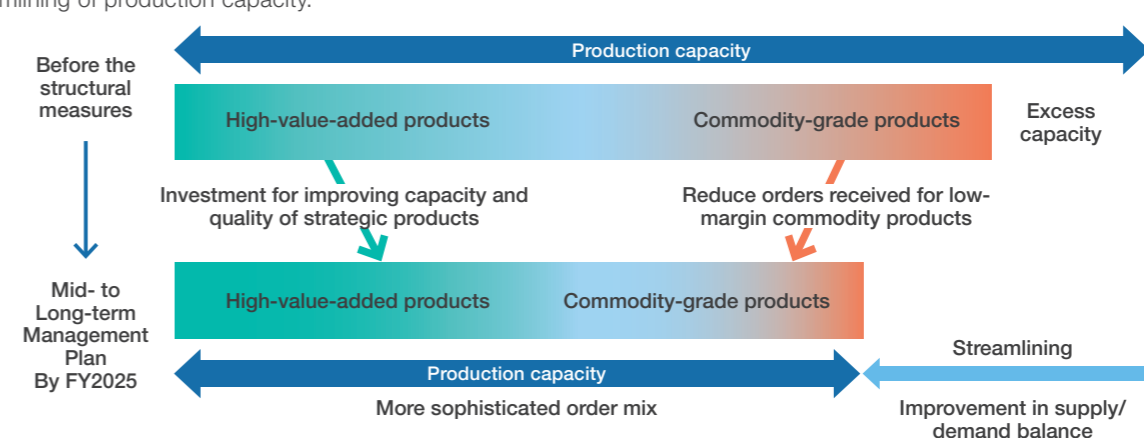
Nippon Steel's production facility structural measures aim at concentrating production in competitive facilities while shutting down less-competitive ones, in order to make the production framework to be streamlined and more efficient. Our plan is to

reduce the number of blast furnaces from 15 to 10, reduce domestic crude steel production capacity by about 20%, realize the cost reduction impact of ¥150 billion per year, mainly in fixed costs, and improve labor productivity.



2 Shift to a more sophisticated order mix

We are investing to improve the capacity and quality of strategic products. We intend to improve average marginal profit by raising the ratio of higher-value-added products and reducing the ratio of commodity-grade products along with the streamlining of production capacity.



3 Renewal and improvement of facilities

We are making selective investment in competitive facilities to improve productivity and cost, and realize a production framework that allows us to steadily supply value-added-products, ensuring our technologies are utilized to generate profit.

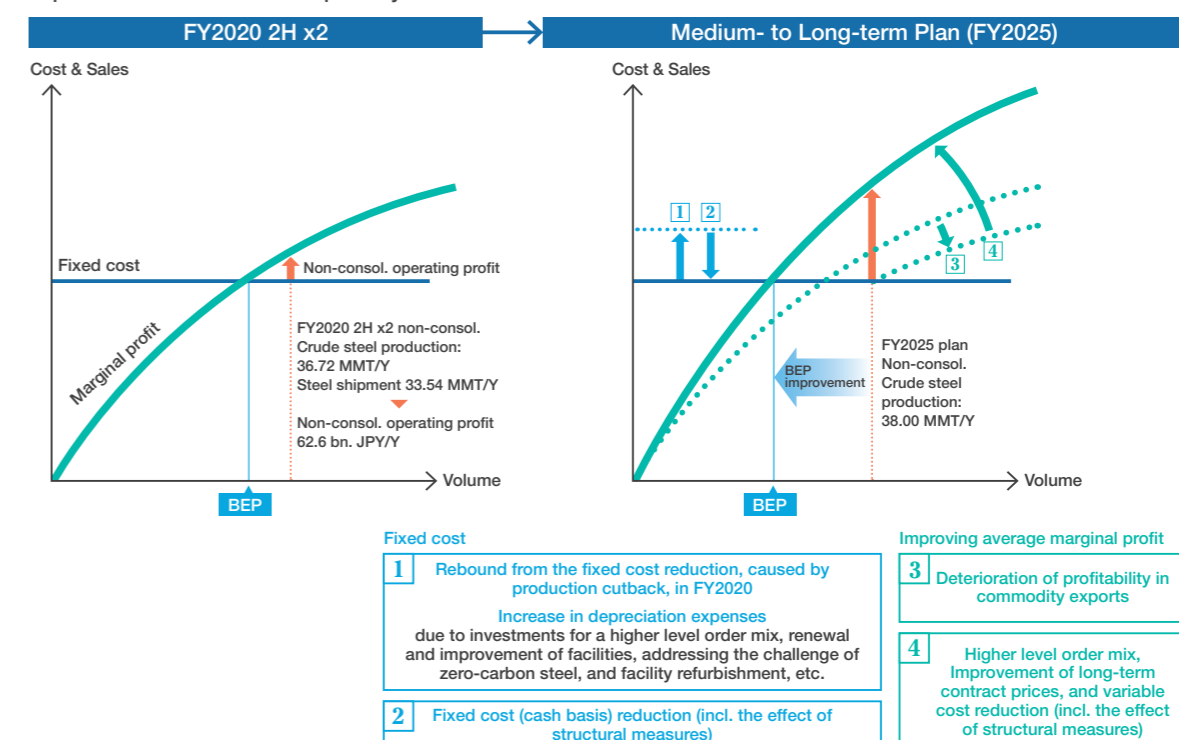
Further improvement in the breakeven point

By building an optimal production system, we are favorably repositioning the breakeven point and establishing a profit base that ensures profitability regardless of production volume. After drastic compression in fiscal 2020, fixed cost has been reduced (see P 86). We will maintain it at a low level, with a contribution by the impacts of reduced fixed costs through the production facility structural measures and other efforts. These positive impacts are expected to more than offset an increase in depreciation expenses, stemming from measures to improve the

capacity and quality of strategic products and capital investment for facility improvement.

In addition to improving the average marginal profit through a shift to a more sophisticated order mix, we will continue to improve variable costs and contract prices, thereby further improving the average marginal profit. We ultimately aim at further improving the breakeven point that we had drastically reduced in fiscal 2020, and strengthening the profit base of our domestic steelmaking business.

Improvement in the breakeven point by FY2025



Specific measures aimed at building an optimal production system

1 Concentrated production

The following measures are being implemented to streamline production facilities and make them more efficient. They include the structural measures announced in February 2020 and the additional ones included in the Medium to Long-term Management Plan announced in March 2021.

1. Product manufacturing process

With the aim of strengthening the business and making an optimal, more efficient production system, some production lines are being shut down, and production is being concentrated in lines that are more competitive or closer to centers of demand. We will withdraw from certain products in light of their medium- to long-term demand trends.

2. Upstream steelmaking process

With the aim of increasing competitiveness in the integrated steelmaking process, all facilities at the Setouchi Works Kure Area and the No. 1 blast furnace and related facilities at the Kansai Works Wakayama Area were shut down by taking into account each steelworks' competitiveness in terms of integrated production/shipment capacity, cost, product strength, and other factors.

The No. 3 blast furnace and related facilities at the East Nippon Works Kashima Area, as well as the No. 1 continuous casting machine at the Kimitsu Area of the same works will be shut down 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 are to be shut down.

Overview of the production facility structural measures

Steelworks		Facilities for shutdown	Approximate time of shutdown ● completed
Upstream facilities	East Nippon Works Kashima Area	One series of upstream facilities (No.3 BF, No.2-A,B,C,D coke ovens, No.3 sintering machine, and No.1 steelmaking plant)	The end of FY2024
	East Nippon Works Kimitsu Area	No.1 continuous casting machine	The end of FY2021
	Kansai Works Wakayama Area	Currently-suspended facilities in one series of upstream facilities (No.1 BF, No.5 coke oven, No.5-1 sintering machine)	FY2021 1H
		Running facilities in one series of upstream facilities (No.4 coke oven, part of No.3 continuous casting machine)	FY2022 1H
	Setouchi Works Kure Area	All upstream facilities (including BF, sintering, steelmaking)	The end of 1H FY2021
	Setouchi Works Hirohata Area	Melting furnace (▶ New EAF)	FY2023 1H
Steel plate	Kyushu Works Yawata Area (Kokura)	Upstream facilities (BF, sintering, steelmaking)	● Sep. 2020
	East Nippon Works Kashima Area	Steel plate mill	FY2024 2H
	Nagoya Works	Steel plate mill	The end of FY2021
Construction product	East Nippon Works Kimitsu Area	Large Shape mill	The end of FY2021
	East Nippon Works Kashima Area	Large Shape mill	The end of FY2024
Pipe & tube	Kansai Works Wakayama Area (Kainan)	Small-diameter seamless pipe mill (West)	The end of FY2025
	East Nippon Works Kimitsu Area	UO pipe line	The end of FY2021
	East Nippon Works Kashima Area	UO pipe line	● Oct. 2019
	East Nippon Works Kimitsu Area (Tokyo)	Small-diameter seamless pipe mill	● May 2020
Steel sheet	East Nippon Works Kimitsu Area	No.1 hot-dip galvanizing line (No.1 CGL)	The end of FY2024
	East Nippon Works Kashima Area	No.1 pickling line	The end of FY2022 1H
	Setouchi Works Hanshin Area (Sakai)	No.1 hot-dip galvanizing line (No.1 CGL) No.1 hot-dip galvanizing and aluminizing line (No.1 GAL)	The end of FY2024 The end of FY2022
	Kansai Works Wakayama Area	All steel sheet lines	The end of FY2024 1H
	Setouchi Works Hanshin Area (Osaka)	All facilities	The end of FY2023 1H - the end of FY2023
	Setouchi Works Kure Area	Hot strip mill, pickling line	The end of FY2023 1H
	Setouchi Works Hanshin Area (Sakai)	Continuous annealing line, electro-galvanizing line, No.1 hot-dip aluminizing line (No.1 CAL)	● The end of FY2020
	Setouchi Works Hirohata Area	Tinplate mill	● The end of FY2020

Steelworks		Facilities for shutdown	Approximate time of shutdown ● completed
Titanium & special stainless steel	East Nippon Works Naoetsu Area	Special stainless steel line	The end of FY2021
	Kansai Works Osaka Area	Titanium raw material plant	The end of FY2022 1H
	Kansai Works Osaka Area	Special equipment for titanium round bar manufacturing	The end of FY2022
	Kyushu Works Oita Area (Hikari Pipe & Tube)	Titanium welded pipe production line	The end of FY2021 1H
Stainless steel	Nippon Steel Stainless Steel Kinuura Works	All lines (the cold-rolling line and all other lines thereafter)	The end of FY2021
	Nippon Steel Stainless Steel Kashima Works	A part of annealing lines	● The end of June 2021
	Nippon Steel Stainless Steel Shunan Area Yamaguchi Works	A part of cold-rolling and annealing lines	The end of March 2021 - the end of June 2026
		1 EAF	The end of FY2023
	Nippon Steel Stainless Steel Kinuura Works	Hot strip mill/ dedicated facility for production of precision products	● Sep. and Oct. 2020

Change in Major Subject Lines (Production facility structural measures)

	Change	Before ▶ After		Change	Before ▶ After
BFs	-5	15 ▶ 10	Galvanizing lines	-3	19 ▶ 16
Continuous casters	-8	32 ▶ 24	Special stainless steel rolling lines	-2	4 ▶ 2
Steel plate lines	-2	4 ▶ 2	Titanium raw material line	-1	1 ▶ -
Large shape lines	-2	4 ▶ 2	Titanium round bar line	-1	1 ▶ -
Seamless pipe lines	-1	3 ▶ 2	Titanium welded pipe line	-1	1 ▶ -
UO pipe lines	-2	2 ▶ -	Nippon Steel Stainless Steel cold rolling lines	-4	13 ▶ 9
Hot strip lines	-1	7 ▶ 6	Nippon Steel Stainless Steel EAFs	-1	4 ▶ 3
Cold rolling lines	-2	17 ▶ 15			

Domestic Steelworks: Upstream Facilities and Products

◆ All of the related lines are to be or already been shutdown ◇ Some of the related lines are to be or already been shutdown		Upstream facilities (units)				Products														
		BF	BOF	EAF	Continuous caster	Sheets				B/W		Pipes			Construction			Machinery	Titanium	Special stainless
North Nippon Works (from Apr. 2022)		1	2	1	1						○	○								
Muroran Area (Muroran Works until Mar. 2022)	Muroran City	1	2	1	1						○	○								
Kamaishi Area (East Nippon Works until Mar. 2022)	Kamaishi City											○								
East Nippon Works		4 ▶ 3	10 ▶ 7		9 ▶ 6	○	○	◇				○	◆	◆	○	◇	◆	○		○
Kimitsu Area	Kimitsu City	2	5		5 ▶ 4	○	○	◇				○	◆	◆	○	○	◆	○		
Kashima Area	Kashima City	2 ▶ 1	5 ▶ 2		4 ▶ 2	○	○	○					◆	◆	○	◆	◆			
Naoetsu Area	Joetsu City																		○	◇
Nagoya Works	Tokai City	2	6		3	○	○	○	○						○	◆				
Kansai Works		2 ▶ 1	3	2	6 ▶ 5		◆						◇				○		○	◆
Wakayama Area (Wakayama, Kainan, Sakai)	Wakayama City etc.	2 ▶ 1	3	1	6 ▶ 5		◆						◇				○			
Osaka Area	Osaka City			1															○	◆
Amagasaki Area	Amagasaki City												○							
Setouchi Works		2 ▶ 0	6 ▶ 0	0 ▶ 1	4 ▶ 2	◇	◇	◇	◆	○										
Hirohata Area	Himeji City		3 ▶ 0	0 ▶ 1	2	○	○	○	◆	○										
Kure Area ▶ all shutdown	Kure City	2 ▶ 0	3 ▶ 0		2 ▶ 0	◆														
Hanshin Area (Osaka) ▶ all shutdown	Osaka City						◆													
Hanshin Area (Kanzaki)	Amagasaki City						○													
Hanshin Area (Sakai)	Sakai City						○		◇											
Hanshin Area (Toyo)	Saijo City						○		○											
Kyushu Works		4 ▶ 3	11 ▶ 7		9 ▶ 7	○	○	○	○	○	○	○	○	○	○	○	○	○	○	◇
Yawata Area (Tobata, Kokura, Yahata, Hikari Titanium Production)	Kitakyushu City, etc.	2 ▶ 1	8 ▶ 4		6 ▶ 4	○	○	○	○	○	○	○					○	○	○	
Oita Area (Oita)	Oita City	2	3		3	○									○					
Oita Area (Hikari Pipe & Tube)	Hikari City												○		○				◇	
Nippon Steel Stainless Steel Corp.				4 ▶ 3	4		◇				○	○			○					
Kashima Works	Kashima City						○													
Yamaguchi Works	Shunan City, Hikari City			4 ▶ 3	4		◇				○	○								
Kinuura Works ▶ all shutdown	Hekinan City						◆													
Yawata Works	Kitakyushu City														○					

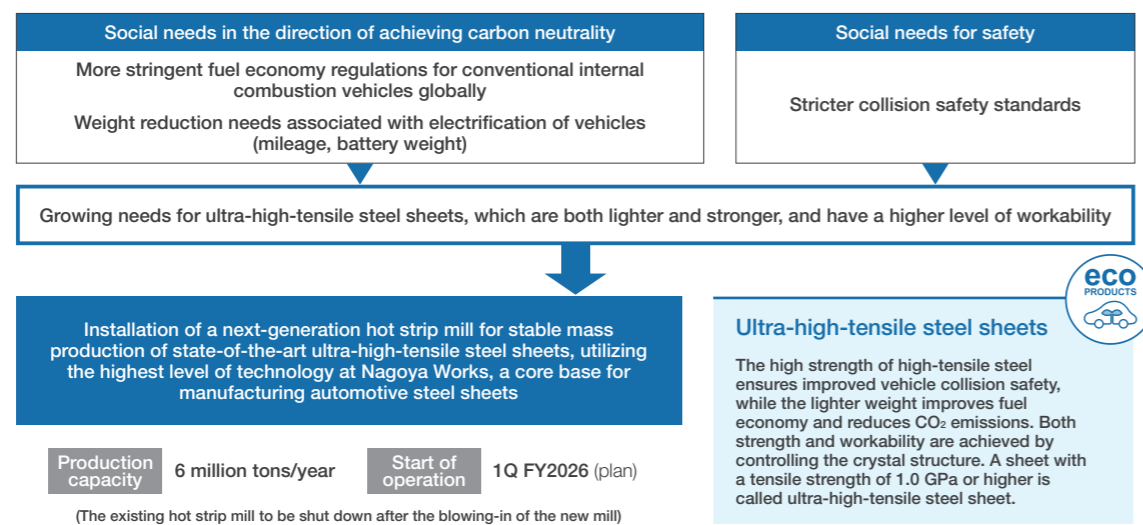
2 Shift to a more sophisticated order mix

Demand for high-grade steel products, which help solve certain social issues, is expected to continue to grow. Demand growth is of growing importance in connection with efforts to realize a carbon-neutral society. These high-end steel products are identified as “strategic products” and we will vigorously invest in facilities to improve their production capacity and quality.

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

In the automotive industry, where global environmental regulations are showing a trend of tightening and where collision safety standards are becoming more stringent, demand for high-performance materials 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

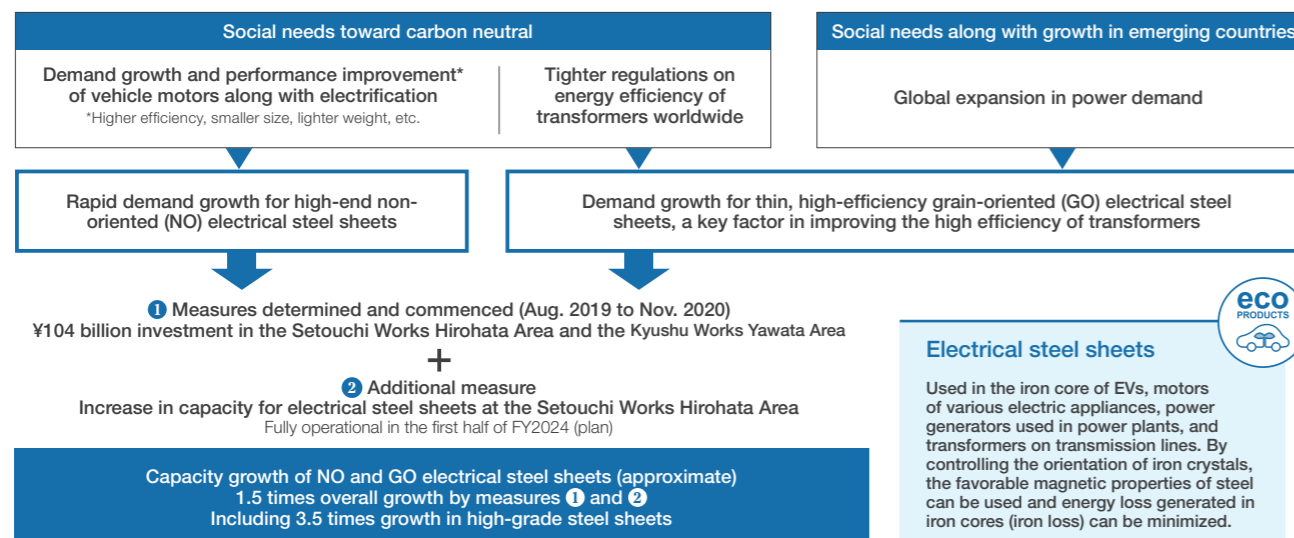
reduce vehicle weight and increase body strength, particularly because of problems concerning mileage and battery weight. In strategic response to these needs, we will establish a next-generation hot strip mill as a means of fundamentally strengthening our production system for ultra-high-tensile steel sheets and other high-grade products at the Nagoya Works – our core base for manufacturing automotive steel sheets.



2) Strengthening the manufacturing system of high-end electrical steel sheets

As the world is rapidly moving toward decarbonization, 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. In the meantime, demand for high-efficiency high-grade non-oriented (NO) electrical steel sheets used in the iron core of electric vehicles (EVs) is also expected to dramatically increase, driven by accelerated growth in demand for EVs, along with the stricter

regulations for CO₂ emissions and average fuel consumption for vehicles. We decided to improve the capacity and quality of electrical steel sheets at the Setouchi Works Hirohata Area and the Kyushu Works Yawata Area before November 2020, and have been working to make these changes fully effective by the first half of fiscal 2023. An additional capacity increase measure has been decided for the Setouchi Works Hirohata Area, in order to quickly respond to growing needs.



3 Renewal and improvement of facilities

The facilities will be renewed and improved by selectively investing in competitive facilities, including using funds to improve the capacity and quality of strategic products.

	Steelworks	Facility	Start-up
Blast furnace (BF)	Muroran Works (Hokkai Iron & Coke)	#2 BF relining	Nov. 2020
	Nagoya Works	#3 BF relining	1H 2022
Coke oven (CO)	East Nippon Works Kashima Area	#2E CO capacity increase	May 2018
	East Nippon Works Kimitsu Area	#5 CO refurbishment	Feb. 2019
	Muroran Works (Hokkai Iron & Coke)	#5 West CO refurbishment	Sep. 2019
	Nagoya Works	#3 CO refurbishment	1H 2021
Other	Kyushu Works Yawata Area	Construction of #3 continuous caster	May 2019
	East Nippon Works Kashima Area	Installment of #6 hot-dip galvanizing line	Jan. 2021
	Setouchi Works Hirohata Area	Construction of an electric arc furnace	1H 2022
	Nagoya Works	Installment of a next-generation hot strip mill	1Q 2026
	Kyushu Works Yawata Area	Improvement of the capacity and quality of electrical steel sheets	1H 2023 to 1H 2024
	Setouchi Works Hirohata Area		

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.

Strengthening Group Management

In order to improve consolidated business profitability and maximize corporate value, we are working on 1) strengthening the competitiveness and profitability of each Group company, 2) optimizing the structure of the Group by selecting and concentrating businesses, and 3) deepening collaboration among the Company and the Group companies, as well as improving and enhancing the management infrastructure.

As for Group companies in steelmaking, we will continue to further clarify the mission of each company, enhance their profitability consistent with the Company’s business divisions of each product type, and “select and concentrate” Group companies in consideration of sustainability, among other factors.

The Engineering and Construction Business and the Chemical & Materials Business implement measures that are closely aligned with the various measures of the steelmaking business, and will expand profits based on the “selection and concentration” of each company’s individual business. The System Solutions Business makes a significant contribution to the development of the DX strategy for the entire Group, based on its accumulated technology and experience, and will continue to grow its business by capturing growing market needs.

Promoting a global strategy to deepen and expand our overseas business

In the overseas steel business, we will expand our integrated production framework in the center of demand, such as by capacity expansion of AM/NS India, and ensure that local demand is captured in growing markets. By implementing these strategies, our plan is to achieve 100 million tons of global crude steel capacity per annum for the Nippon Steel Group by combining the efforts of our mother mills in Japan and local mills located overseas.

Global crude steel capacity of 100 million tons

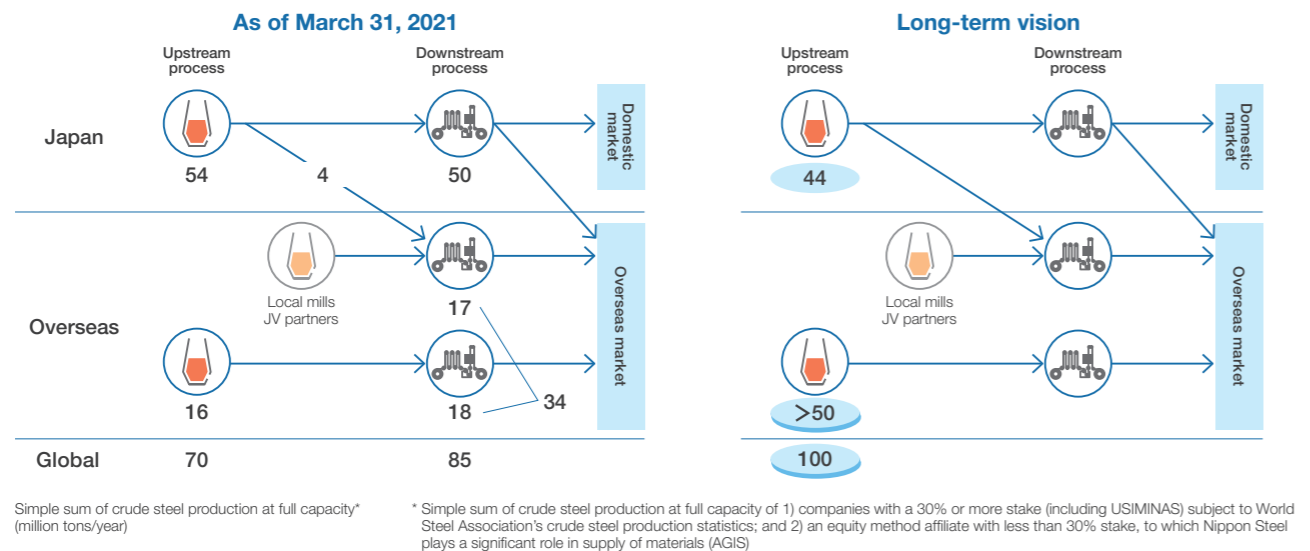
Global steel demand is expected to continue to grow at a moderate pace toward 2025, furthermore, 2030. We have developed our business mainly in Asia (especially China, the ASEAN countries and India), whose market size and growth rate are relatively large globally, and we are well positioned to profit from the scale and growth of this market.

In order to further improve our profitability in this environment, we will maintain our traditional business of exporting steel products, mainly high-grade steel, and supplying by overseas

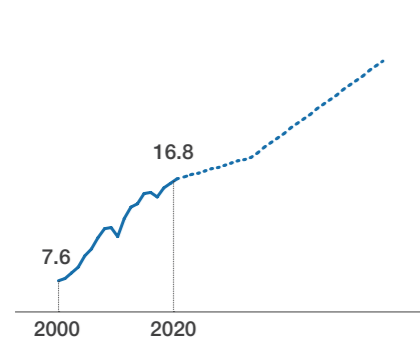
companies in charge of producing predominantly cold-rolled and plating products, and will move toward a full-scale overseas business that enables local demand to be captured in its entirety and provides added value to our products.

The Nippon Steel Group aims to achieve 100 million tons of global crude steel capacity per annum, which is our vision, by capturing demand in growth markets through the sale of products from our strong domestic mother mills and local mills overseas.

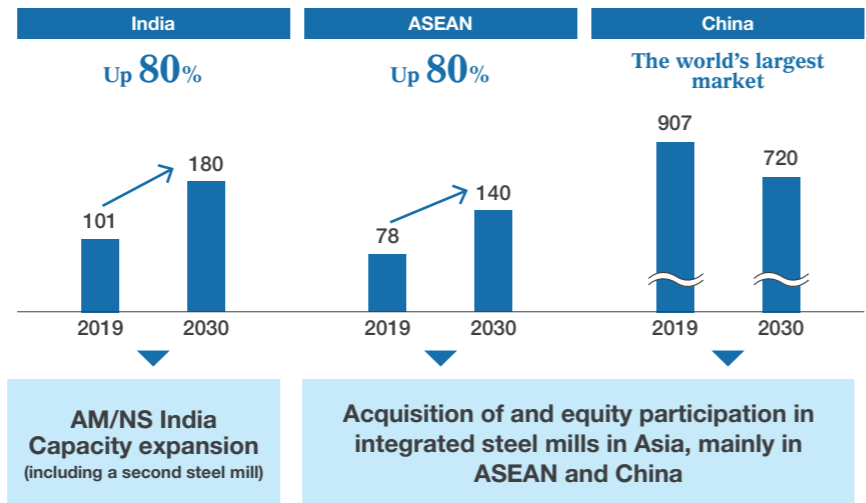
Toward global crude steel capacity of 100 million tons



World Steel Demand (billion tons/year)



Steel demand forecast (million tons/year)



AM/NS India

Specific measures

1 Measures toward global crude steel capacity of 100 million tons

The Nippon Steel Group is expanding its integrated steel-making facilities starting from the upstream processes, mainly in the Asian region, including India and ASEAN, where demand is growing, and China, which is the world's largest market. We aim to expand our overseas crude steel

production capacity from the current 16 million tons per year to over 50 million tons per year in the long term and to achieve a global crude steel production capacity of 100 million tons per year, with domestic crude steel capacity of over 40 million tons per year.

1. India

The population of India is currently about 1.3 billion, and is expected to continue to grow, surpassing China in about a decade, and becoming the world's largest population. On the other hand, India's annual steel consumption is currently around 70kg per person per year, and is at a low level compared to industrialized countries such as Japan and China (about 500kg per person per year), the United States and developed countries in Europe (about 300kg), ASEAN countries (about 130kg), and Brazil (about 100kg). In the future, with the progress of industrialization and urbanization, demand for steel materials per person is expected to increase in India, and especially to increase for infrastructure. Due to the synergy between the increase in steel demand per person and the increase in the population, steel demand is expected to increase steadily over the long term.

India's government, under its "Make in India" policy, is resolutely protecting India's steel industry as a key industry, while India's steel market has had a high domestic production rate and has a structure in which Indian insiders enjoy the growth in demand. On the other hand, new integrated steelworks are unlikely to be rapidly constructed in the near

future because of restrictions in acquisition and utilization of industrial sites. India's steel market had been fragmented with low concentration in top-tier companies and little progress in industry consolidation. However, since 2016 when the Insolvency and Bankruptcy Code entered into force, a large-scale industry consolidation process has started. Going forward, further concentration into top-tier makers is expected, together with a possibility for a more stable market.

The Indian steel market is thus anticipating market expansion and tighter supply and demand. In December 2020, we acquired Essar Steel, one of the major four steelmakers in India, jointly with ArcelorMittal, and began operating it as AM/NS India, an equal partnership of both Nippon Steel and ArcelorMittal.

In line with the growth of the Indian steel market, we plan to expand our capacity, with AM/NS India as a core. In addition to expand the capacity of the acquired Hazira steel mill on the west coast of India from 7 million tons to over 14 million tons, we are considering capacity expansion, including the construction of a second steel mill on the east coast.

2. ASEAN and China

In ASEAN, where demand is expected to continue growing, and China, which is the world's largest market, we will consider acquisition of, and equity participation (brownfield investment) in integrated steel mills, in order to maintain a

supply/demand balance in the market where excess capacity in crude steel production demands attention. Also needed is to avoid the risks associated with a new launch.

2 Measures to enhance profitability of the existing businesses

With regard to existing overseas businesses, we have concentrated operations, and narrowed our focus to certain businesses, as we have almost completed the reorganization of our overseas tinplate business and our withdrawal from VSB and other businesses which would not be economically viable for us to continue. Going forward,

we will aim to increase profits by strengthening the business bases of AM/NS India and OVAKO, which are large-scale acquisitions, and in the case of each overseas business company, by taking advantage of our advanced technology and capturing the growth of the markets as a company in each country.

Nippon Steel Carbon Neutral Vision 2050

Challenge of Zero-Carbon Steel

ESG Materiality 1-(2)-①
Measures to prevent global warming

Nippon Steel aims to become carbon neutral in 2050 by taking up the challenge to develop and implement new CO₂ reduction technology in cooperation with various measures promoted by the Japanese Government. Our aim is to win the development competition with Europe, the United States, China, and other countries and continue to lead the world steel industry in efforts aimed at a decarbonized society.

We will also contribute to the realization of carbon neutrality in Japan by taking advantage of the company's technological and product capabilities and through the development and increased supply capacity of high-performance products, such as ultra-high-tensile steel sheets to reduce vehicle body weight and electrical steel sheets for driving motors of electrification vehicles.

Sustainability Report 2021 P.15-23

Key Phrase



Activity Logo



Our CO₂ emissions reduction scenario

We have developed a CO₂ emissions reduction scenario with a target in 2030 for 30% or more reduction in total CO₂ emission vs. 2013, and an aim to become carbon neutral in 2050. We started group-wide efforts toward realizing them.

2030 Target
30% or more reduction in total CO₂ emissions vs. 2013

30% reduction in total CO₂ emissions vs. 2013 by actually implementing the COURSE50* in the existing BF and BOF process, reducing CO₂ emissions in existing processes, and establishing an efficient production framework.

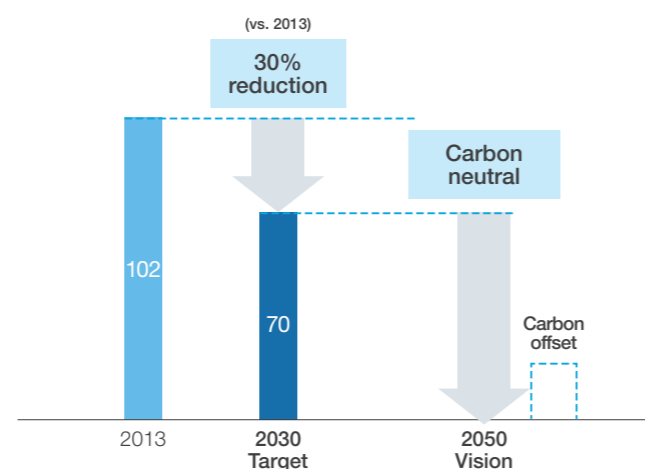
*COURSE50: Abbreviation for CO₂ Ultimate Reduction System for cool Earth 50

Vision 2050
Aim to become carbon neutral

Aim to become carbon neutral by taking up the challenge to mass produce high-grade steel in large size EAFs and to realize hydrogen reduction steelmaking (i.e., Super-COURSE50 use of BFs; direct reduction of 100% hydrogen), 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 + CO₂ at the time of purchase power production)

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

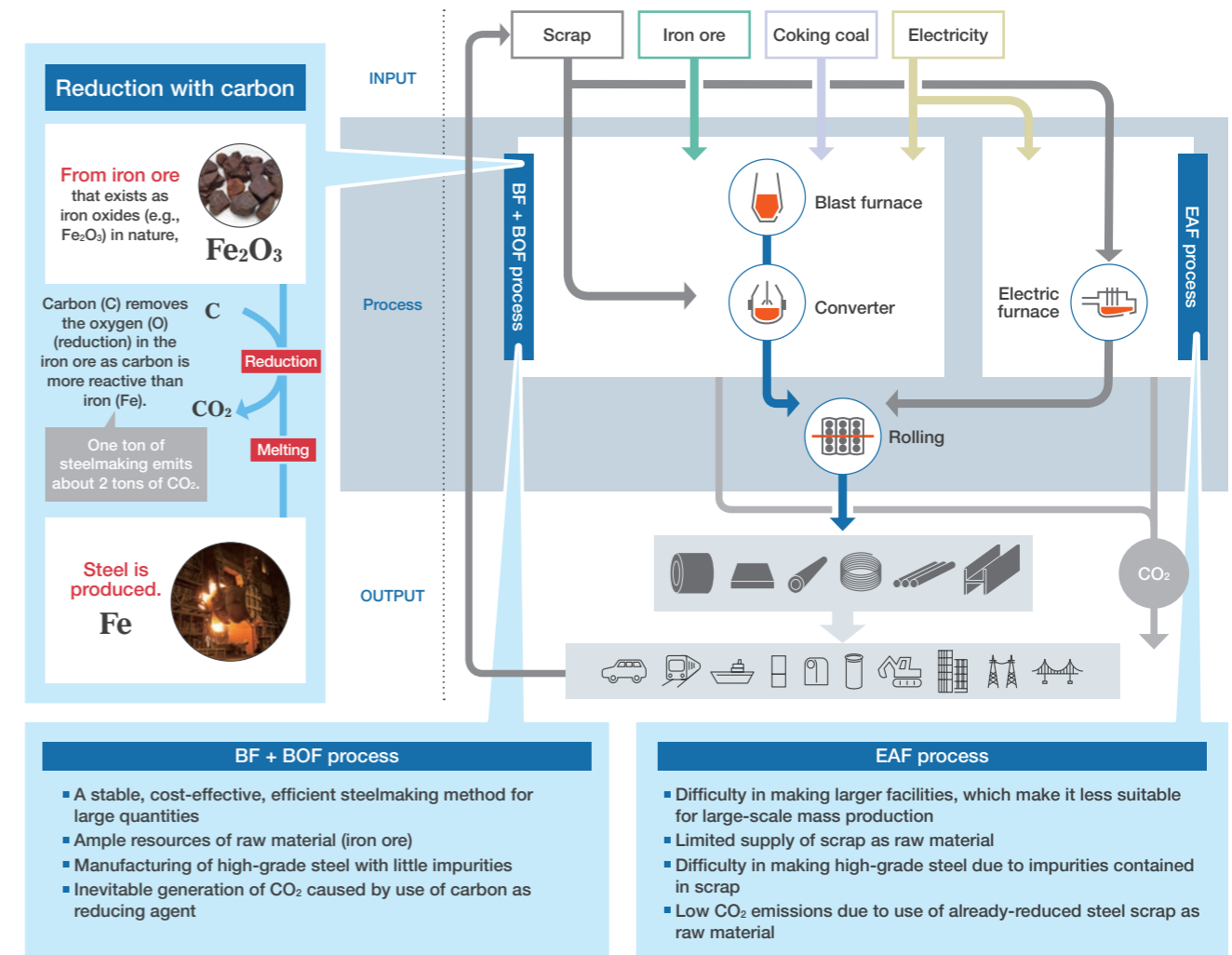
Current steelmaking process: Characteristics and issues

In nature, iron exists as oxides, as iron ore. To produce steel products, oxygen must be removed (= reduced) from iron ore. Starting from Tataru steelmaking in the ancient times of Japan, the process using the blast furnace (BF) and the basic oxygen furnace (BOF), which removes oxygen from iron oxide by carbon (charcoal, coal), has been used. Within a gigantic BF, a chemical reaction called reduction occurs, and steel is continually and efficiently produced from iron ore.

At present, the use of carbon (coal) is the best, stable, cost-effective method for reducing iron ore in large quantities. The reaction, however, emits CO₂ as carbon removes the oxygen in the iron ore.

As the major share of CO₂ emissions in the steelmaking process is derived from the iron ore reduction process in the BF, the reducing agent needs to be reconsidered in order to drastically reduce CO₂ emissions in steelmaking.

Steelmaking can also be done by a process using the electric arc furnace (EAF) with steel scrap as raw material. As steel scrap is already reduced, this method enables less CO₂ emission in steelmaking but has its own shortcomings: difficulty in making larger facilities, which make it less suitable for large-scale mass production; limited supply of scrap at present; and difficulty in making high-grade steel due to impurities contained in scrap.



Nippon Steel is taking challenges toward achieving zero-carbon steel

We are committed to reconsidering our present, long-undertaking steelmaking process and aiming to achieve carbon neutrality by overcoming issues involving decarbonization and realizing zero-carbon steel.

Our idea of a “zero-carbon steel production process” is to

combine two steelmaking routes, utilizing their respective features: the blast furnace (BF) and basic oxygen furnace (BOF) route together, and the electric arc furnace (EAF) route. Either route, however, has its own big challenges.

Three challenges

① EAF route: Improvement in productivity by increasing the size of EAFs; technology development to remove impurities for the production of high-grade steel

② BF + BOF route: Hydrogen injection into a BF (COURSE50 and Super COURSE50 projects) + practical implementation of CCUS

③ 100% hydrogen use in direct reduction process: use of hydrogen to produce DRI, which is partially used as raw material in both routes

The EAF route uses already-reduced steel scrap, which does not generate CO₂ associated with reduction, thereby reducing CO₂ emissions. We seek to make a larger EAF, raise efficiency in production, and use carbon-free electric power, in order to further reduce CO₂ emissions.

In the BF + BOF route, the existing BF is partially retrofit for the COURSE50 project and further advanced for the Super COURSE50 project. In these furnaces, the reducing agent is replaced, by some of the coking coal (coke) being substituted by hydrogen. This produces H₂O and hence reduces the amount of CO₂ emissions.

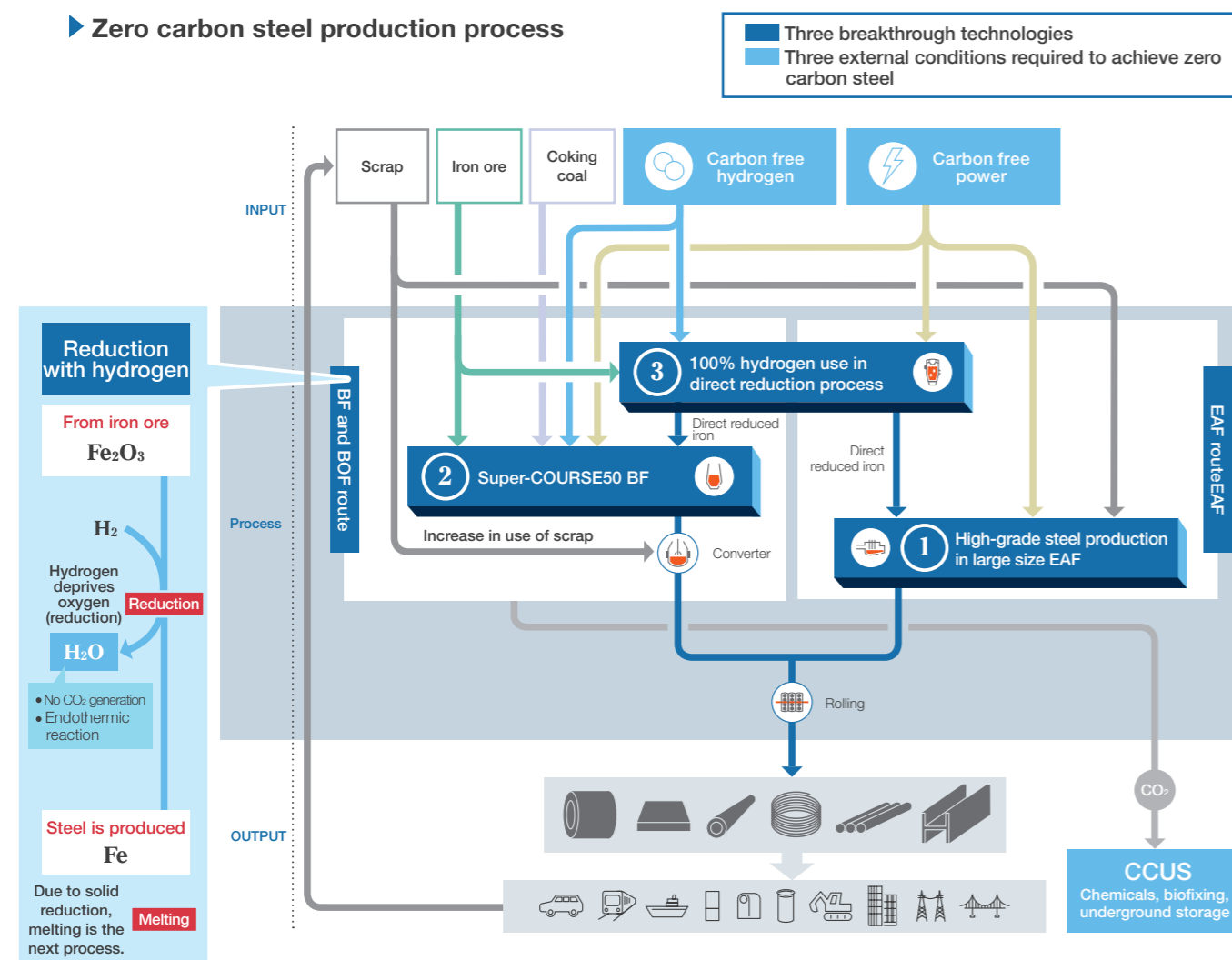
Moreover, in either of the routes, direct-reduced iron (DRI),

manufactured by the direct reduction process by 100% hydrogen, is partially used as raw material, with the aim of further CO₂ emission reduction.

In summary, we will thus take up three challenges to develop breakthrough technologies: ① high-grade steel production in large-sized EAFs; ② COURSE50 BF and Super-COURSE50 BF projects; and ③ 100% hydrogen use in the direct reduction process. CO₂, which is still emitted after these processes, is to be offset by CCUS to ultimately achieve carbon neutrality.

In order to realize this plan, supply of carbon-free electric power and hydrogen are indispensable.

Zero carbon steel production process



Challenge ① high-grade steel production in large-sized EAFs

The EAF steelmaking uses steel scrap, which enables reduction in CO₂ emissions during steel production. However, there are many challenges in the production of high-grade steel by EAFs and in large-scale mass production.

First of all, copper and other impurities in scrap and nitrogen contamination during melting affect the quality of steel, thereby limiting the product types and making it difficult to manufacture high-grade steel that satisfies user requirements for weight reduction and strength.

In addition, in the EAF route, the initial melting of scrap and other cold iron sources as well as refining with natural convection in an EAF take a long time, hence, the result is less productivity compared to the use of a BOF in which strong agitation occurs by an oxygen gas jet. This problem

will be more pronounced in larger-scale EAFs.

That is why the current average annual production capacity of the EAF route is approximately 0.7 million tons per unit, far less than the BF + BOF route of approximately 4.0 million tons. Moreover, the melting of DRI is expected to decrease production efficiency due to the deterioration of heat transfer, melting time, and refining load, caused by a large amount of gangue and voids in DRI.

In summary, the production of high-grade steel, which uses a certain amount of DRI in an EAF, especially large-scale EAFs, has many challenges in terms of quality and productivity. We will take up the challenge of establishing the technology to eliminate hazardous impurities and to improve productivity with a larger-scale, higher-efficiency EAF.

Challenge ② Hydrogen injection into BF (COURSE50 and Super COURSE50 projects)

Since hydrogen reduction is achieved by reducing iron ore by use of hydrogen rather than by conventional carbon (coal), the reduction process produces H₂O with no CO₂ emission. We are therefore taking up the challenge of reducing CO₂ emission by partially replacing carbon by hydrogen as the reducing agent, and switching from iron ore to direct reduced iron (DRI). This will be enabled by retrofitting existing blast furnaces (BFs) into COURSE50 and Super-COURSE50 BFs in the zero-carbon steel production process.

As mentioned previously, a blast furnace is an ultra-large chemical reactor that continuously and efficiently produces iron from iron ore. In the process, coke is 1) a

reducing agent, 2) a source of heat, and 3) plays a role to support raw materials at high temperature in a solid state while facilitating to maintain ventilation in the furnace. However, the following issues arise as the hydrogen reduction ratio in blast furnaces increases.

In response to these issues, we will mainly work on 1) the technology to ensure maximum ventilation and control stable reduction and melting when the amount of coke in the blast furnace declines, 2) the technology to blow in a large amount of hot combustible gas into the furnace, and 3) the advancement of technology to estimate actual machine reactions when scaling up from test machines to actual machines.

Challenge ③ 100% hydrogen use in direct reduction process

In the 100% hydrogen use in direct reduction, we target zero CO₂ emissions in reduction process by fully using hydrogen as the reduction agent. Since this process produces solid direct reduced iron (DRI), it is necessary to melt it in the next process such as in the blast furnace (BF) or electric arc furnace (EAF).

Most of the actual direct reduction methods currently use methane (natural gas) as the reducing agent but methane contains carbon and hence emits CO₂. In contrast, the 100% hydrogen direct reduction process aims at 100% use of hydrogen as reduction agent. This method,

however, has its own high technical issues, too. Since hydrogen reduction is an endothermic reaction, it is necessary to supply heat to maintain the reduction reaction. In addition, in the case of using a shaft furnace, powdering and sticking of DRI tend to occur at low temperature.

We will therefore take up the challenges of developing technologies for the stable production of DRI by direct hydrogen reduction, and operation technologies for expanding raw material sources. We will be bold in our efforts for realizing a zero-carbon steel production process.

Development of CCUS technology

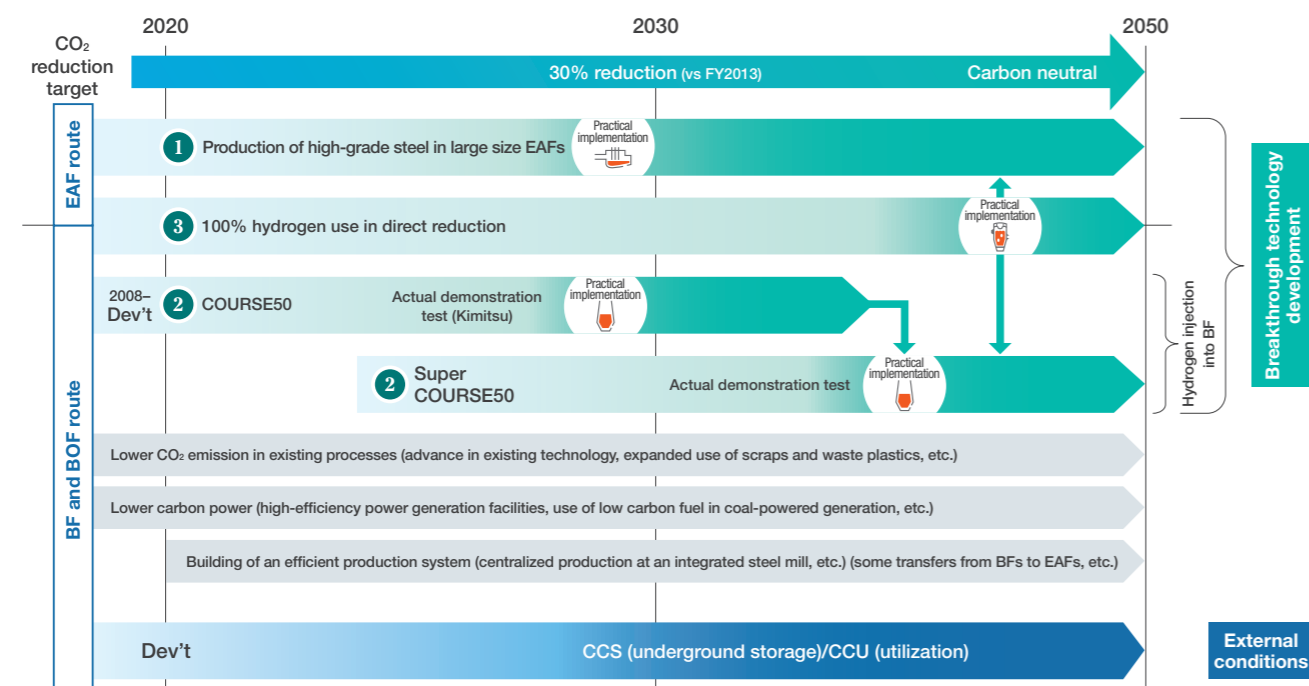
CCUS (Carbon Capture, Utilization and Storage) is a technology that separates, captures, and stores CO₂ in the ground, or directly uses CO₂ or converts it into other materials and utilizes it. In the zero-carbon steel production process, CCUS technology is used to process CO₂ still generated from the steelmaking process even after it has been minimized.

Realization of this technology requires the related technology development as well as preparation of external conditions. The required technologies include development and installment of

CO₂ separation and recovery technology (high-performance chemical adsorption liquid) and development of CO₂-based manufacturing technologies for chemicals and fuels. The necessary external conditions include the securing of the storage space needed for building 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.

Toward achieving the Carbon Neutral Vision 2050

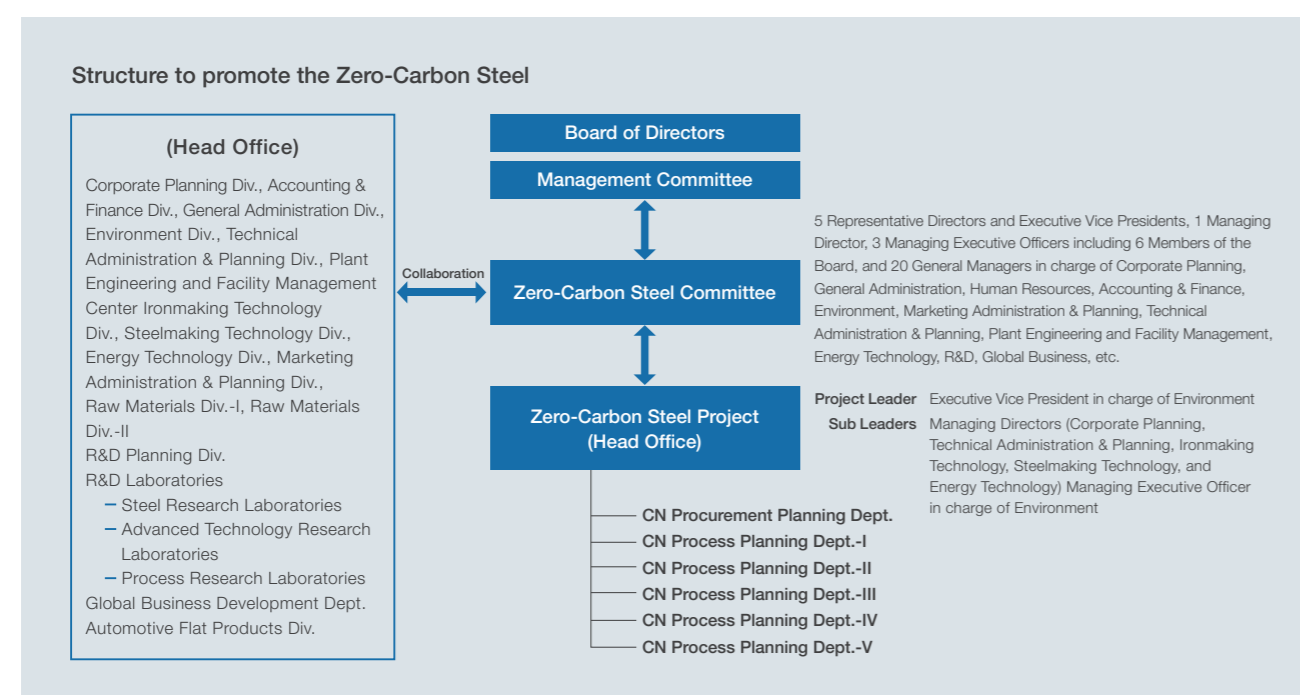
Roadmap



Structure toward achieving zero-carbon steel

To examine and implement various measures to develop and commercialize breakthrough technologies in steelmaking process, which is the key to achieving zero carbon steel (a top management priority), we established the Zero-Carbon Steel Committee, in

which all five Representative Directors and Executive Vice Presidents, participate. Further, in April 2021, a project team of about 60 to 70 officers and employees of various divisions was formed by the Committee to consider carbon neutral technologies.



Collaboration with others in society to realize zero carbon steel

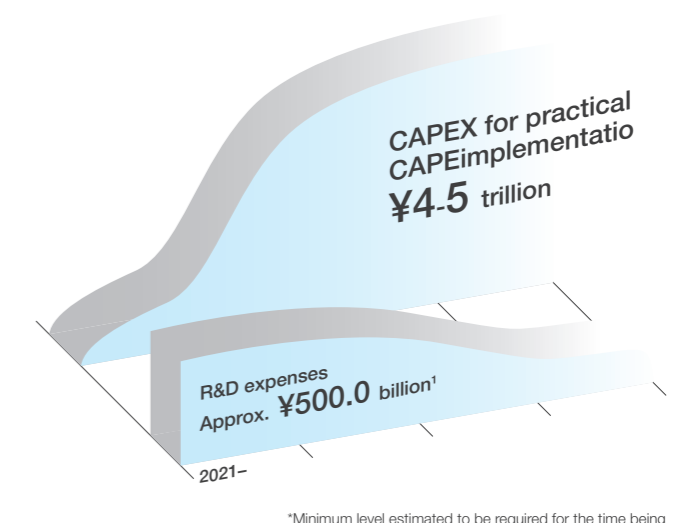
In order to realize the zero-carbon steel objective, which is believed to be essential for Japan's steel industry to continue to lead the world and to maintain and strengthen the competitiveness of Japan's overall industry, Nippon Steel has been taking on the challenge to develop and implement breakthrough technologies ahead of the other countries. This is our most important management challenge.

In our estimates, the needed innovations will roughly require a half trillion yen in R&D expenses and 4-5 trillion yen in capital expenditures. In such a case the production cost of crude steel may more than double the current cost even if external conditions, including the estimated prices of electric power and hydrogen, are best met in around 2050.

Beside the challenges taken by the steel industry, collaboration with others in society is essential in various aspects to realize zero-carbon steel: 1) long-term and multi-year government support for R&D in the field of breakthrough innovation etc.; 2) establishment of an inexpensive, stable, large-scale hydrogen supply infrastructure; 3) action on behalf of realization of carbon free power at an international competitive cost, 4) promotion of national projects for the development and commercialization of economically-rational CCUS; 5) securing of equal-footing in international competition; and 6) building of a system for society as a whole to bear enormous cost. Facing these issues, we have been carefully

explaining our ideas to relevant ministries and experts. Through Nippon Keidanren (Japan Business Federation) and the Japan Iron and Steel Federation, in which we take a leading position, we are making various recommendations regarding Japan's climate change measures and energy policies in accordance with the Paris Agreement, at councils and committees of various ministries in Japan.

Investments needed for the zero-carbon steel project



*Minimum level estimated to be required for the time being

Three factors to increase costs for realizing zero-carbon steel

1. Huge R&D expenses
2. Huge CAPEX for practical implementation
3. Increase in operational cost, even if inexpensive carbon free hydrogen and zero-emission power are to be secured

The production cost of crude steel may more than double the current cost.

Three collaborations required for realizing zero-carbon steel

1. A national strategy to realize a "virtuous cycle of environment sustainability and economic growth"
 - Long-term and continuous government support for R&D in the field of breakthrough innovation etc.
 - Establishment of inexpensive and stable large-scale hydrogen supply infrastructure
 - Realization of carbon free power at an international competitive cost
 - Promotion of national projects for the development and commercialization of CCUS
2. Realization of government's comprehensive policies to secure equal-footing in international competition, strengthen industrial competitiveness, and lead to business chances
3. Formation of consensus on the issue of cost bearing by society
 - Establishing a system for society as a whole to bear the enormous costs of realizing of zero-carbon steel, such as R&D expenses, CAPEX for replacing existing facilities, and significant increase in production costs.

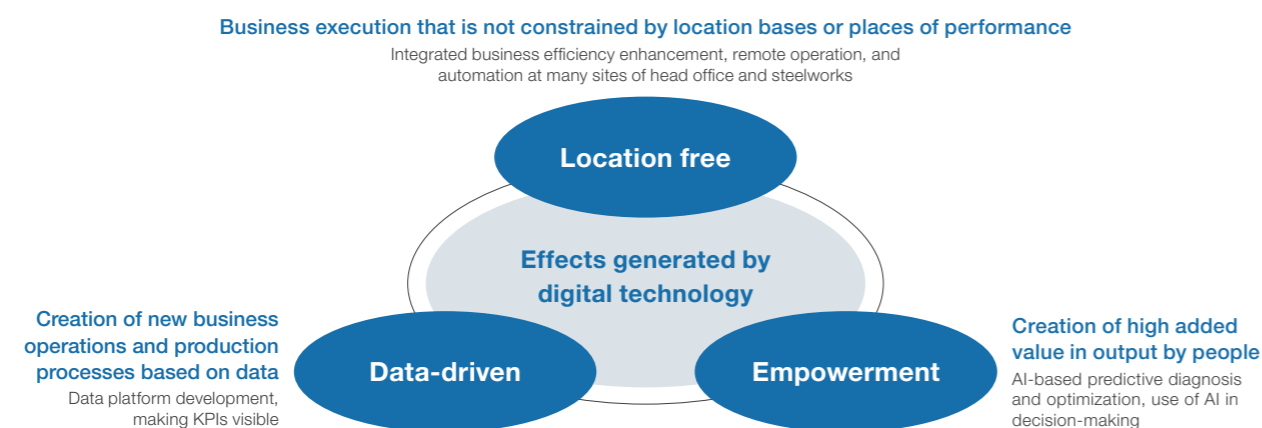
Promotion of Digital Transformation Strategy

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.

Promotion of Nippon Steel's DX

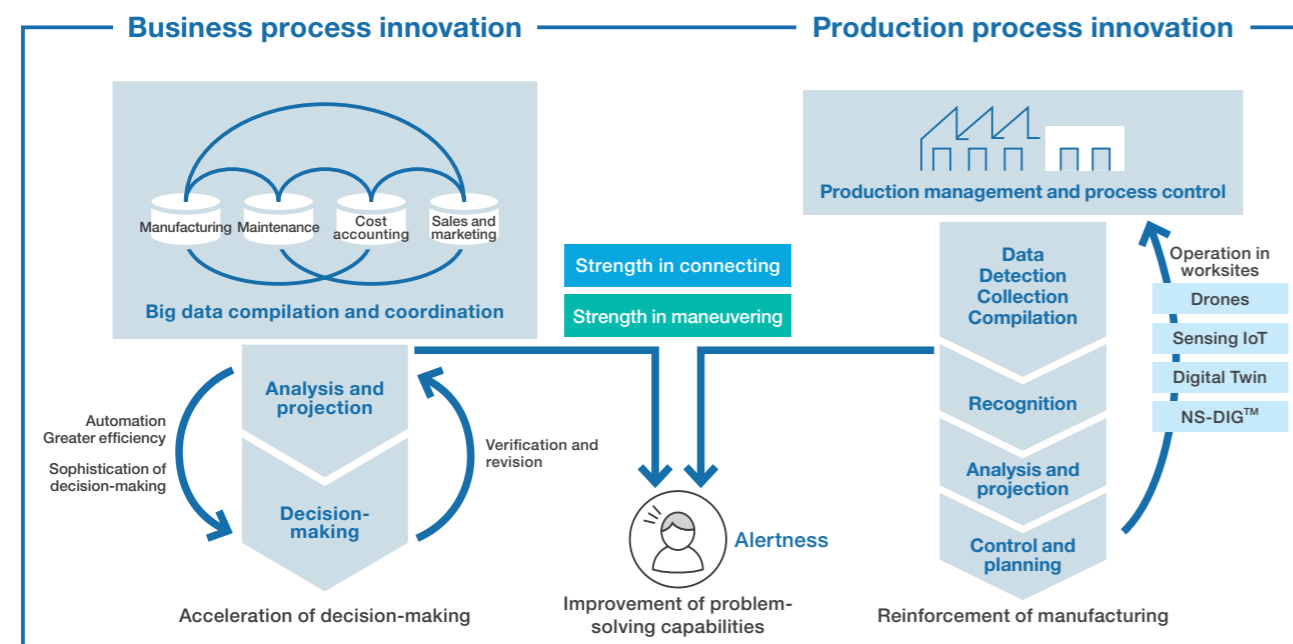
In promoting DX at Nippon Steel, we believe that it is important to utilize digital technology and enhance our ability to continuously implement innovation, or "the power to change," without being affected by traditional constraints. This is because it is possible to create significant value by efficiently standardizing and automating current business operations and production processes using digital technology, and then using

the knowledge and resources generated to create a cycle of new innovation. 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. In the coming era of digital innovation as well, people will still propose and implement new innovations, and it is important for people to have a higher sense of mission and to chart a course for future-oriented innovation. In addition, we think it is extremely important to utilize digital technology as a means

to turn the cycle of innovation. 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.



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. 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.

	1960s	1970s-1980s	1990s	2000s	2015-2020s	2000s-
Major cases	▲ IBM7070 introduced (1961)	▲ Online operation introduced ▲ ISCM introduced	▲ Production scheduling system	■ NSSOL started ▲ Integrated servers introduced	▲ Analysis infrastructure: (NS-DIG™) Global expansion	▲ Companywide data infrastructure ▲ AI execution infrastructure (AIRON-EDGE™)
Aims of IT introduction					Use of AI for thinking and knowledge Response to social demands Overall optimization Integrated optimization Optimization, simulations Prediction, projection Automation Labor saving, efficiency enhancement	
Data handled	Numerical data (kilo-megabytes)				Text data (gigabytes)	Images (terabytes) Videos (petabytes)

"Nippon Steel DX," which realizes strength in connecting and strength in maneuvering, and its vision

Nippon Steel will promote Nippon Steel DX to innovate all steel business processes. In order to achieve the goals outlined in our mid- to long-term management plan, we will realize "smarter manufacturing," "strengthening of flexible and optimal supply systems," and "building of business intelligence"

through the integration of our technologies and expertise (competitiveness in the real world) with digital technologies. At the same time, by setting challenging targets through the development of a DX roadmap, we will also enhance our ability to create solutions and innovations to achieve them.

Innovative evolution of strength in manufacturing based on smarter manufacturing

- 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

- 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

Global management support through enhancement of business intelligence

- Building an integrated data platform that enables real-time understanding of management information and KPIs for optimal action
- Strengthen business intelligence as a global management platform (Business Intelligence: data-driven management support)
- Accelerate decision-making and improve problem-solving capabilities from the management level to the front line

Nippon Steel DX Specific Initiatives

► Innovation of all steel business processes

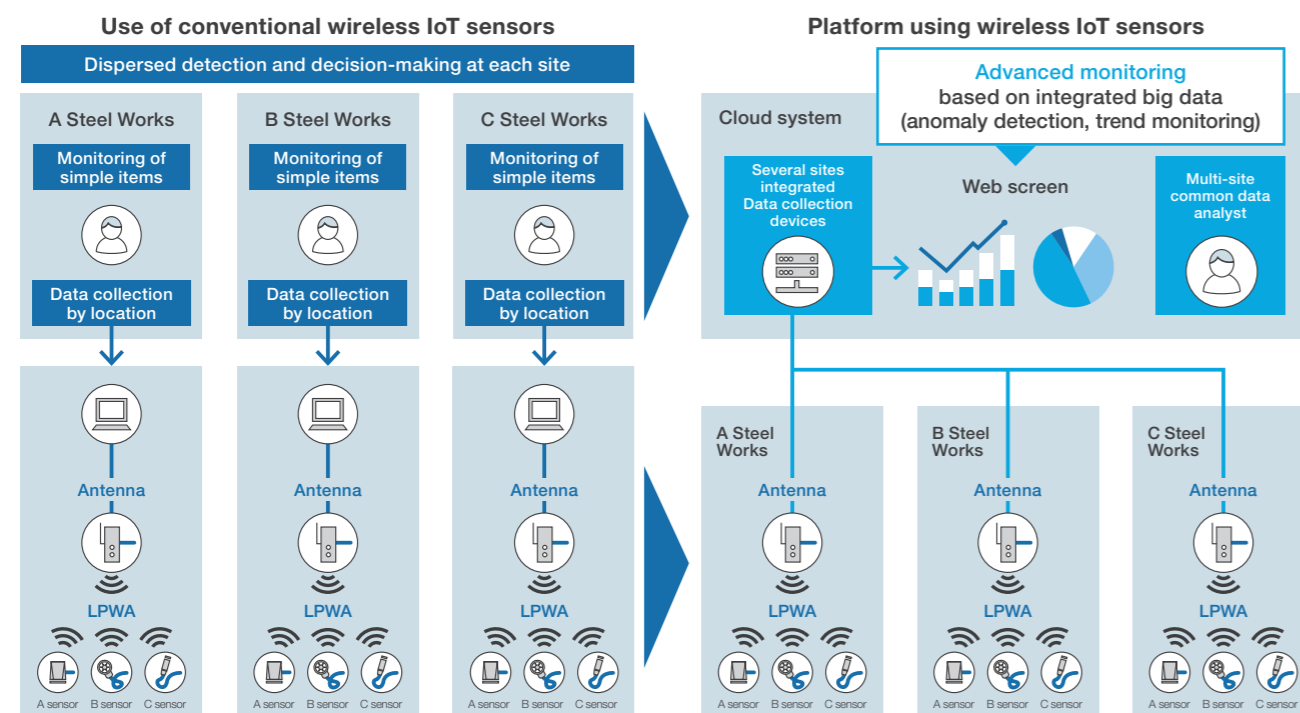
Nippon Steel DX, which Nippon Steel is promoting, covers the entire series of steel business processes, including production planning, marketing, manufacturing and maintenance, quality control, engineering, research, procurement, and finance.

Categories	Business activities
Production planning DX	Linkage with each DX measure based on integration and acceleration of performance management and integrated production planning
Marketing DX	Strengthening of supply chain linkage, acceleration and sophistication of marketing policy decisions
Manufacturing and maintenance DX	Remote management, prediction monitoring and automation of operation and equipment maintenance through use of IoT and AI
Quality control DX	Design of optimal quality conditions based on big data and advancement of quality control
Engineering DX	Design advancement and remote trial running using MR (VR + AR) and wireless technology
Research DX	Promotion of R&D utilizing digital technologies
Procurement DX	Optimal operation relating to raw material supply and demand and production plan changes
Finance DX	Enhancement of response to management environment changes through reinforcement of data infrastructure

► Promotion of smarter manufacturing (manufacturing and maintenance DX)

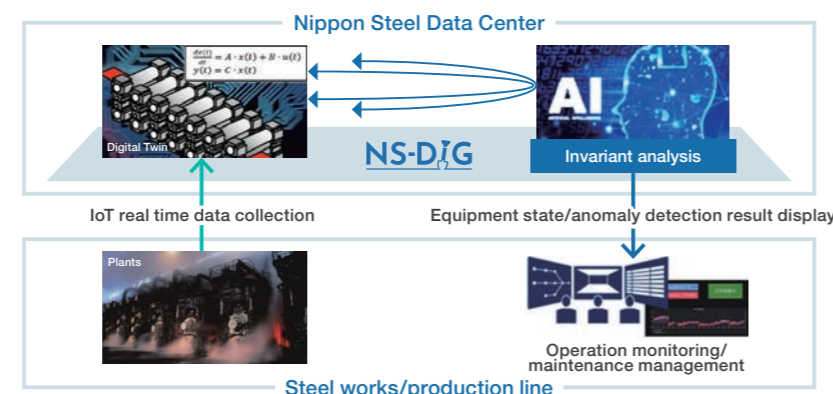
The use of wireless IoT sensors is essential to expand the monitoring of the status of a wide range of manufacturing sites extending over several kilometers. Nippon Steel is working to enhance its system for centralized management of data from each remote manufacturing site by using

LPWA (low power wide area wireless communication) and cloud technology. Going forward, we will promote the application of this technology with a view to expanding it to all of our manufacturing bases and Group companies.



We are promoting “Cyber Physical Production (CPP)” to realize the sophistication of manufacturing by combining such elements as real time analysis of big data collected from IoT equipment, in addition to digital twins which simulate the production and equipment conditions of manufacturing sites in a digital space. We are using CPP to detect operational changes at an early stage, predict equipment aging and deterioration, and otherwise enhance our strength in maneuvering data, thereby promoting smart manufacturing to achieve advanced stability in production.

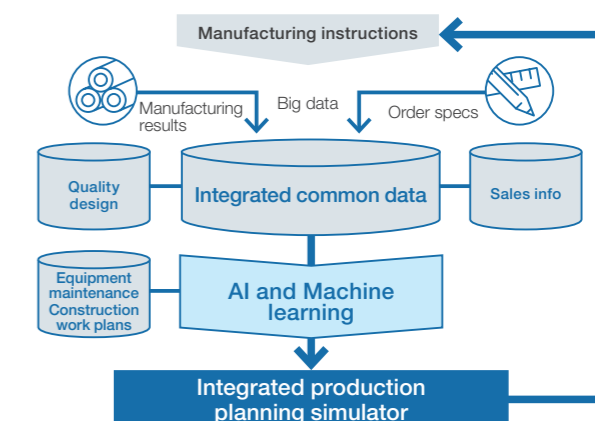
Cyber Physical Production (CPP)



► Company-wide integrated planning and optimization of steel works and product-specific planning (Production Planning DX)

We will build an integrated production planning platform by integrating the actual production data, efficiency results and detailed order specification information for each process accumulated by each steel works. 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. 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. We started applying the prototype in FY2021 and will proceed to implement it through agile development.

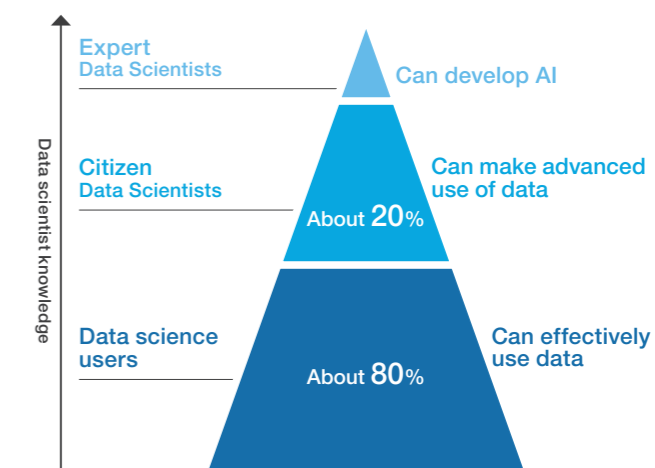
Integrated production planning platform [production planning DX]



► Promotion of ICT education

Nippon Steel defines DX human resources as “people who can identify and solve business problems based on data.” By 2030, we will promote the development of DX human resources by promoting DX strategy and providing ICT education as well as learning of various skills to all office staff and engineers. Of particular importance is the development of data scientists who can make advanced use of data in their work and who can plan and implement innovations. We have started data science education with the aim of training about 20% of all office staff and engineers (more than 1,000 people) as data scientists by 2025.

In addition, we will provide digital management education according to position and rank so that employees in operational divisions can promote business process innovation by acquiring management knowledge to utilize digital technologies.

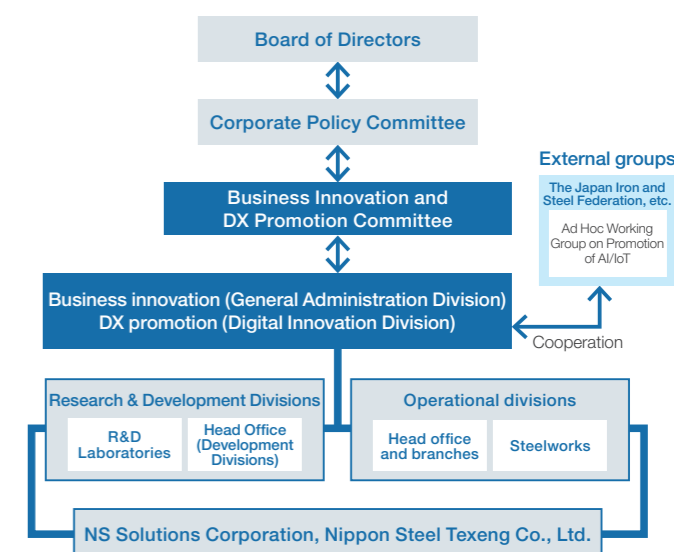


► DX promotion organization

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.

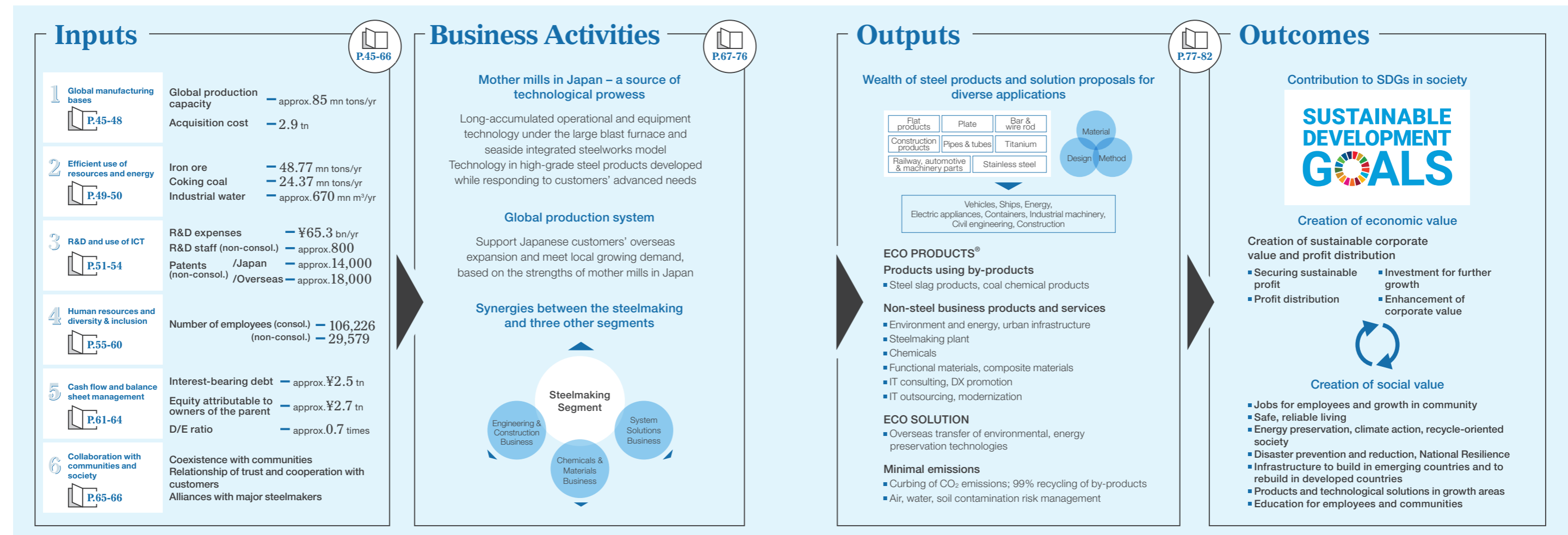
We have established the Business Innovation and DX Promotion Committee, chaired by the Executive Vice President in charge of business innovation and DX promotion. It is discussing company-wide policies and strategies and promoting related activities based on both the business innovations we have been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

Digital innovation promotion organization



The value creation process and Nippon Steel's strengths

Business model



Corporate Philosophy (P.02)

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

Corporate Governance (P.89-102)

In response to the delegation of responsibilities by and trust of all stakeholders, Nippon Steel has established a corporate governance structure appropriate for the Group's business, for its sound and sustainable growth, and improvement of its corporate value in the mid- to long-term.

Nippon Steel has made a transition to a "Company with an Audit & Supervisory Committee" to enhance the supervisory function and to accelerate speed in decision making, responding well to greater, more speedy changes in the business environment.

ESG Materiality (P.41-44)

1 Safety, environment, disaster prevention, 2 Quality, 3 Production, 4 Securing and fostering personnel, 5 Harmony with local communities and society, 6 Corporate value enhancement and profit distribution; Thorough implementation of compliance

History of our development (P.11-12)

Continual growth as a global leading steelmaker, overcoming crises many times.

Established a business model with strengths in terms of "technology," "cost," and "being global," such as Process technology (incl. world top-class energy efficiency), High-grade steel product technology,

Global production framework, Four-segment structure, (incl. the steelmaking business)

Nippon Steel's strengths

Technology	Cost	Being global
Products and solutions that contribute to customers' value creation	Cost competitiveness, enabled by our process technology and operational technology	Global expansion in response to Japanese customers' overseas expansion and local demand
Technology	Cost	Being global
Global top-level R&D resources as a steelmaker	P.51	•
Practical use of advanced technology by R&D centers and steelworks research divisions	P.45	•
Joint development with customers based on long relationships of trust	P.74	•
Rich product portfolio	P.77	•
The world's top-class energy efficiency	P.50	•
The top-runner approach in many steelworks	P.69	•
Large blast furnace operating technology	P.69	•
Stable, mass production technology of high-grade steel	P.69	•
Synergy with the non-steel segments	P.75	•
Global production framework	P.46	•
Alliances with some global leading steelmakers	P.70	•
Presence in the growing Asian market	P.74	•
High domestic shares; No. 5 in the world in production volume	P.74	•

Operating results and outlook (P.83-88)

Fiscal 2020 operating results

Significantly reduced fixed costs and improved the profit structure. Improved profitability by selective concentration of overseas businesses. Turned to non-consolidated operating profit in 2H from a significant loss due to the impact of COVID-19 in 1H. Made a V-shaped recovery in consolidated business profit.

Aim to renew record-high profit in fiscal 2021, since the business integration in 2012.

Risks, opportunities, and strategies (P.13-38)

Steel supply/demand environment

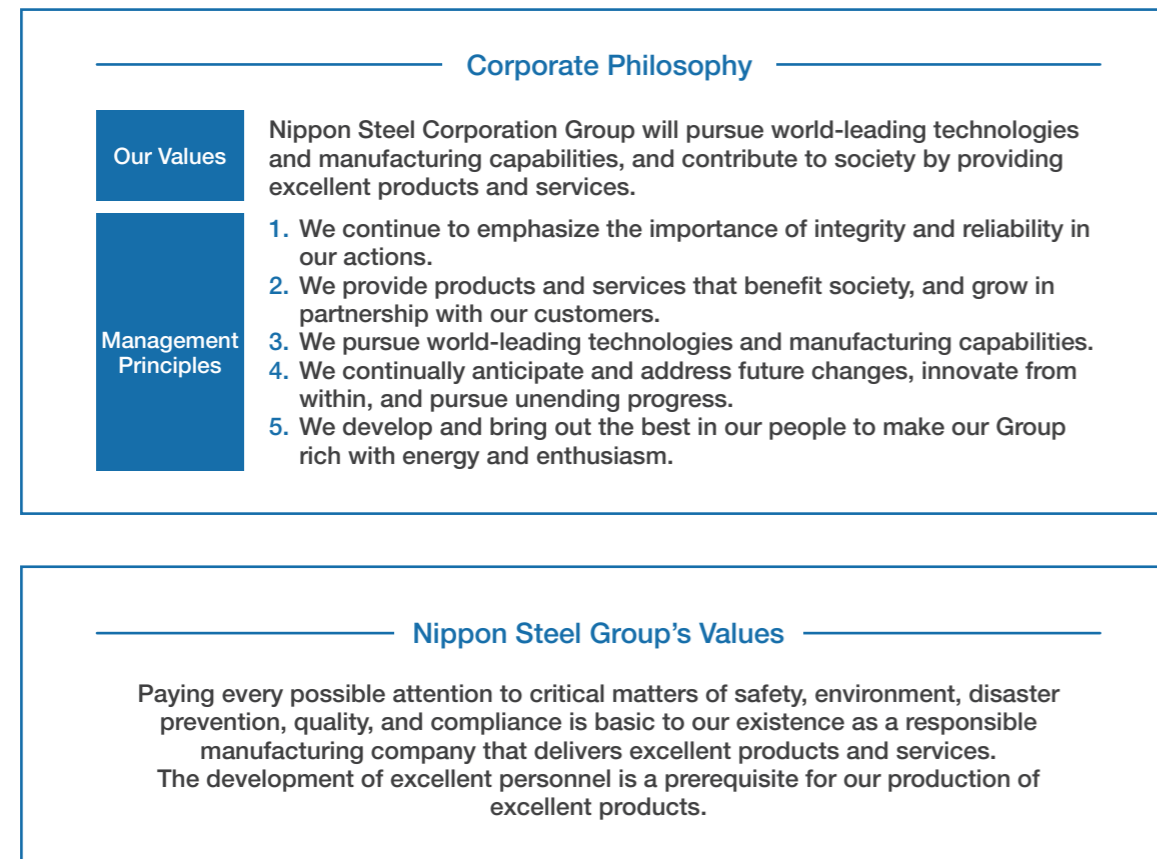
Climate change

- Rebuilding our domestic steel business and strengthening our group's management
- Promoting a global strategy to deepen and expand our overseas business
- Taking on the challenge of zero-carbon steel
- Promoting digital transformation strategies

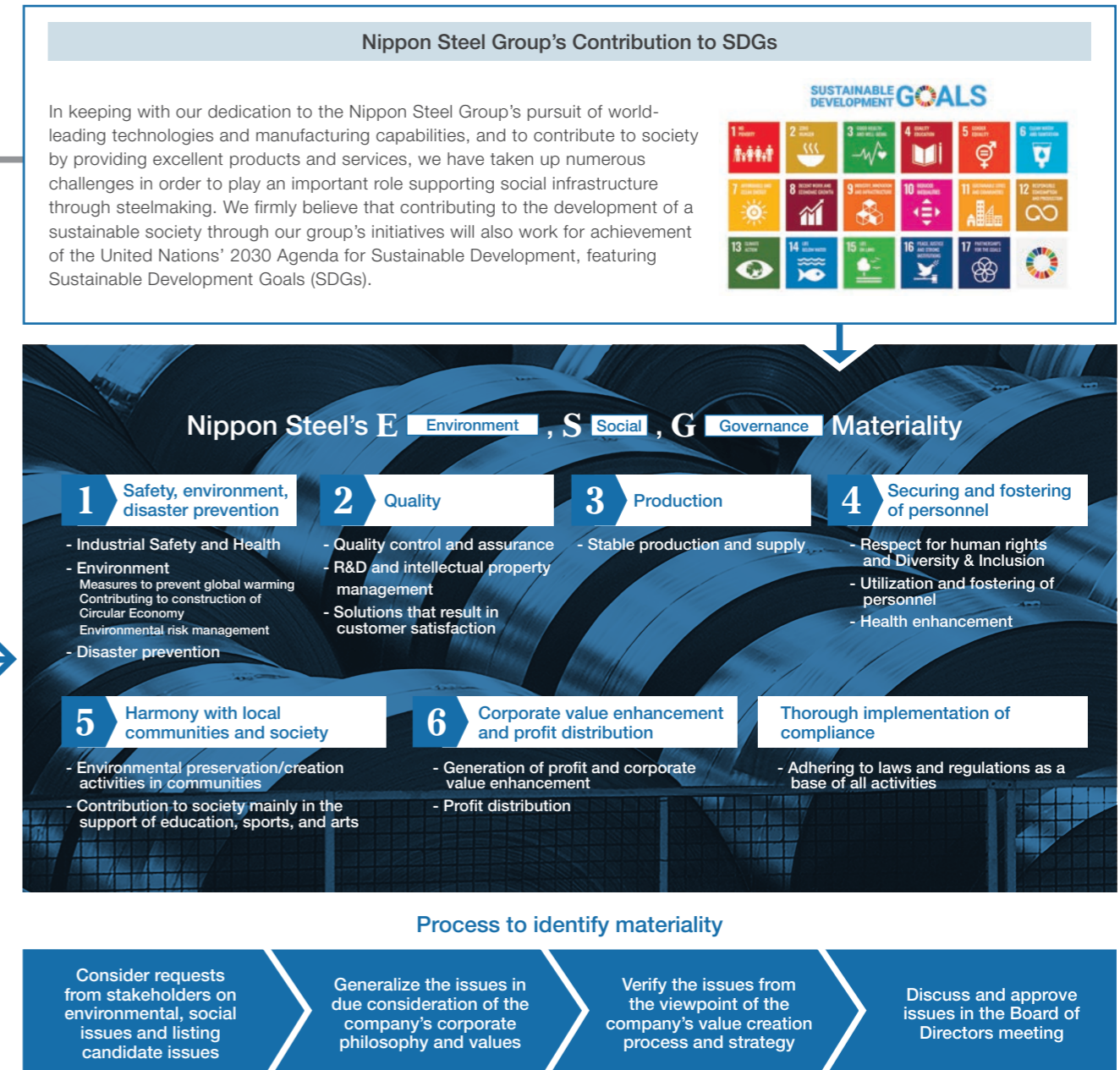
Materiality of ESG Issues

Nippon Steel recognizes that ESG initiatives are one of the priority issues and form the base that supports the very existence and growth of the company.

Among these initiatives we have identified our materiality in due consideration of requests from stakeholders, the corporate philosophy and values, as well as growth strategy.



Nippon Steel Corporation Group Code of Conduct [URL https://www.nipponsteel.com/company/philosophy/](https://www.nipponsteel.com/company/philosophy/)



Nippon Steel's Materiality

1 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 respect for human rights and

diversity & inclusion, as well as promotion of physical and mental wellness strength 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.

2 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.

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).

As our recent initiatives, we have played a leading role in solving various global environment-related challenges, including formulation of the Japan Iron and Steel Federation's long-term vision for climate change mitigation "A challenge towards zero-carbon steel"; calculation of environment impact based on the Life Cycle Assessment (LCA) to be adopted by the International Organization for Standardization (ISO) and the Japan Industrial Standards (JIS); and a proposal to promote the "Creation of Sea Forests" and "Blue Carbon" (the carbon captured and sequestered by oceans and coastal ecosystems). We are confident that such initiatives for raising

long-term corporate value will contribute to sustainable social development.

3 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 ESG initiatives. We will also contribute to society by providing excellent products and services, and distributing profit to employees, government, shareholders, and other stakeholders.

4 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.

Nippon Steel's ESG Materiality and KPIs

Concerning initiatives in ESG materiality, Nippon Steel steadily promotes their execution and follow-up by checking the Key Performance Indicators (KPI) to assess outcome, and strives to contribute to sustainable social development, as well as maintenance and improvement of our corporate value.

Materiality KPIs and status of major initiatives

SR : Sustainability Report 2021

Materiality			Key Performance Indicator (KPI)		Major Initiatives and Achievements in FY2020 (including some results in FY2019)			Page
1. Safety, environment, and disaster prevention								
(1) Safety and health			<ul style="list-style-type: none">Accident frequency rate of 0.10 or lessZero fatal accident		<ul style="list-style-type: none">Prevention and risk reduction of accidents, based on safety risk evaluationPromotion of disaster prevention aimed at prevention of repeated disasters (thorough adherence to the six company-wide compliance requirements and promotion of greater machine safety)Acquisition of ISO45001 for management systems of occupational health and safety (OH&S) to enhance safety level			<ul style="list-style-type: none">Accident frequency rate: 0.09Number of fatal accidents: 0 <p>P.71</p>
(2) Environment	1) Promotion of climate control measures	<div><div>Contribution by "Three Ecos"</div><div><ul style="list-style-type: none">Promotion of the Carbon Neutral Vision 2050 (CO₂ emission reduction)Implementation of "Eco Process"Enhancement of "Eco Products"Contribute with "Eco Solutions"</div></div>	<ul style="list-style-type: none">Target in 2030: 30% reductionVision for 2050: Carbon neutral	<ul style="list-style-type: none">March 2021: Announced the Nippon Steel Carbon Neutral Vision 2050, based on the results of the Zero-Carbon Steel Commission's review, and specific roadmap and technical issues were disclosed.April 2021: A "Zero-Carbon Steel Project" was established to promote the vision.			P.29-34	
			<ul style="list-style-type: none">JISF's Commitment to a Low-Carbon Society's CO₂ emission reduction target (down 3mn tons-CO₂ from Business As Usual (BAU) in FY2020 vs. 2005)	<ul style="list-style-type: none">Promotion of Eco Process (enhancement of energy efficiency)	<ul style="list-style-type: none">Down 3.30mn tons-CO₂ from BAU1 (JISF result in FY2019; achieved the FY2020 target one year ahead)	P.17		
			<ul style="list-style-type: none">Maintaining high-level effective use of energy	<ul style="list-style-type: none">Effective use of byproduct gas (coke oven gas, blast furnace gas etc.) and waste gas	<ul style="list-style-type: none">Use of byproduct gas: 100%Use of waste gas in steam generation: 61%In-house generated energy use in in-house power generation: 72%	P.49-50		
			<ul style="list-style-type: none">Promotion of adopting advanced energy-saving technology	<ul style="list-style-type: none">Adoption of high-efficiency power generation equipment and oxygen plant; regeneration burner in reheating furnace	<ul style="list-style-type: none">Investment cost for energy-saving: ¥4.4bn	SR P.42		
			<ul style="list-style-type: none">Supply of high-performance steel products to help reduce CO₂ emissions through use of their end products	<ul style="list-style-type: none">In the proposal of the next-generation vehicle structure concept "NSafe™-AutoConcept" (a body design solution that achieved a weight reduction of approximately 30%), the solution concept in the field of electrification vehicles and nextgeneration mobility was added, and the lineup was strengthened.Acquired the "Eco-Leaf" environmental labels for three products: tin, tin-free steel and laminate steel		P.82		
	2) Contribution to construction of a circular economy	<ul style="list-style-type: none">Realization of zero emissions within the companyRecycling of waste generated in society	<ul style="list-style-type: none">Reduction in final disposal amount: 263,000 tons (FY2025 target)	<ul style="list-style-type: none">Promotion of recycling of byproducts (slag, dust, sludge, etc.) in and out of the company	<ul style="list-style-type: none">Final waste disposal: 229,000 tons	SR P.33		
			<ul style="list-style-type: none">Establishment of a waste plastics recycling system to expand its collection volume	<ul style="list-style-type: none">Aggressive promotion of recycling treatment, according to the Chemical Recycling Act	<ul style="list-style-type: none">Packaging/container plastic waste treatment: 210,000 tons (equivalent to 31% of Japan's total plastic waste)	SR P.34		
			<ul style="list-style-type: none">NOx and SOx; Keep low-level emissionsMaintaining of lower discharge levels than voluntary targets in chemical substances VOC (volatile organic compounds): 1,106 tons/year (down 30% vs. FY2000)Benzene: 172 tons/year (voluntary target, along with the government target)	<ul style="list-style-type: none">Installment of equipment that reduces SOx and NOx emissions; shifting to low-sulfur fuel; adoption of low NOx regenerating burners	<ul style="list-style-type: none">SOx: 11mn Nm³NOx: 21mn Nm³	SR P.35		
				<ul style="list-style-type: none">Continual efforts based on the voluntary reduction plan	<ul style="list-style-type: none">VOC: 524 tonsBenzene: 75 tons	SR P.37		
			3) Promotion of environmental risk management	<ul style="list-style-type: none">Water environment preservation	<ul style="list-style-type: none">Recycling of water; high-level stable use of recycled water	<ul style="list-style-type: none">Water treatment, recycling and reuse of freshwater used by the company	<ul style="list-style-type: none">Use of recycled water: app. 90%	P.49-50
(3) Disaster prevention	1) Elimination of disaster risks and group-wide sharing of effective measures	<ul style="list-style-type: none">Zero serious disaster-related accident	<ul style="list-style-type: none">Prevention of recurrence via corporate-wide implementation of measures against risks emerged from the accidentsRisk assessment to detect new disaster risks; execution of measures from hard/soft aspects to reduce risk and control residual riskSelf-monitoring (auditing) by those in charge of disaster prevention in steelworks; and management by the head office management through interviews	<ul style="list-style-type: none">Serious disaster-related accidents: 0	P.72-73			
2. Quality								
(1) Quality control and guarantee			<ul style="list-style-type: none">Systemization and automation aimed at more credibility in testing and inspection		<ul style="list-style-type: none">Automatic input of inspection results from testing/analytical devices and measurement devices			P.73
(2) R&D and intellectual property management			<ul style="list-style-type: none">Strategic R&D, aimed at sustainable growthProtection and use of intellectual property		<ul style="list-style-type: none">Creation of the Digital Innovation Division as a planning division to tackle company-wide issues of utilization of information telecommunication technologies (ICT) (April 2020)The ninth consecutive year of being named as one of the world's most innovative companies in the Top 100 Global Innovator 2021; award in intellectual property and patent areas			<ul style="list-style-type: none">R&D expenditures: ¥65.3bn (consolidated)Number of patents: app. 32,000 (14,000 in Japan and 18,000 overseas) <p>P.51-54</p>
(3) Solution that result in customer satisfaction			<ul style="list-style-type: none">Number of awards from customers, government, and institutions		<ul style="list-style-type: none">Received the 53rd Ichimura Prize Industry for Distinguished Achievement; the 2019 MEXT Minister's Award "Prize for Science and Technology (Development Division)"; the 47th Iwatani Naoki Memorial Award			<ul style="list-style-type: none">Number of awards from customers, government, and institutions: 9 <p>P.77-82 SR P.64</p>
3. Production								
(1) Stable production and supply			<ul style="list-style-type: none">Initiatives for more stable production and supply (hardware and software)		<ul style="list-style-type: none">Relining of the #2 blast furnace of the Muroran Works; operation of #6 CGL of the East Nippon Works Kimitsu AreaStandardization of operational skills of veteran workers and active use of experts			SR P.30,58
4. Human resources, and diversity & inclusion								
(1) Respect for human rights								P.55-56
(2) Diversity & inclusion			<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 higherHealth management with the aim of maximizing employees' performance up to 65 years of age		<div>Human Resources, Diversity & Inclusion</div> <div> P.55-60</div>			<ul style="list-style-type: none">Number of women in managerial positions: 45 (in-house employment in FY2021)Ratio of women in hiring: 31% of office staff; 12% of operators; 17% in overall (FY2019-2021 average)The ratio of paid holidays taken: 60% (FY2020) <p>P.57-59</p>
(3) Human resource development			<ul style="list-style-type: none">Promotion of measures to develop human resources					<ul style="list-style-type: none">Hours of training and education: 780,000 hours/year (27 hours/ person, year) <p>P.59-60</p>
5. Harmony with local communities and society								
(1) Environmental preservation/creation activities in communities			<ul style="list-style-type: none">Green space development to contribute to the local environment		<ul style="list-style-type: none">Tree planting activities by new employees in steelworksFunding for green space development and maintenance			<ul style="list-style-type: none">Greenery space: 830haExpenses for green space development and maintenance: ¥2.6bn <p>P.65 SR P.39,42</p>
(2) Activities mainly in the support of education, sports, and arts			<ul style="list-style-type: none">Ongoing promotion of hosting plant visitsContinual execution of corporate philanthropy in the support of music via Nippon Steel Arts Foundation		<ul style="list-style-type: none">Proactively accepting plant visits by shareholders, investors, and junior high/elementary school studentsSupport of music activities via presentation of Nippon Steel Music Awards and operation of the Kioi Hall			<ul style="list-style-type: none">Number of plant visitors: app. 130,000 (FY2019 results; almost no implementation in FY2020 due to the COVID-19 pandemic) <p>P.65 P.66</p>
6. Corporate value enhancement and profit distribution								
(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)					
(2) Profit distribution	1) Payment of salary to employees of the company and related/subcontracting companies	<ul style="list-style-type: none">Bonus payment amountRevised amount of salary (Revision in the personnel management system in April 2021 in line with an extension of the retirement age to 65 years; plan to disclose the actual results from FY 2022)		<div>Management of cash flow and balance sheet</div> <div> P.61-64</div>			<ul style="list-style-type: none">ROS of 2.3%ROE of ~1.2%Base bonus amount: ¥1.05mnTax payment (consol.): ¥ 26.7bnDividend per share: ¥10/year <p>P.61-64 P.83-88 P.103-104 Fact Book "Wages and Bonuses" section</p>	
	2) Appropriate tax payment	<ul style="list-style-type: none">Tax payment (consol.)		<div>Operating and financial performance</div> <div> P.83-88</div>				
	3) Dividend payment to shareholders	<ul style="list-style-type: none">Dividend payment according to the dividend policy of about 30% in consolidated payout ratio (FY2025 plan target)						
Thorough implementation of compliance								
Adhering to laws and regulations as a base of all activities					<div>Corporate Governance</div> <div> P.89-102</div>			P.89-102

*BAU (Business as usual)

1 Mother mills in Japan as a source of advanced technology and a strategic global expansion

Global crude steel production capacity

Approx. 85 mn tons/year
(March 2021)

Tangible fixed asset book value

Approx. ¥2.9 tn
(March 2021)

The Nippon Steel Group's annual crude steel production capacity is approximately 54 million tons in Japan and 16 million tons outside Japan. The Group's domestic steel product capacity domestic totals approximately 34 million tons/year.

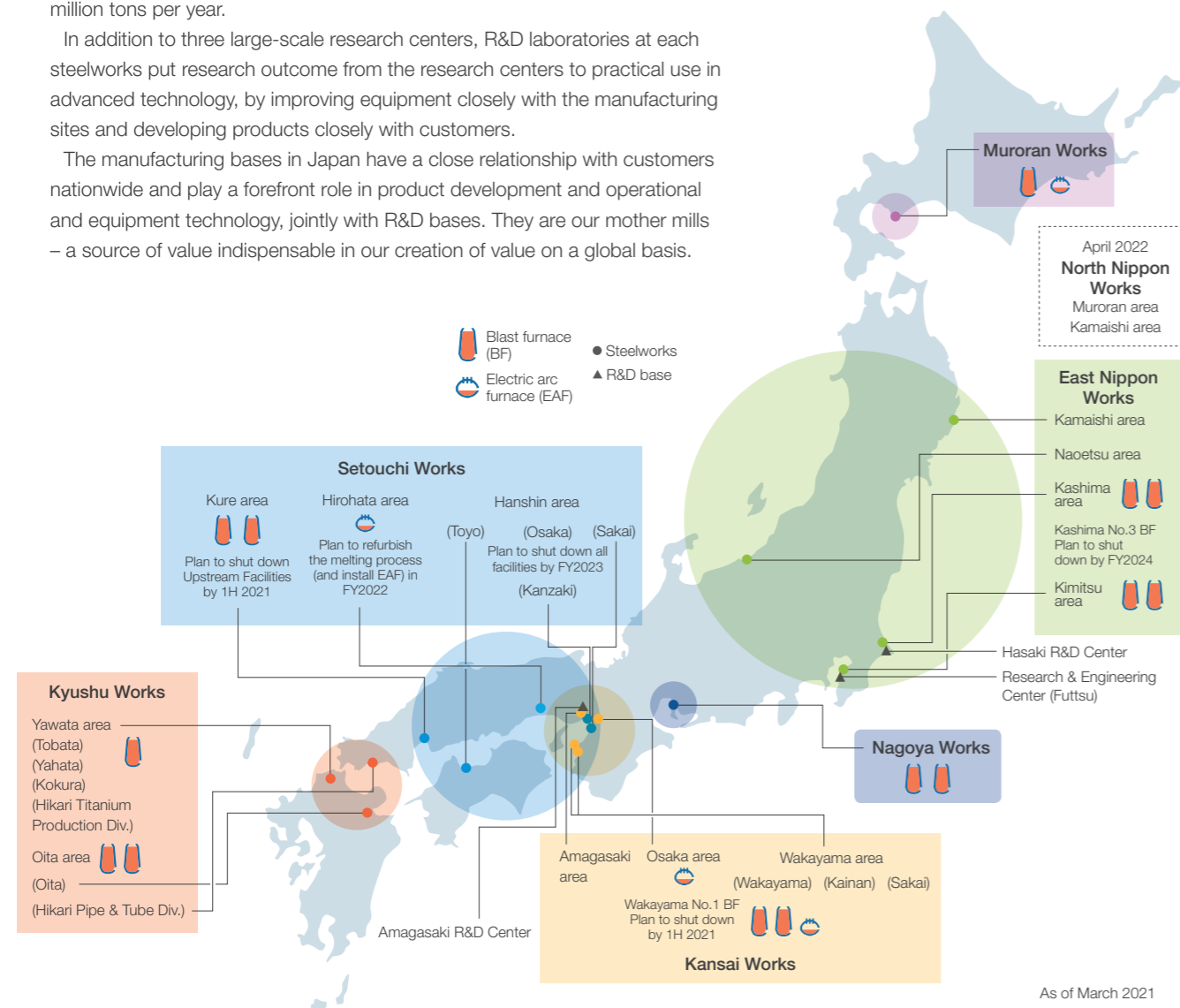
Manufacturing bases in Japan

◆ Nippon Steel's strength

In Japan, six steelworks of Nippon Steel Corporation has 14 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. Domestic crude steel production capacity totals about 54 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.

The manufacturing bases in Japan have a close relationship with customers nationwide and play a forefront role in product development and operational and equipment technology, jointly with R&D bases. They are our mother mills – a source of value indispensable in our creation of value on a global basis.



As of March 2021

P.69

Manufacturing bases outside Japan

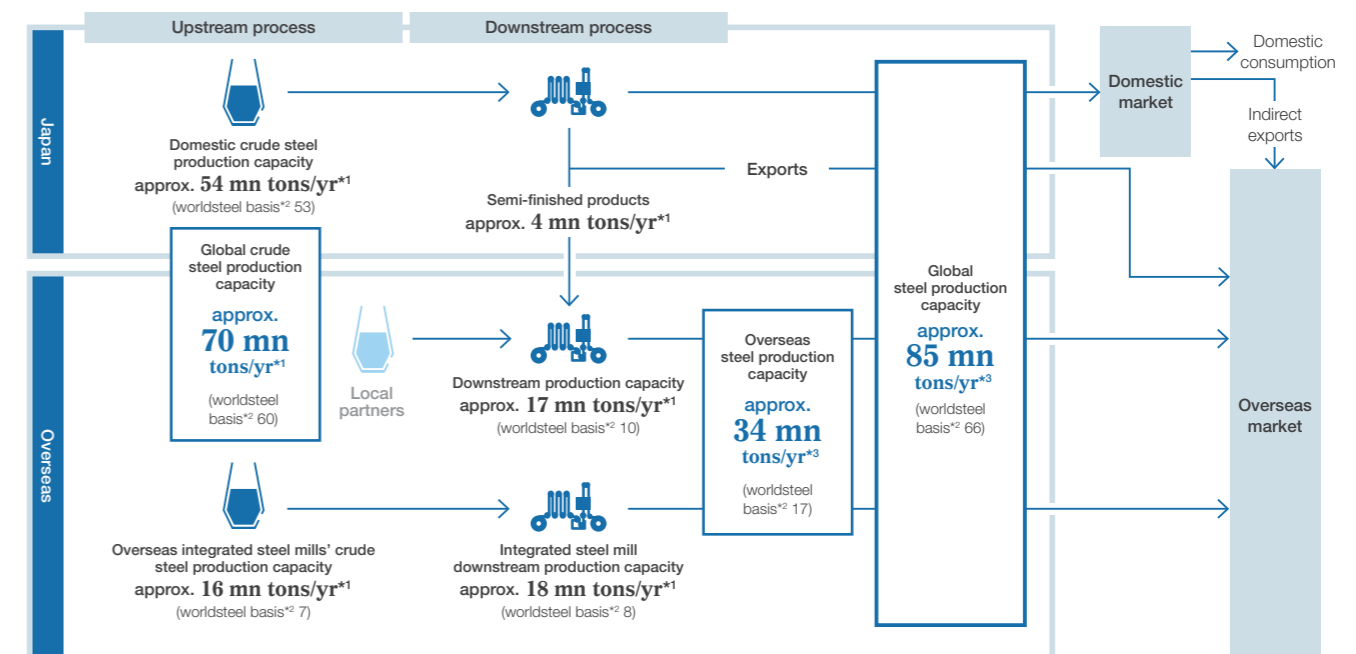
Leveraging our strengths accumulated in the mother mills in Japan, we have developed overseas bases in production and sales, ahead of our peers, in order to support our Japanese customers' overseas expansion and to meet overseas growing demand.

At present, the Group's overseas crude steel production capacity is approximately 16 million tons per year and its steel product capacity, approximately 34 million tons.

P.69-70

Global Production Framework

◆ Nippon Steel's strength



As of March 2021

*1: Simple sum of crude steel production at full capacity of 1) companies with a 30% or more stake (incl. USIMINAS), subject to World Steel Association's crude steel production statistics; and 2) an equity method affiliate with less than 30% stake, to which Nippon Steel plays a significant role in supply of materials (AGIS). Excl. double counting due to intra-group supply of original sheet (STP) *2: worldsteel basis: Among companies stated in 1, calculation at full capacity for the parent company and subsidiaries with more than 50% stake; at pro-rata capacity for companies with a 50% or less stake *3: Excl. double counting in USIMINAS and UNIGAL from the above-stated 1

Overseas steel production capacity *1 (by region and field)

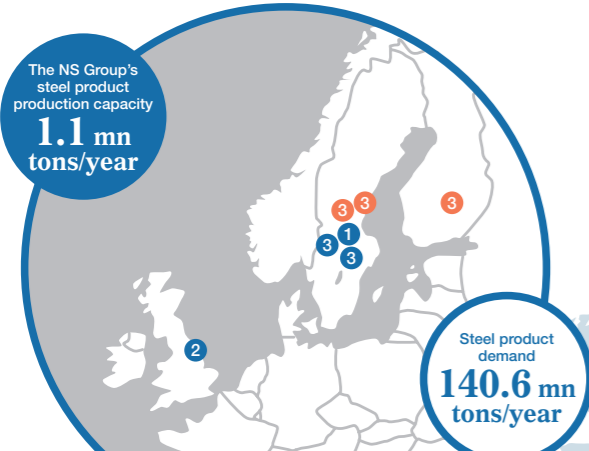
(10,000 tons/year)										
	Integrated steel mill	Automotive				Energy & Resources	Infrastructure	Home appliances, containers, etc.	Downstream processing capacity ^{*3}	Total
		Flat products	Bars & wire rods	Pipes & tubes	Crankshafts ^{*2}					
Overseas total	1,800	1,050	170	45	15	45	440	125	1,700	3,400
ASEAN		148	13	25			271	43 ^{*4}	470	470
China		264	9	5	4			80	360	360
India	984	60	24 ^{*5}	2	4				70	1,050
Middle East						43	40		80	80
North/Central America	20	472	8	11	8	1	125 ^{*6}		600	620
South America	690	103 ^{*7}							100	690 ^{*8}
Europe	110		113 ^{*9}						5	115

As of March 2021

*1: Companies subject to World Steel Association's crude steel production statistics (incl. USIMINAS) and AGIS; *2: Calculated by basic unit conversion

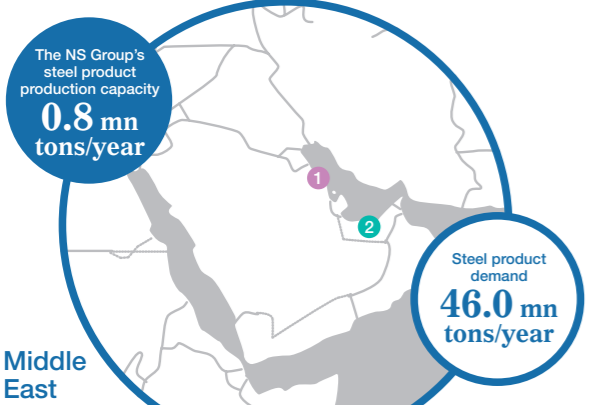
*3 Excl. double counting with integrated mills (Mahindra Sanyo, Standard Steel, and OVAKO) and double counting of a company that receives intra-group supply of original sheet (STP)

*4: Incl. STP 0.24 MMT/Y; *5: Mahindra Sanyo 0.24 MMT/Y; *6: Incl. Standard Steel 0.20 MMT/Y; *7: Incl. UNIGAL 1.03 MMT/Y; *8: Excl. double counting of USIMINAS and UNIGAL 1.03 MMT/Y; *9: Incl. OVAKO 1.10 MMT/Y



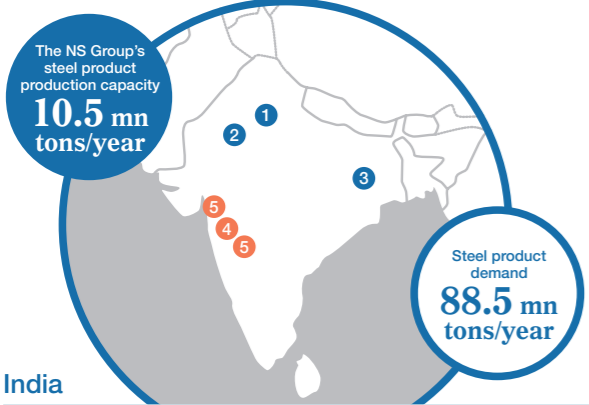
Europe

Establishment	Company	Sector	Product	Capacity (10 thousand tons/year)	Investment ratio;partner(%)	
1	2009	Suzuki Garphyttan	Automotive	Bars & wire rods	3	100
2	2014	KTS Wire	Automotive	Bars & wire rods	1	100
3	2018	OVAKO	Integrated steel mill (Automotive)	Bars & wire rods	110	100

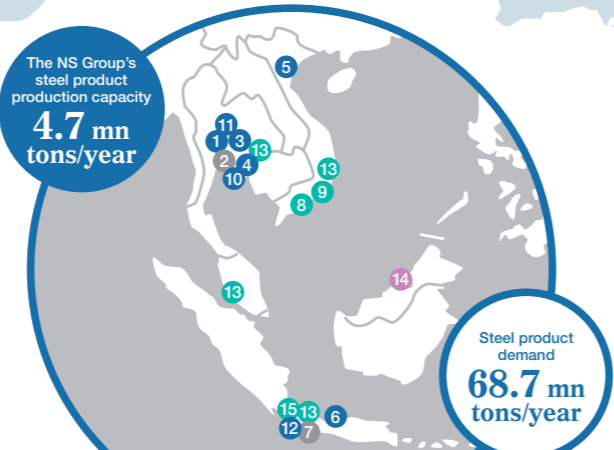


Establishment	Company	Sector	Product	Capacity (10 thousand tons/year)	Investment ratio:partner(%)
1 1978	NPC	Energy	Pipes & tubes	43	<div><div></div></div> 52
2 2005	AGIS*	Infrastructure	Flat products	40	<div><div></div></div> 20

* Companies to which Nippon Steel plays an important role in supply of semi-finished products are added in the Group's worldsteel-based steel product production capacity.



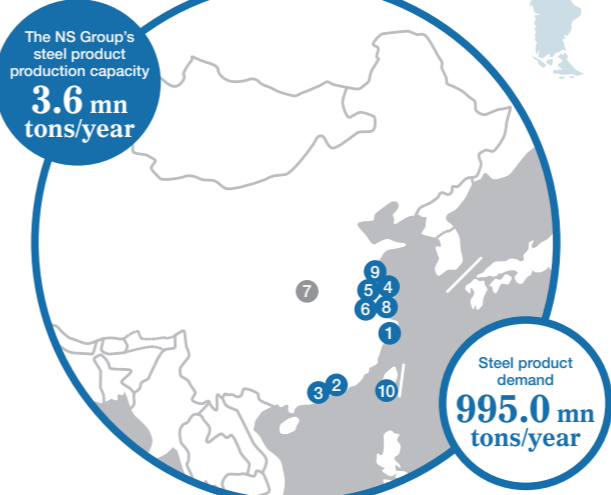
Establishment	Company	Sector	Product	Capacity (10 thousand tons/year)	Investment ratio;partner(%)		
1	2010	SMAC	Automotive	Crankshafts	2.2 mn units	40	
2	2010	NSPI	Automotive	Pipes & tubes	2	99	
3	2012	JCAPCPL	Automotive	Flat products	60	49	Tata Steel
4	2012	Mahindra Sanyo	Integrated steel mill (Automotive)	Special Steel	24	57	Mahindra & Mahindra
5	2019	ArcelorMittal Nippon Steel India	Integrated steel mill	Flat products Plates Pipes & tubes	960	40	ArcelorMittal



ASEAN

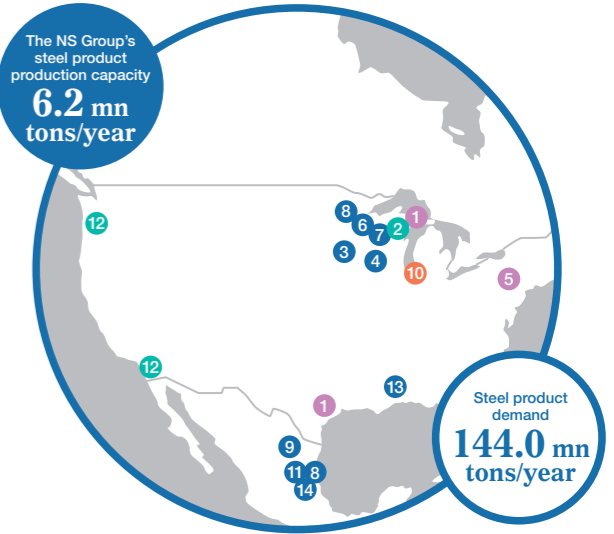
Establishment	Company	Sector	Product	Capacity (10 thousand tons/year)	Investment ratio;partner(%)	
1 1963	NSPT	Automotive	Pipes & tubes	16	58	
2 1988	STP*	Containers	Tinplates	27	90	
3 1995	NS-SUS	Automotive	Flat products	100	80	
4 1997	NSSPT	Automotive	Bars & wire rods	10	67	
5 1997	VNSP	Automotive	Pipes & tubes	5	60	
6 2005	INSP	Automotive	Pipes & tubes	4	90	
7 2006	LATINUSA	Containers	Tinplates	16	35	Krakatau
8 2009	CSVC	Infrastructure	Flat products	120	30	CSC
9 2010	NPV	Infrastructure	Pipes & tubes	6	76	
10 2011	TSW	Automotive	Bars & wire rods	2	51	
11 2012	TPP	Automotive	Bars & wire rods	1	80	
12 2012	KNSS	Automotive	Flat products	48	80	Krakatau
13 2013	NSBS	Infrastructure	Flat products	96	50	NS BlueScope
14 2015	VAM*BRN	Energy	Pipes & tubes		60	Vallourec
15 2017	KOS	Infrastructure	Construction products	50	80	Krakatau

* Production capacity of STP, 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. However, the company's capacity is excluded from the regional total due to semi-finished products being supplied by NS-SUS.



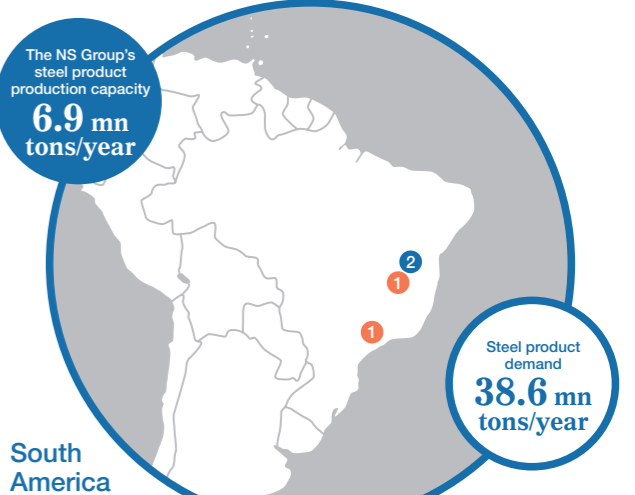
China

Establishment	Company	Sector	Product	Capacity (10 thousand tons/year)	Investment ratio;partner(%)	
1 2001	Ningbo Sanyo Special Steel Products Co., Ltd.	Automotive	Bars & wire rods		89	
2 2003	Huizhou Nippon Steel Forging	Automotive	Crankshafts	2.1 mn units	60	
3 2003	Nippon Steel Pipe Guangzhou	Automotive	Pipes & tubes	2	66	
4 2004	BNA	Automotive	Flat products	262	50	Baowu Steel Group
5 2004	Wuxi Nippon Steel Pipe	Automotive	Pipes & tubes	2	71	
6 2006	Suzuki Garphyttan	Automotive	Bars & wire rods	1	100	
7 2011	WINSteel	Containers	Tinplates	80	50	Baowu Steel Group
8 2013	NSCh	Automotive	Bars & wire rods	4	48	
9 2013	Nippon Steel Nisshin (Nantong) High-Tech Sheet Co., Ltd.	Automotive	Flat products	1	90	
10 2016	Taiwan Nippon Steel Stainless Precision	Automotive	Flat products	1	51	



North/Central America

Establishment	Company	Sector	Product	Capacity (10 thousand tons/year)	Investment ratio:partner(%)	
1 1984	VAM USA	Energy	Pipes & tubes		<div><div></div></div> 34	Vallourec
2 1984	Wheeling-Nippon Steel	Infrastructure	Flat products	60	<div><div></div></div> 100	
3 1989	NSPA	Automotive	Pipes & tubes	8	<div><div></div></div> 80	
4 1990	ICI	Automotive	Crankshafts	4 mn units	<div><div></div></div> 80	
5 1992	PEXCO	Energy	Pipes & tubes	1	<div><div></div></div> 30	
6 1996	IPF	Automotive	Bars & wire rods	4	<div><div></div></div> 100	
7 2008	NSI	Automotive	Crankshafts		<div><div></div></div> 60	
8 2009	Suzuki Garphyttan	Automotive	Bars & wire rods	2	<div><div></div></div> 100	
9 2010	Tenigal	Automotive	Flat products	40	<div><div></div></div> 49	Ternium
10 2011	Standard Steel	Integrated steel mill (Infrastructure)	Railway wheels	20	<div><div></div></div> 65	
11 2012	MNSP	Automotive	Pipes & tubes	2	<div><div></div></div> 74	
12 2013	NSBS	Infrastructure	Flat products	44	<div><div></div></div> 50	NS BlueScope
13 2014	AM/NS Calvert	Automotive	Flat products	430	<div><div></div></div> 50	ArcelorMittal
14 2015	SMM	Automotive	Bars & wire rods		<div><div></div></div> 91	



Establishment	Company	Sector	Product	Capacity (10 thousand tons/year)	Investment ratio;partner(%)	
1	1958	USIMINAS	Integrated steel mill	Flat products Plates	690	31 ¹ Ternium
2	1999	UNIGAL ^{*2}	Automotive	Flat products	103	30 Usiminas

*1: Stock ownership with voting right
*2: Excluding UNIGAL's capacity from the regional total due to semi-finished products being supplied by USIMINAS

The steel product demand for each region is assumed results for 2020 by the World Steel Association as of April 2021.

2 The world's top-class energy efficiency and efficient use of resources

ESG Materiality 1-(2)-②
Contribution to construction of a circular economy

Iron ore 48.77 million tons/year
FY2020 Performance

Coking coal 24.37 million tons/year
FY2020 Performance

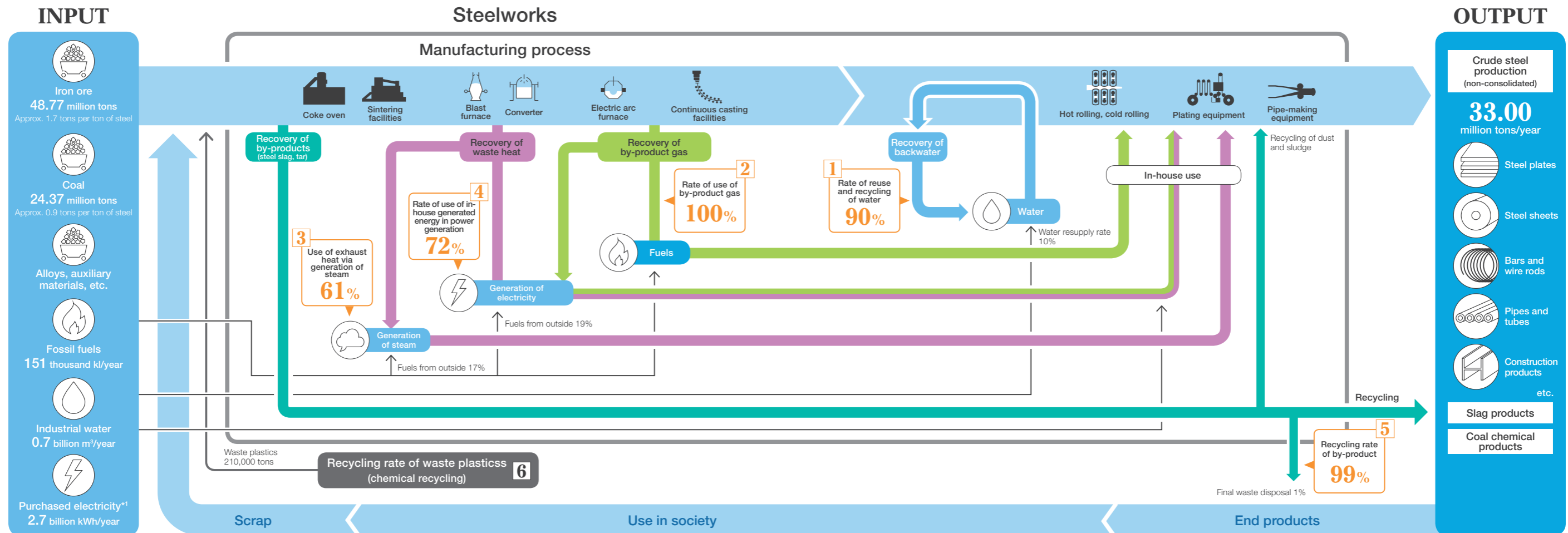
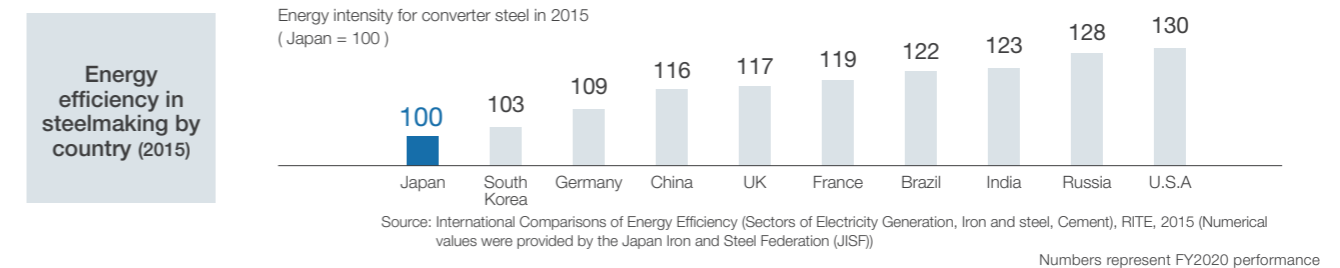
Industrial water 670 million m³/year
FY2020 Performance

Nippon Steel strives to efficiently utilize limited resources and energy at every stage of operations. Through this Eco Process approach we have achieved the world's top-class energy efficiency and reduction in environmental impact and cost for a steelmaker.

The world's top-class energy efficiency

◆ Nippon Steel's strength

Diverse efficient use of efforts has enabled the Japanese steel industry, including Nippon Steel, to achieve significant energy saving and the world's top-class energy efficiency at present.



*1 Purchased electricity (kWh) excludes electricity purchased from Cooperative Thermal Power Companies.

Efficient use of resources

1 Water resources

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

4 Electricity

Nippon Steel itself generates 91% of the electricity it uses at steelworks, 72% of which is from internally generated energy sources such as exhaust heat and byproduct gases. Toward the way to low-carbon power generation, we will consider highly efficient use of facilities and switching to other fuel sources.

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.

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.

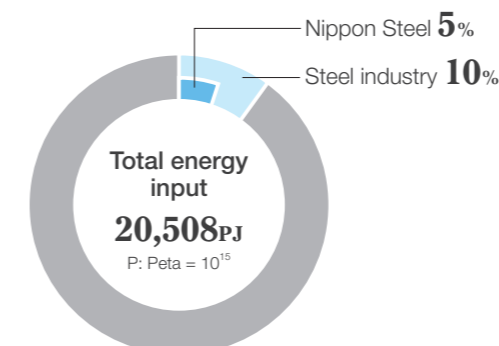
3 Use of exhaust heat

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. In fiscal 2020, the volume of waste heat recovery steam decreased mainly due to shutdowns of coke ovens and related facilities stemming from a substantial production cut.

6 Recycling of waste plastics

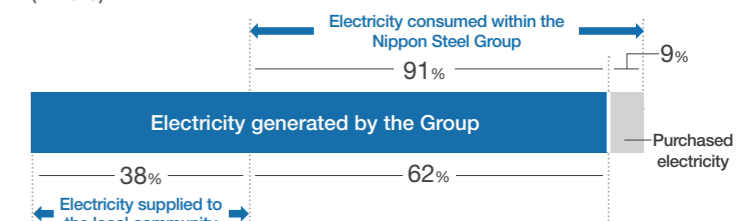
Nippon Steel recycles 100% of waste plastic containers and packaging that are collected from households, via a chemical recycling method using a coke oven. The collected waste amounts to approximately 0.2 million tons per year, which is equivalent to about 30% of household waste plastic containers and packaging in Japan.

Nippon Steel's share in Japan's primary energy supply (FY2019)



Source: "General Energy Statistics" by the Agency for Natural Resources and Energy; Japan Iron and Steel Federation (JISF)

Nippon Steel Group's*2 Electricity Supply and Demand Balance (FY2020)



The Nippon Steel Group internally generates 91% of electricity consumed, and supplies 38% of its generated electricity to society.

*2 Including Cooperative Thermal Power Companies and related electric furnace companies

3 R&D activities and use of ICT – sources of value creation and competitiveness

R&D expense **¥65.3 bn/yr**
FY2020 Results

R&D staff **Approx. 800**
2021.3E (non-consolidated)

Patents **Approx. 14,000**
Japan 2021.3E (non-consolidated)

Overseas **Approx. 18,000**
2021.3E (non-consolidated)

Nippon Steel has identified “strategic R&D, aimed at sustainable growth” and “protection and use of intellectual property” as a part of materiality. Use of advanced IT in business has also been identified as an important element to enhance competitiveness.

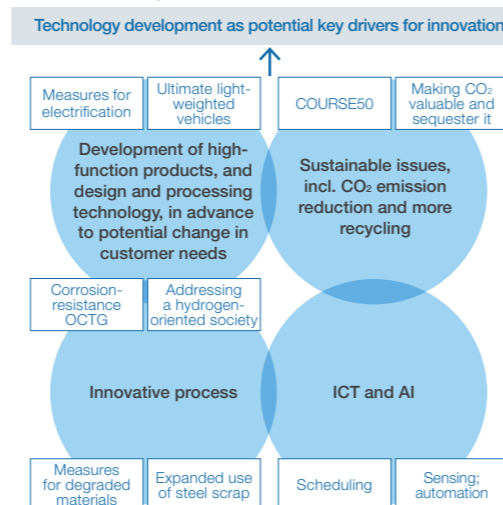
Research & development

ESG Materiality 2-(2)
R&D and intellectual property management

▶ Top-level R&D resources among world steelmakers

Nippon Steel has approximately 800 researchers (non-consolidated basis) working on steel-related projects. No other steel company in the world has such a large research staff. This human resource is allocated according to priority and each project is carried out according to a road map which sets forth milestones, goals, and returns. Five major areas of development that our research emphasizes and that foresees potential change in customer needs are 1) CO₂ emissions reduction measures; 2) response to challenges of sustainability issues, such as expanded recycling; 3) development of high-function products, and related design and processing technology; 4) innovative process development and 5) use of advanced ICT and artificial intelligence (AI). We are resolved in our determination to develop technology which can become key drivers for zero-carbon steel and other innovations, and we are also resolved to continue to lead the world in steel technology in the future.

◆ Nippon Steel's strength



▶ R&D organization

Nippon Steel's approximately 800 R&D employees work in three core research centers – Research & Engineering Center (Futtsu in Chiba Prefecture), Amagasaki R&D Center (Amagasaki in Hyogo Prefecture), and Hasaki R&D Center (Kamisu in Ibaraki Prefecture) – as well as in the Plant Engineering and Facility Management Center (Head Office) and R&D laboratories at steelworks across Japan. They collaborate to ensure integrated R&D activities that encompass basic and fundamental research, application development and engineering.

In April 2018, a new R&D unit was established which is central to development of materials and products that respond to steel-user needs for flat product (among other products), and their corresponding advanced application technology development and solutions. We also established the Intelligent Algorithm Research Center which is engaged

in enhancing our research on use of advanced IT. The Nippon Steel Group's top-class researchers in this field have been assigned to this new facility, supporting a part of the DX strategy.

Our R&D capabilities feature six strengths:

1) comprehensiveness, facilitated by the integration of R&D and engineering, which we call Research & Engineering (RE), and speed of development; 2) an R&D network having locations near customers; 3) integrated solutions enhanced by Group companies' products and technologies; 4) the ability to address environmental and energy-related concerns with solutions based on steelmaking process technology; 5) collaboration between industry and academic institutions, overseas alliances, and joint research with customers; and 6) an extensive portfolio of fundamental and platform technologies.

Strengths in R&D

Comprehensiveness and speed of development, facilitated by the integration of R&D and engineering

R&D network having locations near customer locations

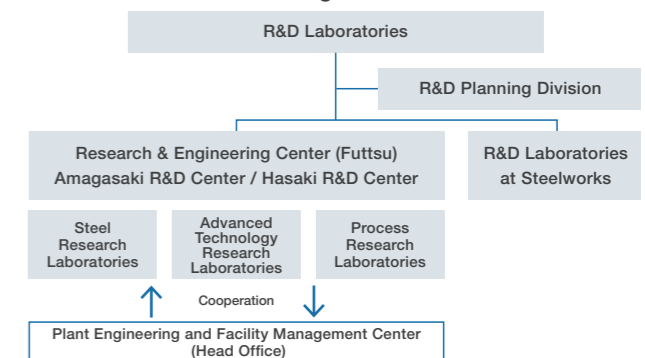
Integrated solutions enhanced by Group companies' products and technologies

Ability to address environmental and energy-related concerns with solutions based on steelmaking process technology

Collaboration between industry and academic institutions, overseas alliances, and joint research with customers

Extensive portfolio of fundamental and platform technologies

R&D organization



Intellectual property

ESG Materiality 2-(2)
R&D and intellectual property management

Nippon Steel secures the most advanced newly created technologies and other proprietary technologies, including zero-carbon steel technologies, as intellectual property (IP) and utilizes them according to its medium- to long-term IP strategy. The Intellectual Property Division collaborates with the business divisions and the R&D divisions to support the

Company's global strategies. We have been focusing on enriching and accumulating IP as “an effective means of leverage to compete with others anywhere in the world” both in terms of quality and quantity of products and have also been enhancing the strategic utilization of our IP.

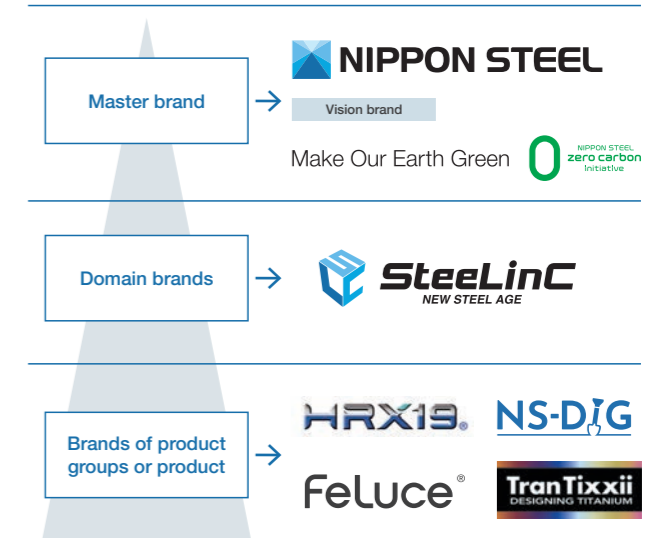
Specific efforts

- Support the creation of new IP**
 - Plan IP strategy that contributes to the business strategy
 - Build the IP portfolio and plan its strategy
 - Enrich the function of establishing rights for inventions, discoveries, and IP (recognized by being named a Clarivate Top 100 Global Innovator for a ninth consecutive year by Clarivate Analytics)
- Enhance the protection and utilization of IP**
 - Use patents granted overseas as a means to differentiate products
 - Establish brand strategies
 - Make the code of conduct well known internally for safeguarding business secrets
 - Strategically use IP in global business and alliances
 - Strictly deal with counterfeit products as well as any violation and illegal use of our corporate name, brands, IP, and other assets

Strategic establishment of brand raising corporate value

We use **NIPPON STEEL** as a master-brand to present us as a global corporation. On the occasion of announcing the Nippon Steel Carbon Neutral Vision 2050, we adopted an activity logo as our **0 NIPPON STEEL zero carbon initiative** to represent our initiatives concerning Zero-Carbon Steel.

We are also strategically establishing brand products with strong user-oriented messages and appealing power so that our customers can accurately recognize the features and values of the products. The brands include 1) HRX19™ stainless steel tube for use in high-pressure hydrogen stations (that contribute to decarbonization); 2) NS-DIG™, a platform for data analysis and AI development, to help promote DX; and 3) FeLuce™ hairline-finished electroplated steel sheet, which received the Good Design Award 2020 for its high visual attractiveness.



Use of ICT

Information and Communication Technology (ICT) and Digital Technology are rapidly becoming indispensable in people's lives. Nippon Steel believes that they also have become a critical element that encourages business innovation and affects corporate competitiveness. We are therefore focusing on how to make best use of ICT.

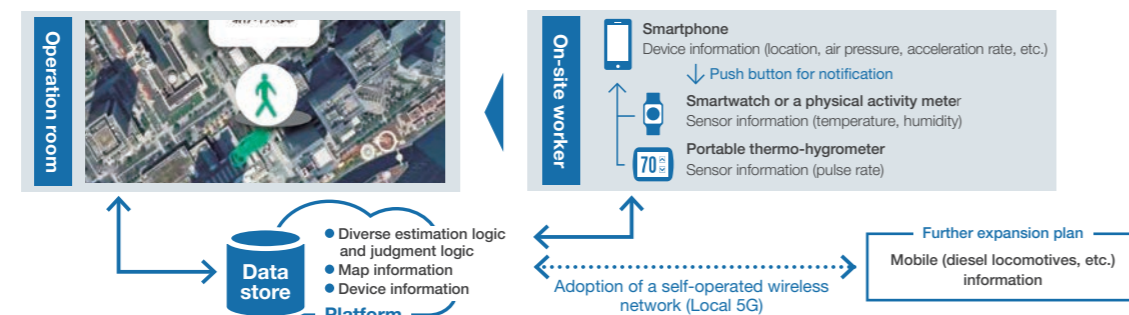
► Integration of ICT departments

The ICT System Planning Departments, each of which had belonged to each works, were integrated on April 1, 2021 with the objective to promote digital innovation as advocated in the management strategy, and for optimal construction, maintenance, and operation of systems. Accordingly, the AI Solution Section was established to expand and improve AI and optimization technologies, as well as advanced ICT that supports digital innovation, across Nippon Steel. The now integrated system division keeps abreast of the ever-evolving

► ICT realizes a new workstyle

We are establishing a Smart Platform, which enables us to 1) make communication anytime, anywhere, with anyone, 2) use ICT, including the Robotic Process Automation (RPA) and the Self Business Intelligence (BI), to reduce to a bare minimum our employees' primary and incidental tasks at their work stations, and 3) support their intelligent work.

Basic to the Smart Platform is use of mobile devices (i.e., smartphones, tablets) in all working environments. We began distribution of mobile devices to on-site workers in fiscal 2017 and have almost completed it and better and more efficient



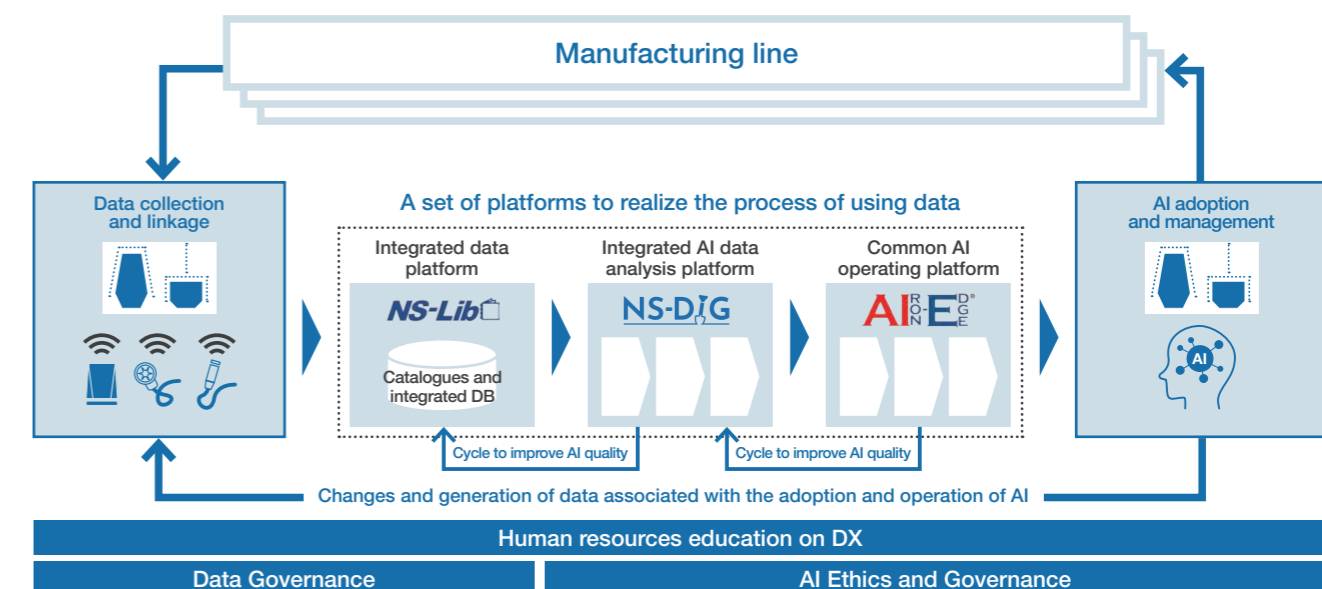
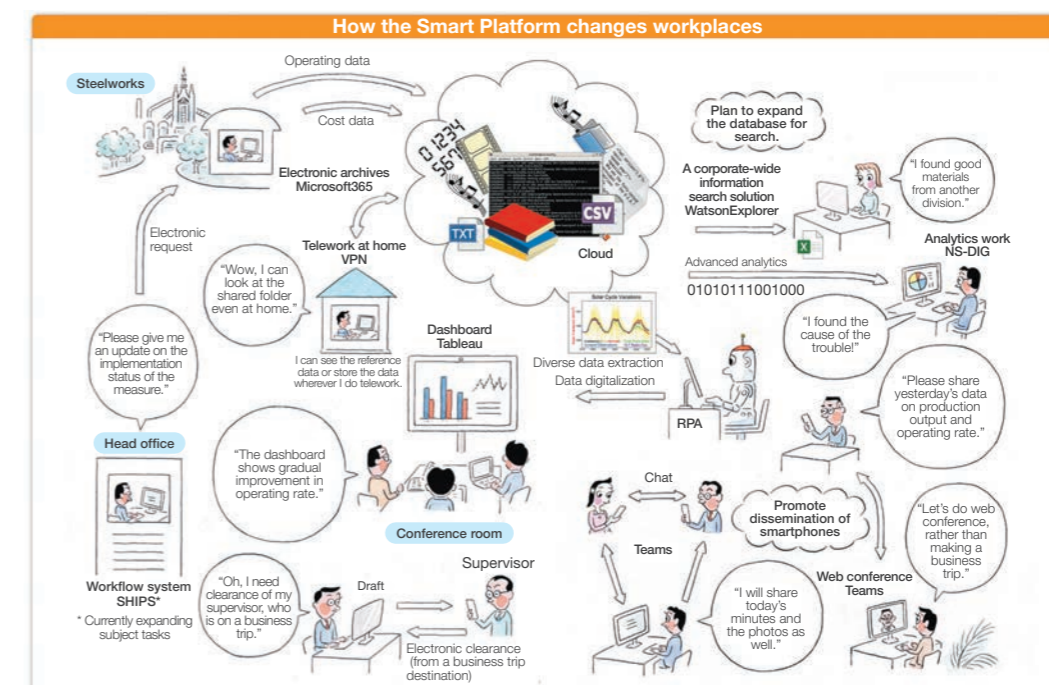
In the case of distributing mobile devices to office staff and engineers, in addition to on-site workers, we are accelerating efforts to complete it in the head office within the current fiscal 2021 and at all steelworks by early fiscal 2022. We are thus promoting efficient operation by use of telework as a new workstyle and for enhanced functionality. As an internal network, based on the Zero Trust concept has already been set up, in addition to expanded adoption of web conferences and electronic contract and enhanced workflow systems, we were able to smoothly introduce working at home after the COVID-19 outbreak and have since been seamlessly continuing business.

Going forward, we intend to create an integrated data platform for collection and management of data, which is a key to digital innovation. Our goal is to enable all employees to

perform their "strength in connecting," and "strength in maneuvering" data at best. We are establishing an environment where all our employees can access information needed accurately at the right time. NS-DIG™, a platform for comprehensive data analysis, will also be introduced to support intelligent production. In addition, KAMONOHASHI™, NSSOL's AI development tool, will be adopted so that even our Citizen data scientists who are not system experts can develop AI models. Further, AIRON-EDGE™, a base of edge computing, will facilitate easy adoption of AI models at worksites, by use of the container technology. These platforms will allow us to realize digital innovation at an early stage. We are hence promoting efficient development, use, and optimization of the information systems across the Company.

safety checks have become possible. The instant input and output of actual site/product information is leading to greater assurance of stable quality and stable operation and at the same time raise yield and productivity by preventing trouble. Moreover, using the on-site workers' feedback and suggestions on new ways of using the devices, smarter production sites are being created. At Muroran Works, we have started verification of a self-operated wireless network, in anticipation of adopting local 5G communication.

perform their "strength in connecting," and "strength in maneuvering" data at best. We are establishing an environment where all our employees can access information needed accurately at the right time. NS-DIG™, a platform for comprehensive data analysis, will also be introduced to support intelligent production. In addition, KAMONOHASHI™, NSSOL's AI development tool, will be adopted so that even our Citizen data scientists who are not system experts can develop AI models. Further, AIRON-EDGE™, a base of edge computing, will facilitate easy adoption of AI models at worksites, by use of the container technology. These platforms will allow us to realize digital innovation at an early stage. We are hence promoting efficient development, use, and optimization of the information systems across the Company.



► Cybersecurity

Cybersecurity is becoming ever more important in the new workstyle using ICT: Information is exchanged in all different forms, in all kinds of situations and fields. As teleworking becomes a part of normal business life, mobile devices can all too easily create a torrential flow of data, and that data is stored and analyzed by using the cloud, we find it important to provide a reliable cybersecurity environment for all employees. We are therefore offering continuous e-learning opportunities on security, and training sessions on targeted attack e-mails, to promote employees' enhanced IT literacy and resultant sensitivity to cybersecurity. Moreover, in addition to the conventional

centralized cybersecurity measures, we are implementing the latest security measures that incorporate the Zero Trust concept to always verify security before being connected.

Cybersecurity of the entire Nippon Steel Group must also be ensured. The Nippon Steel Group - Computer Security Incident Response Team (NSG-CSIRT) is steadily increasing the number of member companies to 17 as of June 2021. We are also enhancing cybersecurity measures of our overseas Group companies and promoting enhanced IT literacy of overseas employees through education programs and training sessions, to ensure strong cybersecurity for the entire corporate Group.

4 Initiatives for human resources development, and diversity & inclusion

Number of employees (consol.) **106,226**
March 31, 2021

Number of employees (non-consol.) **29,579**
March 31, 2021

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.



Respect for human rights

ESG Materiality 4-(1)
Respect for human rights

Basic policy

In compliance with the Universal Declaration of Human Rights and other international norms on human rights, the Nippon Steel Group is in the business of creating and delivering valuable and attractive products and ideas, by respecting our employees' diverse views and individualities and utilizing them for the good of all. 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 nine 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.

Based on these basic ideas concerning respect for human rights, we strive to create a workplace environment where employees can share diverse values and maximize their abilities. We thereby seek to improve productivity, work conditions, benefits, and the working environment, with the aim to enrich the life of employees and achieve the corporate development.

Addressing human rights risks

From the viewpoint of promoting human rights (HR) awareness activities by assigning human rights awareness advocates at each steelworks and each office, and of implementing 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 HR managers of 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 organizations and activities hosted by public entities and others in each community. We do this as concerted efforts for human rights enlightenment with the communities.

Along with the group-wide expansion of our efforts to Group companies in Japan and overseas, monitoring surveys on the status of compliance with labor-related laws and regulations, the establishment of consultation contacts, and other issues are regularly conducted via a checklist on internal controls.

Through these efforts, we are continuously and systematically promoting activities to prevent human rights abuses. This includes 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 the policy of prevention and eradication of both types of labor. We 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 related matters, including the status of each country, region, and type of work, and hold meetings with labor representatives, to appropriately reward employees with due consideration given to business conditions and financial performance.

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 anti-discrimination, understanding of LGBTQ, and human rights issues in the conduct of our business.

The number of recipients of training courses by rank on human rights in fiscal 2020

3,020

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

Mechanism of corrective actions

We have clarified whom to contact for consultation on various compliance issues including human rights. This is a part of efforts to establish a groupwide claim 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 discrimination.

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,

Communicating with stakeholders

Adhering to laws and the group-company labor agreements, and respecting the rights to organize and to bargain, Nippon Steel strives to maintain sound labor-management relationships. With a focus on mutual understanding through two-way dialogue, we have a place for discussion with labor unions for the entire Company as well as for each steelworks and each office. We discuss the operating and financial performance, safety, health, and production management issues, working conditions such as salaries and bonus payments, balancing of work and personal life, and other issues. Close labor-management communication is also maintained, particularly concerning the actual work cases for

Labor-management discussions in fiscal 2020

114 times for the entire Company
950 times at steelworks and offices

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 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).

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.

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.

which the labor unions received reports from their members. The minutes of these discussions are recorded and shared through the Intranet and other means broadly, from senior management to work union members.

In-house magazines for the entire Company as well as each steelworks and each office are regularly published as a means to send various messages to employees. PR magazines are also published to convey our business and other information outside. Our steelworks and offices also regularly set up a place for dialogue with the nearby residents' associations to ask for their understanding of our business operations and listen to opinions and requests from them; this is part of what we do to realize better communication with the local community.

Number of union members and unionized rate (March 31, 2021)

28,118
(100% unionized)

Diversity & Inclusion

Basic policy

From the perspective of creating a company where diverse employees are productive, perform at their best, be empowered, and feel proud and fulfilled, we are reinforcing our diversity & inclusion efforts while focusing on the following five areas. The “Diversity & Inclusion Dept.” has been established as a dedicated unit to promote diversity and inclusion efforts.

ESG Materiality 4-(2) diversity & inclusion

- 1 Promote female employee's participation and career advancement
- 2 Realize work life balance so as to enable employees with various backgrounds and circumstances to perform at their best
- 3 Develop health management in order for employees to perform at their best until the retirement age of 65
- 4 Prevent harassment
- 5 Promote empowerment of the elderly and the disabled

Promotion of women's participation and career advancement

What we have done so far

We have introduced the following programs: 1) a childcare leave 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 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 have introduced maternity work clothes for use by steelwork employees who are in the childbirth/childcare period, in order to help them continue their shift work without feeling concerned. We are thus enhancing programs to support employees' work-life balance. In addition, we are investing in improving work infrastructure such as showers, toilets, and dressing rooms at manufacturing sites, and improving work practices, so as to establish a comfortable working environment for female employees.



In-house childcare center (Nagoya Works)

Toward further promoting women's participation in the workplace

Based on the various programs and work environments that we have established, we have developed an action plan to support female employees to continue to demonstrate their abilities through career development, and to promote their empowerment in all workplaces and levels. We target at least doubling and possibly tripling the number of female employees in management positions in 2025 from 36 in 2020, and an increase by at least four times and possibly seven times by 2030.

Improved hiring and retention

The ratio of women in overall hiring is 17%, and we will continue to expand their hiring. We also seek to improve the retention rate of female employees by taking the following measures: 1) promotion of teleworking; 2) elimination of long work hours (for those with constraint on workplace or work time due to childcare or other conditions to continue to work); 3) career assessments for female employees; and 4) flexible placement and development based on the understanding of individual circumstances.

Our other continual efforts include investment in the work environment with the aim of expanding women's placement mainly at steelworks, and child-care support measures such as the establishment of childcare centers that offer night-time service. In fiscal 2021 we plan to open in-house childcare centers at the East Nippon Works' Kashima area and the Muroan Works.

The ratio of women in
overall hiring
(Average ratio for
FY2019–FY2021)

Office staff and engineers **31%**
Operators and
maintenance personnel **12%**
Overall hiring **17%**

Support for employees' career development and work-life balance

In addition to establishing career education programs to contribute to the further promotion of female employees' performance, we also encourage them to develop their capability by providing opportunities for growth through proactive efforts in anticipation of various life events, and by actively promoting advancement to managerial positions.

We will create a workplace culture where work and home life are comfortably balanced by making various programs well known to employees, through improvement and introduction of brochures which explain the programs. We also provide to managers education concerning unconscious bias and diversity management.

With the aim of encouraging male employees with young children to actively participate in childcare, we encourage them to take child-care and related leave.

Realizing the work life balance as a means to enable people with diverse situations perform well in the workplace

Enabling flexible ways of working

All human resources with their diverse attributes and circumstances, such as age, gender, and restrictions on work time and workplace due to childcare and nursing care, 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 move away from traditionally-set ways of working and pursue more flexible and diverse ways of working in accordance with the nature of work at any given time and fluctuation in workload flow of operation needed at that time,

and the circumstances of each individual.

In fiscal 2019, we revised the work-at-home system, which was previously limited to childcare cases, and introduced the teleworking system.

Among employees under the flexible time system and those eligible to the short-work hour program for childcare and nursing care, those approved by the Company on the basis of their work assignment can do teleworking. The workplace in this case is not limited to home but any location.

Along with the introduction of the teleworking system, we have also adopted various IT tools to develop the environment that allows employees to work at any place as in the office. This has led to an efficient way of work, using spare time on business trip or out of office, and maximizing the ability of employees with childcare, nursing care, and other circumstances. In response to the COVID-19 pandemic, and since the Japanese Government made initial requests to refrain from going out and declared of the state of emergency, we have used the accumulated knowledge and experience, and

have actively utilized the teleworking system.

A flexible time system has also been introduced. Since fiscal 2019, a more flexible management structure has been in place by our expanding the workplaces that could use the “coreless flexible system,” which eliminated the core time — an essential time period to be in the office, so that we can achieve a more harmonious way of working, balanced with personal life.

Based on these systems, we aim to achieve improved productivity and employees' work-life balance, while pursuing ways in which individuals can perform at their best.

Realization of a flexible way to take time off from work

We have been establishing the employee environment so that it facilitates a flexible way to take time off from work, tailored to the circumstances of individual employees and their life stage.

With regard to annual paid leave, we encourage employees to use it to get refreshed physically and mentally. Each business site has set recommended dates to acquire annual paid leave. The head office, for example, sets every Friday in August as an “Eco-paid leave day,” and recommends that employees not set meetings and other events on those days in order to make it easier to take off those days. The annual leave utilization rate in and before fiscal 2019 exceeded 70%, but declined to about 60% in fiscal 2020 partly due to the effects of the temporary leave that was implemented in response to a large-scale production cuts. Looking ahead toward the target of 75% or higher in terms of the utilization rate, we will continue to work together with labor union to promote taking planned annual paid leaves in accordance with individual needs.

Concerning childcare leave, we encourage male employees who are entitled to child care leave to take parental leave and get actively involved in childcare. We also focus on fostering a workplace culture that makes it easier for employees to take childcare leave.

Matched to the ongoing aging of Japanese society, programs for nursing care leave and time off for nursing care have been established to support employees continue working while attending to nursing care. The expired leave days that have been accrued can be used for nursing care purposes, as part of our efforts to provide an environment in which employees can work with peace of mind while providing care.

To promote the use of these programs, we distributed a brochure that summarizes each type of work and vacation program applicable for each life stage. We try to make the programs better known through various training programs.

Promote health management for employees to with a goal of maximizing workability until retirement at age 65.

Basic thinking

We aim all employee work at their best from the time of joining the company to retirement, which has been extended to the age of 65. In order to accomplish this, we support them to maintain and enhance both mental and physical health. We conduct health promotion measures focusing on disease prevention as well as early detection and treatment. We are committed to providing an advanced health

checkup including cancer or mental disorder screening and encouraging employees to take regular checkups and provide a consultation or a counseling about lifestyle or stress coping by health care professionals, as needed. Employees are expected to also be committed to implementing measures for their own health maintenance, such as to get various checkups and improve their daily lifestyle.

Promoting physical wellness

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 priority targets age and screening frequency for the examination, based on evidence. We also set our target rate of exam-taking and encourage employees to take exams for early detection and treatment of cancer.

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 worker with high risk of cardiovascular disease improve their lifestyle. , We will improve the implementation rate of specified health guidance, which 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 the goal.

Promoting mental wellness

Aiming for each employee in the Nippon Steel Group to enjoy a robust life on and off the job, we provide a consulting service for prevention and early detection in the area of mental health, and have incorporated the issue of mental health in in-house seminars for each rank of employee. We also offer education on how to be aware of one's own stress and to deal with it, how managers should care for their subordinates and manage their teams, and how to coordinate with the corporate health care professionals (physician, nurses, and other staff). We provide the stress check which is 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 a team or an individual, coordinating with the personnel department and the health department. Because early detection and early response are important in the treatment of mental illness, 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.

▶ Preventing harassment

In order for all Nippon Steel employees to work with vigor, it is extremely important to respond appropriately to harassment issues, and we are strengthening our efforts to prevent them. Specifically, we have clarified our internal policies to prevent harassment in terms of working regulations and internal regulations, and we have also prepared and distributed leaflets to promote awareness among all employees. In addition, we engage in education through e-learning for all officers and employees, and through sponsoring lectures on harassment at milestone training events, spanning activities from new employees to higher management. In addition to continuing these efforts, we will periodically review and improve the contents of our efforts, including the factoring in awareness of

unconscious biases as part of our training programs. Several dedicated consultation and reporting points of contact have been established so that employees who face a harassment issue can consult with other people, in addition to someone close to themselves, such as their supervisor or colleague. We are striving to create an environment wherein a harassment issue can be resolved without the employee concerned taking it on all alone. Each of the contact points takes individual actions and makes sure not to disbenefit anyone for reporting or cooperating. After investigating and confirming the existence of a problem, we conduct fact checks and take strict measures in accordance with employment rules and other regulations.

▶ Empowerment of the elderly and the disabled

Employment for the elderly

With regard to the promotion of the empowerment of the elderly, we extended the retirement age to 65 from 60 in fiscal 2021, after consultation with labor unions, and taking into account the declining working population, the response to the extended starting age of the pension system, and the maintenance and improvement of our workplaces. Assuming that the same work will be carried out, even after the age of 60, the employment scheme as well as the salary and bonus scheme will remain the same up to the age of 65. Under this new system, hopefully, all generations, up to 65 years of age, will continue to perform at their best at the front lines of our workplaces, while also invigorating the skill transfer process and communication within the workplace between generations, thereby creating a vibrant company.

Employment for the disabled

Recognizing employment of the disabled as an important social challenge, we are implementing an action plan for their employment and providing a friendly working environment. Since 2007, we have established special-purpose companies to expand employment opportunities. As of June 2021, at four special subsidiaries of NS HEARTFUL SERVICE EAST NIPPON LTD., NS HEARTFUL SERVICE TOKAI LTD., NS HEARTFUL SERVICE KANSAI LTD., and NS HEARTFUL SERVICE KYUSHU LTD., over 100 people are actively engaged mainly in various outsourced work from Nippon Steel. The work includes data input and printing of written documents, cleaning of the steelworks premises, cleaning and management of the welfare facilities, and cleaning of work clothes.

Employment rate of the disabled (as of June 2021) **2.35%**

Initiatives for human resources development

ESG Materiality 4-(3)
Initiatives for human resources development

Based on the belief that the development of excellent personnel is a prerequisite for the production of excellent products, Nippon Steel is rolling out robust programs to strengthen the overall capabilities of the Company’s human assets.

▶ Basic Policy for Human Resource Development

Nippon Steel’s Management Principles state that “we develop and bring out the best in our people to make our Group rich with energy and enthusiasm,” positioning human resource (HR) development as a top-level concept. A goal of HR development is to create people who can understand and implement our Corporate Philosophy and our Employee Action Guidelines. All our employees keep this in mind. Nippon Steel’s basic approach to HR development is for supervisors to transfer to their subordinates, through daily dialogues on the job, understanding and knowledge of criteria for judgment and of operational skills. In order to share this mind with all employees, the following “Basic Policy for Human Resource Development” has been established.

- 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.

Number of training/learning hours
0.78 mn hours/year
(27 hours/year per employee)

Objective
Promote measures to develop human resources who serve the enhancement of workplace strength and technological advancement

▶ Development of operators and maintenance staff

The operators and maintenance staff ceaselessly put into practice their accumulated skills in steelmaking and maintenance, from joining the Company on the assumption of long-term employment to retirement. They thus fundamentally support the Company’s manufacturing worksites. 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. The status of planning and skill transfer is monitored by using a skill map — a list of skills for each individual. If needed the plan and its implementation are modified. In light of the ongoing diversification in recruitment sources

(especially the increase in female employees and middle-career recruitment) in response to the rapidly declining working-age population in Japan, it is essential to promote the development of infrastructure and the creation of a workplace environment in which diverse personnel can be motivated and collaborate with each other. Specific efforts along these lines include the establishment of an environment and education on human rights and harassment. Off-the-job training (OFF-JT), which complements on-the-job training (OJT), is used

▶ Development of office staff and engineers

Following the Basic Policy for HR Development, Nippon Steel uses a “HR Development PDCA” for office staff and engineers, who implement OJT-based HR development plans. Specifically, development plans are formulated for each person based on the corporate philosophy and organizational strategies, and are discussed by supervisors and subordinates. Implementation is routinely checked and, if needed, revised. This PDCA for HR development follows a one-year cycle, from April through March of the following year. An employee’s period of time from joining the Company to becoming a manager is divided into three steps: “Discipline”, “Creation” and “Independence”. Based on the OJT, 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.

▶ Development of staff who support technological advancement

With the aim of achieving world-leading technologies and manufacturing capabilities, basic courses in engineering are taught so that employees can learn the essential technologies needed to systematically acquire the skills required for

throughout the Company by organizing the minimum skills and knowledge required by each rank of employees of Nippon Steel into a company-wide standard system. Through this, we work at measures to maintain and improve motivation of the elderly to continue working with health and motivation, and at education of workplace leaders to further increase their ability to add to and improve our knowledge base from the field (“field technology”).

Discipline In the initial few years, new hires learn the basics in each of our fields of expertise, and acquire the manners and basic patterns for work as a social person through each practice.

Creation The employees in this step are assigned to perform a certain task from start to finish, develop their execution ability, identify their own field of expertise, and acquire a firm basic foothold in it.

Independence Through experience of working according to their own responsibility, the employees develop their leadership skills. Together with development of skills, when they reach this phase they must also pay close attention to the development of their subordinates or junior colleagues.

In addition, various OFF-JT training courses are provided to learn specific skills and researches, which cannot be covered by OJT, and to acquire common skills required throughout the Company depending on the employee’s qualification.

▶ Development of managers

The training courses are provided to managers match the managers’ qualification and position, and are given so that they can acquire proper understanding of their responsibilities and authority as managers; knowledge, skills, and mindset that contribute to enhancing the management as supervisors; and group management capabilities. We gather managers in similar positions to cultivate each other and share experiences and

opinions. In recent years, we have given increased attention to management education. We added new courses including one for line manager candidates to enhance line management skills on the manufacturing field, and one for new managers to ensure they have a correct understanding of their roles and responsibilities as managers, and acquire the required knowledge and management skills to conduct business.

▶ Development of staff for roles in overseas expansion

Nippon Steel is actively expanding business to overseas growth markets and many Nippon Steel employees are working on these projects, together with employees of our joint ventures and local employees. At these bases, we also contribute to local communities by locally hiring employees and creating job opportunities. Nippon Steel also has programs for employees who can contribute to our overseas business expansion. For global Group employees and managers, we have been standardizing English “dialog ability” for each qualification, and a language education system suitable for any level of English has been created for that. Further, for young managers, there are middle-management seminars designed for them to acquire the knowledge, skills, and mindset necessary for domestic

and overseas business. For young employees, we offer opportunities to study abroad or work at overseas operational companies for a certain period. We also provide a course for employees who are assigned to work abroad and their family members. Concerning development of overseas local staff, we also make efforts to transfer to them Nippon Steel’s criteria for judgment and operational skills, mainly through OJT, in line with 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 or for special subjects are conducted.

▶ Development of employees who can contribute to digital innovation

We make extensive use of data and digital technologies for production and business process innovation and are promoting a Digital Transformation (DX) strategy combined with implementing measures to speed up decisionmaking and enhance our problem-solving. Among our DX activities we have established a skills training

program for employees to acquire data science knowledge and enhance competence in order to add strength to our professional staff in this area and strengthen cyber-skills among all employees. Management education courses are also given to reform managers’ consciousness in order to promote DX in each department.



Financial discipline for achieving both financial soundness and corporate growth

ESG Materiality 6
Corporate value enhancement and profit distribution

Interest-bearing debt **Approx. ¥2.5 tn** 2021.3E Shareholders' equity **Approx. ¥2.7 tn** 2021.3E Debt/Equity ratio **0.7 times** (adjusted for equity credit attributes) 2021.3E

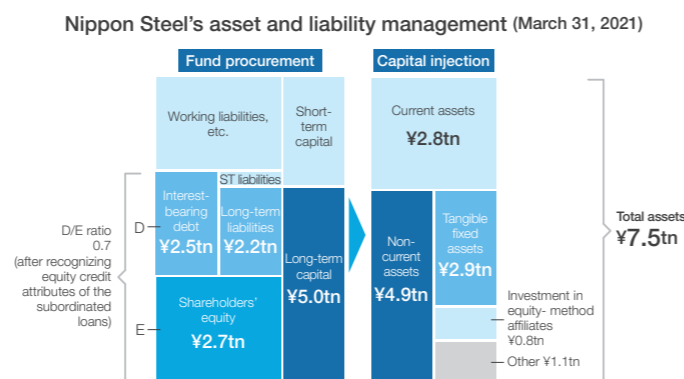
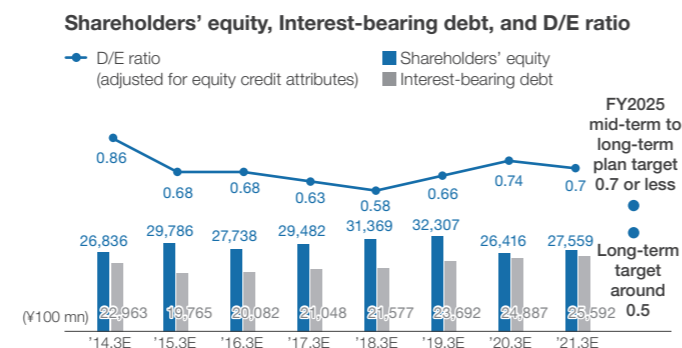
We maintain sound financial positions, using the D/E ratio as benchmark, and carry out cash management with financial discipline, meaning to aggressively inject capital in growth investment with which we can expect return that exceeds the cost of capital.

How we think about capital structure

The debt-to-equity (D/E) ratio is identified as an important benchmark in financial management. While we aim to achieve the D/E ratio of around 0.5, a level that allows us to maintain a long-term A rating by international credit rating agencies over the long term, our immediate target had been to maintain the D/E ratio of around 0.7, by offsetting an increase in interest-bearing debt with an increase in shareholders' equity during the 2020 Mid-term Management Plan period when investing cash flow was at a high level because we needed large-scale refurbishment for domestic facilities and tried not to miss opportunities for overseas growth investment.

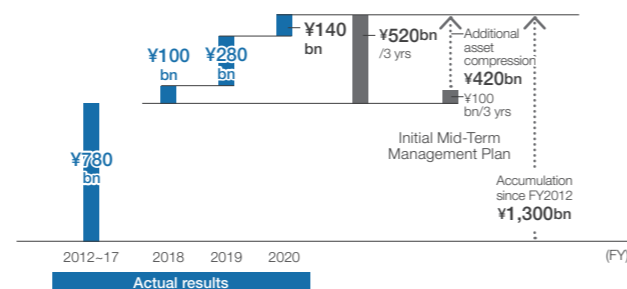
As of March 31, 2021, the D/E ratio after recognizing equity credit attributes of the subordinated loan and the subordinated bonds was 0.7 and reached the 2020 Mid-term Management Plan's target of around 0.7. Our next target is to maintain or lower the D/E ratio of 0.7 in fiscal 2025, even if the business environment further deteriorates.

The steel industry is a gigantic equipment-based industry, which uses a massive 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.



Asset compression

Following the integration of Nippon Steel and Sumitomo Metals in 2012, we generated ¥780 billion on a cumulative basis in asset compression over six years to 2017. In the 2018-2020 Mid-Term Management Plan, we planned to achieve ¥100 billion in asset compression but given deteriorating performance and the status of operating cash flow, we have accomplished approximately ¥520 billion asset compression in the last three years, by far exceeding the plan. We intend to further compress assets in the future.



COLUMN

Asset compression by disposing of strategic shareholdings

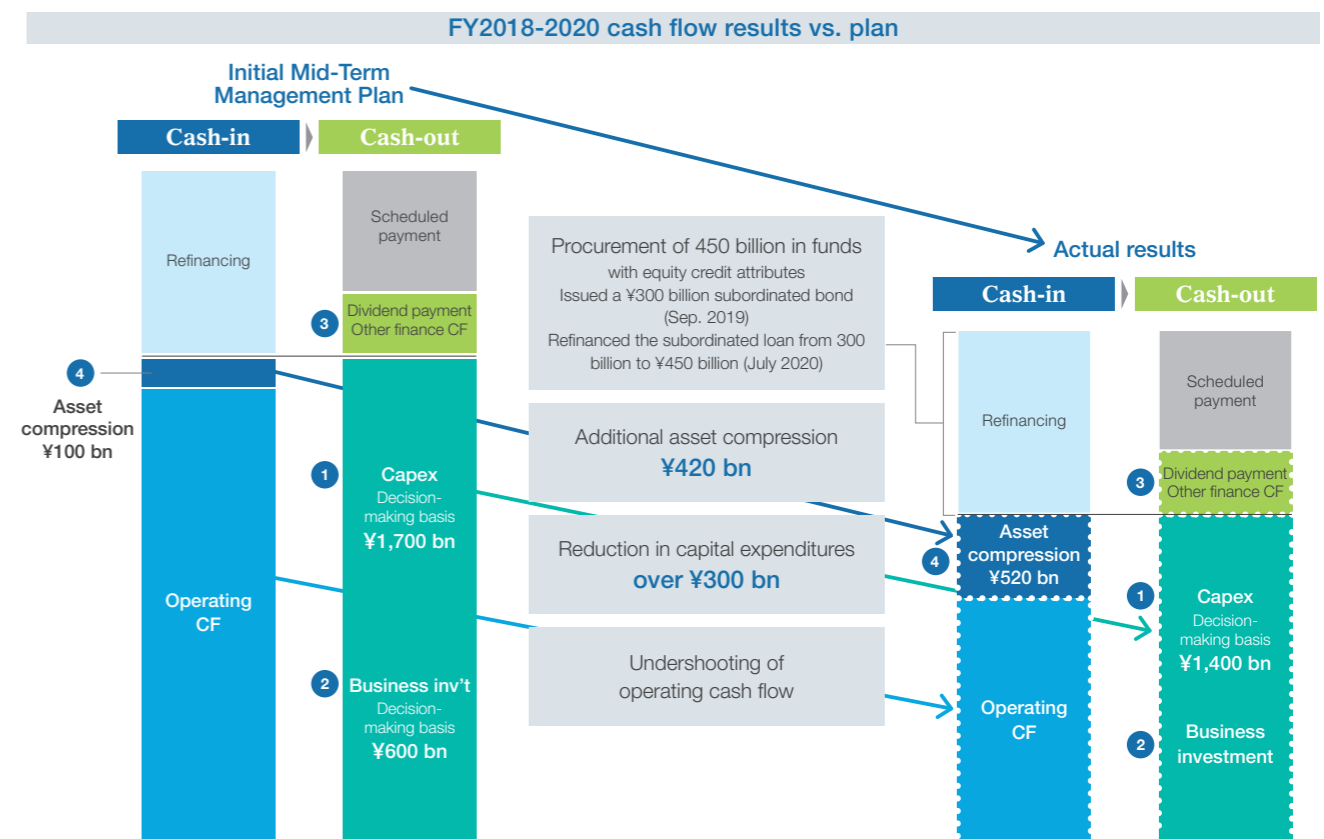
Most of the asset compression comes from sale of strategic shareholdings. Strategic shareholdings are judged to contribute to maintaining and strengthening its business foundation such as the business relationships and alliance relationships between Nippon Steel and the investees, enhancing the profitability of both parties, and thereby contributing to sustainable growth and improving mid- to long-term corporate value of Nippon Steel and the Group. However, we dispose of holdings of companies, with whom we confirmed, based on sufficient dialogues with them, that the above objectives could be achieved without holding their shares.

How we think about cash flow management

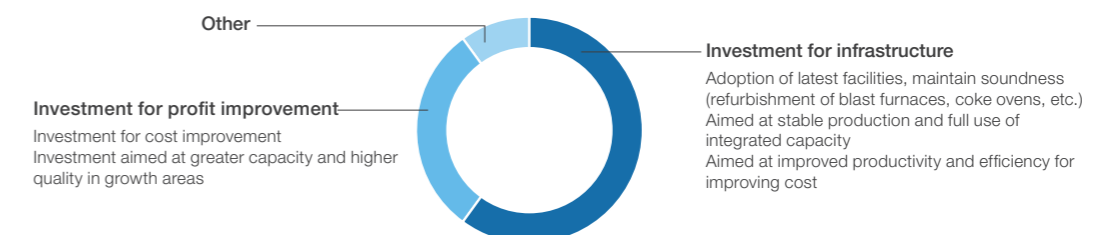
During the 2018-2020 Mid-Term Management Plan, we made a high level of investment, such as for large-scale refurbishment of domestic facilities and overseas growth investment. These investments were financed within the aggregate amount of operating cash flow and asset compression and while maintaining the financial position in terms of the D/E ratio of around 0.7 times, thereby exercising financially-disciplined cash flow management. Given a significant change in the business environment

during the plan period, operating cash flow undershot the initial forecast. We therefore made an additional asset compression of approximately ¥420 billion and increased own funds, while reducing capital expenditures by over ¥300 billion so as to maintain financial soundness.

Our cash flow management going forward focuses on maintaining financial stability while making investment for growth and the challenge of realizing zero-carbon steel.



- 1 Capital expenditures** Invested ¥1,400 billion during the three-year period, which was reduced by over ¥300 billion from the initial plan. The overall IRR exceeded the cost of capital.



- 2 Business investment** Flexibly executed strategic investment in Japan and overseas. Sanyo Special Steel and OVAKO became subsidiaries. Acquired AM/NS India jointly.
- 3 Return to shareholders** The consolidated payout ratio was targeted at around 30%. Actual dividend payment: ¥80 per share (28.4% payout) in FY2018; ¥10 in FY2019; and ¥10 in FY2020
- 4 Asset compression** Proceeds were generated mainly from sale of strategic shareholding, but also from sale of properties, inventory compression, etc. Increased by approximately ¥420 billion from initially planned to ¥520 billion for the three-year period.

Capital injection in investment

In injecting capital as investment, we focus on investment profitability that exceeds the cost of capital.

For capital expenditures, we set a hurdle rate of the number of years to recover capital in the case of investment aimed at profit improvement. Even for the overall capital expenditures, including refurbishment of aging facilities, we manage to secure an internal rate of return (IRR) that

exceeds the cost of capital.

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 with running a PDCA system, which enables us to track the execution status and make judgment on restructuring, withdrawal, and other options if needed.

Capital expenditures

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 are in an extremely long refurbishment cycle, as is the case for coke ovens and infrastructure equipment, 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.

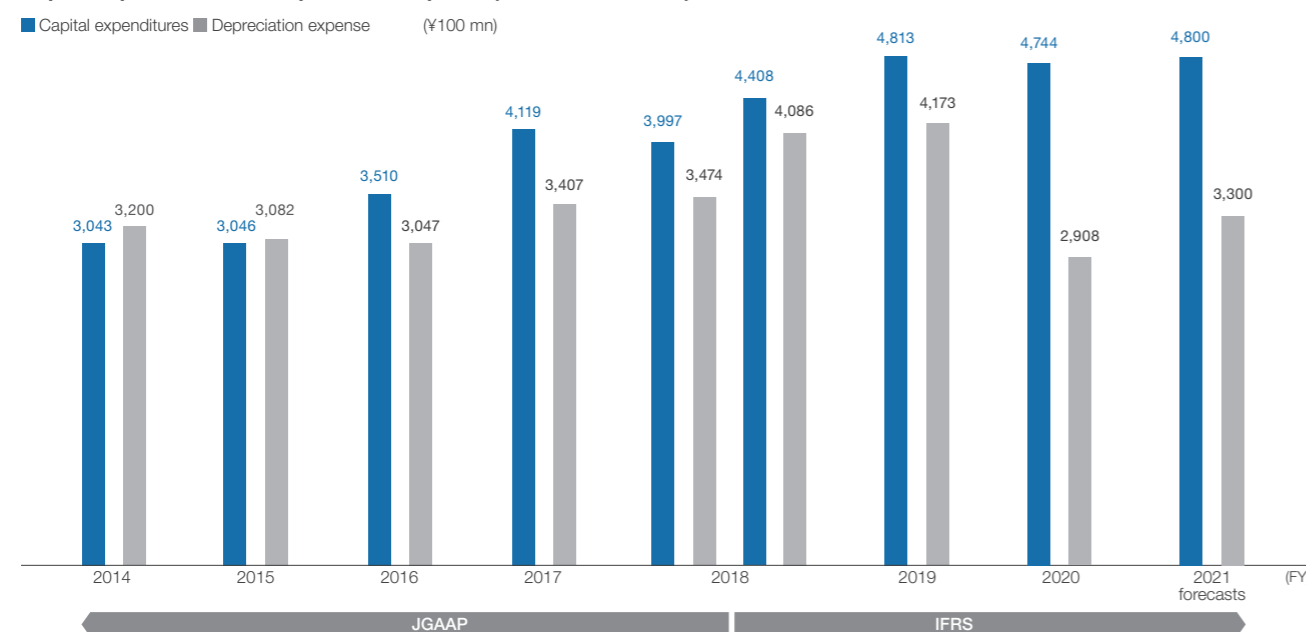
Given the assumptions for the future steel market in and out of Japan, we have decided to suspend less-competitive facilities and consolidate production to competitive ones via the production facility structural measures (pp. 21-26). In addition to curbing investment in facilities to be shut down, we are making strategic selective investment in the remaining facilities. We also seek to efficiently inject capital based on the long-term refurbishment plan, aiming for reduction in overall capital expenditures.

We are concurrently making investment to capture demand in growth areas in the context of changes in social and industrial structure.

We initially planned to implement domestic capital expenditures of about ¥1,700 billion over three years during the 2018 – 2020 Mid-Term Management Plan but have reduced the amount by more than ¥300 billion to less than ¥1,400 billion, mainly by taking the above measures.

Over the next five years to fiscal 2025, we plan to make capital expenditures of about ¥2,400 billion for improving the capacity and quality of strategy products, increasing higher value added products, and reducing costs, while making maintenance/renewal investment only in needed facilities, in light of the production facility structural measures. For determining capital expenditures, we set a hurdle rate, designed at such a level that the internal rate of return (IRR) of overall capital expenditures exceeds the cost of capital.

Capital expenditures and depreciation expense (consolidated basis)



- The amounts of capital expenditures are construction based (about a 2-year time lag from decision-making basis).
- The scope of investments and depreciation has expanded since fiscal 2018 due to a change in the financial accounting system.
- The method of depreciation was changed from the declining-balance method to the straight-line method in FY2020.

Business investment

We invested approximately ¥600 billion for M&As and establishment of new overseas manufacturing bases over the three-year term (fiscal 2018 – 2020). In fiscal 2018, we invested around ¥60 billion in restructuring the special steel business by acquiring Ovako AB in Sweden and making Sanyo Special Steel Co., Ltd. a subsidiary. In fiscal 2019, together with ArcelorMittal, we invested about ¥310 billion (including approximately ¥103 billion in equity investment) in acquisition of Essar Steel India Limited, the fourth largest steelmaker in India.

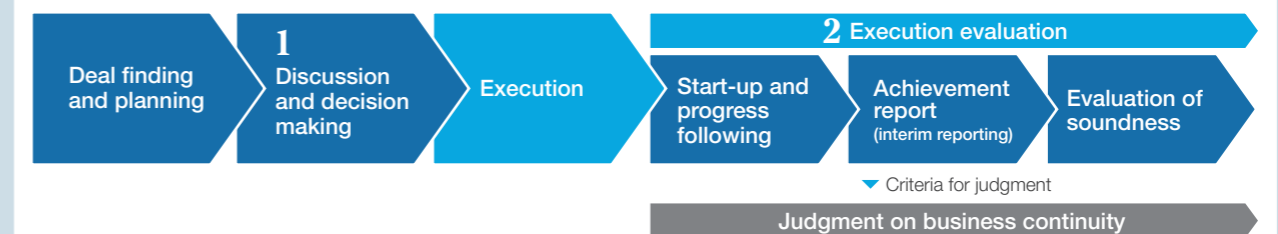
We set the business investment budget of ¥600 billion for

five years up to fiscal 2025 in order to promote business expansion of AM/NS India and get prepared for potential acquisition or equity investment opportunities in integrated steelworks in China or ASEAN.

In terms of increasing overseas businesses' profit and reallocation of management resources, we have thoroughly examined past investments and 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.

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.



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 given consideration to risk scenarios, the certainty of generating return that matches investment is confirmed.

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. Very important projects are then submitted to the Board of Directors.

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.

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.

6 Together with others in society

Having many manufacturing bases all over Japan, Nippon Steel has a long history of being engaged in business activities rooted in local communities and supported by local residents.

In accordance with our attitude of maintaining harmony with local communities and society, we have implemented distinctive social contribution programs, in collaboration with numerous government bodies and various organizations, and mainly through promotion of environmental preservation, and through education, music, and sports.

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Initiatives on Conservation of Biodiversity and Environmental Preservation Activities in Collaboration with Local Communities

ESG Materiality5-(1)
Environmental preservation/creation activities in communities

As a member of Nippon Keidanren (Japan Business Federation), Nippon Steel has affirmed the Declaration of Biodiversity by Keidanren and Action Policy (revised in October 2018) and has accordingly taken initiatives on biodiversity preservation under the following policy.

Among the initiatives, interesting programs thus far are “Creation of Hometown Forests” and “Creation of Sea Forests,” the world-leading pioneer projects. The “Creation of Hometown Forests” began in the Kyushu Works in 1970 and our forests in aggregate have grown to total around 830 ha (about the size of 180 Yankee Stadiums). “Creation of Sea Forests” is to use the iron content of steel slag to stop loss of sea weeds caused by sea desertification in the coast in various parts of Japan. The project has been launched in 38 spots in Japan and shown some positive effects.

(Details on the Sustainability Report 2021, P.39)

We are also a regular corporate member of the NPO, Mori wa Umi no Koibito (The forest is longing for the sea, the sea is longing for the forest), represented by Mr. Shigeatsu Hatakeyama, a fisherman raising oysters and scallops in Kesennuma City, Miyagi Prefecture, who received the Forest Heroes award from the United Nations in 2012. Since 2012 we participated in the NPO’s tree planting activity at Murone Mountain in Iwate Prefecture, which began in 1989, based on the theory that the chain of forests, villages, and the sea nurtures the blessings of the sea.

Moreover, Nippon Steel is a co-sponsor of an NPO, “green bird”, and participates in its garbage pickup events. Many steelworks also voluntarily carry out diverse cleaning activities of their surrounding areas.



Creation of Hometown Forests



Creation of Sea Forests



Mori wa Umi no Koibito

Monodzukuri and environmental education

ESG Materiality5-(2)
Activities mainly in the support of education, sports, and arts

With the aim of showing the joy of product-manufacturing, Nippon Steel holds demonstrations on “tatara ironmaking” — Japan’s indigenous ironmaking technique. Every year we also host approximately 130,000 people to our plant visits and receive teachers for a corporate training program in order to make Nippon Steel as well as the steel industry to be better

understood. In fiscal 2020, the COVID-19 pandemic made it difficult to undertake these programs. We therefore sent lecturers from steelworks or branch offices to special occasions in the local communities upon requests of the latter. In the East Nippon Works Kashima Area, on-line learning sessions were provided as a new undertaking.



Training Program for Educators in Muroran



On-line learning sessions (Kashima Area)



Social contribution through art, music, and sports

ESG Materiality5-(2)
Activities mainly in the support of education, sports, and arts

We are active in corporate philanthropy activities in the support of music, particularly through the work of the Nippon Steel Arts Foundation. The Foundation manages Kioi Hall in Tokyo, organizing performances of its resident chamber orchestra and promoting 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. Nippon Steel manages or supports sports teams in local communities of its steelworks. All of these teams contribute to their local community through such various activities as sports classes for children and making our athletic facilities available to local residents. 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.



Volleyball tournament (Kashima Area)



Charity concert (Nagoya)



Nippon Steel Music Awards recipients (Mr. Mitsuhiro Ikari, left, and Mr. Naruhiko Kawaguchi, right)

Suggestions on public policies, opinions as the industry, and cooperation with government

Over the years, Nippon Steel has provided personnel to key positions of the Japan Federation of Economic Organizations (Keidanren) and the Japan Iron and Steel Federation (JISF), and through the activities of these organizations, has expressed opinions and urged them to take action on

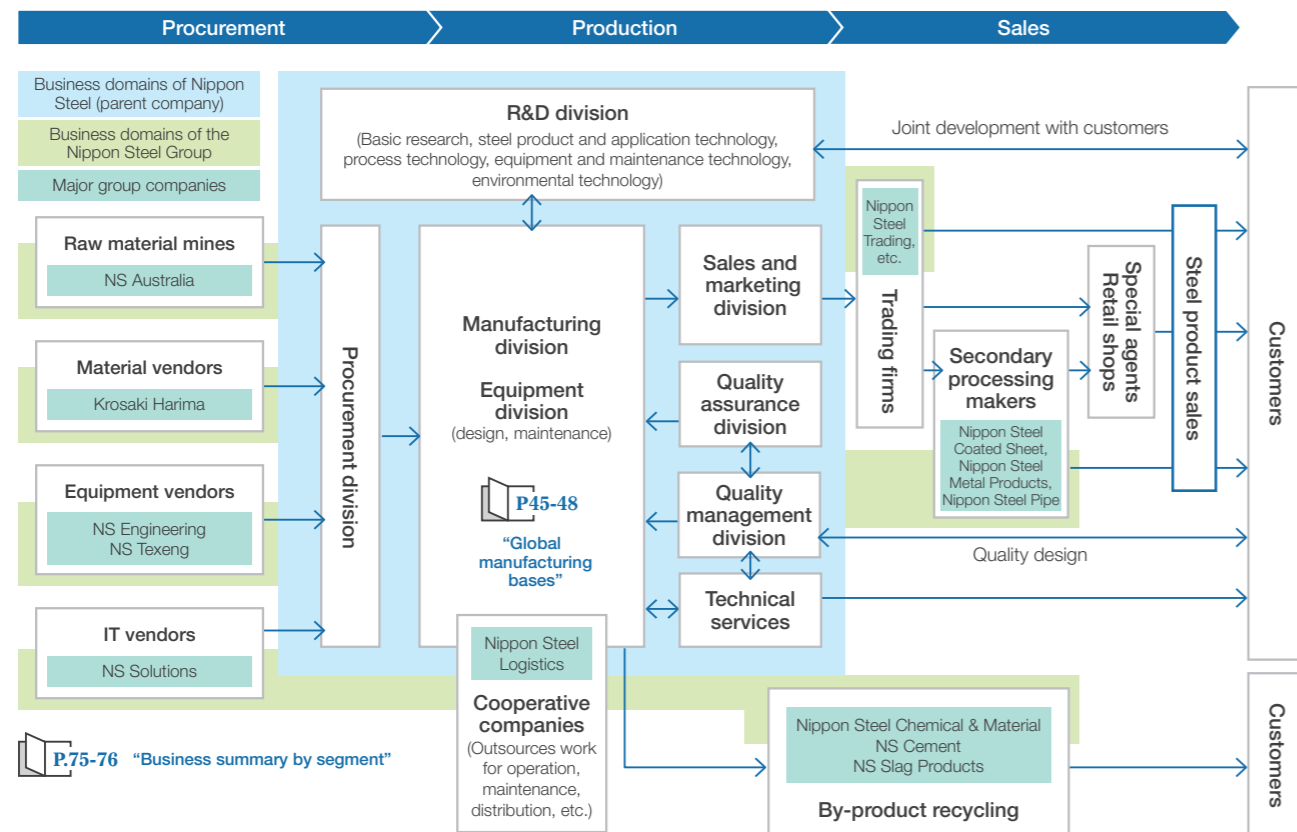
deregulation matters and the implementation of institutional reforms aimed at improving the Japanese economy.

In the local communities, we also strive to cooperate with various organizations such as the local government and the local chamber of commerce and industry.

- Voicing opinions on deregulation and institutional reform aimed at maintaining and improving the vitality of the Japanese economy
- Participation in public policy studies, such as infrastructure development, adoption of the International Financial Reporting Standards (IFRS), revision of the Corporate Governance Code, tax reform, Digital Transformation (DX), workstyle reform and regional revitalization
- Recommendations on national strategy to achieve a “virtuous cycle of environmental sustainability and economic growth,” the need for policies that will strengthen the international competitiveness of industries, and energy policy
- Promotion of voluntary initiatives by industry to achieve Japan’s medium- to long-term targets based on the Paris Agreement (Low-Carbon Society Action Plan)
- Participation in the JISF’s formulation of Basic Policies for the Japanese Steel Industry on Carbon Neutral in 2050

Steelmaking value chain and the Nippon Steel Group's business domains

The Nippon Steel Group's business domains span from upstream to downstream of the steel industry's value chain. Nippon Steel, engaged in integrated steelmaking business, and its group companies, are responsible for each process of the value chain, share important strategies, and aim at maximizing the Group's corporate value.



Production Steel product manufacturing process

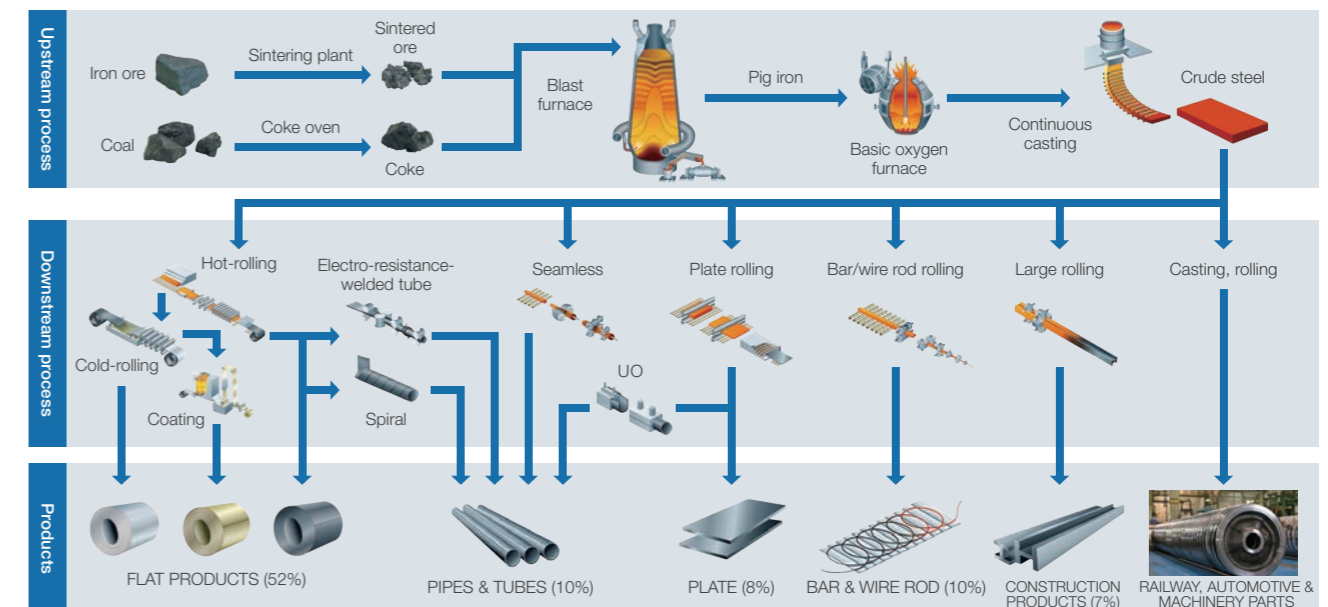
The steelmaking process is divided into the upstream process, to melt and reduce iron ore at high temperature, and to solidify the metal, and the downstream process, to make it into products of shapes and properties that meet needs of customers.

Upstream 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 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.

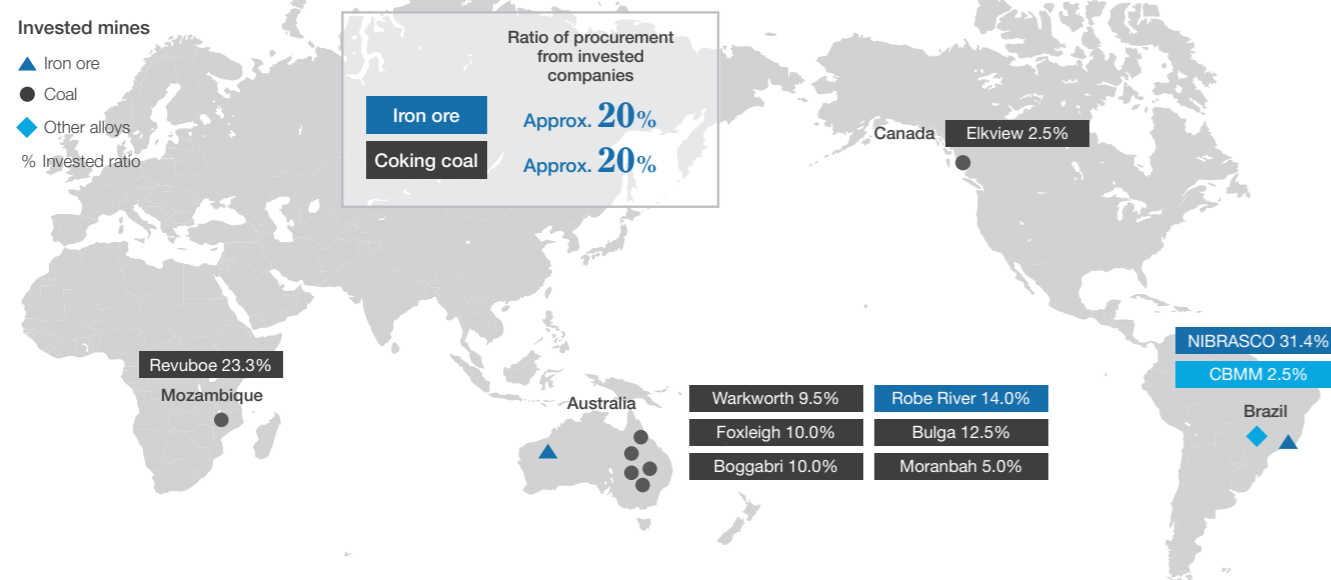
Downstream process

The downstream process is divided into processes for rolling, coating, refining and inspection, to name the most important ones, enabling manufacturing of products with features required by customers.

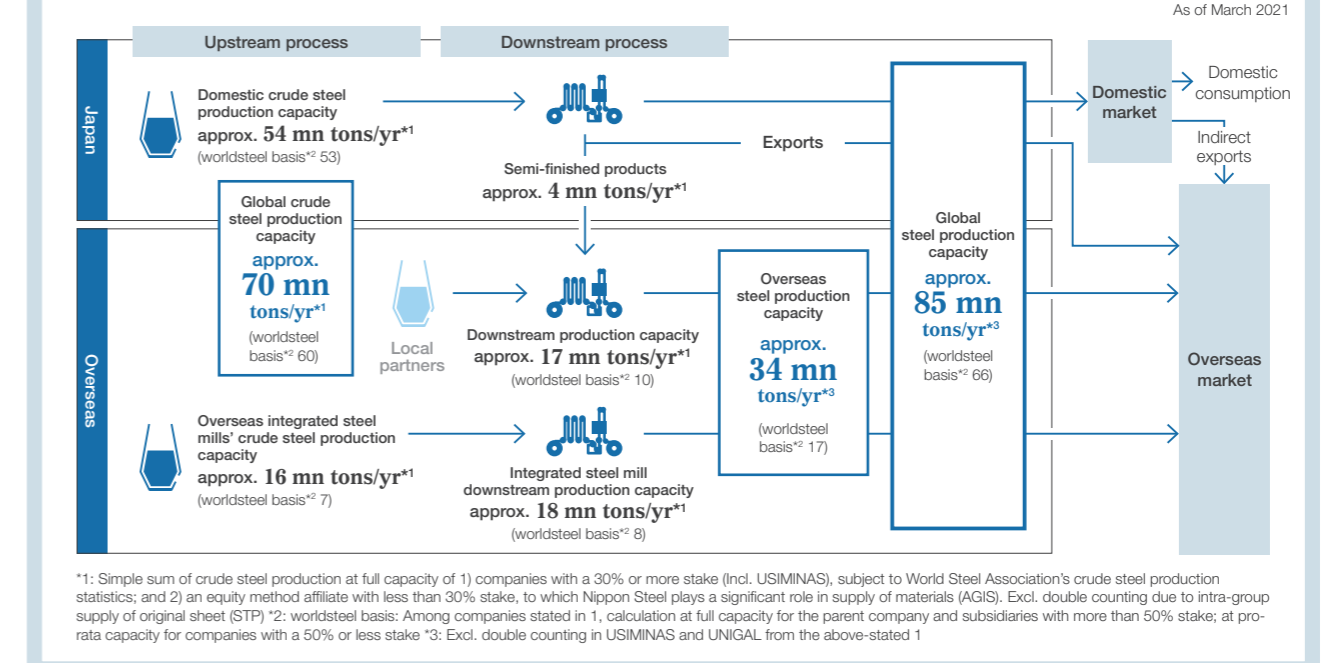


Procurement Raw material concessions

Nippon Steel has invested in raw material mines in order to ensure stable procurement of raw materials. Roughly 20% of iron ore and coking coal used in the steelmaking business is procured from the invested mines.



Global Production Framework



Production Mother mills in Japan

In our corporate journey of many years in the past and for years in the future, jointly with our customers, our manufacturing bases and R&D bases in Japan are a source of value to continuously create operational, equipment, and

ESG Materiality3-(1) Stable production and supply

product technology, which is a core source of our strengths. We call them mother mills, a base of value creation in our global expansion.



Efficient, high-grade steel production in large blast furnace, seaside integrated steelworks

Nippon Steel's strength

All of Nippon Steel'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 steelworks. Most of our 15 blast furnaces, a main facility in upstream process, are ultra-big ones with an average furnace capacity of approximately 4,300 m³ (to be raised to 4,900m³ after planned shutdown of some), led by No. 1 and No. 2 blast

furnaces (5,775 m³) in Oita, these being among the world's largest.

The large blast furnace 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, and responding to customers' advanced needs.

The top-runner approach for continuous improvement in technology level

Nippon Steel's strength

Our top-runner approach is that all steelworks share their operational and technical know-how 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, 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.

Secondary processing group companies raise added value of steel products

Nippon Steel's strength

Secondary processing companies of the Nippon Steel Group are engaged in manufacturing and sales of higher-value-added secondary processed products, that respond to end customers' needs, mainly using steel products of Nippon Steel's parent company as material and the group's advanced technologies.

Main secondary processing subsidiaries	Business activities
Nippon Steel Coated Sheet	Galvanized sheets, colored galvanized sheets, coated steel sheets, construction materials
Nippon Steel Metal Products	Construction materials, civil engineering materials, colored galvanized sheets
Nippon Steel Pipe	Carbon steel pipes for machine structure, welded stainless steel pipes, carbon steel pipes for building structure
Nippon Steel SG Wire	Piano wires, coated wires, oil tempered wires
Geostr	RC segments, steel segments, other civil engineering RC products
Nippon Steel Welding & Engineering	Welding materials, plasma devices, optical fiber products
Nippon Steel Drum	Drums
Nippon Steel Stainless Steel Pipe	Seamless stainless steel pipes
Nippon Steel Wire	Steel wires for cold heading, hard steel wires, high carbon chrome bearing steel wires
Nippon Steel Bolt	High-tension bolts

Production Global development



Overseas steel product production capacity*1 (by region and sector)

(10,000 tons/year)

	Integrated steel mill	Automotive				Energy & Resources	Infrastructure	Home appliances, containers, etc.	Downstream processing capacity*3	Total
		Flat products	Bars & wire rods	Pipes & tubes	Crankshafts*2					
Overseas total	1,800	1,050	170	45	15	45	440	125	1,700	3,400
ASEAN		148	13	25			271	43*4	470	470
China		264	9	5	4			80	360	360
India	984	60	24*5	2	4				70	1,050
Middle East						43	40		80	80
North/Central America	20	472	8	11	8	1	125*6		600	620
South America	690	103*7							100	690*8
Europe	110		113*9						5	115

As of March 2021

*1: Companies subject to World Steel Association's crude steel production statistics (incl. USIMINAS) and AGIS; *2: Calculated by basic unit conversion

*3 Excl. double counting with integrated mills (Mahindra Sanyo, Standard Steel, and OVAKO) and double counting of a company that receives intra-group supply of original sheet (STP)

*4: Incl. STP 0.24 MMT/Y; *5: Mahindra Sanyo 0.24 MMT/Y; *6: Incl. Standard Steel 0.20 MMT/Y; *7: Incl. UNIGAL 1.03 MMT/Y; *8: Excl. double counting of USIMINAS and UNIGAL 1.03 MMT/Y; *9: Incl. Ovako 1.10 MMT/Y

We have not globalized our operations through mergers with steelmakers in different countries. Rather, we have established overseas group companies, constructed new manufacturing bases, and extended our capacity in technology, sales and marketing, and management methods, which have been nurtured in Japan, to other countries, to support our Japanese

customers' overseas expansion and meet overseas demand. In the future, while maintaining the current supply system, we will expand our integrated production system to capture overall local demand and move to the next stage of full-scale overseas operations to secure higher added value.

Becoming an insider in a most-suited way by region and product type

Nippon Steel's strength

Anywhere in the world, steel demand increases in line with economic development and is initially satisfied by imports. With further economic progress, fostering of the nation's own steel industry becomes a national policy as steel is a basic material of all industries. Steel demand then is filled by domestic production. As a result of this process, steelmakers tend to develop on a country-by-country basis, making global shares of top-tier makers less concentrated compared to other industries. The steel industry therefore can be described as a "gigantic compound local industry."

ASEAN Downstream bases

In the ASEAN region which is geographically close to Japan and where many of our Japanese customers have production bases, we have built a framework to locally provide similar high-grade steel products to customers as we do in Japan. We have invested substantial capital to establish local bases for downstream production processes which directly link to quality assurance and reliable delivery to customers, while providing semi-finished products from our steel mills in Japan to those local production bases where they are processed to finished products.



North America and China Downstream bases

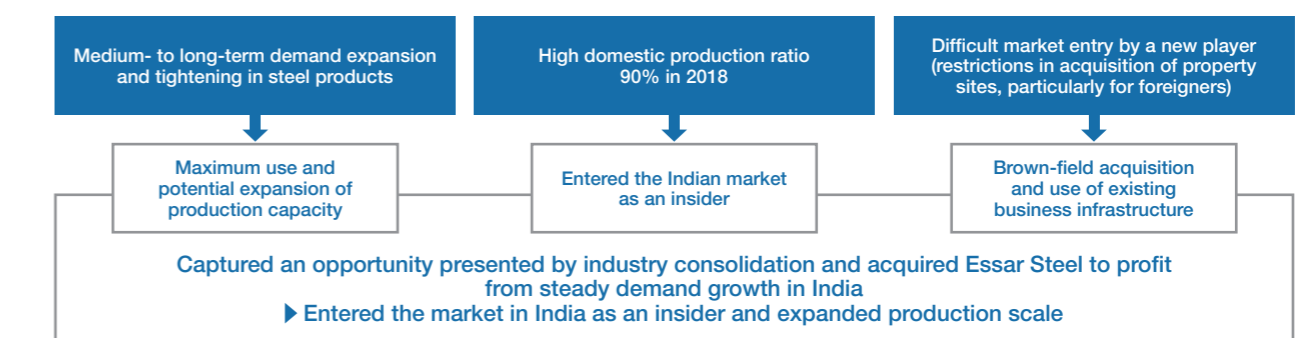
In areas such as North America and China, we have made alliances with major local partners, such as ArcelorMittal and Baowu Steel, to develop local bases for downstream production processes by joint ventures. Those joint ventures supply high-grade steel products by Nippon Steel's technical assistance, using semi-products provided by the partner.



India Integrated steelwork

India is anticipating steel demand growth but tends to have a protectionism trend. The steel market is difficult to enter via exports or by building a new steel mill. This is especially the case when by foreign capital. In December 2019, Nippon Steel and ArcelorMittal jointly acquired Essar Steel India Limited, one of India's four major steelmakers, and entered the Indian

market as an integrated steelmaker, to be engaged in the full range of activities, from raw materials procurement to upstream and downstream processes, under a new company name, AM/NS India. Going forward, we plan to extend capacity by extending the existing steel mill of AM/NS India and building the second steel mill.



We intend to continue expanding overseas markets with a focus on "markets where we see assurance of demand growth potential" and "areas where our technology and product capacity can be used."

Production

Premise in manufacturing: Safety, the environment, and protection against disasters are the most valuable factors that take precedence over all other things

Gigantic movable equipment, high-speed rotating equipment, high-temperature molten materials, and flammable gas are among what are employed in making iron and steel, which therefore is a process of high risk in terms of safety and disaster prevention, and contaminating the air,

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► Safety and health initiatives

In keeping with the corporate philosophy that “safety and health are the most valuable factors that take precedence over all other things and they are the basis that supports business development,” we have firmly kept our manufacturing priorities in all of our activities. We have been

water, and soil. It is therefore essential that we assign the highest and most crucial priority to safety, the environment, and protection against disasters, minimizing the risks. We make sure to operate our steelworks while adhering to these manufacturing priorities.

ESG Materiality 1-(1) Safety and health initiatives

improving our Occupational Safety and Health Management System (OSHMS) and strive at making safe and secure workplaces. The Basic Policy on Safety and Health is applied to Nippon Steel as well as to related or subcontracting companies.

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

We promote risk assessment and conduct regular safety risk assessments during the planning of new projects and for existing projects to prevent accidents and mitigate risks. We also appropriately analyze actual accidents and promptly make known effective examples of accident-preventive measures. As a result of continuing efforts, our safety performance in 2020 shows that the number of accidents accompanied by lost work time was 3 for company, 16 for our cooperating companies (including fatal cases of zero for the company and 2 for cooperating companies), the comprehensive accident frequency rate was 0.09 (vs. the domestic steel industry average of 0.87), and the intensity ratio was 0.08 (vs. the same

average of 0.14). The goals for safety and health in 2021 are zero death or serious injury, and the comprehensive accident frequency rate of 0.10 or less. We will continue to strengthen our efforts to achieve a safer working environment.

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

Target
Accident frequency rate **0.10 or less** | **Zero fatalities accidents**

Acquisition of third-party certification

In fiscal 2019, Nippon Steel adopted a plan for all of our steelworks and offices to obtain the ISO (JIS Q) 45001 Health and Safety certification (published in March 2018) by the end of fiscal 2021, and they have been acquiring it one by one.

Acquisition of ISO (JIS Q) 45001 certificates

FY2019 Kansai Works Wakayama Area

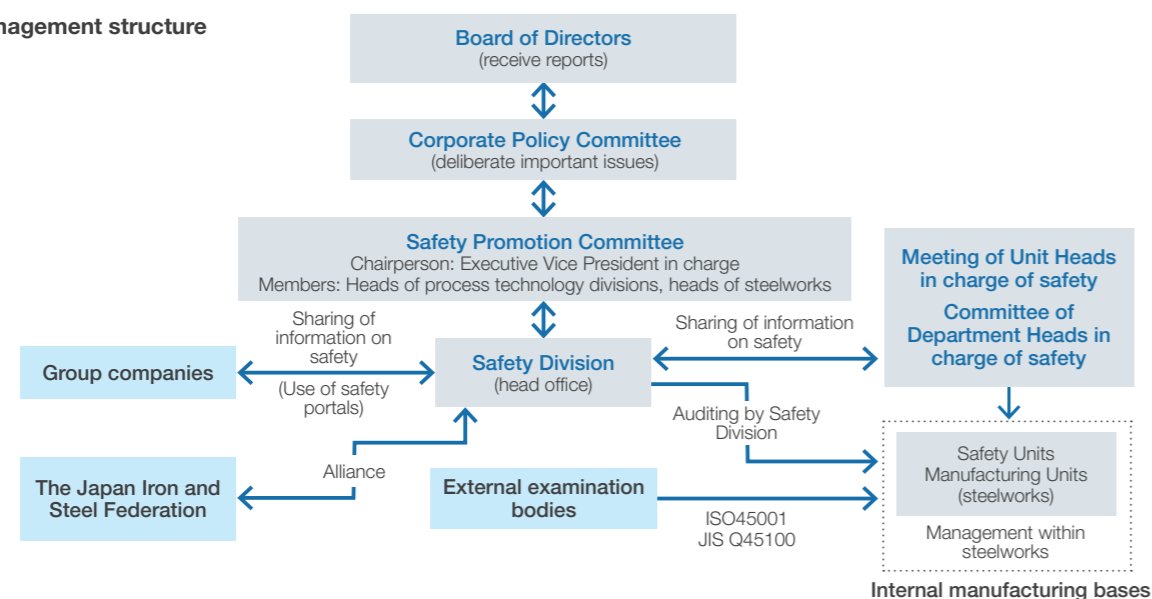
FY2020 Amagasaki Area and Osaka Area of Kansai Works; Nagoya Works; Kyushu Works Oita Area; and East Nippon Works Kashima Area

FY2021 East Nippon Works Naoetsu Area

Kashima Area's ISO(JIS Q) 45001 Health and Safety certification



Safety management structure



► Promotion of 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.

Atmospheric risk management

In order to reduce emissions of sulfur oxides (SOx) and nitrogen oxides (NOx), we are taking measures such as using low-sulfur fuel, adopting low NOx generating burners and installing effective equipment, including equipment that eliminates SOx and NOx emissions. To curb emissions of soot and dust, we install dust collectors, windbreak net, and sprinklers and prevent scattering of particles, based on air pollution risk analysis through scientific simulation. We also conduct constant monitoring and regular patrols.

Soil risk management

We are taking appropriate measures in compliance with the Soil Contamination Countermeasures Act, guidelines issued by the Ministry of the Environment, 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.

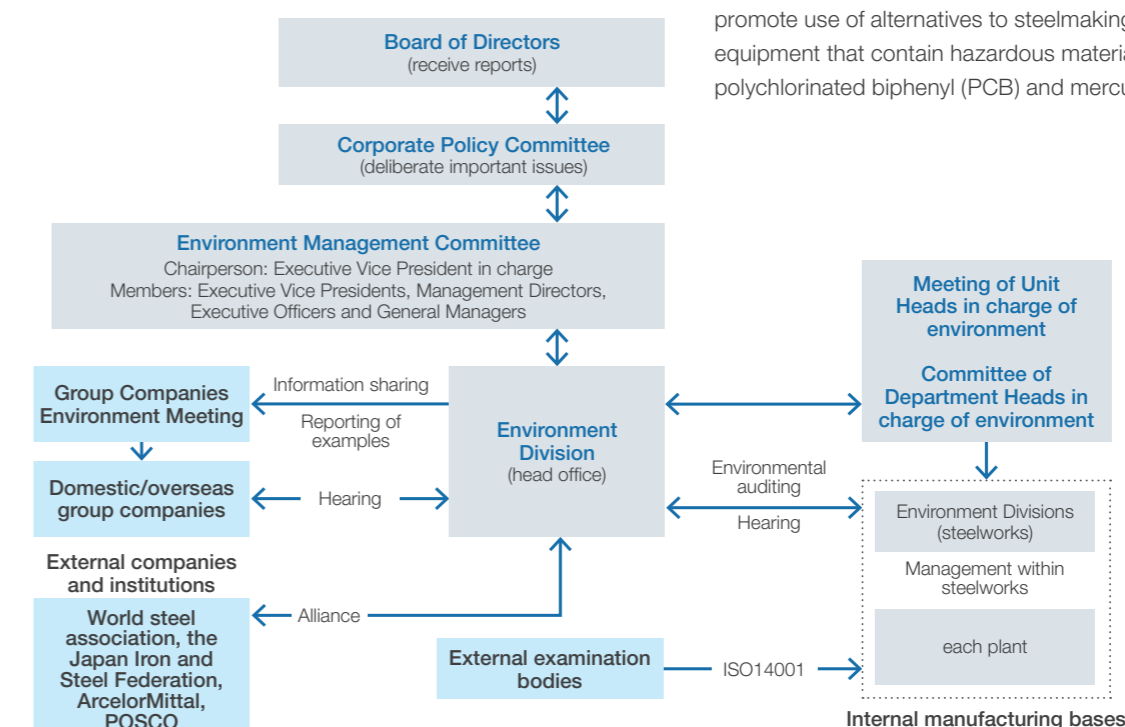
Water risk management

We use approximately 6 billion m³ of freshwater a year at all of our steelworks and factories combined. Approximately 90% of this is recycled or reused to reduce wastewater discharge. We have also installed devices such as automatic detectors, wastewater shut-off gate, and made emergency water storage pits. Our operational bases in Japan are evaluated by the World Resources Institute (WRI) Aqeduct to confirm that we are not prone to high-level water stress.

Management of discharged chemical substances

We appropriately manage the production, handling, and discharge or disposal of chemical substances in accordance with the laws concerning the management of chemical substances and the voluntary control manual developed by the Japan Iron and Steel Federation (JISF) and ourselves. We developed a voluntary reduction plan of hazardous air pollutants specified in the environmental standard, such as benzene and volatile organic compounds (VOC). As a result of our undertaking, we have already reached the targets and have maintained the target levels. We also took the lead to promote use of alternatives to steelmaking materials and equipment that contain hazardous materials such as polychlorinated biphenyl (PCB) and mercury.

Environment management structure



► Efforts on disaster prevention

Trust and co-existence with customers, communities and society are of utmost importance to Nippon Steel, and it is important for the sustainability of the Company to avoid accidents that undermine the trust. We have therefore established a system and

structure for autonomous and continuous disaster prevention activities. We implement measures to reduce the risk of accidents, while proactively preventing them with the aim of enhancing disaster management.

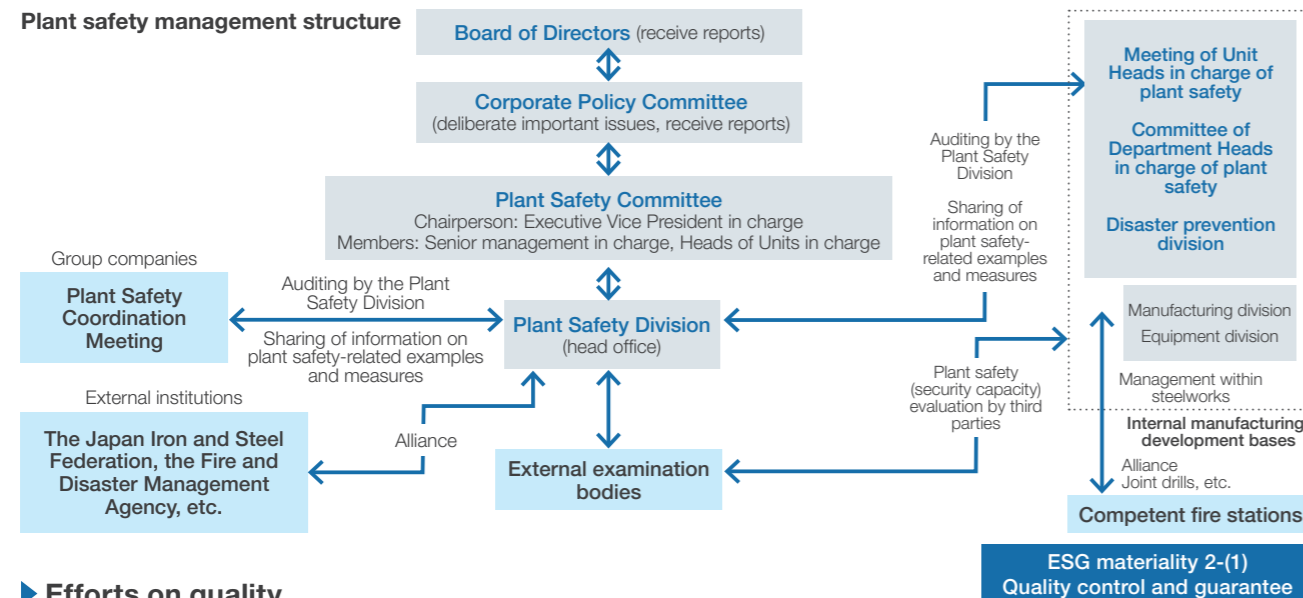
Initiatives on reduction in disaster risks

As initiatives on reduction in disaster risks, Nippon Steel's Plant Safety Division undertakes three key initiatives: 1) corporate-wide implementation of measures against risks exposed by disaster to prevent recurrence; 2) identification of disaster occurrence risks based on risk assessment plant by plant and by each of their process technology divisions; and implementation of measures in software and hardware to reduce risks and control residual risks; and 3) voluntary monitoring concerning appropriate implementation of points 1)

and 2) by persons in charge of disaster prevention in each works; understanding of the control status based on the management hearing at the head office and implementation of corrections if needed. We promote essential disaster prevention improvement measures in manufacturing sites, with a goal set at zero serious disaster-related accidents.

Target
Zero serious disaster-related accidents

Plant safety management structure



Efforts on quality

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 relevant employees are responsible for thorough quality management.

In coordination with product units and individual steelworks, the Company's Quality Assurance Department promotes measures to cope with Groupwide quality control and assurance issues.

Activities aimed at strengthening the quality assurance system of the Nippon Steel Group

As a basic policy in line with the Japan Iron and Steel Federation's guideline, 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 behavioral risks, and 3) advanced internal quality audit. Information on quality-related examples is promptly shared across the Group and at appropriate times measures are launched to resolve

issues through standardization, systemization, automatization, and other action. These measures are then implemented to enhance identification management of actual products and to improve reliability of testing and inspection. In addition, the five newly defined basic rules of quality behavior have been made known to all employees, with a focus on improving the awareness in quality compliance and preventing quality problems to occur.

Quality management structure



Sales Broad-based customer base

Nippon Steel's strength

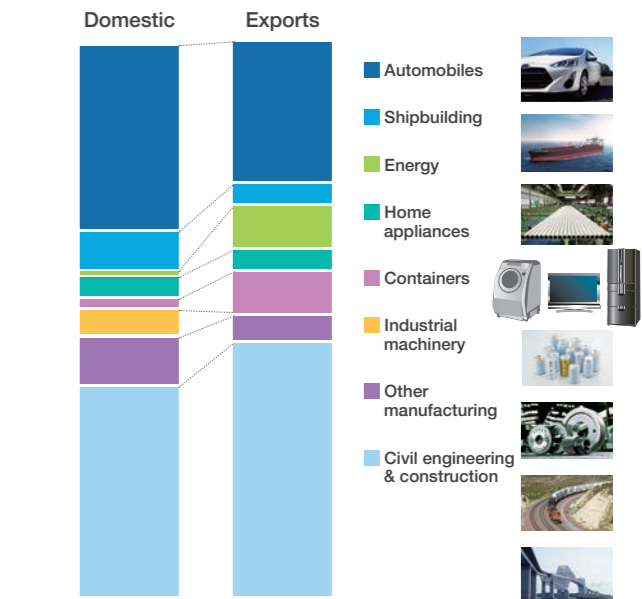
In terms of Nippon Steel's sales by industry, the manufacturing sector represents 60-70%, of which roughly 30% is the automotive sector, and the civil engineering and construction sector occupies the remaining 30-40%.

The sales contracts to the manufacturing sector tend to have a higher portion of tied (long-term contract) sales contracts, 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.

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Shipment breakdown by customer sectors



Based on shipment volume (Nippon Steel non-consolidated, FY2020, excluding semi-finished products)

COLUMN

Sales contracts of steel products

● **Tied (long-term contract) sales contract**
Contract that a steelmaker produces steel products according to a customer's specified order (price, volume, specifications, etc.) and sells them to the customer via an intermediary trading firm.

● **Retail sale**
Contract that a steelmaker sells steel products to retailers and trading firms 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, taking into account the market and other conditions.

Sales High presence in growing Asian region

Nippon Steel's strength

Out of Nippon Steel's steel products produced in Japan, roughly 50-60% are consumed in Japan and the remaining 40-50% are exported. ASEAN countries, South Korea, China, Taiwan, and elsewhere in Asia represent about 70% 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 Japan's No. 1 and the world's No. 5 in market share

Nippon Steel's strength

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 emergence, consolidation, and reorganizations of Chinese steelmakers, along with China's rapid growth in steel demand and production volume. At present, Nippon Steel is No. 5 in the world.

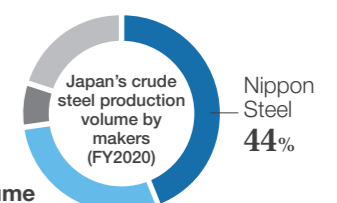
We now aim at "becoming the best steelmaker with world-leading capabilities," not the largest in scale, by using our three key

driving forces, "technology," "cost," and "being global."

World ranking in crude steel production volume

849 million tons in 2000		1,346 million tons in 2007		1,878 million tons in 2020	
1	Nippon Steel 28.4	1	ArcelorMittal 116.4	1	China Baowu Group 115.29
2	POSCO 27.7	2	Nippon Steel 35.7	2	ArcelorMittal 78.46
3	Arbed 24.1	3	JFE 34.0	3	HBIS Group 43.76
4	LMN 22.4	4	POSCO 31.1	4	Shagang Group 41.59
5	Usinor 21.0	5	Baosteel 28.6	5	Nippon Steel 41.58
6	Corus 20.0	6	TATA 26.5	6	POSCO 40.58
7	ThyssenKrupp 17.7	7	Angang 23.6	7	Ansteel Group 38.19
8	Baosteel 17.7	8	Shagang 22.9	8	Jianlong Group 36.47
9	NKK 16.0	9	Tangshan Steel 22.8	9	Shougang Group 34.00
10	Riva 15.6	10	U.S. Steel 21.5	10	Shandong Steel Group 31.11
11	Kawasaki Steel 13.0				
12	Sumitomo Metals 11.6	20	Sumitomo Metals 13.8		

Source: World Steel Association



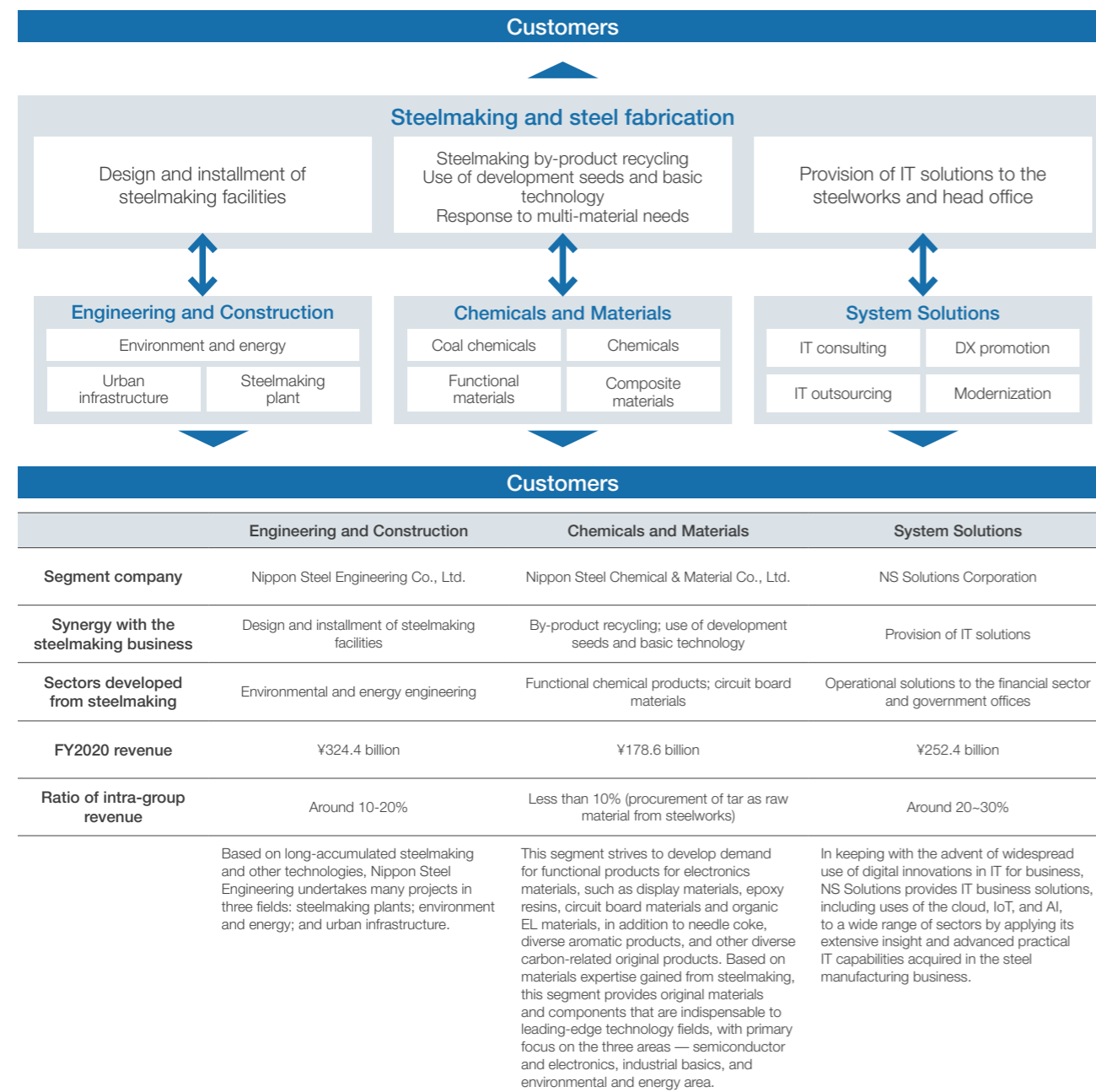
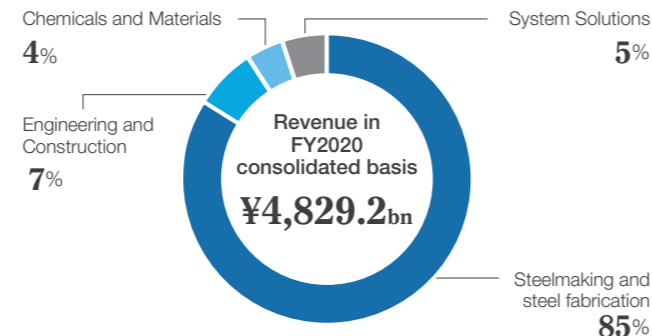
Business summary by segment

Three non-steel segments support the steelmaking business and provide excellent products and services to society

 Nippon Steel's strength

The Nippon Steel Group generates close to 90% of revenue from the steelmaking business.

Nippon Steel's three business segments, which are derived from the steelmaking business, support and generate synergy with the steelmaking business, and are also engaged in business with companies outside the Nippon Steel Group, by using technology, products and services developed in the Group. Each of the three segments has grown to have revenue of ¥200-300 billion, achieving top-class profit levels in their respective business field.

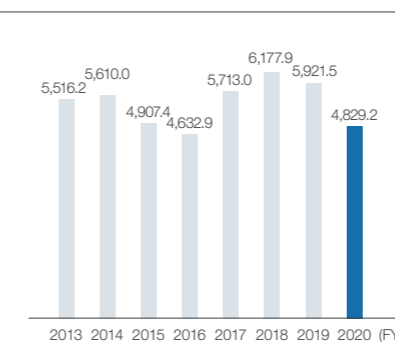


P.85-88


NIPPON STEEL

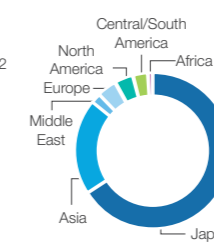
Revenue (consol.)

(billion yen/year)
Net sales (JGAAP) up to FY2016
Revenue (IFRS) from FY2017



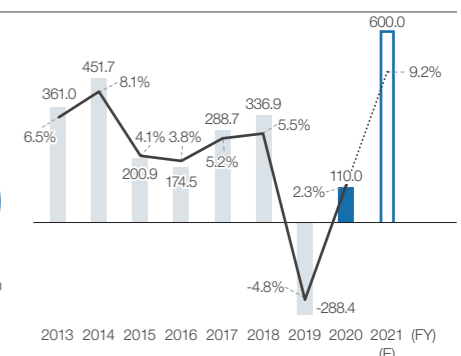
Regional Revenue (consol.)

FY2020 results

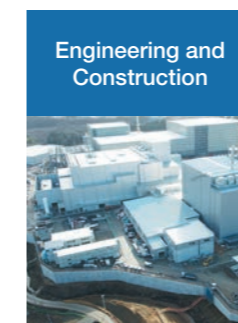
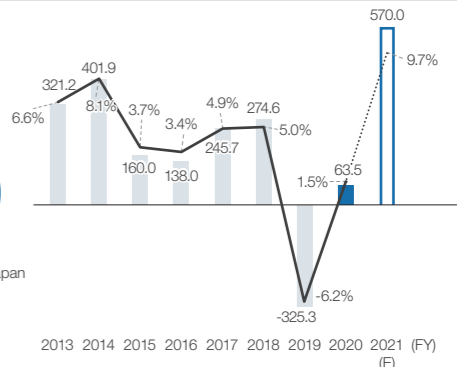
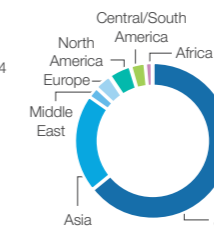
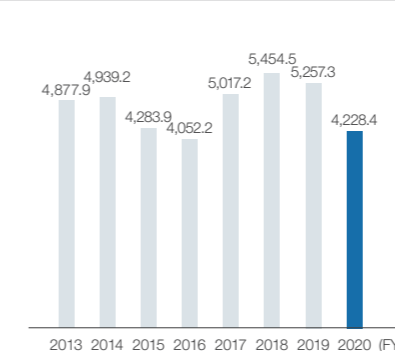


Business profit (consol.) ROS (Return on Sales)

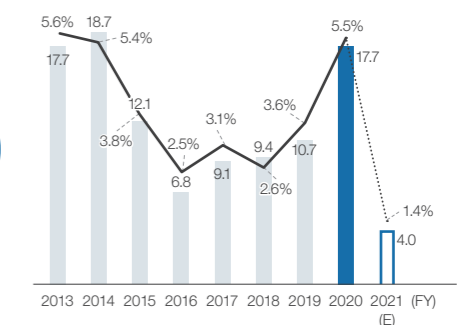
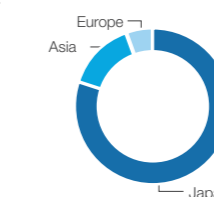
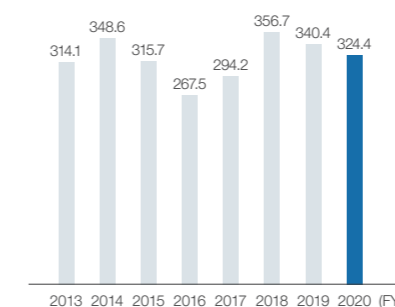
(billion yen/year)
Ordinary income (JGAAP) up to FY2016
Business profit (IFRS) from FY2017



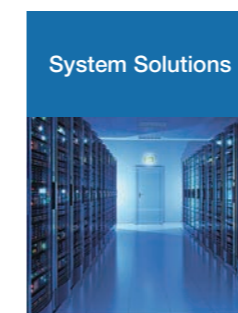
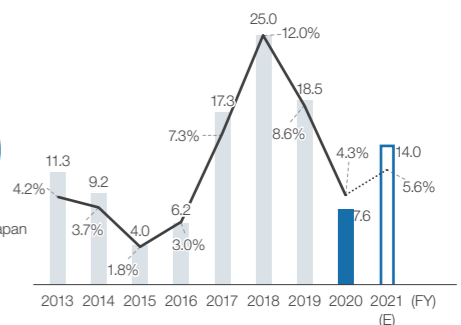
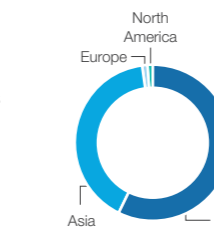
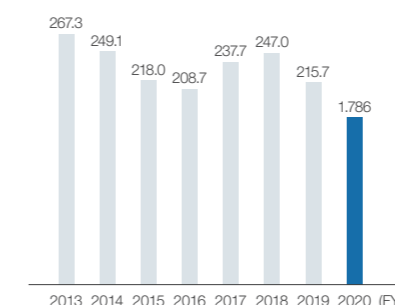
Steelmaking and steel fabrication



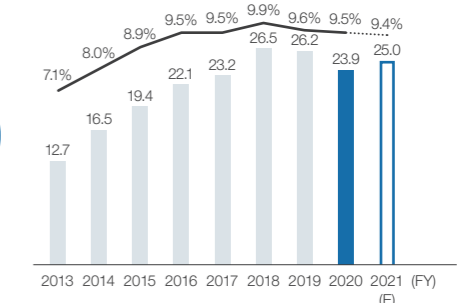
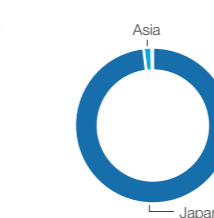
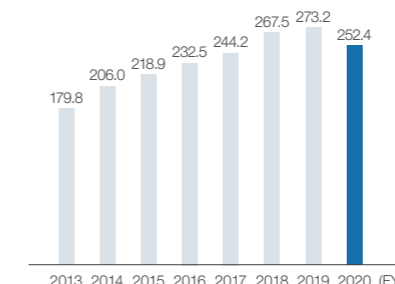
Engineering and Construction



Chemicals and Materials



System Solutions



Products and applications

ESG materiality 2-(3)
Solutions that result in customer satisfaction

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.

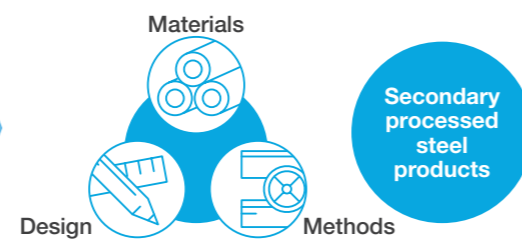
Technological prowess that brings out diverse properties and infinite potential of steel

◆ Nippon Steel's strength

Diverse properties and infinite potential of steel

Strength	Weldability	Heat resistance
Toughness	Paintability	Cold resistance
Robustness	Magnetism	Weather resistance
Workability	Corrosion resistance	etc.
Abundant resources	Mass production	

Solution provision



Value realized by Nippon Steel

Supply of steel products	Contribution to customers
Lightweight	Energy saving
Process saving	Reduction in environment impact
Long product life	Safety
High yield	Appearance design
No hazardous substance etc.	Labor saving
	Comfort
Long-term stable supply	Product competitiveness
Global supply system	Overseas production capability

Contribution to SDGs in society

SUSTAINABLE DEVELOPMENT GOALS

Safe, reliable living	Energy preservation, climate action, recycle-oriented society
Disaster prevention and reduction, National Resilience	Products and technological solutions in growth areas
Infrastructure to build in emerging countries and to rebuild in developed countries	

Wealth of product groups

◆ Nippon Steel's strength

Product types

	Steel sheets	Flat products	Bar & wire rod	Construction products	Pipes and tubes	Railway, automotive and machinery parts	Titanium	Stainless steel (Nippon Steel Stainless)
	 Hot-rolled steel sheets Cold-rolled steel sheets Electrical steel sheets Galvanized steel sheets Electrolytic tinplate	 Plate	 Bar Wire rod	 Structural shapes Steel pipe piles Rails Steel sheet piles	 Welded pipes and tubes Seamless pipes and tubes	 Bogie trucks Railway wheels Crankshafts	 Titanium sheets Titanium ingots Titanium foil	 Sheets Plates Bar and rod materials
Major applications and product examples	Automotive High-tensile steel sheets High strength Lightweight Workability Electrical appliances, office equipment VIEWKOTE™ (pre-painted steel sheets) Corrosion resistance Appearance design Process saving 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 SuperDyma™ 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 Workability Weldability Energy 7% nickel steel Energy saving Ultra-low-temperature strength and toughness	Automotive Steel cords for tires Ultra-lightweight High strength Durability Steel for high-strength suspension springs High strength Durability Lightweight Industrial machinery Steel for high-function bearings Circularity 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 Hat-type sheet piles Space saving Workability Reduction in construction time NM segment Structural reliability Reduction in construction time Reduction in waste soil	Automotive Pipes and tubes for hydroforming (Pipes and tubes for suspensions) Closed-section structure High strength Lightweight Energy Pipes and tubes for ultra-supercritical thermal power plant boilers High-temperature strength High-temperature corrosion resistance OCTG, line pipes High strength Durability 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 Crankshafts High strength Durability Safety Industrial machinery Permanent magnet retarder Energy saving Lightweight Safety	Automotive Titanium alloys for mufflers Corrosion resistance Lightweight High strength Workability Aircraft Titanium alloys for aircraft Lightweight High-specific strength Corrosion resistance Construction TranTixii™ 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 Appearance design Workability Energy Stainless plates Corrosion resistance High strength Civil engineering and construction Stainless cold-rolled sheets Corrosion resistance Lightweight Appearance design

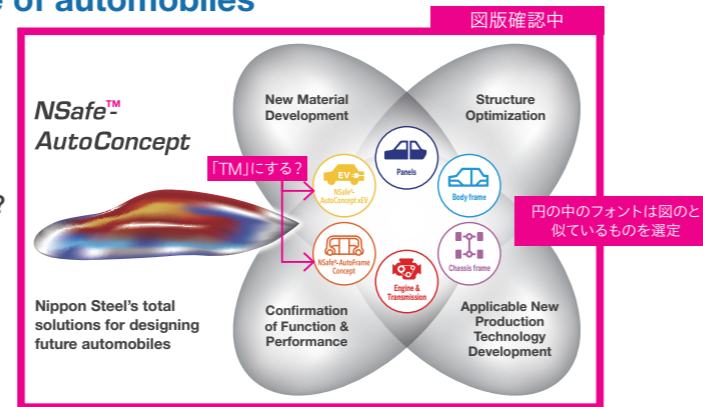
Products and solutions that design the future of automobiles

Automobiles are changing with the changing times:
no more need to drive, the emergence of alternative energy sources, and vehicle-to-vehicle communication.

New concept cars are going to be on the road in various parts of the world. In such an environment, what can Nippon Steel do?

As the expert in steel, we strongly believe in the infinite potential of steel and will continue to make innovations.

We aim to contribute to the development of next-generation automobiles and all aspects of the future surrounding automobiles.



Nippon Steel is accelerating efforts in research and development aimed at capturing automakers' growing needs for the reduction of car body weight and collision safety, as well as the mega-trends in the auto-motive industry – the spread of electrification vehicles (EVs), such as electric vehicles, and automatic driving. We have established the next-generation steel car concept “NSafe™-AutoConcept” (NSAC), with mass equivalent to that of all-aluminum vehicles and enhanced collision performance. We will continue to make improvements to further enhance the performance of the NSAC.

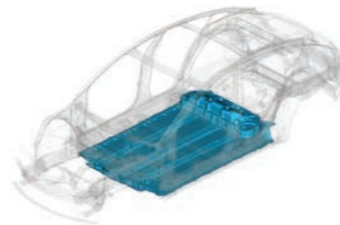
In this context, we have expanded our solution concept in

two fields: EVs and next-generation mobility. By taking full advantage of the Group's comprehensive strengths, we are making extensive efforts in the areas of material development, structural and functional design, process development, and performance evaluation in the fields of EVs and next-generation mobility as part of the development and manufacture of next-generation vehicles.



Concept for steel solutions for electrification vehicles “NSafe™-AutoConcept xEV”

The NSafe™-AutoConcept xEV has been developed as a steel solution concept for EVs, which are becoming increasingly popular worldwide in line with growing needs for zero carbon. We have realized the “safety, performance, and cost balance” proposal in the field of body structure and the motor field, including the battery and the battery box, which are the main components of EVs. The application of this solution will help not only performance, but also shorter and lower-cost development by customers, thereby contributing to the earlier realization of electrification.



Die-less production solution concept befitting smaller-lot production for next generation mobility “NSafe™-AutoFrameConcept”



CASE and MaaS have diversified the needs of end users regarding the automotive structure. Greater variety of models leads to the need for smaller-lot production, but it will be inefficient to prepare production facilities for each model.

We have established the “NSafe™-AutoFrameConcept”, a die-less production solution concept that enables production with no need or less need for molds. This concept is based on our superior performance steel pipes and their processing and structural solution technologies.

A unique product connecting tomorrow's hydrogen-oriented society

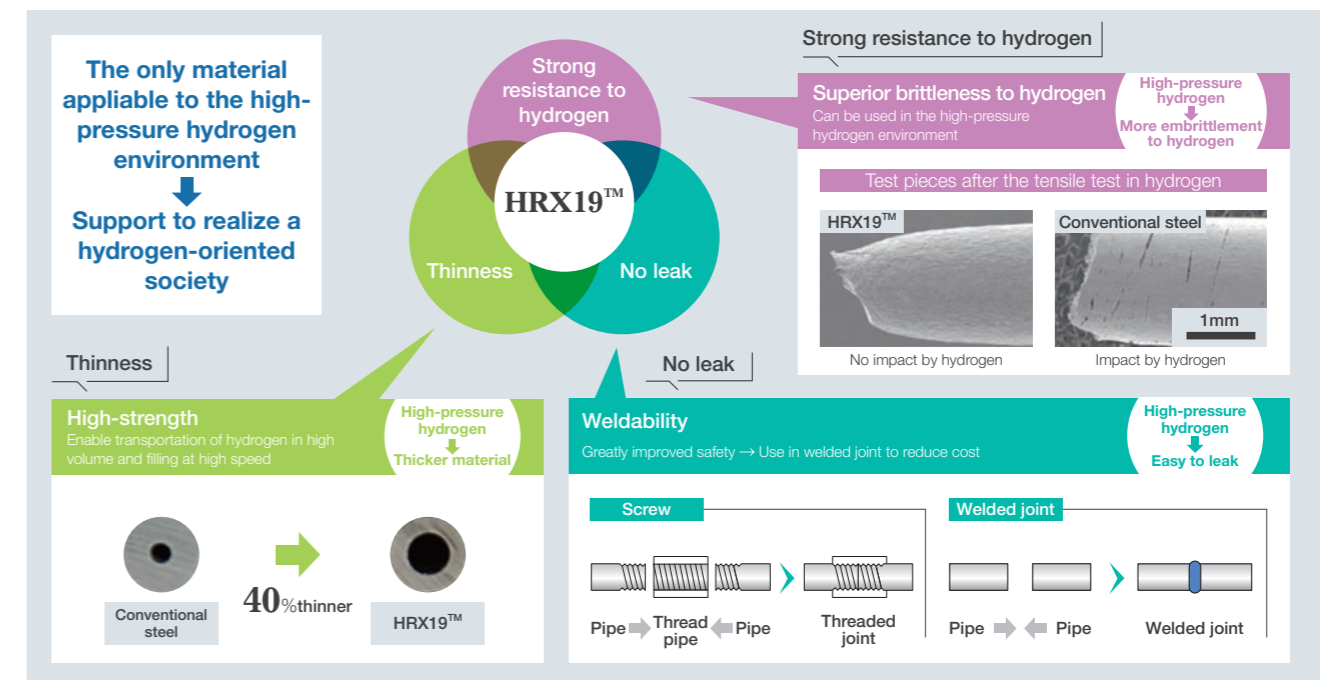
HRX19™, a stainless steel product for high-pressure hydrogen, will contribute significantly to the realization of a hydrogen-oriented society



The development of hydrogen stations is progressing throughout Japan in a planned manner, as fuel cell vehicles (FCVs) using hydrogen are attracting attention as an increasingly popular next-generation clean energy. HRX19™, the world's first high-pressure hydrogen stainless steel developed by Nippon Steel, has been adopted by approximately 60% of hydrogen stations in Japan, and has

won many awards for technology and social contribution, as it has overcome hydrogen brittleness, which occurs in the high-pressure hydrogen gas environment, and as it has high strength and weldability. This sole material adapted to high-pressure hydrogen environments will greatly expand the potential of tomorrow's hydrogen-oriented society and contribute to the further spread of clean energy.

Features of HRX19™



Commercial-use hydrogen station

Adoption of HRX19™

Approx. **50%** (Approx. 80 stations)

Over 90% in the stations constructed in FY2019

Commercial-use hydrogen station

161

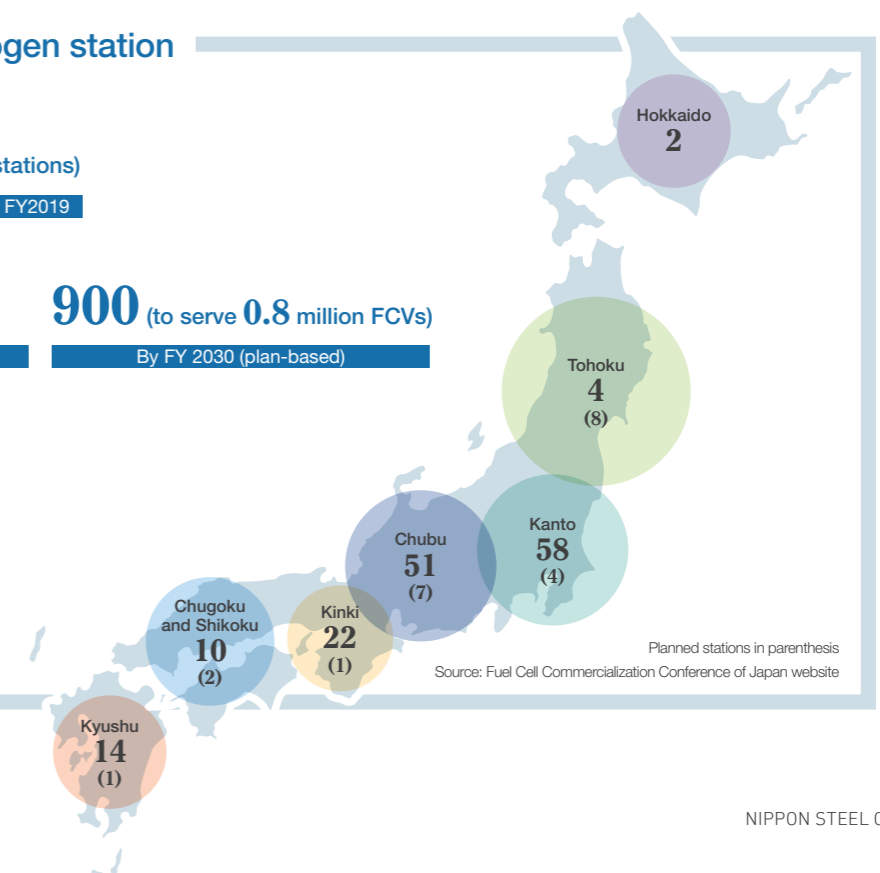
Aa of May 2021

900 (to serve 0.8 million FCVs)

By FY 2030 (plan-based)



Ariake Hydrogen Station of Iwatani Corporation
Photo courtesy of Iwatani Corporation



Solutions for National Resilience

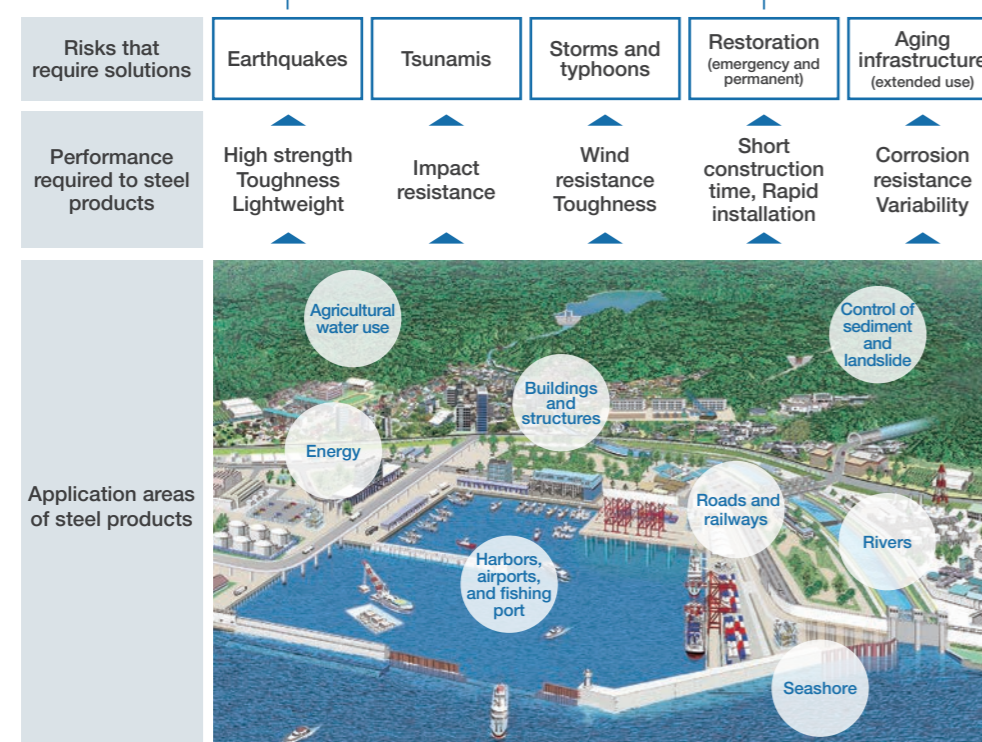
In recent years in Japan, natural disasters such as earthquakes, tsunamis, powerful storms, and typhoons have occurred more frequently and with greater severity geologically and geographically due to crust fragility associated with being located in plate boundaries, and due to impacts of global-scale climate changes.

The national land and diverse infrastructure have to support and protect people's everyday life and safety from these disasters. Construction of new and added facilities and measures against the aging or declining performance of existing facilities are in urgent need. In addition to responding quickly to disaster recovery and support, it is now necessary to meet the demands of a broader range of resilience in preparation for the digital transformation era. Among 169 Sustainable Development Goals adopted by the United Nations is included a goal to "develop quality, reliable, sustainable and resilient infrastructure, including regional and transborder infrastructure."

The Japanese Government is also taking up "Sustainable and Resilient Land Use, Promoting Quality Infrastructure" as one of issues. The Government has promoted a "three-year emergency response plan for disaster prevention, disaster mitigation, and building national resilience" budgeted at around ¥7 trillion since fiscal 2018. This was followed by a launch of the "five-year accelerating measures for disaster prevention, disaster mitigation, and building national resilience" budgeted at around ¥15 trillion starting in fiscal 2021. Further, taking into account the repeated heavy rainfall disasters, accelerated water control measures concerning 121 river basins across Japan has been announced as a "basin-wide flood disaster prevention project."

The Nippon Steel Group is committed to providing various solutions for national resilience, making use of its diverse manufacturing methods, product development capacity, abundant achievements in technology proposals, and nationwide product supply capacity.

Measures against natural disasters, triggered by climate change, etc.



Outcomes to be achieved



Nippon Steel's solution examples for national resilience



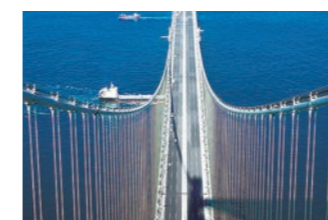
Eco products™ (What we produce is "Eco-friendly")

Nippon Steel's eco-friendly products help reduce environmental burden.

Our products have advanced or highly specialized functions and reliability, that are based on our technological capabilities, and are widely used in diverse areas of society. They contribute to promote (1) measures against climate change by energy saving and CO₂ emission reduction; (2) creation of a circular economy by prolonging product life and improving recyclability; and (3) environmental risk management by preservation of the environment and control of chemical substances.

Promoting measures against climate change (Saving of energy and a reduction in CO₂ emissions)

Nippon Steel is contributing to reduction in CO₂ emissions through improved fuel efficiency such as by customers' use of high-tensile-strength steel sheets, which are thinner and more lightweight.



Improved construction efficiency for civil engineering
Wire rods for high-strength suspension bridge cables



Energy conservation from lighter, faster-speed railways
Wheels for high-speed railways



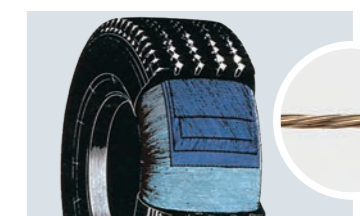
Improved construction efficiency for civil engineering
Hat-type steel sheet piles



Promotion of energy conversion
Seamless pipes and tubes for hydrogen refueling stations



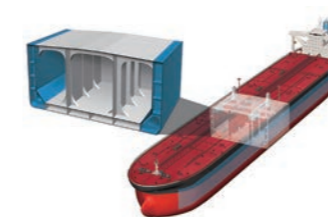
Enhanced efficiency of motors for hybrid vehicles
Highly-efficient non-oriented electrical steel sheet



Weight reduction and better fuel efficiency for automobiles
Steel cords for tires

Promoting environmental risk management (preservation of the environment and control of chemical substances)

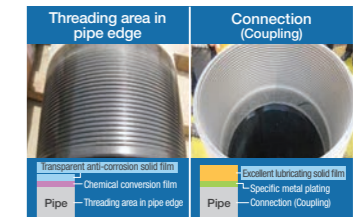
Nippon Steel is contributing to reduction of environmental risks by realizing the same performance, which used to be achieved by adding lead and other substances of concern, without doing so, and by providing steel products that curb noise generation in the use of the products.



Enhanced maritime safety of ships
steel plates for enhancing collision safety
NSafe™-Hull



Electrolytic chromatefree zinc-coated steel sheet for home appliances
NS ZINKOTE™ Black



Eco-friendly products for the energy sector OCTG connections
CLEANWELL™ DRY

Promoting the creation of circular economy (prolonged service life and improved recyclability)

Nippon Steel is contributing to prolonged product lives by providing corrosion-resistant, abrasion-resistant steel products, that respond well to usage and the environment to be used. We are also contributing to promoting a circular economy by adding various functions to steel, which has extremely high recyclability.



Highly recyclability and weight reduction
Ultra-thin tin laminated steel foil (steel cans)



Prolonged service life and enhanced durability and reliability for the construction industry
Titanium roofing



Enhanced corrosion resistance for home appliances and construction products
High corrosion resistance coated steel sheet, SuperDyna™

Fiscal 2020 operating results and fiscal 2021 outlook

In fiscal 2020 Nippon Steel significantly reduced fixed costs and improved the profit structure. The overseas business also improved profitability by selective concentration of businesses.

We recorded a significant loss in 1H, stemming from the impact of COVID-19, but made a turnaround to generate non-consolidated operating profit in 2H for a V-shaped recovery in consolidated business profit.

Our next target is to exceed the high for our profit since the business integration in 2012.

ESG Materiality 6
Corporate value enhancement and profit distribution

Consolidated business profit and non-consolidated operating profit

Financial summary (¥ billion)						
	FY2019A	1H FY2020A	2H FY2020A	FY2020A	1H FY2021F	FY2021F
Steel segment	5,257.3	1,965.8	2,262.6	4,228.4	About 2,810.0	About 5,880.0
Non-steel segment	829.4	352.2	403.4	755.6	About 372.0	About 735.0
Adjustment	▲165.2	▲76.0	▲78.7	▲154.7	▲About 82.0	▲About 175.0
Revenue	5,921.5	2,241.9	2,587.2	4,829.2	About 3,100.0	About 6,500.0
Non-consolidated operating profit	▲119.3	▲136.1	31.3	▲104.7	/	About 310.0
Steel segment	▲325.3 <small>excl. impairment loss etc.</small>	▲116.7	180.2	63.5	About 340.0	570.0
Non-steel segment	55.3	14.2	35	49.2	About 18.5	About 43.0
Adjustment	▲14.4	▲3.9	1.2	▲2.7	▲8.5	▲13.0
Business profit	▲284.4 <small>excl. impairment loss etc.</small>	▲106.5	216.5	110.0	About 350.0	About 600.0
ROS	1.3% <small>excl. impairment loss etc.</small>	▲4.8%	8.4%	2.3%	About 11.3%	About 9.2%

A: Actual results; F: Forecasts

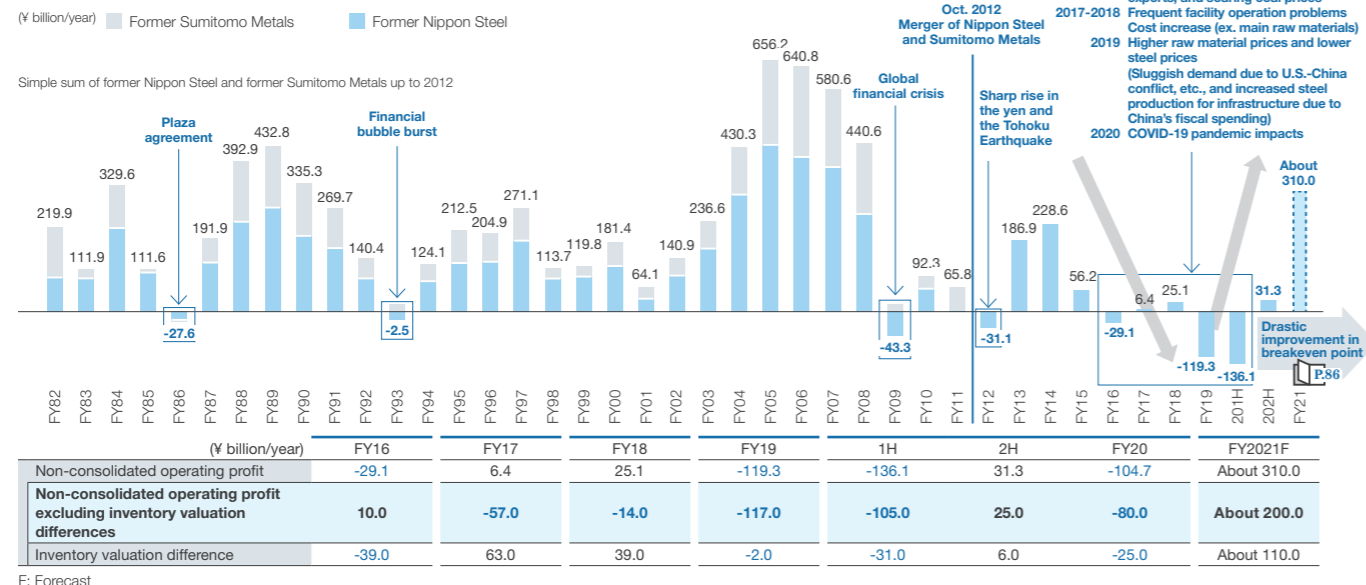
Results for fiscal 2020

In fiscal 2020, due to the the COVID-19 pandemic, domestic steel demand fell sharply to around 80% (25.1 million tons) of the demand in the first half of fiscal 2019, and recovered in the second half but only up to the low level of around 90% (27.5 million tons) of the same period of a year ago. Under these circumstances, we recorded a business loss of ¥106.5 billion in the first half but returned into business profit of ¥216.5 billion in the second half. Non-consolidated operating profit, which represents the profits of our main domestic steelmaking business, turned into a surplus in the second half, for the first time in 4.5 years. Full-year business profit of

¥110 billion exceeded that of the previous fiscal year (¥76.5 billion, excluding the effects of impairment losses, etc.), despite the lower levels in production and shipments.

The return to a non-consolidated operating surplus in the adverse environment resulted from a drastically improved breakeven point, achieved through our efforts at cost reduction. The strategic selections and concentration of overseas businesses resulted in generating overseas business profits, which significantly contributed to the overall consolidated business profits.

Non-consolidated operating profit



F: Forecast

Business profit variance

	FY2019 FY2020 FY2021F
(¥ billion)	76.5 110 600
Increase (decrease) in consolidated business profits	+33.5 +490
Increase (decrease) in production shipment volume	-249 +120
Sales prices, product mix and raw material prices	-5 +100
Cost reduction	+165 +60
Depreciation expenses	+120 -34
Inventory valuation difference (incl. Group companies)	-18 +175
Group companies	-30 +10
Non-steel segments	-6 -6
Other	+56.5 -54
Base variable cost improvement	+ ¥55 billion
Base fixed cost compression (cash basis)	+ 110
Depreciation expenses decrease	+ 120
Base fixed cost compression	+ 230
Negative cost impact of production cut	
Improved variable costs utilizing low production	
Fixed cost compression utilizing low production	
FY2020 cost improvement + Depreciation	+ 285

Forecast for fiscal 2021

In fiscal 2021, a V-shaped recovery to business profit of ¥600 billion is expected (as of August 2021), mainly due to 1) a drastic improvement in the breakeven point through the fundamental cost improvement efforts in fiscal 2020, 2) the effect of selective order acceptance after our integrated steelmaking capacity had been narrowed down to competitive facilities, and 3) the improved profitability of overseas Group companies.

Crude steel production is expected to increase by 20% y-o-y to 40 million tons/year. We intend to take advantage of the current high export margins, stemming from a sharp rise in the overseas steel market, stabilize our operations and facilities, and maximize marginal profit through stable production and shipment. We will also seek to reduce variable costs by further improving full-potential operations.

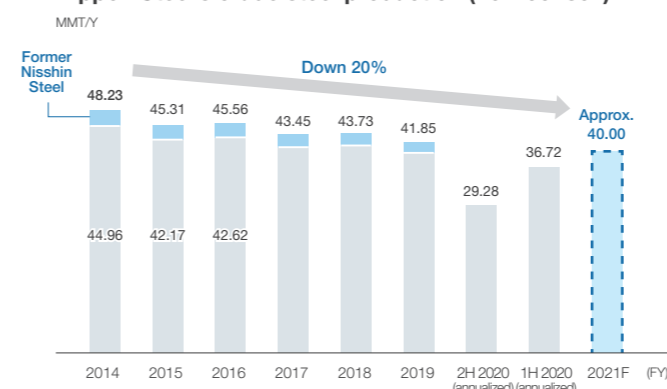
Efforts to improve long-term contract prices are another area of focus. In order to ensure stable supply of materials (and long-term supply capability), and to develop and invest in high-quality products required by customers, we are asking customers to adjust long-term contract pricing and to allow us to secure

appropriate margin internationally by proportionately passing along the impact of cost increases of main raw materials and commodity raw materials, and from the perspective of the value provided by our products and solutions.

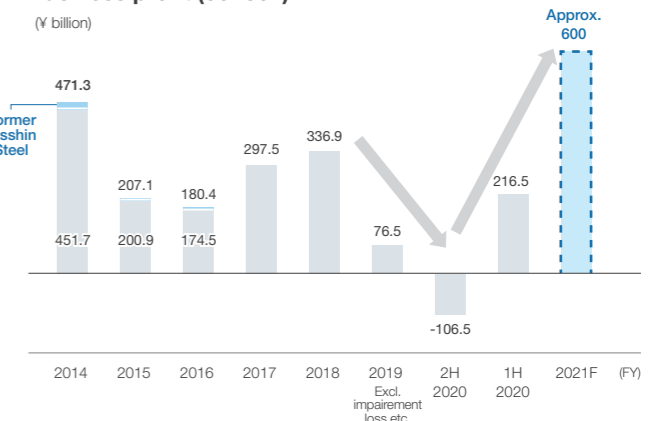
The highest profit we recorded since the integration of former Nippon Steel and former Sumikin was ¥471.3 billion (including profit from the former Nisshin Steel, which was merged in fiscal 2017) in fiscal 2014. Compared to that year, our production shipment level in fiscal 2021 will be about 20% less due to the deteriorated business environment, which is mainly represented by 1) declining domestic demand, 2) deteriorating OCTG business, caused by weak crude oil prices, and 3) soaring iron ore prices. Nevertheless, we are anticipating to realize profit, which substantially surpasses the level in fiscal 2014, owing very much to our structural efforts.

Despite the current favorable environment, our assumption that domestic demand will decrease and export will be difficult over the medium to long term remains unchanged, and we are committed to continue steady implementation of production facility structural measures.

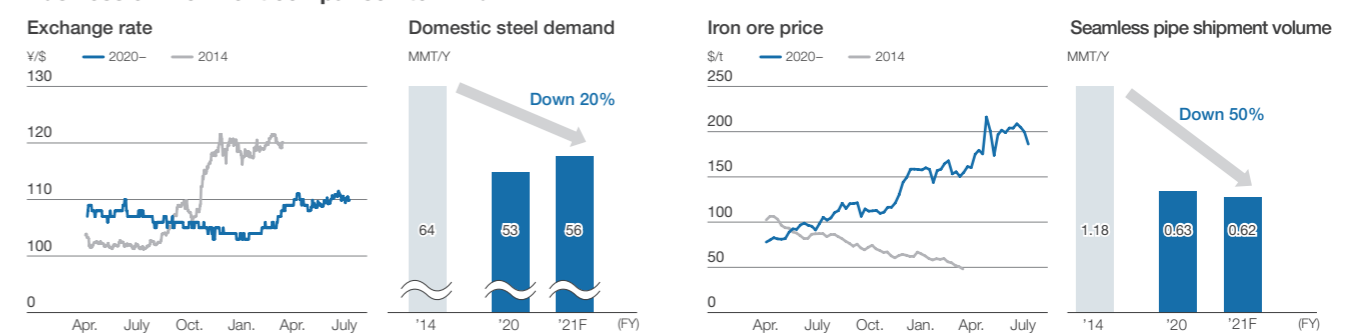
Nippon Steel's crude steel production (non-consol.)



Business profit (consol.)



Business environment comparison to FY2014



Steelmaking segment

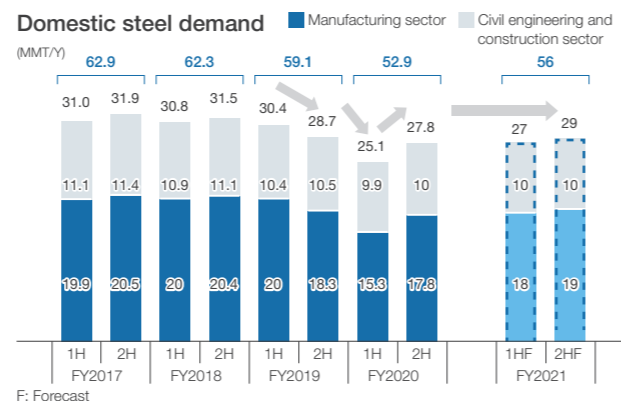
Business environment

Decline followed by recovery in demand, driven by the COVID-19 impact

Domestic steel demand fell below 60 million tons in fiscal 2019, for the first time in a decade since the global financial crisis of 2008, due to a decrease in demand for indirect exports of Japan's manufacturing industry. In fiscal 2020, demand for steel products, particularly in the manufacturing sector, decreased significantly due to the spread of the COVID-19 infection. In the first half, demand was around 25 million tons, down nearly 20% y-o-y. In the second half, demand slightly recovered to around 28 million tons, which was still down 5% y-o-y. We are expecting that demand will continue to stay roughly at the same level in fiscal 2021.

Overseas steel demand also decreased in fiscal 2020 due to the COVID-19 impacts but demand increased in China, where the economy picked up earlier than other countries from the COVID-19 pandemic. As a result, the global demand was nearly

as high as in fiscal 2019. In fiscal 2021, each region is seeing a y-o-y recovery in demand and the global demand is likely to increase by around 5.8%, although the impact of re-emergence of COVID-19 infections makes the outlook a little uncertain.



Steel product prices and raw material prices

In the global steel market, a peculiar situation of "high raw material prices and low steel product prices" prevailed in fiscal 2019 but the situation began improving in fiscal 2020. In the first half of fiscal 2020, the COVID-19 effects led to sharp decline in demand and sharp drop in the steel market but since the second half, the supply and demand balance has tightened due to the economic recovery. Iron ore prices have still soared to a high level, but steel prices have also turned and are on an uptrend.

These favorable developments are derived from the trend in China, which accounts for 60% of the world's steel supply and demand. China's steel demand continues to be high due to the government's infrastructure investment. Despite the continuing

high level of iron production in China, the country's demand for steel products remains so strong that it decreased steel exports and even increased imports. In fiscal 2021 in the midst of a recovery in global steel demand, the Chinese government announced policies, including "crude steel production cut in fiscal 2021," "strict prohibition of increase in new steel production capacity," and "curbing of steel exports and promoting of imports." These reinforce the expectation for tighter global steel demand for the foreseeable future.

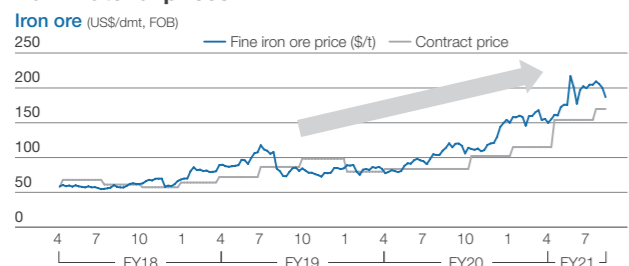
Under such tight supply and demand conditions, overseas steel markets have risen substantially, and the Japanese steel market, although lagging, is also expected to rise.

Hot-rolled coil prices

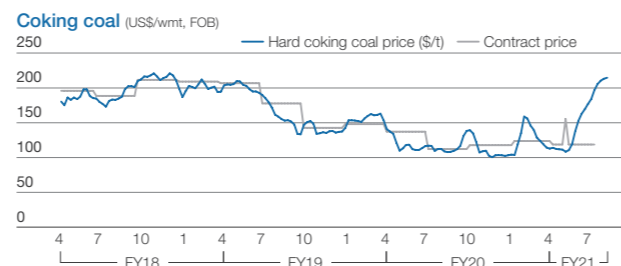


Looking at the main raw materials, iron ore prices have risen to a high level, due to the strong pig iron production in China from fiscal 2020 to the first half of fiscal 2021. The coking coal price needs to be carefully monitored as the political tension

Raw material prices



between China and Australia caused a temporary decline in the price of Australian coking coal, while European mills are currently boosting procurement.



Actions taken in fiscal 2020

Prompt response to the rapid decline and subsequent recovery in demand, caused by the COVID-19 impact

In response to a sharp drop in demand in the first half of fiscal 2020, we promptly put 6 out of 15 blast furnaces into banking mode (temporarily stop blast furnace production in a condition that enables production to restart), thereby rapidly reducing production. Then in the second half, responding to a recovery in demand, we restored operation of blast furnaces in banking

one by one and secured proper production volume.

As we had announced the production facility structural measures in February 2020, and had decided on policy for our future facility structure, we were able to quickly determine and implement banking of blast furnaces and resume their operation in the most optimal manner.

Blast furnace operation status

		FY2020	FY2021
Muroran	2BF	Blowing-out ahead of schedule → Refurbishment → Blowing-in	
Kashima	1BF	Suspension → Resumption	
	3BF	Suspension → Resumption	
Kimitsu	2BF		
	4BF		
Nagoya	1BF		
	3BF		
Wakayama	1BF	Suspension → Shutdown (already disclosed)	
	2BF		
Kure	1BF		Shutdown (already disclosed)
	2BF	Suspension → Shutdown (already disclosed)	
Yawata (Kokura)	4BF		
	2BF	Suspension → Shutdown (already disclosed)	
Oita	1BF		
	2BF		

Drastic improvement of breakeven point

Prior to the COVID-19 outbreak, we planned to drastically reduce costs and improve our earnings structure in fiscal 2020. Then the COVID-19 infections significantly affected our operations but we proceeded with cost reduction measures without deviating from the original policy and achieved more results than initially planned. Variable costs improved by ¥55 billion, which exceeded the level of improvement in other years, despite a decline in production volume. Fixed costs, which were stuck at a high level in the past few years, decreased by ¥110 billion, as we scheduled repair costs in line with the production facility structural measures released in February 2020, used advanced IT for inspections so as to better manage equipment, and reorganized steelworks into smaller groups for improving efficiency. Depreciation expenditures decreased by ¥120 billion per year due to change in the depreciation method from the fixed-rate method to the

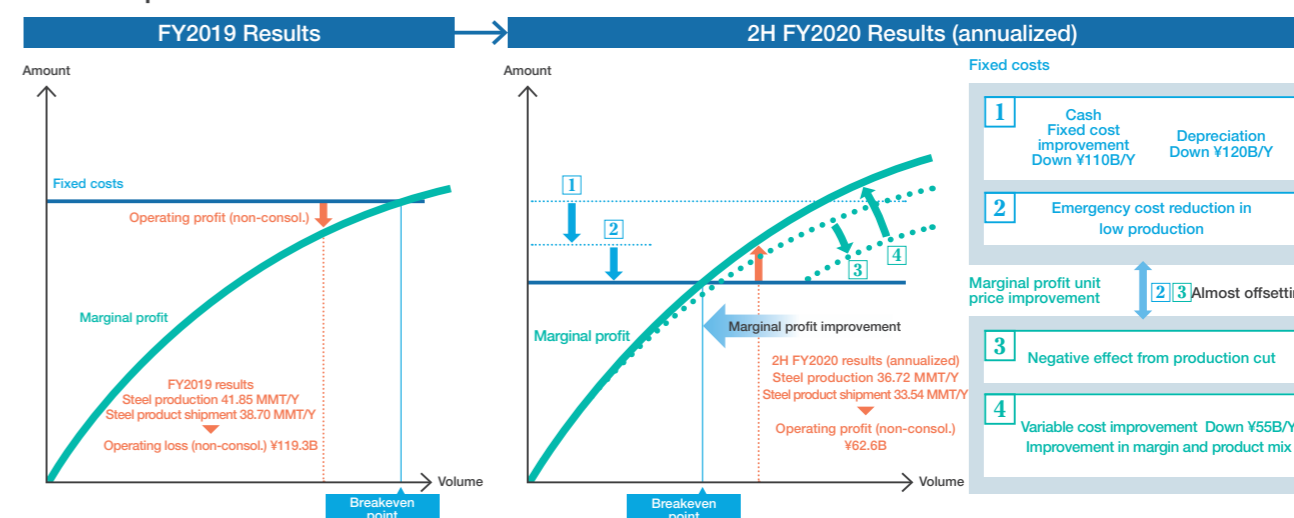
straight-line method and the recording of impairment loss of some steelworks in fiscal 2019. In total, we have reduced costs by an unusually high scale of ¥285 billion per year.

Furthermore, the COVID-19 pandemic led to low production and prompted us to make emergency cost reduction efforts. This has almost absorbed the negative impact of the deterioration in operating costs associated with production reduction.

Even though the COVID-19 pandemic has caused a worsened business environment for our customers, we have not decelerated efforts on improving long-term contract prices and have been making steady progress.

As a result, the breakeven point was significantly reduced compared to fiscal 2019, and while production and shipping volumes were still at low levels, we made an about-face and turned in a non-consolidated operating profit in the second half of fiscal 2019.

Breakeven point



► Selection and concentration of overseas business

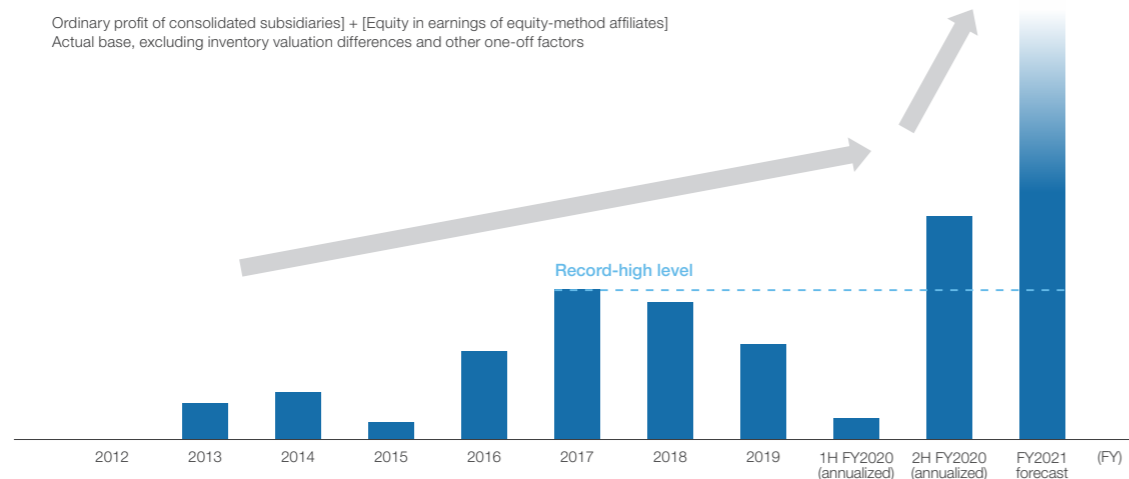
In order to capture a large share of the growing steel demand in overseas markets, we have been developing overseas manufacturing bases. In December 2019, we acquired Essar Steel, one of India's major four steelmakers, jointly with ArcelorMittal, and began operating it as AM/NS India under the equal partnership of both Nippon Steel and ArcelorMittal as its parent companies. AM/NS India became an equity-method affiliate in the first quarter of fiscal 2020 and has contributed more profits than expected since the first year, despite a decrease in volume due to the COVID-19 impact.

In recent years, we have also been withdrawing from

businesses that have finished their roles, or have weak synergies, and have been in deficit. In fiscal 2020, we sold a seamless steel tube & pipe business in Brazil and a tin business in China.

As a result of the dual tactics of "selection and concentration," overall overseas business has improved its profitability and generated record-high business profit in the second half of 2020. In fiscal 2021, our operations in India, U.S.A, Brazil are strong and the overall overseas business is expected to record even higher profit and to contribute significantly to consolidated business profit.

Contribution of overseas business to business profit (consolidated)



Non-steel segment

(¥ billion)	FY2019A	FY2020A	FY2021F
Non-steel segment Consolidated business profit	55.3	49.2	Around 43
Engineering and Construction	10.7	17.7	Around 4
Chemicals and Materials	18.4	7.6	Around 14
System Solutions	26.1	23.9	Around 25

A: Actual results F: Forecasts

► Engineering and Construction Business

The steelmaking plant sector increased revenues y-o-y due to the completion of blast furnace refurbishment projects and the steady implementation and management of large-scale projects. The environment and energy sector decreased revenues mainly due to a decrease in the scale of an electric power project but progress is made in the offshore gas field development project in Thailand. The urban infrastructure sector increased revenues as a result of the continuing strong environment for order-taking, particularly for large-scale logistics warehouses, and steady project management.

Engineering and construction Business: consolidated revenue

(¥ billion)	FY2019A	FY2020A	FY2021F
Engineering and construction	340.4	324.4	280
Steelmaking plant	55	56.3	
Environment and energy	214.9	193.1	
Urban infrastructure	73.9	76.1	
Other and adjustments	-3.5	-1.1	

A: Actual results F: Forecasts

► Chemicals and Materials Business

The Chemicals and Materials Business Segment experienced severe profit conditions in the first half of fiscal 2020, amid the global economic slowdown caused by the spread of COVID-19. In the second half, however, the business environment improved, and partly due to efforts to improve profitability, such as cost reduction and changes in the retirement benefit system, the segment managed to record a profit for the full year.

The Coal Chemical business decreased revenues as demand for needle coke used in graphite electrodes continued to be sluggish. In the Chemicals business, the market for styrene monomer and bisphenol A, which had been weak since the beginning of 2020, recovered in the second half but the sector decreased revenues for the full year. Contrary to this, the Functional Materials business increased revenues: sales of semiconductor-related materials and LCD materials remained strong throughout the fiscal year, and sales of smartphone materials, which had been sluggish at the beginning of the fiscal year, started to recover. The Composite Materials

business has flattish revenues compared to fiscal 2019. Carbon fiber reinforced materials for civil engineering and construction recorded record-high annual sales, and epoxy resin sales increased for automotive equipment and semiconductor package substrates.

Chemicals and Materials Business: consolidated revenue

(¥ billion)	FY2019A	FY2020A	FY2021F
Chemicals and Materials	215.7	178.6	250
Coal chemicals	49	26	
Chemicals	93	76	
Functional materials	56	60	
Composite materials	18	17	
Other and adjustments	-0.3	-0.3	

A: Actual results F: Forecasts

► System solutions business

NS Solutions Corporation has provided digital workplace solutions and other services for IT needs to accommodate new workstyles amid harsh economic activities caused by the spread of COVID-19. In order to support customers' promotion of DX, the company has made efforts to provide digital innovation co-creation programs and promote local 5G and loX solutions, with those efforts centered on the manufacturing and energy industries. However, the System Solutions segment recorded a decline in revenue mainly due to a decrease relative to the booking of a large-scale infrastructure project in fiscal 2019.

In addition to an increase in projects that regulations required the financial sector to undertake, the Business Solutions business was strong mainly for retail and transportation in the industrial, distribution, and service sectors. However, this business decreased revenues due to a tough comparison to the previous year when there were contributions by a large-

scale infrastructure project for the manufacturing industry, an infrastructure project for government agencies in the public sector, and IT products for the telecommunication sector. The Service Solutions business also decreased revenues mainly due to a decline in IT products for the IT infrastructure sector, and a decline in projects in the steel sector, which were related to Nippon Steel's corporate name change in fiscal 2019 and consolidation and reorganization of its steelworks.

System Solutions: consolidated revenue

(¥ billion)	FY2019A	FY2020A	FY2021F
System Solutions	273.2	252.4	265
Operational solutions	180	162.2	
Service solutions	94.7	89.7	
Other and adjustments	0.5	-1.5	

A: Actual results F: Forecasts

Profit attributable to owners of the parent

Besides the business profits stated above, "additional line items" amounted to a loss of ¥98.6 billion in fiscal 2020 and are expected to make a loss of around ¥130.0 billion in fiscal 2021. These items included the loss due to facility downtime in line with the production facility structural reform of the Medium-to Long-term Management Plan, and the loss of business restructuring associated with the selection and concentration of overseas businesses. In addition, approximately 40 billion yen will be generated from the sale of the former Tokyo Works, which was closed as a part of the production facility structural measures. Based on these factors, we are expecting ¥370.0 billion in profit attributable to owners of the parent in fiscal 2021, compared to a loss of ¥32.4 billion in fiscal 2020.

Additional line items and Profit attributable to owners of the parent

(¥ billion)	FY2020A	FY2021F
Business profit (consol.)	110	Around 600
Individual disclosure items	-98.6	Around -90
Losses related to facility shutdown	-79.9	Around -130
Losses on business withdrawal	-18.7	-
Gain on sale of land	-	Around 40
Profit attributable to owners of the parent	-32.4	Around 370

A: Actual results F: Forecasts

Executives (As of July 2021)



Representative Director and Chairman

Kosei Shindo

Attendance at Board of Directors meetings: 14 of 14
Attendance at Nomination and Compensation Advisory Committee meetings: 2 of 2

- April 1973

Joined Nippon Steel Corporation (NSC)
- June 2005

Director (Member of the Board) and General Manager of Corporate Planning Division of NSC
- June 2006

Director (under the Executive Management System) and General Manager of Corporate Planning Division of NSC
- April 2007

Director (under the Executive Management System) and General Manager of General Administration Division of NSC
- April 2009

Executive Vice President (under the Executive Management System) of NSC
- June 2009

Representative Director and Executive Vice President of NSC
- Oct. 2012

Representative Director and Executive Vice President of the Company
- April 2014

Representative Director and President of the Company
- April 2019

Representative Director and Chairman of the Company



Representative Director and Executive Vice President

Shinichi Nakamura

Attendance at Board of Directors meetings: 14 of 14

- April 1982

Joined Nippon Steel Corporation (NSC)
- April 2016

Managing Executive Officer, Member of the Board, Head of Flat Products Unit, Project Leader of Shanghai-Baoshan Cold-rolled & Coated Sheet Products Project, Global Business Development, and Project Leader of India Continuous Annealing and Processing Line Project, Global Business Development of the Company
- June 2016

Managing Director, Member of the Board, Head of Flat Products Unit, Project Leader of Shanghai-Baoshan Cold-rolled & Coated Sheet Products Project, Global Business Development, and Project Leader of India Continuous Annealing and Processing Line Project, Global Business Development of the Company
- April 2018

Representative Director and Executive Vice President of the Company

Marketing Administration & Planning; Transportation & Logistics; Project Development; Raw Materials; Machinery & Materials Procurement; Steel Products Units; Domestic Office and Branches;



Representative Director and President

Eiji Hashimoto

Attendance at Board of Directors meetings: 14 of 14
Attendance at Nomination and Compensation Advisory Committee meetings: 2 of 2

- April 1979

Joined Nippon Steel Corporation (NSC)
- April 2009

Director (under the Executive Management System), Director of Plate Division and Director of Structural Division of NSC
- April 2011

Director (under the Executive Management System) of NSC
- Oct. 2012

Executive Officer of the Company
- April 2013

Managing Executive Officer of the Company
- July 2015

Managing Executive Officer, Vice Head of Global Business Development and Project Leader of Usiminas Project, Global Business Development of the Company
- April 2016

Executive Vice President and Head of Global Business Development of the Company
- June 2016

Representative Director, Executive Vice President and Head of Global Business Development of the Company
- April 2019

Representative Director and President of the Company



Representative Director and Executive Vice President

Akio Migita

Attendance at Board of Directors meetings: 14 of 14

- April 1984

Joined Nippon Steel Corporation (NSC)
- April 2015

Executive Officer and Head of Human Resources Division of the Company
- April 2017


Managing Executive Officer and Head of Human Resources Division of the Company
- April 2019

Executive Vice President of the Company
- June 2019

Representative Director and Executive Vice President of the Company
- April 2021

Representative Director, Executive Vice President, and Project Leader of Zero-Carbon Steel Project of the Company

Corporate Planning; Group Companies Planning; General Administration; Legal; Internal Control & Audit; Digital Innovation; Information & Communication Technology; Human Resources; Environment; Business Transformation & Standardization
Zero-Carbon Steel Project Leader



Representative Director and Executive Vice President

Shuheï Onoyama

Attendance at Board of Directors meetings: 11 of 11^{*2}

- April 1984

Joined Nippon Steel Corporation (NSC)
- April 2015

Executive Officer and Head of Technical Administration & Planning Division of the Company
- April 2018

Managing Executive Officer and Head of Kimitsu Works of the Company
- April 2020

Executive Vice President and Head of R&D Laboratories of the Company
- June 2020

Representative Director, Executive Vice President and Head of R&D Laboratories of the Company

Head of R&D Laboratories



Representative Director and Executive Vice President

Takahiro Mori

Attendance at Board of Directors meetings: NA^{*3}

- April 1983

Joined Nippon Steel Corporation (NSC)
- April 2014

Executive Officer and Vice Head of Flat Products Unit of the Company
- June 2016

Vice President of Usiminas
- April 2020

Managing Executive Officer, Head of Plate Unit, Head of Pipe & Tube Unit, VSB Project Leader, Global Business Department of the Company
- April 2021

Executive Vice President, Executive Officer, Head of Global Business Development, and Project Leader of India Iron and Steel Project, Global Business Development of the Company
- June 2021

Representative Director, Executive Vice President, Head of Global Business Development, and Project Leader of India Iron and Steel Project, Global Business Development of the Company

Head of Global Business Development; Project Leader of India Iron and Steel Project, Global Business Development; Accounting & Finance; Overseas Offices (including Corporate Entities); Special Matters Concerning Pipe & Tube Overseas Business



Representative Director and Executive Vice President

Naoki Sato

Attendance at Board of Directors meetings: NA^{*3}

- April 1983

Joined Nippon Steel Corporation (NSC)
- April 2015

Executive Officer and Head of Yawata Works of the Company
- April 2017

Managing Executive Officer and Head of Yawata Works of the Company
- April 2018

Managing Executive Officer and Head of Kashima Works of the Company
- April 2020

Executive Vice President, Executive Officer and Head of East Nippon Works of the Company
- April 2021

Executive Vice President, Executive Officer, Project Leader of Next-Generation Hot Strip Mill Project, and Deputy Project Leader of India Iron and Steel Project, Global Business Development of the Company
- June 2021

Representative Director, Executive Vice President, Project Leader of Next-Generation Hot-Rolling Project, Deputy Project Leader of India Iron and Steel Project, Global Business Development of the Company

Intellectual Property; Safety; Plant Safety; Technical Administration & Planning (including Standardization); Quality Management; Plant Engineering and Facility Management; Ironmaking Technology; Steelmaking Technology; Energy Technology; Slag, Cement & Resource Recycling
Project Leader of Next-Generation Hot Strip Mill Project, and Deputy Project Leader of India Iron and Steel Project, Global Business Development



Managing Director, Member of the Board

Tadashi Imai

Attendance at Board of Directors meetings: 11 of 11^{*2}

- April 1988

Joined Nippon Steel Corporation (NSC)
- April 2016

Executive Officer and Head of Nagoya Works of the Company
- April 2019

Managing Executive Officer of the Company
- June 2020

Managing Director, Member of the Board of the Company
- April 2021

Managing Director, Member of the Board, Deputy Project Leader of Zero-Carbon Steel Project, and Deputy Project Leader of Next-Generation Hot Strip Mill Project of the Company

Corporate Planning; Technical Administration & Planning (including Standardization); Ironmaking Technology; Steelmaking Technology; Energy Technology; Zero-Carbon Steel Project Leader and Deputy Project Leader of Next-Generation Hot Strip Mill Project.



Director, Member of the Board

Outside DirectorIndependent Director

Noriko Iki^{*1}

Attendance at Board of Directors meetings: 14 of 14
Attendance at Nomination and Compensation Advisory Committee meetings: 2 of 2

- April 1979

Joined Ministry of Labor
- July 2009

Director-General, Equal Employment, Children and Families Bureau, Ministry of Health, Labour and Welfare (MHLW)
- July 2010

Research Director, Japan Institute for Labour Policy and Training
- Sept. 2012

Director-General, Tokyo Labour Bureau, MHLW
- April 2014

Ambassador of Japan to Brunei Darussalam
- July 2017

Retired from Ambassador of Japan to Brunei Darussalam
- Mar. 2018

Director of Japan Institute for Women’s Empowerment & Diversity Management
- June 2018

President of Japan Institute for Women’s Empowerment & Diversity and Management (current position)
- June 2018

Director, Member of the Board (Outside Director) of the Company

Material concurrent position
Outside Director, NEC Corporation

Reasons for the election as Outside Director

Nippon Steel believes that Ms. Noriko Iki is well-qualified for the position for reasons such as the deep insight she accumulated at MHLW in areas including employment, labor and promoting the success of diverse personnel, and her ample experience, etc. as Director-General of the Tokyo Labor Bureau of MHLW, the Ambassador Extraordinary and Plenipotentiary and other key positions.



Director, Member of the Board

Outside DirectorIndependent Director

Masato Kitera^{*1}

Attendance at Board of Directors meetings: 11 of 11^{*2}
Attendance at Nomination and Compensation Advisory Committee meeting: 1 of 1^{*2}

- April 1976

Joined Ministry of Foreign Affairs of Japan
- Jan. 2008

Director-General for African Affairs, Ministry of Foreign Affairs of Japan
- July 2008

Director-General, International Cooperation Bureau, Ministry of Foreign Affairs of Japan
- Jan. 2010

Deputy Minister, Ministry of Foreign Affairs of Japan
- Sept. 2012

Assistant Chief Cabinet Secretary
- Nov. 2012

Ambassador of Japan to the People’s Republic of China
- April 2016

Ambassador of Japan to the French Republic
- Dec. 2019


Retired from Ambassador of Japan to the French Republic
- June 2020

Outside Director of the Company

Material concurrent position
Outside Director, Marubeni Corporation
Outside Director, Japan Tobacco Inc.

Reasons for the election as Outside Director

Nippon Steel believes that Mr. Masato Kitera is well-qualified for the position for reasons such as his deep insight regarding international affairs, economy, culture, etc., cultivated in the Ministry of Foreign Affairs as well as his ample experience earned as Ambassador Extraordinary and Plenipotentiary and other important positions.



Director, Member of the Board

Outside DirectorIndependent Director

Tetsuro Tomita^{*1}

Attendance at Board of Directors meetings: 11 of 11^{*2}
Attendance at Nomination and Compensation Advisory Committee meeting: 1 of 1^{*2}

- April 1974

Joined Japanese National Railways
- April 1987

Joined East Japan Railway Company
- June 2000

Director and General Manager of Management Administration Department, Corporate Planning Headquarters of East Japan Railway Company
- June 2003

Executive Director and Deputy Director General of Corporate Planning Headquarters of East Japan Railway Company
- June 2008

Executive Vice President and Representative Director, and Director General of Life-Style Business Development Headquarters of East Japan Railway Company
- June 2009

Executive Vice President and Representative Director, and Director General of Corporate Planning Headquarters of East Japan Railway Company
- April 2012

President and Representative Director, and Director General of Corporate Planning Headquarters of East Japan Railway Company
- April 2018

Chairman and Director of East Japan Railway Company (current position)
- June 2020

Director, Member of the Board (Outside Director) of the Company

Material concurrent position
Outside Director, Nippon Life Insurance Company

Reasons for the election as Outside Director

Nippon Steel believes that Mr. Tetsuro Tomita is well-qualified for the position for reasons such as his deep insight and ample experience in corporate management.



Director, Member of the Board (Senior Audit & Supervisory Committee Member)(Full time)

Masato Matsuno

Attendance at Board of Directors meetings: 14 of 14^{*4}
Attendance at Audit & Supervisory Board meetings and Audit & Supervisory Committee meetings: 19 of 19

- April 1981

Joined Sumitomo Metal Industries, Ltd.
- April 2015

Managing Executive Officer and Head of General Administration Division of the Company
- April 2016

Managing Executive Officer and Head of Osaka Office of the Company
- April 2019

Executive Officer and Advisor to the President of the Company
- June 2019

Senior Audit & Supervisory Board Member (Full time) of the Company
- June 2020

Director, Member of the Board (Senior Audit & Supervisory Committee Member) (Full time) of the Company



Director, Member of the Board (Senior Audit & Supervisory Committee Member)(Full time)

Nobuhiro Miyoshi

Attendance at Board of Directors meetings: 11 of 11^{*2}
Attendance at Audit & Supervisory Committee meetings: 14 of 14^{*2}

- April 1982

Joined Nisshin Steel Co., Ltd.
- June 2014

Director, Managing Executive Officer and Head of Corporate Planning Division of Nisshin Steel Co., Ltd.
- April 2015

Director and Managing Executive Officer of Nisshin Steel Co., Ltd.
- April 2017

Representative Director, Vice President and Executive Officer of Nisshin Steel Co., Ltd.
- April 2019

Representative Director, Vice President and Executive Officer of Nippon Steel Nisshin Co., Ltd.
- April 2020

Executive Officer and Advisor to the President of the Company
- June 2020

Director, Member of the Board (Senior Audit & Supervisory Committee Member) (Full time) of the Company



Director, Member of the Board (Senior Audit & Supervisory Committee Member)(Full time)

Shozo Furumoto

Attendance at Board of Directors meetings: 11 of 11^{*2}
Attendance at Audit & Supervisory Committee meetings: 14 of 14^{*2}

- April 1985

Joined Nippon Steel Corporation (NSC)
- Mar. 2014

Head of Legal Division of the Company
- April 2016

Executive Officer and Head of Legal Division of the Company
- April 2019

Managing Executive Officer of the Company
- April 2020

Executive Officer and Advisor to the President of the Company
- June 2020

Director, Member of the Board (Senior Audit & Supervisory Committee Member) (Full time) of the Company



Director, Member of the Board (Audit & Supervisory Committee Member)

Hiroshi Obayashi^{*1}

Attendance at Board of Directors meetings: 14 of 14^{*4}
Attendance at Audit & Supervisory Board meetings and Audit & Supervisory Committee meetings: 19 of 19
Attendance at Nomination and Compensation Advisory Committee meeting: 1 of 1^{*2}

- April 1972

Prosecutor, Tokyo District Public Prosecutor’s Office
- May 2001

Director-General, Rehabilitation Bureau, Ministry of Justice
- Jan. 2002

Deputy Vice-Minister, Ministry of Justice
- June 2004

Director-General, Criminal Affairs Bureau, Ministry of Justice
- June 2006

Vice-Minister, Ministry of Justice
- July 2007

Superintending Prosecutor, Sapporo High Public Prosecutors Office
- July 2008

Superintending Prosecutor, Tokyo High Public Prosecutors Office
- June 2010

Prosecutor-General, the Supreme Public Prosecutors Office
- Dec. 2010

Retired from Prosecutor-General, the Supreme Public Prosecutors Office
- Mar. 2011

Registered as Attorney-at-law (current position)
- June 2014

Audit & Supervisory Board Member (Outside Audit & Supervisory Board Member) of the Company
- June 2020

Director, Member of the Board (Outside Audit & Supervisory Committee Member) of the Company

Material concurrent position
Outside Audit & Supervisory Board Member, Daiwa Securities Co. Ltd.
Outside Director, Mitsubishi Electric Corporation
Outside Audit & Supervisory Board Member, Japan Tobacco Inc.

Reasons for the election as Outside Director

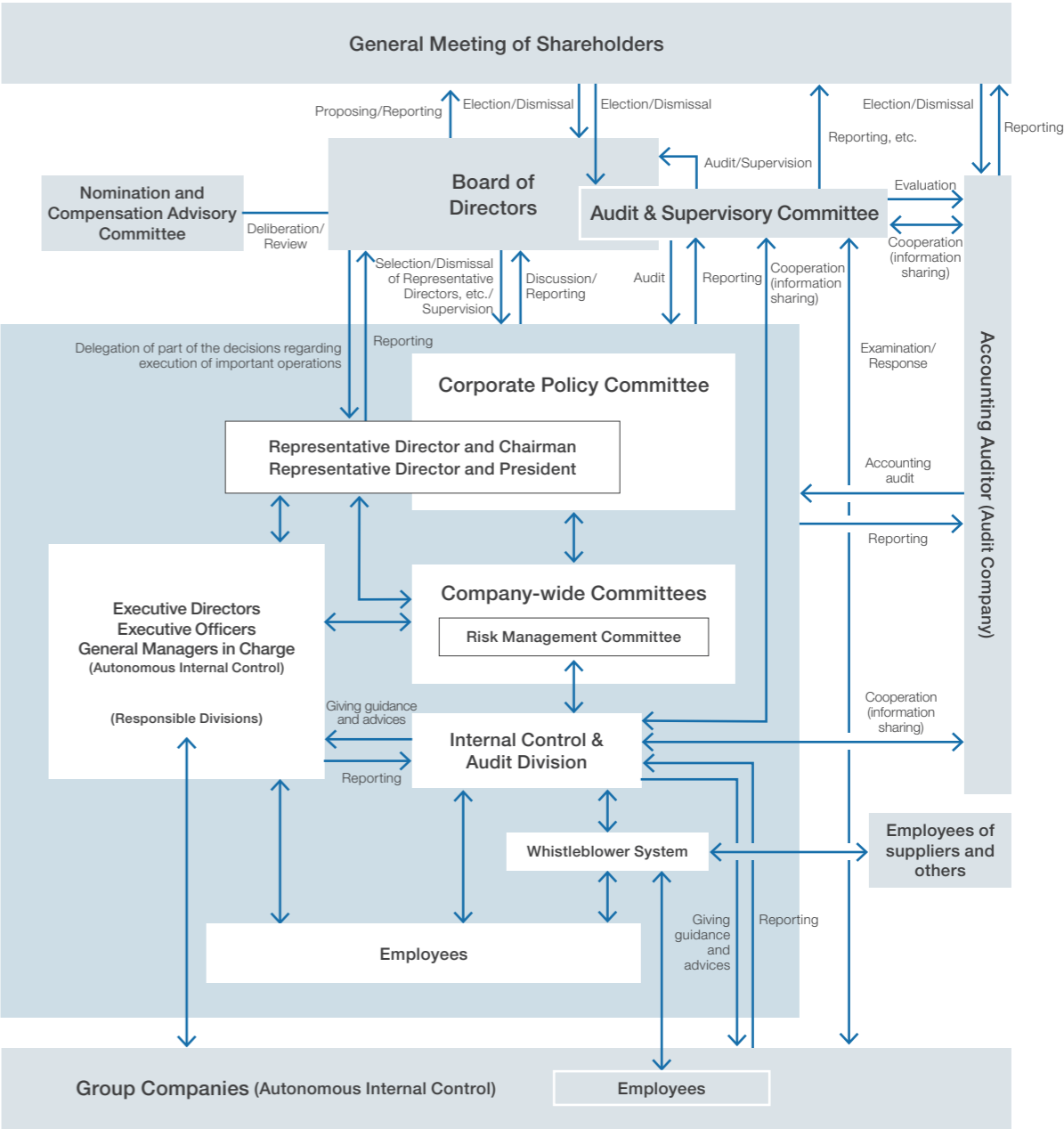
Nippon Steel believes that Mr. Hiroshi Obayashi is well-qualified for the position for reasons such as his deep insight as a legal professional and his ample experience as Prosecutor General and other key positions.

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 the 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.





Director, Member of the Board
(Audit & Supervisory Committee Member)

Outside Director
Independent Director

Jiro Makino^{*1}

Attendance at Board of Directors meetings:
14 of 14^{*4}

Attendance at Audit & Supervisory Board meetings and Audit & Supervisory Committee meetings: 19 of 19

- April 1973** Joined Ministry of Finance
- July 2003** Director-General, Financial Bureau, Ministry of Finance
- Oct. 2006** President, Policy Research Institute, Ministry of Finance and President, Account Center, Ministry of Finance
- July 2007** Commissioner, National Tax Agency
- July 2008** Retired from Commissioner, National Tax Agency
- July 2008** Vice Chairman, General Insurance Rating Organization of Japan (retired in November 2009)
- Nov. 2009** Vice Chairman, The General Insurance Association of Japan
- April 2012** Vice Chairman, The General Insurance Association of Japan
- June 2014** Audit & Supervisory Board Member (Outside Audit & Supervisory Board Member) of the Company
- June 2020** Director, Member of the Board (Outside Audit & Supervisory Committee Member) of the Company
- June 2021** Chairman of The General Insurance Institute of Japan (current position)

Reasons for the election as Outside Director

Nippon Steel believes that Mr. Jiro Makino is well-qualified for the position for reasons such as the deep insight in the general area of finance that he accumulated at the Ministry of Finance, and his ample experience as Commissioner of National Tax Agency and other key positions.



Director, Member of the Board
(Audit & Supervisory Committee Member)

Outside Director
Independent Director

Hiroshi Yoshikawa^{*1}

Attendance at Board of Directors meetings:
13 of 14^{*4}

Attendance at Audit & Supervisory Board meetings and Audit & Supervisory Committee meetings: 19 of 19

- Feb. 1993** Professor of Faculty of Economics, The University of Tokyo
- April 1996** Professor of Graduate School of Economics, The University of Tokyo
- Oct. 2009** Dean of Graduate School of Economics, The University of Tokyo
- Oct. 2011** Professor of Graduate School of Economics, The University of Tokyo
- April 2016** Professor of Faculty of Economics, Ritssho University
- June 2016** Professor Emeritus of The University of Tokyo
- April 2019** President of Ritssho University (current position)
- June 2019** Audit & Supervisory Board Member (Outside Audit & Supervisory Board Member) of the Company
- June 2020** Director, Member of the Board (Audit & Supervisory Committee Member) of the Company

Reasons for the election as Outside Director

Nippon Steel believes that Mr. Hiroshi Yoshikawa is well-qualified for the position for reasons such as the deep insight he accumulated as a university professor and his ample experience as President of Ritssho University and Dean of the Graduate School of Economics of The University of Tokyo.



Director, Member of the Board
(Audit & Supervisory Committee Member)

Outside Director
Independent Director

Seichiro Azuma^{*1}

Attendance at Board of Directors meetings:
14 of 14^{*4}

Attendance at Audit & Supervisory Board meetings and Audit & Supervisory Committee meetings: 19 of 19

- Dec. 1975** Joined Tohmatsu Awoki & Co. (current Deloitte Touche Tohmatsu LLC)
- July 1991** Partner of Tohmatsu & Co. (current Deloitte Touche Tohmatsu LLC)
- June 2007** Member of Management Council and General Manager, Kansai Block of Tohmatsu & Co. (current Deloitte Touche Tohmatsu LLC)
- Nov. 2013** Chairman of Management Council of Deloitte Touche Tohmatsu LLC
- Nov. 2015** Partner of Deloitte Touche Tohmatsu LLC
- June 2016** Retired from Deloitte Touche Tohmatsu LLC
- June 2016** Audit & Supervisory Board Member (Outside Audit & Supervisory Board Member) of the Company
- July 2016** Certified Public Accountant, Seichiro Azuma Certified Public Accountant Office (current position)
- June 2020** Director, Member of the Board (Audit & Supervisory Committee Member) of the Company

Reasons for the election as Outside Director

Nippon Steel believes that Mr. Seichiro Azuma is well-qualified for the position for reasons such as his deep insight and ample experience as a certified public accountant possessing deep familiarity with corporate accounting.

^{*1}: Outside Director as provided for in the Article 2-15 of the Companies Act, and registered as Independent Director at a Financial Instruments Exchange

^{*2}: Assumed the post on June 24, 2020

^{*3}: Assumed the post on June 23, 2021

^{*4}: Including attendance of the meetings of the Board of Directors as an Audit & Supervisory Board Member

▶ Board of Directors

The Board of Directors of Nippon Steel is comprised of eighteen (18) members, of whom eleven (11) are Directors (excluding Directors who are Audit & Supervisory Committee Members) and seven (7) are Directors who are Audit & Supervisory Committee Members, and is chaired by the Representative Director and President. Independent Outside Directors account for more than one-third (7 out of 18, including one female Director) 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 by the Board of Directors are secured. In addition, Directors who are Audit & Supervisory Committee Members have 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 Directors, 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 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 six members: the Representative Director and Chairman, Kosei Shindo, the Representative Director and President, Eiji Hashimoto, and Outside Directors Noriko Iki, Tetsuro Tomita, Masato Kitera and Hiroshi Obayashi. 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. In fiscal 2020 the Committee meeting was held in May and December.

▶ 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 corporate organizations engaging in deliberations before the Corporate Policy Committee and the Board of Directors, there are 21 company-wide committees in total, which are established by purpose and area, and chaired by Representative Directors and Executive Vice Presidents. The committees include the Ordinary Budget Committee, the Plant and Equipment Investment Budget Committee, the Investment and Financing Committee, the Fund Management Committee, the Technology Development Committee, the Environment Management Committee, the Risk Management Committee, and the Zero-Carbon Steel Committee (as of April 1, 2021).

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 creation of a sound and open organization is indispensable in raising efficiency of internal control, Nippon Steel emphasizes dialogues in and out of workplaces and regularly conducts awareness surveys regarding internal controls to 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 of the next year.

As a whistleblower system, the Compliance Consulting Room was established to receive information not only from employees of Nippon Steel and the Group companies, but also from their families, suppliers, and others. The Room receives reports and consultation on a wide range of subjects – from violation of laws, regulations, or company rules to ascertaining of rules thought to be needed for operations. It is also positioned as one of the bodies that monitors 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 2020, there were 375 cases of internal reporting and consultations.

Risk management

The Risk Management Committee, chaired by the Executive Vice President in charge of the Internal Control & Audit Division, receives regular reports from the Division on the development and execution status of the internal control annual plan, the compliance status of laws and regulations, and the matters related to risk management, which include adherence to the Code of Conduct of Nippon Steel Group Company and other company rules as well as ESG risks, such as labor safety, workplace sexual or power harassment and other abuse of human rights, environmental issues, disaster prevention, quality assurance, financial reporting, and information security. The

Committee then deliberates and checks the status of measures taken. What was deliberated and ascertained by the Risk Management Committee, including important risks, is reported and deliberated by the Corporate Policy Committee, attended by the Representative Director and Chairman and Representative Director and President among other members.

The Board of Directors evaluates effectiveness of supervision of risk management and internal control by receiving regular reports on managerial important risks, including those originated by the Risk Management Committee and the Corporate Policy Committee.



Business risks, etc. are stated in the Securities Report, p.21-26.

https://www.nipponsteel.com/ir/pdf/nipponsteel_jp_br_2020_all.pdf

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 Executive Directors and staff in 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 laws, public administration, public finances, corporate accounting and economies. 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.

Measures implemented to enhance corporate governance

June 2006

- 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 System
- Adoption of a limited liability contract with External Auditors

June 2014

- Appointment of Outside Directors (two)
- Adoption of a limited liability contract with Outside Directors

June 2015

- Adoption of a limited liability contract with full-time Audit & Supervisory Board Members

October 2015

- Establishment of the Nomination and Compensation Advisory Committee

June 2018

- Increase the number of Outside Directors to three (appointment of a female director)

June 2020

- Transition to a Company with an Audit & Supervisory Committee

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 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

Policies in Determining the Compensation for Directors

Content of policies

The policies regarding the decisions on the amount of compensation, etc. for Directors of Nippon Steel are as detailed in the following 1 and 2.

Nippon Steel abolished its retirement benefits for Directors in 2006. Furthermore, the policies relating to their bonuses were removed from the “Policies regarding the Decisions on the Amount of Compensation” for Directors, etc. in 2013.

1 Directors (excluding Directors who are Audit & Supervisory Committee Members)

1. Basic policy

Nippon Steel sets the base amount of compensation for each position as it deems appropriate in consideration of the skills and responsibilities it requires 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.

2. Policy on performance-linked compensation

In accordance with the “Basic Policy” above, compensation for Directors (excluding Directors who are Audit & Supervisory Committee Members and Outside Directors) consists solely of monthly compensation, and the amount of compensation is wholly based upon the performance of Nippon Steel, in order to give incentives for the sustainable growth of Nippon Steel’s group and improvement of its corporate value. As indicators for performance-linked compensation, Nippon Steel uses

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, taking into account, 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.

consolidated annual profit/loss (however, corrections were made for the sake of fair remuneration commensurate with earnings for the term by excluding the portion of gains/losses from reorganization for production facility structural measures; hereinafter the same in this section), which clearly indicates its business performance and earnings power, and consolidated EBITDA, while taking into account other factors including the revenue targets in the Medium- to Long-term Management Plan.

Compensation for Outside Directors (excluding Directors who are Audit & Supervisory Committee Members) consists solely of monthly compensation, and fixed compensation in principle, but the amount of compensation may be increased or decreased only in the event of significant changes in the consolidated annual profit/loss of Nippon Steel.

3. Method to determine compensation for each individual

The specific amount of monthly compensation of each Director (excluding Directors who are Audit & Supervisory Committee Members) is determined by the Board of Directors after the deliberation of the Nomination and Compensation Advisory Committee.

2 Directors who are Audit & Supervisory Committee Members

Nippon Steel determines the monthly compensation for each Director who is Audit & Supervisory Committee Member, 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 in 1 above for Directors (excluding Directors who are Audit & Supervisory Committee Members) are determined by resolution of the Board of Directors, after the deliberation of the Nomination and Compensation Advisory Committee, while for Directors who are Audit & Supervisory Committee Members, the policies described in 1. Above are determined through discussion by 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 and Audit & Supervisory Board Members (FY2020)

Prior to the transition to a Company with an Audit & Supervisory Committee (From April 1, 2020 to the conclusion of the 96th General Meeting of Shareholders held on June 24, 2020)

Position	Number of recipients	Total amount (yen)	Total amount by type (yen)		
			Monthly compensation*	Non-monetary compensation	Other compensation
Directors	13	215,012,500	215,012,500	-	-
Outside Directors	3	10,800,000	10,800,000	-	-
Audit & Supervisory Board Members	7	52,500,000	52,500,000	-	-
Outside Audit & Supervisory Board Members	4	14,400,000	14,400,000	-	-
Total	20	267,512,500	267,512,500	-	-

- (Notes)
- (1) The above number of recipients includes six (6) Directors (including two (2) Outside Directors) and two (2) Audit & Supervisory Board Members who retired at the conclusion of the 96th General Meeting of Shareholders held on June 24, 2020.
- (2) Of monthly compensation with an asterisk (*), compensation for Directors is wholly based upon the performance of NIPPON STEEL. As indicators for performance-linked compensation, NIPPON STEEL uses consolidated annual profit/loss, which clearly indicates its business performance, and business profit/loss in its steelmaking segment, which accounts for about 90% of its consolidated revenue, while taking into account other factors including the revenue targets in the Mid-Term Management Plan. The base amount of compensation for each position fluctuates within a certain range based on these indicators, and the amount of each Director’s monthly compensation is determined within the limit approved by the General Meeting of Shareholders. The actual results of these indicators in fiscal year 2018, which were used to determine the monthly compensation for Directors prior to the transition to a Company with an Audit & Supervisory Committee, were a consolidated annual profit of 251.1 billion yen and business profit in the steelmaking segment of 274.6 billion yen.
- (3) The specific amount of monthly compensation for each Director is determined by the Board of Directors after discussion at the “Nomination and Compensation Advisory Committee.” The specific amount of monthly compensation for each Audit & Supervisory Board Member is determined by discussion of the Audit & Supervisory Board Members.
- (4) The limit on the amount of compensation for Directors was approved at the 88th General Meeting of Shareholders held on June 26, 2012 to be within 180 million yen per month. At the time the resolution of the 88th General Meeting of Shareholders became effective (October 1, 2012), the Articles of Incorporation stipulated the number of Directors to be not more than 20.
- (5) The limit on the amount of compensation for Audit & Supervisory Board Members was approved at the 82nd General Meeting of Shareholders held on June 28, 2006 to be within 22 million yen per month. At the conclusion of the 82nd General Meeting of Shareholders, the Articles of Incorporation stipulated the number of Audit & Supervisory Board Members to be not more than 7.

After the transition to a Company with an Audit & Supervisory Committee (From the conclusion of the 96th General Meeting of Shareholders held on June 24, 2020 to March 31, 2021)

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	379,260,000	379,260,000	-	-
Outside Directors	3	32,400,000	32,400,000	-	-
Directors who are Audit & Supervisory Committee Members	7	140,580,000	140,580,000	-	-
Outside Directors	4	43,200,000	43,200,000	-	-
Total	18	519,840,000	519,840,000	-	-

- (Notes)
- (1) Of monthly compensation with an asterisk (*), (i) monthly compensation for Directors (excluding Directors who are Audit & Supervisory Committee Members) is wholly based upon the performance of NIPPON STEEL. (ii) Monthly compensation for Directors who are Audit & Supervisory Committee Members is fixed compensation in principle, but the amount of compensation will be increased or decreased only in the event of significant changes in the consolidated performance of NIPPON STEEL. (iii) Monthly compensation for Outside Directors is fixed compensation in principle, but the amount of compensation may be increased or decreased only in the event of significant changes in the consolidated performance of NIPPON STEEL. As indicators for performance-linked compensation, NIPPON STEEL uses consolidated annual profit/loss, which clearly indicates its business performance, and business profit/loss in its steelmaking segment, which accounts for about 90% of its consolidated revenue, while taking into account other factors including the revenue targets in the Mid-Term Management Plan. The base amount of compensation for each position, etc. fluctuates within a certain range based on these indicators, and the amount of each Director’s monthly compensation is determined within the limit approved by the General Meeting of Shareholders. The results of these indicators in fiscal year 2019, which were used to determine the monthly compensation for Directors after transitioning to a Company with an Audit & Supervisory Committee, were a consolidated annual loss of 431.5 billion yen and business loss in the steelmaking segment of 325.3 billion yen.
- (2) The specific amount of monthly compensation for each Director (excluding Directors who are Audit & Supervisory Committee Members) is determined by the Board of Directors after discussion in the “Nomination and Compensation Advisory Committee.” The specific amount of monthly compensation for each Director who is Audit & Supervisory Committee Member is determined by discussions of the Directors who are Audit & Supervisory Committee Members.
- (3) The limit on the amount of compensation for Directors (excluding Directors who are Audit & Supervisory Committee Members) was approved at the 96th General Meeting of Shareholders held on June 24, 2020 to be within 140 million yen per month (including compensation for Outside Directors of within 12 million yen). The number of Directors (excluding Directors who are Audit & Supervisory Committee Members) was 11 (including 3 Outside Directors) at the conclusion of the 96th General Meeting of Shareholders.
- (4) The limit on the amount of compensation for Directors who are Audit & Supervisory Committee Members was approved at the 96th General Meeting of Shareholders held on June 24, 2020 to be within 22 million yen per month. The number of Directors who are Audit & Supervisory Committee Members was 7 (including 4 Outside Directors) at the conclusion of the 96th General Meeting of Shareholders.

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 of Directors and the number of hours of deliberation, as well as the attendance rate and the number of opinions expressed by attendees at meetings of the Board of Directors with these of prior years; and the Board of Directors, taking into account self-assessments and opinions of each member of the Board of Directors on the operation of the Board of Directors obtained through individual interviews with them, annually analyzes and evaluates the effectiveness of the entire Board of Directors and utilizes such analysis and evaluation to improve the future operation and administration of the Board of Directors. 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 of Directors on matters such as the formulation of management policies and strategies, strengthen the supervisory function of the Board of Directors over management, and devise and improve operation of meetings so as to contribute to these efforts.

The Board of Directors, at its meeting held in June 2021, analyzed and evaluated the effectiveness of the Board of

Directors for fiscal 2020, confirming that the Board of Directors functions effectively based on a comprehensive judgment. It also confirmed that Board meetings were attended by more than a majority of Directors, which is needed for making resolutions, and that all of the matters submitted for deliberation or reported to the Board of Directors pursuant to the Companies Act or Nippon Steel's rules were resolved or confirmed. At each of Board meetings, attended by almost all Directors, all matters on the agenda with relevant information being provided in advance were resolved after questions and answers and discussion among Directors and Audit & Supervisory Board Members from diverse perspectives, in light of the perspective of improving Nippon Steel's corporate value in the mid- to long-term or other various perspectives.

From the standpoint of further enhancing the effectiveness of the Board of Directors, NIPPON STEEL will expand opportunities for progress reports on major items submitted and reported to the Board of Directors such as the Medium- to Long-Term Management Plan, and enhance discussions with Outside Directors regarding the status of initiatives and so forth in each line of business, including opportunities outside of Board of Directors meetings, based on the opinions voiced by each Director in the effectiveness evaluation for fiscal year 2020.

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.

Significance of having listed subsidiaries

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 the independence of listed subsidiaries, 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. Nippon Steel also recognizes that its listed subsidiaries ensure independent decision-making and carry out autonomous management.

Nippon Steel currently has five listed subsidiaries. (NS Solutions Corporation, Sanyo Special Steel Co., Ltd., Osaka Steel Co., Ltd., Krosaki Harima Corporation, Geostr Corporation) .Significance of having the listed subsidiaries is stated in the Corporate Governance Report, "5. Other Special Circumstances which may have Material Impact on Corporate Governance."

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, and 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 proceeds 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. Of these shareholdings, each shareholding with the market value exceeding a certain threshold is examined each year at the Board of Directors. 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, 2021).

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 301 stocks were held as of March 31, 2021 (the total value on the balance sheet was ¥262.6 billion). (Despite an increase due to the merger with Nippon Steel Nisshin Co., Ltd. on April 1, 2020, the number of stocks held decreased by 7 from March 31, 2020, and the total value on the balance sheet increased by 24.7 billion yen partly due to rises in stock prices.)

► Basic Policy on 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. Opinions and other

comments received from the shareholders and investors are reported and fed back to the Board of Directors and others responsible for the dialogues with the shareholders and investors on a regular basis.

"Nippon Steel Corporate Disclosure and Dialogue Policy"

Nippon Steel's website



<https://www.nipponsteel.com/csr/ir/>

Please see details on corporate governance in Nippon Steel's Corporate Governance Report and Securities Report.

Corporate Governance Report



https://www.nipponsteel.com/csr/governance/pdf/cg_report.pdf

Securities Report



https://www.nipponsteel.com/ir/pdf/nipponsteel_jp_br_2020_all.pdf

Message from Outside Directors



Diversity and Inclusion (D&I) is one of our important elements in achieving sustainable growth toward becoming “the best steelmaker with world-leading capabilities”

Director
Noriko Iki

Three years have passed since I was appointed as Outside Director of Nippon Steel. I have long been involved in various administration policy issues concerning personnel and labor affairs, and also have an experience of being at the forefront of diplomacy in an ASEAN member country. I have therefore been grateful that I can make use of my experiences and share my diverse perspectives and values in discussions at Nippon Steel's Board of Directors meetings. I have encouraged Nippon Steel to make aggressive efforts mainly to pursue safety, which is the most important management issue for the steel industry, and to promote diversity and inclusion (D&I), including the extensive participation in our labor force of women and men from outside Japan. The development of overseas business operations and its global management issues are other areas of great interest to me. I also strived to clearly express my opinions on a wide range of topics, by acting as a bridge between the Company and its shareholders and other stakeholders. In this regard, I am pleased to see that what I suggested has materialized, including the nationwide development of a safety and health management system based on the ISO standards, and the strengthening of D&I efforts.

Nippon Steel faces a very harsh business environment. Overseas we have to develop strategic developments in line with the global trend of “local production and local consumption” in which each country intends to produce major goods in its own country. In Japan, we need to further strengthen competitiveness through efficient production of top-class products. In these contexts, I have been involved in the decision-making of various efforts to strengthen the long-term earnings base, such as the large-scale acquisition project of an integrated steelmaker in India with ArcelorMittal, and the structural reform of domestic production facilities including the suspension of operation of some blast furnaces, and reorganization of steel plants. Throughout discussions at the Board of Directors meetings, I confirmed strong commitment to the thorough preparation and realization of the projects of those working in the executive departments. I have been so impressed with Nippon Steel's resilience in the face of adverse conditions.

As for corporate governance, I believe that Nippon Steel as a whole is moving in the right direction. While the above-mentioned

restructuring of the steelworks and the reduction of directors are leading to a slimmer management system, the transition to a Company with an Audit and Supervisory Committee has driven the Board of Directors to carry out more active discussions. With regard to the management of the Board of Directors, efforts are being made to enhance prior explanation of the agenda items and reduce the time taken for explanation at the Board meetings. At the beginning of each meeting, the President presents management topics of the times and share his views on the global situation in his own words. This is very useful for us to understand the background of the agenda issues submitted.

As stated in the Medium- to Long-term Management Plan released in March 2021, the Challenge to Zero-Carbon Steel in 2050 is one of the biggest management issues going forward. This will require extremely high levels of innovation and a large amount of R&D costs. And this must be implemented while undertaking the structural reforms we have planned. While it would be important to ask for support to the government and to work toward developing various national projects, in my view, more than anything, the key to our medium-to-long term future will be how to secure and nurture excellent human resources who will lead development efforts and generate profits through the advancement of business. Openness to welcoming diverse human resources, as well as inclusion to prevent them from leaving the company, increase their engagement, and maximize their capabilities, are indispensable elements. This is also true for achieving the Medium- to Long-term Management Plan of sustainable growth with the aim of becoming “the best steelmaker with world-leading capabilities.”

I highly appreciate Nippon Steel's recent decision to address D&I head-on as a management issue, but I must say that this was a relatively slow start. KPIs such as the number of female managers are quite ambitious relative to the current situation, but I am hoping that efforts will continue to be made with more extended goals, in order to gain appeal to working for our Company. Above all, I think it is important to communicate these efforts and their progress to employees and outside the Company.

Lastly, I would like to continue to make every effort possible as an outside director to ensure that this outstanding company can work with all stakeholders to increase its corporate value.



I am engaged in audit work in the hope of contributing to the cycle of operational improvement, including safety and disaster prevention.

Director (Audit & Supervisory Advisory Committee Member)
Hiroshi Obayashi

I was appointed as Outside Director and Audit & Supervisory Advisory Committee Member of Nippon Steel in 2020, after serving as its Outside Audit & Supervisory Advisory Board Member. My main assignment concerning audits covers a wide range of items, including safety, disaster prevention, quality assurance, environment, compliance, information security, and financial reporting.

Nippon Steel places top priority in safety and disaster prevention at steelworks and other manufacturing sites, based on its Management Principles which state “We provide products and services that benefit society, and grow in partnership with our customers.”

This is what I and other Outside Directors and Audit & Supervisory Advisory Committee Members place utmost importance on. During our field surveys, we change into work clothes, wear long boots, and on occasion climb up a narrow ladder to a high workplace, and listen to explanation by workers, as a part of efforts to understand the situation. Let me now offer a few comments about audits concerning safety and disaster prevention.

At Nippon Steel's manufacturing sites nationwide, every day starts with the greeting “Go-anzen ni!” (Stay safe), by executives and employees alike. The main steelmaking process is to extract iron from iron ore, a main raw material, in a blast furnace, heat and cool the steel that was made from it, and then use large hot strip mills to roll and cut it into products of various shapes. Melted iron reaches 1,600°C and semi-finished products may weigh tons. They are moved around huge worksites and there is always a risk of serious accidents.

That is why numerous measures for safety and disaster prevention have been implemented. Safety measures include 1) development of a mechanical safety system that restricts access to operating plants, 2) reduction of manual work through automation and remote control, 3) on-site instruction and training by experts, and 4) training at a risk-experiencing facility utilizing virtual reality (VR) IT tools. Fire and other disaster prevention measures include 1) first-action training following nine scenarios, 2) training at the Disaster Prevention Learning Center in order not to lose memories of accidents, 3) training to

improve the performance of self-defense fire defense units, 4) more active risk assessment activities based on company-wide guidelines, and 5) evaluation by third parties.

As a result of experiencing field surveys and other opportunities, I have come to highly evaluate the level of safety and disaster prevention measures and responses of Nippon Steel. The accident cause reports are a good example. These reports use cross-sectional maps and formulas to confirm the possibility of an accident, and identify the cause of an accident. They are highly reliable and I would even think they could be used for an appraisal that would be submitted to the court as such. I heard that these valuable materials are promptly shared by other workplaces and used in education and training, which I believe will bring the benefit of great outcomes.

On the other hand, there was also an unfortunate regrettable incidence. A veteran of more than a decade of experience, who was in a position to teach young employees, encountered an unexpected sudden shutdown of a large facility. He entered the danger zone for inspection although he was aware of the basic rules not to do so, and suffered an injury. This has made me realize once again the need to more deeply consider human psychology and behavior in an emergency situation and add measures to prevent recurrence.

Outside Audit & Supervisory Advisory Committee Members strive to express candid opinions in dialogue with the executives in workplaces during the field surveys. We also share with the management what we have learned and felt concerning the management during the field surveys. We sincerely hope to contribute to the cycle of operational improvement, including safety and disaster prevention, through audits.

I hope that everyone at our worksites will be aware that accidents can occur no matter how much they implement the preventive measures, and will further refine their sensitivity and awareness of hazards and improve their ability to do so. We will continue to fulfill the duties of auditing with our wishes to be of help.

11-Year Financial Performance

		JGAAP							
FY		2010	2011	2012*6	2013	2014	2015	2016	2017
Operating Results (Fiscal year) <Millions of yen>									
Net sales	Nippon Steel*1	4,109,774	4,090,936	4,389,922	5,516,180	5,610,030	4,907,429	4,632,890	5,668,663
	Sumitomo Metals	1,402,454	1,473,367	693,601	—	—	—	—	—
Operating profit (loss)	Nippon Steel	165,605	79,364	20,110	298,390	349,510	167,731	114,202	182,382
	Sumitomo Metals	56,301	76,801	15,759	—	—	—	—	—
Ordinary profit (loss)	Nippon Steel	226,335	143,006	76,931	361,097	451,747	200,929	174,531	297,541
	Sumitomo Metals	34,049	60,803	10,815	—	—	—	—	—
Profit (loss) before income taxes	Nippon Steel	185,377	120,053	(136,970)	399,147	376,188	230,778	181,692	289,860
	Sumitomo Metals	(27,991)	(51,251)	(134,831)	—	—	—	—	—
Profit (loss) attributable to owners of parent	Nippon Steel	93,199	58,471	(124,567)	242,753	214,293	145,419	130,946	195,061
	Sumitomo Metals	(7,144)	(53,799)	(133,849)	—	—	—	—	—
Capital expenditure*2	Nippon Steel	287,236	281,748	355,873	257,019	304,389	304,643	351,038	411,930
	Sumitomo Metals	109,934	115,797	N.A.	—	—	—	—	—
Depreciation and amortization*3	Nippon Steel	291,587	280,940	288,770	331,801	320,046	308,276	304,751	340,719
	Sumitomo Metals	126,267	122,937	49,757	—	—	—	—	—
Research and development costs	Nippon Steel	46,663	48,175	60,071	64,437	62,966	68,493	69,110	73,083
	Sumitomo Metals	22,783	22,842	N.A.	—	—	—	—	—
Financial Position (End of fiscal year) <Millions of yen>									
Total assets	Nippon Steel	5,000,860	4,924,711	7,089,498	7,082,288	7,157,929	6,425,043	7,261,923	7,592,413
	Sumitomo Metals	2,440,761	2,386,158	—	—	—	—	—	—
Shareholders' equity*4	Nippon Steel	1,860,799	1,828,902	2,394,069	2,683,659	2,978,696	2,773,822	2,948,232	3,145,450
	Sumitomo Metals	766,777	709,315	—	—	—	—	—	—
Total net assets*4	Nippon Steel	2,380,925	2,347,343	2,938,283	3,237,995	3,547,059	3,009,075	3,291,015	3,515,501
	Sumitomo Metals	818,080	761,484	—	—	—	—	—	—
Interest-bearing debt*5	Nippon Steel	1,337,851	1,334,512	2,543,061	2,296,326	1,976,591	2,008,263	2,104,842	2,068,996
	Sumitomo Metals	1,173,382	1,172,120	—	—	—	—	—	—
Cash Flows (Fiscal year) <Millions of yen>									
Cash flows from operating activities	Nippon Steel	369,500	237,414	313,317	574,767	710,998	562,956	484,288	458,846
	Sumitomo Metals	202,340	88,065	N.A.	—	—	—	—	—
Cash flows from investing activities	Nippon Steel	(325,781)	(226,096)	(327,336)	(196,856)	(263,667)	(242,204)	(343,738)	(353,419)
	Sumitomo Metals	(144,009)	(120,110)	N.A.	—	—	—	—	—
Cash flows from financing activities	Nippon Steel	(47,244)	(31,785)	33,332	(367,115)	(451,843)	(337,555)	(135,054)	(89,190)
	Sumitomo Metals	(1,325)	(32,714)	N.A.	—	—	—	—	—
Amounts per Share of Common Stock*7,*8 <yen>									
Profit (loss) attributable to owners of parent per share	Nippon Steel	14.81	9.29	(16.23)	26.67	23.48	158.71*8	147.96	221.00
	Sumitomo Metals	(1.54)	(11.61)	—	—	—	—	—	—
Cash dividends per share	Nippon Steel	3.0	2.5	1.0	5.0	5.5	45.0*9	45	70
	Sumitomo Metals	3.5	2.0	—	—	—	—	—	—

IFRS				
	2017	2018	2019	2020
Operating Results (Fiscal year) <Millions of yen>				
Revenue	5,712,965	6,177,947	5,921,525	4,829,272
—	—	—	—	—
Business profit	288,700	336,941	(284,417)	110,046
Profit before income tax	271,760	248,769	(423,572)	(8,656)
Profit for the year attributable to owners of parent	180,832	251,169	(431,513)	(32,432)
Capital expenditure	423,428	440,830	481,310	474,489
Depreciation and amortization	366,565	408,616	417,339	290,863
Research and development costs	74,071	72,043	77,691	65,336
Financial Position (End of fiscal year) <Millions of yen>				
Total assets	7,756,134	8,049,528	7,444,965	7,573,946
Total equity attributable to owners of parent	3,136,991	3,230,788	2,641,618	2,759,996
Total equity	3,524,896	3,607,367	2,996,631	3,131,387
Interest-bearing debt	2,157,755	2,369,231	2,488,741	2,559,232
Cash Flows (Fiscal year) <Millions of yen>				
Cash flows from operating activities	485,539	452,341	494,330	403,185
Cash flows from investing activities	(363,170)	(381,805)	(345,627)	(389,035)
Cash flows from financing activities	(104,969)	(42,900)	(14,582)	52,694
Amounts per Share of Common Stock <yen>				
Basic earnings per share	204.87	281.77	(468.74)	(35.22)
Cash dividends per share	70	80	10	10

*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."
*5. The amounts of "Outstanding borrowings" (the sum of "Borrowings," "Corporate bonds," and "Commercial paper") are stated.

*6. The amounts stated for "Nippon Steel" for fiscal 2012 are the sum of Nippon Steel's amounts for the first half (April 1 to September 30) of fiscal 2012 and NSSMC's amounts for the second half (October 1 to March 31) of fiscal 2012. The amounts stated for "Sumitomo Metals" for fiscal 2012 are Sumitomo Metals' amounts for the first half (April 1 to September 30) of fiscal 2012.
*7. On October 1, 2015, NSSMC performed a 1-for-10 share consolidation.
*8. 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.
*9. 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.

11-Year Financial Performance

		JGAAP							
FY		2010	2011	2012*8	2013	2014	2015	2016	2017
Financial Indices									
Return on sales ((Ordinary profit / Net sales)x 100)	Nippon Steel*1	5.5%	3.5%	1.8%	6.5%	8.1%	4.1%	3.8%	5.2%
	Sumitomo Metals	2.4%	4.1%	—	—	—	—	—	—
Return on equity ((Profit attributable to owners of parent / Shareholders' equity [average for the period]) x 100)	Nippon Steel	5.0%	3.2%	(5.9%)	9.6%	7.6%	5.1%	4.6%	6.4%
	Sumitomo Metals	(0.9%)	(7.3%)	—	—	—	—	—	—
Shareholders' equity ratio ((Shareholders' equity / Total assets) x 100)	Nippon Steel	37.2%	37.1%	33.8%	37.9%	41.6%	43.2%	40.6%	41.4%
	Sumitomo Metals	31.4%	29.7%	—	—	—	—	—	—
Number of shares issued as of end of period*2 <In thousands>	Nippon Steel	6,806,980	6,806,980	9,503,214	9,503,214	9,503,214	950,321	950,321	950,321
	Sumitomo Metals	4,805,974	4,805,974	—	—	—	—	—	—
Share price at end of period*2 <Yen>	Nippon Steel	266.0	227.0	235.0	282.0	302.5	2,162.0	2,565.0	2,336.5
	Sumitomo Metals	186.0	167.0	—	—	—	—	—	—
Net Sales by Industry Segment*3 <Millions of yen>									
Steelmaking and steel fabrication		3,473,495	3,476,855	3,790,450	4,877,909	4,939,239	4,283,923	4,052,261	5,017,245
Engineering and construction		254,941	248,934	303,002	314,174	348,699	315,727	267,545	294,268
Urban development		86,556	80,419	—	—	—	—	—	—
Chemicals		193,896	197,669	195,719	230,130	212,777	181,823	174,227	200,767
New materials		60,888	54,245	42,211	37,241	36,449	36,280	34,519	37,050
System solutions		159,708	161,582	171,980	179,856	206,032	218,941	232,512	244,200
Elimination of inter-segment transactions		(119,711)	(128,769)	(113,442)	(123,132)	(133,168)	(129,267)	(128,175)	(124,868)
Segment Profit (Loss)*3 <Millions of yen>									
Steelmaking and steel fabrication		181,968	98,846	41,522	321,287	401,987	160,088	138,017	245,708
Engineering and construction		14,883	12,775	18,189	17,702	18,758	12,163	6,838	9,110
Urban development		9,273	9,371	—	—	—	—	—	—
Chemicals		13,244	13,598	9,778	10,057	6,898	1,093	4,518	15,480
New materials		2,111	607	984	1,391	2,482	3,073	1,786	1,919
System solutions		11,332	11,215	11,673	12,760	16,565	19,493	22,113	23,292
Elimination of inter-segment transactions		(6,478)	(3,408)	(5,217)	(2,101)	5,053	5,017	1,256	2,030
Non-Financial Performance									
Crude steel production <Ten thousands of tons>	Nippon Steel (Consolidated)	3,492	3,244	4,603	4,816	4,732	4,453	4,517	4,682
	Nippon Steel (Non-consolidated)*4	3,246	3,020	4,355	4,567	4,496	4,217	4,262	4,067
	Nippon Steel (Non-consolidated)*5	1,290	1,272	—	—	—	—	—	—
Steel products shipments (Non-consolidated) <Ten thousands of tons>	Nippon Steel	3,135	2,909	4,097	4,202	4,188	3,962	3,978	3,779
	Sumitomo Metals*6	1,172	1,124	—	—	—	—	—	—
Average steel selling price (Non-consolidated) <Thousands of yen per ton>	Nippon Steel	81.7	86.2	80.1	86.0	87.2	77.1	72.6	84.7
	Sumitomo Metals*6	94.2	103.5	—	—	—	—	—	—
Export ratio (Value basis, non-consolidated)*7<*>	Nippon Steel	40%	39%	44%	46%	47%	45%	42%	41%
	Sumitomo Metals*6	42%	41%	—	—	—	—	—	—
Number of employees (Consolidated)	Nippon Steel	59,183	60,508	83,187	84,361	84,447	84,837	92,309	93,557
	Sumitomo Metals	22,597	23,007	—	—	—	—	—	—

		IFRS			
		2017	2018	2019	2020
Financial Indices					
Return on sales		5.1%	5.5%	(4.8%)	2.3%
Return on equity		6.0%	7.9%	(14.7%)	(1.2%)
Ratio of total equity attributable to owners of parent		40.4%	40.1%	35.5%	36.4%
Number of shares issued as of end of period		950,321	950,321	950,321	950,321
Share price at end of period		2,336.5	1,954.0	925.4	1886.5
Segment revenue <Millions of yen>					
Steelmaking and steel fabrication		5,017,245	5,454,536	5,257,344	4,228,449
Engineering and construction		294,268	356,707	340,404	324,468
—		—	—	—	—
Chemicals		237,817	247,067	215,733	178,678
—		—	—	—	—
System solutions		244,200	267,503	273,294	252,476
Elimination of inter-segment transactions		(80,565)	(147,867)	(165,251)	(154,799)
Segment profit <Millions of yen>					
Steelmaking and steel fabrication		245,708	274,672	(325,341)	63,522
Engineering and construction		9,110	9,474	10,717	17,708
—		—	—	—	—
Chemicals		17,399	25,095	18,477	7,631
—		—	—	—	—
System solutions		23,292	26,576	26,162	23,948
Elimination of inter-segment transactions		(6,809)	1,122	(14,433)	(2,764)
Non-Financial Performance					
Crude steel production (Consolidated)		4,702	4,784	4,705	3,765
Crude steel production (Non-consolidated)		4,067	4,100	3,954	3,300
Steel products shipments (Non-consolidated) <Ten thousands of tons>		3,779	3,797	3,631	3,122
Average steel selling price (Non-consolidated) <Thousands of yen per ton>		84.7	89.9	87.3	86.1
Export ratio (Value basis, non-consolidated)*7<*>		41%	40%	40%	36%
Number of employees (Consolidated)		97,996	105,796	106,599	106,226

*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. "Segment profit (loss)" stated for fiscal 2009 and earlier is "Segment operating profit (loss)." 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.
*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.
*8. The amounts of "Sales," "Ordinary profit," and "Net income" used to calculate "Return on sales (ROS)" and "Return on equity (ROE)" are the sum of Nippon Steel's amounts for the first half (April 1 to September 30) of fiscal 2012 and NSSMC's amounts for the second half (October 1 to March 31) of fiscal 2012. "Crude steel production" and "Steel products shipments" for fiscal 2012 are the sum of Nippon Steel's amount for the first half, Sumitomo Metals' amount for the first half, and NSSMC's amount for the second half. At the first half of fiscal 2012, NSSMC's "Average steel selling price" and "Export ratio" are the weighted average of Nippon Steel and Sumitomo Metals.
Figures in parentheses indicate negative figures.

Consolidated Statements of Financial Position

	March 31, 2020	March 31, 2021
ASSETS		
Current assets		
Cash and cash equivalents	289,459	359,465
Trade and other receivables	826,596	805,306
Inventories	1,532,181	1,349,355
Other financial assets	17,340	27,772
Other current assets	119,396	130,786
Total current assets	2,784,974	2,672,686
Non-current assets		
Property, plant and equipment	2,812,542	2,954,938
Right-of-use assets	93,663	88,559
Goodwill	45,486	46,341
Intangible assets	96,677	95,826
Investments accounted for using the equity method	878,271	817,328
Other financial assets	481,117	628,226
Defined benefit assets	58,643	110,396
Deferred tax assets	186,457	153,123
Other non-current assets	7,132	6,519
Total non-current assets	4,659,990	4,901,260
Total assets	7,444,965	7,573,946
LIABILITIES AND EQUITY		
Liabilities		
Current liabilities		
Trade and other payables	1,449,801	1,382,761
Bonds, borrowings and lease liabilities	376,900	308,985
Other financial liabilities	2,189	1,250
Income taxes payable	27,323	24,256
Other current liabilities	38,978	54,077
Total current liabilities	1,895,192	1,771,331
Non-current liabilities		
Bonds, borrowings and lease liabilities	2,111,841	2,250,246
Other financial liabilities	4,621	4,784
Defined benefit liabilities	236,758	189,453
Deferred tax liabilities	27,765	37,385
Other non-current liabilities	172,154	189,358
Total non-current liabilities	2,553,141	2,671,228
Total liabilities	4,448,333	4,442,559
Equity		
Common stock	419,524	419,524
Capital surplus	394,404	393,168
Retained earnings	1,870,948	1,910,333
Treasury stock	(58,505)	(58,342)
Other components of equity	15,245	95,311
Total equity attributable to owners of the parent	2,641,618	2,759,996
Non-controlling interests	355,013	371,390
Total equity	2,996,631	3,131,387
Total liabilities and equity	7,444,965	7,573,946

Consolidated Statements of Profit or Loss

	Fiscal 2019	Fiscal 2020
Revenue	5,921,525	4,829,272
Cost of sales	(5,312,367)	(4,263,940)
Gross profit	609,158	565,332
Selling, general and administrative expenses	(571,781)	(469,133)
Share of profit in investments accounted for using the equity method	38,395	55,220
Other operating income	104,844	49,710
Other operating expenses	(465,035)	(91,083)
Business profit (loss)	(284,417)	110,046
Losses on reorganization	(121,702)	98,665
Operating profit (loss)	(406,119)	11,381
Finance income	7,706	5,367
Finance costs	(25,159)	(25,404)
Profit (loss) before income taxes	(423,572)	(8,656)
Income tax expense	(2,548)	(10,671)
Profit (loss) for the year	(426,120)	(19,327)
Profit (loss) for the year attributable to		
Owners of the parent	(431,513)	(32,432)
Non-controlling interests	5,393	(13,105)
Profit (loss) for the year	(426,120)	(19,327)
Earnings (loss) per share		
Basic earnings (loss) per share (Yen)	(468.74)	(35.22)

Consolidated Statements of Comprehensive Income or Loss

	Fiscal 2019	Fiscal 2020
Profit (loss) for the year	(426,120)	(19,327)
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	(83,305)	125,471
Remeasurements of defined benefit plans	(1,449)	42,307
Share of other comprehensive income of investments accounted for using the equity method	(6,785)	10,062
Subtotal	(91,540)	177,841
Items that might be reclassified to profit or loss		
Changes in fair value of cash flow hedges	(1,821)	5,029
Foreign exchange differences on translation of foreign operations	(14,812)	2,752
Share of other comprehensive income of investments accounted for using the equity method	(9,346)	(23,062)
Subtotal	(25,981)	(15,280)
Total other comprehensive income, net of tax	(117,521)	162,561
Total comprehensive income for the year	(543,642)	143,233
Comprehensive income for the year attributable to:		
Owners of the parent	(543,881)	119,451
Non-controlling interests	238	23,781
Total comprehensive income for the year	(543,642)	143,233

Total Shareholder Return, Stock Price and Market Cap, and Strategic Shareholdings

	FY	2016	2017	2018	2019	2020
Total shareholder return (TSR) (%)		120.7	113.4	99.4	52.3	97.2
(Comparative indicator: Dividend-included TOPIX; %)		(114.7)	(132.9)	(126.2)	(114.2)	(162.3)
Highest share price (¥)		2,912.0	3,132.0	2,527.0	2,081.0	1,954.0
Lowest share price (¥)		1,787.5	2,228.0	1,794.0	857.0	798.1
Market cap (fiscal year end; ¥ bn)		2,437.5	2,220.4	1,856.9	879.4	1,792.8
Strategic shareholding : Number of issues recorded amount		372	361	345	308	301
Amount reported on the balance sheet (¥ bn)		603.4	635.9	464.8	237.8	262.6
Nikkei Stock Average (fiscal year end; ¥)		18,909.26	21,454.30	21,205.81	18,917.01	29,178.80

*1: Total shareholder return is obtained by dividing return (dividend and capital gains) from stock investment by the invested amount (stock price). Calculated based on Cabinet Office Order on Disclosure of Corporate Affairs.
TSR = (Stock price at end of each fiscal year + Cumulative per-share dividends paid since FY2016)/ Price at the end of FY2015
*2: TOPIX tracks all domestic companies listed in the First Section of the Tokyo Stock Exchange

Investor Information (As of March 31, 2021)

Head Office
2-6-1, Marunouchi, Chiyoda-ku,
Tokyo 100-8071, Japan
Phone: +81-3-6867-4111
URL: <https://www.nipponsteel.com/en/>

Common Shares (Issued)
950,321,402 shares

Registration Agent
Sumitomo Mitsui Trust Bank, Limited
1-4-1, Marunouchi, Chiyoda-ku,
Tokyo 100-0005, Japan
Phone inquiries 0120-785-401
(Toll-free for domestic phone calls only)
+81-3-3323-7111 (Outside Japan)

Common Shares (Authorized)
2,000,000,000 shares

Inception
April 1, 1950

Number of Shareholders
424,454

Common Stock
¥419,524 million

Listings
Tokyo Stock Exchange
Nagoya Stock Exchange
Fukuoka Stock Exchange
Sapporo Securities Exchange

Stock Code
5401

Number of Shares per Trading Unit
100 shares

Share Ownership by Category
Ratio of shares held to the total number of common shares (issued)


Financial institutions	35.8%
Overseas investors	29.6%
Individuals and others in Japan	20.3%
Other companies	9.5%
Securities companies	1.8%
Treasury stock	3.0%

Principal Shareholders


Name	Shares owned (Thousands)	Shareholding ratio (%)*
The Master Trust Bank of Japan, Ltd. (Trust Account)	79,061	8.6
Custody Bank of Japan, Ltd. (Trust Account)	48,329	5.2
Nippon Life Insurance Company	24,532	2.7
Custody Bank of Japan, Ltd. (Trust Account 5)	14,475	1.6
Meiji Yasuda Life Insurance Company	14,064	1.5
STATE STREET BANK WEST CLIENT – TREATY 505234	13,422	1.5
Custody Bank of Japan, Ltd. (Trust Account 6)	12,830	1.4
GOVERNMENT OF NORWAY	12,725	1.4
THE BANK OF NEW YORK MELLON 140044	12,434	1.3
Mizuho Bank, Ltd.	12,199	1.3

* The shareholding ratio is calculated after treasury stock owned by Nippon Steel Corporation is excluded from the number of common shares (issued).


Overview of corporate communication tools



Corporate Website
The website comprehensively describes the nature of company operations, general aspects of the company, IR information, hiring information, and ESG information.
<https://www.nipponsteel.com/en/index.html>



Integrated Report
This report conveys overall business and management information to investors.
https://www.nipponsteel.com/en/ir/library/annual_report.html



Sustainability Report
This report describes Nippon Steel's Environmental, Social, and Governance initiatives.
<https://www.nipponsteel.com/en/csr/report/>

Various reports for investors

- Basic Facts About Nippon Steel
- Financial Results Summary
- Annual Securities Report
- Corporate Governance Report
- Documents related to the General Meeting of Shareholders, etc.

Disclaimer regarding forward looking statements

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This report is not prepared for the purpose of providing the basis for an investment decision. The Company is not responsible for any damages or loss incurred due to the information available on this report.