

Nippon Steel Integrated Report 2020

NIPPON STEEL CORPORATION

#### Editorial Policy

This Integrated Report 2020 summarizes Nippon Steel's value creation process, current business situation, risks and opportunities, and strategy. In addition to updating changes since the 2019 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 overall composition of the report can be seen in "The value creation process and Nippon Steel's strengths" on pages 13 and 14.
- 2-Concerning the Environmental and Social aspects of ESG (Environmental, Social, Governance), this Integrated Report takes up materiality and relevance to factors of the value creation process while details on initiatives are written in the Nippon Steel Sustainability Report 2020.

We sincerely hope that this Integrated Report helps stakeholders better understand Nippon Steel. Your comments and feedback are welcome as we intend to continue improving the Integrated Report.

Period covered Fiscal 2019 (April 1, 2019 – March 31, 2020)

Organizations	Nippon Steel Corporation and Nippon Steel Group companies
covered	(526 companies as of March 31, 2020 comprised of 408 consolidated subsidiaries and 118 equity-method affiliates)

Publication October 2020 date

guidelines

- The International Integrated Reporting Council (IIRC) International Integrated Reporting Framework Reference for
  - 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

AMA

- materiality among ESG initiatives.
- Sustainability Reporting Standards (Global Reporting Initiative)
- ISO 26000
- Various ESG ratings and evaluations

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governance

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Introduction

Introduction Overview Materiality Inputs Business activities Outputs and outcome

# **Corporate Philosophy** Our Values Management Principles

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

#### Our Thoughts Incorporated in the Corporate Logo

ing to become the best steelmake with world-leading capabilities

#### Aiming at the summit

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 summit, representing the best steelmaker. It can be also viewed as the destination of a road, representing the unlimited future of steel as a material. The blue color represents leading technology and reliability.

Integrated Report 2020

## NIPPON STEEL

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.

Representing the unlimited future of steel

## The business environment and Nippon Steel's operating results up to the first half of fiscal 2020

## **Message from the President**

On April 1, 2019, we renamed ourselves as "Nippon Steel Corporation" (from Nippon Steel and Sumitomo Metal Corporation), to keep in pace with our advance as a growing global steelmaker with origins in Japan, and as a company incorporating a diversity of DNAs of people and companies. With the aim of securing a position of the best steelmaker with the world-leading capabilities, using our three key drivers of "technology," "cost," and "being global," we have worked hard; 1) to rebuild our profit base by restoring our "strength in manufacturing\*1" and enhancing our "strength in sales and marketing\*2"; 2) to expand profit of the overseas business; and 3) to promote business innovation, standardization, and workstyle reform. These efforts are, as always, based on all possible measures related to safety, environment, disaster prevention, quality assurance, and compliance.

Our Group's mainstay steelmaking business is expected to remain subject to an extremely harsh business environment partly due to the COVID-19 crisis, which has further aggravated the unprecedented environment of "higher raw material prices and lower steel product prices." Despite being in such situation or because of this, we focus on early transition to an optimal production framework in Japan, enhancement of globally-competitive strategic products in terms of quality and quantity, and execution of initiatives to deepen our overseas business in response to the global trend of "local production and local consumption" and "favoring domestic production." Our intended result is to enhance our profitability. In the post-COVID-19 world, we are determined to restore profitability in the parent steelmaking business whatever the ambient circumstances may be and aim at "becoming the best steelmaker with world-leading capabilities." We are also tackling measures against climate change by development of innovative technology, thereby contributing to achieving Sustainable Development Goals (SDGs) adopted by the United Nations.

\*1: Capability of stable production as planned in line with demand, with a focus on cost control \*2: Capability to realize appropriate pricing that matches our product value and contribution



In fiscal 2019 (ended March 31, 2020), the sluggish trend of the world's manufacturing industry, prompted by the U.S.-China friction since the latter half of fiscal 2018, worsened and we experienced a significant decline in demand from the manufacturing sector - our mainstay customers. At the same time, China boosted infrastructure investment and continued high-level production of blast furnaces, and hence high prices of iron ore and other main raw materials took hold. As a result, we were plunged into the unprecedented environment of "higher raw material prices and lower steel product prices." Natural disasters and other factors also affected our results. Due to continued loss of the parent company's steelmaking business and recording of impairment losses, Nippon Steel Group's earnings deteriorated significantly in fiscal 2019, to record a business loss of ¥284.4 billion and loss attributable to owners of the parent of ¥431.5 billion. As a brighter spot, with regard to restoring of our "strength in manufacturing," our efforts to enhance line management capability in both operation and maintenance finally achieved some progress, as evidenced by a significant drop in the number of unscheduled operational and equipment events that tended to lead to production cuts, and improvement in variable costs. Moving on to fiscal 2020 (ending March 31, 2021), there were

### The changing environment of the steelmaking business and Nippon Steel's business strategy

#### Medium- to long-term outlook

Our projected medium- to long-term environment of the steelmaking business is as follows.

First, we anticipate an accelerating structural change in the steel market. On the demand side, the base demand in Japan may be depressed further, along with declining, aging population, while a decline in indirect exports has to be assumed due to reduction in trade flows, driven by the spread of nation-to-nation confrontation. Overseas steel demand is expected to increase over the long term, thanks to economic growth, associated with population growth. However, demand growth cannot be expected near term if investment in the energy sector, caused by the current oil price declines, remains depressed and if emerging countries continue to be in difficulties due to spread of COVID-19 and weaker currencies. The COVID-19 outbreak is likely to accelerate the manufacturing industry's "local production and local consumption" and "favoring domestic production" and to further disrupt the globally-connected market, leading to a harsher environment for exports.

Looking at the competitive landscape, China is the biggest threat in the steel market, as we all know. On the back of swift resumption of post-COVID-19 economic activities, Chinese major steelmakers are expected to expand their relative Corporate governance Financial information and Investor information

initially good prospects of generating a profit in the parent company's steelmaking business, driven by improvement in variable costs from stable production, enhanced measures for long-term contractual prices\*<sup>3</sup>, and reduction in fixed costs (including repair costs and capital expenditures) by carrying out stringent selection. However, the COVID-19 outbreak sharply depressed demand for steel products, and output and shipments dropped substantially. As a result, operating results for the first half of fiscal 2020 are projected to be poor with the estimate of ¥150 billion as consolidated business loss.

We are taking appropriate steps concerning the impact of the spread of the COVID-19 infection. Responding to a significant drop in steel demand, we swiftly decided to temporarily stop production in six blast furnaces out of 15 in total and have adjusted manufacturing process operations according to the demand status of each product type with a focus on cost and in line with demand. Foreseeing potentially prolonged implementation of the COVID-19 measures, we are resolute in thoroughly taking infection prevention measures, based on the guidelines of the government, concerned organizations, and other factors, and are promoting on a company-wide basis a new workstyle that could further enhance business efficiency.

\*3: Prices of order-made steel products for customers

predominance. Moreover, a decline in domestic demand in China – the world's largest steel consuming country – and an increase in integrated steel production capacity in China's coastal regions and ASEAN will intensify competition in the export market.

In sum, the COVID-19 pandemic is accelerating the preexisting structural changes in the steel market, which makes our steelmaking business exposed to a dire environment.

Next I will address the social, industrial structural changes we anticipate. The rapid advance in IT, and automakers' growing needs for lighter vehicles, emergence of electric vehicles and other vehicles with a new energy source, and autonomous driving and other developments, are likely to lead to advanced demand for performance of materials. In anticipation of competition with other materials, we have to maximize the potential of steel and respond to advanced needs. While initiatives for Sustainable Development Goals (SDGs) adopted by the United Nations are being undertaken, an important mission for the steel industry, in particular, is reduction in greenhouse gas and establishment of a circular economy, as measures against climate change. We need to appropriately address these megatrends of society and industry.

#### Our business strategy in light of medium- to long-term changes in the steelmaking business environment

How will Nippon Steel restore its profit base and continue sustainable growth in the changing environment of the steelmaking business? Let me explain our policies and strategies.

#### Stable production, price improvement, and reduction in fixed costs as primary factors determining profit

Concerning the restoring of our "strength in manufacturing" - a source of profit - we seek to make stability of our production completely embedded. Despite the sluggish demand environment, the improvement in long-term contractual prices has progressed, though somewhat less than expected, and we intend to make efforts for further improvement. We will also carry out the dual tactics of selection and concentration and reduce fixed costs (including repair costs and capital expenditures).

#### Medium- to long-term business strategy: stringent selection of facilities, products, and businesses

#### 1. Early transition to an optimal production framework in Japan and enhancement of competitiveness

The role of the Nippon Steel Group is to accurately respond with superior technology, products, and services to diverse needs and challenges of customers and society, such as for advanced performance of materials in the automotive industry and measures against climate change. Requirements for R&D and production capability have risen compared to the past. For us to prevail in global competition in the future, jointly with our customers, we have to be more sophisticated and improve our strength in development and technology, and raise the ratio of our strategic products, such as high-tensile steel sheets and electrical steel sheets, so as to be unrivaled by global competitors.

Our sources of strengths in development and technology lie in integrated blast furnace steelmaking. In order to maintain and advance these strengths, maintaining integrated

#### 2. Enhancement of globally-competitive strategic products in terms of guality and guantity

We have expanded solutions concerning material development, utilization of processing technology, and other matters in response to customers' needs, given that properties required for materials are now more diversified and advanced. We pride ourselves on making stable supply of high-grade steel products and enhancing their functions, contributing to customers and creation of value in society. These products include: high-tensile steel sheets, which enable energy saving due to their high strength and weight reduction; electrical steel sheets for Eco Cars and high-efficiency transformers; high-corrosion-resistance seamless steel tubes, used in drilling of natural gas and other

energy resources; and steel products for the high-pressure hydrogen environment. In case of ultra-high-tensile steel sheets and electrical steel sheets, we have decided to build a new manufacturing facility to respond to demand growth from the automotive and electric power sectors and needs for highergrade products. We thus intend to further enhance manufacturing capacity and product quality. By making use of our world-class scale and world-class technological prowess, we will proactively enhance globally-competitive, unrivaled, strategic products in quality and quantity, maximize marginal profit, and contribute to the creation of a sustainable society.

steelworks at a certain level of production in Japan is a must.

As mother mills, our domestic steelworks are the bedrock

base that supports our global strategy, while securing cost

competitiveness and generating profit. We will therefore

invest in adopting new, powerful equipment in our major

steelworks and increasing supply capacity of advanced

strategic products. By concentrating production of high-

value-added products, cost will be reduced. Along with

execution of this measure, we cannot avoid stringent

selection of products and facilities. Implementation of

measures announced in February 2020, is difficult and

measures, consider and implement additional ones, and

enhance competitiveness of our domestic mother mills.

drastic measures, including the production facility structural

painstaking but we are determined to move forward certain

#### 3. Deepening of overseas business, addressing to local production and local consumption

The global trend of "local production and local consumption" and "favoring domestic production" is expected to get stronger due to travel restrictions and global supply chain disruption, caused by the COVID-19 pandemic. We were ahead of our peers in establishing overseas production and sales bases, as well as a global production and supply framework. Going forward, with a focus on "markets where we see assurance of demand growth potential" and "areas where our technology and product capacity can be used," we are committed to contributing to development in key countries and regions and to creating corporate value.

In the target countries and regions, we seek to collaborate with a major company or work on M&A in an agile, flexible manner and become an insider. In India in December 2019 we acquired an integrated steelmaker Essar Steel India, jointly with ArcelorMittal and made a fresh start as ArcelorMittal Nippon Steel India. We plan to steadily capture steel demand in India, which is expected to expand.

We will also withdraw from businesses that cannot be returned to the black, those that have completed their roles, or those that are losing synergies, and redistribute and optimize management resources.



#### 4. Innovative technology development as a response to climate change issues

Among the Sustainable Development Goals (SDGs), measures against climate change, such as reduction in greenhouse gas emissions and creation of a circular economy, are also critical challenges for the steel industry.

Nippon Steel has been working on CO<sub>2</sub> emission reduction through the "Three Ecos" initiatives and "innovative technology development." We are also making efforts to recycle 100% of plastic containers and packaging and to help create a circular economy, such as by use of by-product gas generated in steelmaking and reuse of waste water. Toward tackling climate change issues, we are recognized as playing a leading role in 1) formulation of the Japan Iron and Steel Federation's long-term vision for climate change mitigation, "A challenge towards zero-carbon steel" (including development of hydrogen reduction steelmaking technology, which enables zero CO<sub>2</sub> emission at the time of steelmaking); 2) use of the Life Cycle Assessment (LCA)based environmental impact calculation method of the International Organization for Standardization (ISO) and the Japan Industrial Standards (JIS); and 3) a proposal to promote the

#### Management reform measures: Revised corporate governance structure and revised organization and business management

For the purpose of appropriately responding to greater fluctuation in the business environment and an acceleration of the speed of change, and of solidly implementing business strategy and sustainably raising corporate value, we are reforming our corporate governance, organization, and business management. Concerning the corporategovernance structure required from the viewpoint of corporate governance, we made a transition from a "Company with an Audit & Supervisory Board" to a "Company with an Audit & Supervisory Committee" in June 2020. The objective is to enhance the supervisory function of the Board of Directors over management, and at the same time expedite and increase efficiency in management decision making by delegating part of the decisions regarding execution of important operations to the

#### In closing

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

and strategies

and Investor

"Creation of Sea Forests" and "Blue Carbon" (the carbon captured and sequestered by oceans and coastal ecosystems).

We also signed the statement of support for the Task Force on Climate-related Financial Disclosures (TCFD) and since 2019 we have disclosed the results of scenario analysis concerning the impact of climate changes in our business activities. In June 2020 we stated our agreement with the Challenge Zero declaration, announced by Keidanren, toward realizing a decarbonized society. Through this, we disclosed 10 specific challenges, including "development of hydrogen steelmaking process for zero emission" Moreover, we have established a cross-divisional committee, which began discussion on subjects such as individual companies' scenarios for Zero Carbon Steel and R&D and technology adoption related to low CO<sub>2</sub> emission technologies. We plan to disclose individual companies' specific scenarios within the current fiscal year.

Our innovative technology development aims to respond to a future increase in global steel demand and simultaneously resolve climate change issues.

Representative Director and Chairman, and Representative Director and President.

In line with the revision in corporate governance structure and given the absorption of Nippon Steel Nisshin on April 1, 2020, we are in process of enhancing efficiency of the entire corporate organization and businesses, including the integration and reorganization of steelworks into six steelworks and streamlining of divisions and departments. In addition, with the aim at proactively using data and digital technology to strengthen our business competitiveness, a Digital Innovation Division (division to promote Digital Transformation, or DX) has been established. Enhancement of data management is another way to speed up decision-making, promote business and production process innovation.

promote its execution and follow-up of our materiality in ESG issues, by checking the Key Performance Indicators (KPI), and strive to contribute to sustainable social development, 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.

## 鉄は、 jש× Attractiveness of steel ともに

#### Steel is an abundant, sustainable material that can be reborn endlessly



Steel is easily sorted from a mixture with other materials and can be endlessly recycled without causing deterioration in quality - quite a unique characteristic. Steel is a perfect material for recycling as it can be recycled endlessly into all kinds of steel products after the end of its product life.

#### Diverse properties and a wide range of applications

Due to diverse advantages such as strength and easiness to work, steel has been used in a wide range of applications and deserves recognition as the most outstanding material for the infrastructure of society, a material that supports people's lives and overall economic development. Steel is close to us and we cannot live without steel products.

Steel is for here for all of us now and will be with us in the future. **P.47-48** 

#### Major properties that enable diverse applications

Strength	Weldability	Heat resistance
Toughness	Paintability	Cold resistance
Robustness	Magnetism	Cold resistance
Workability	Corrosion resistance	Weather resistance
		et



Infinite potential

Steel is a material with great potential due, in part, to its having a much higher theoretical strength than other materials. In addition to adjusting carbon and other content to give a certain steel product specific desired characteristics, steel's properties can be finely controlled to meet function and performance requirements, including requirements that did not exist in the past. We do this by controlling the combination of its temperature and rolling at the manufacturing stage or by adding alloys. Further development in steel and its usage will push the potential horizon further outward.

#### Potential capacity and present application level of material strength

<ul> <li>Present application level St</li> <li>Theoretical strength*2</li> </ul>	reng	ith o	f she	et m	ateri	als fo	r automobiles
Tensile strength (GPa*1)	0	1 :	2	3	4	5 :	6 (( 10 ; (( ;
Iron and steel			-				(10.4GPa) 🔵
Aluminum and alloy					) (3.5	5GPa)	$\sim$
Concrete (compressive strength)	1						$\rangle$
CFRP							$\rangle$

"Gigapascal (GPa) is a unit to measure tensile strength. Giga denotes a factor of one billion (10%). \*2:Theoretical strength is said to be 1/5 to 1/7.5 of the modulus of rigidity. The above data uses 1/7.5.

Steel is one of the most familiar materials of which things are made and is indispensable for our daily lives. With its diverse properties and infinite potential, steel can be recycled endlessly, contributing to a sustainable society.

## Steel – an excellent material from the Life Cycle Assessment (LCA) perspective

Environmental impact of a certain material can be high in its entire life cycle, even if its environmental impact is low when used.

#### Why the Life Cycle Assessment is important



Comparison of CO<sub>2</sub> emission in producing an automotive part that has the same strength as conventional steel (kg-CO2)



#### Steel's environmental impact in production is extremely low, despite steel being heavier than other materials.

\* The high strength steel weighs 25% less than conventional steel and causes less environmental impact

Source: WorldAutoSteel

#### Thinking of the environment in a product life cycle

The Life Cycle Assessment method (LCA) is a way to evaluate environmental impact of a product over its entire life cycle. While many aspects of environmental impact cannot be seen, the LCA is an attempt to visualize the impact over the life cycle of a product. From the LCA perspective, steel can be regarded as a sustainable material with very low environmental impact relative to other materials.

#### Environmental impact of BF and EAF routes using LCA approach

Focusing only on the steelmaking process itself, the blast furnace (BF) route to reduce iron ore to make steel may appear to generate a higher environmental impact than the method that melts steel scrap in an electric arc furnace (EAF) to make steel. However, the BF route creates steel products that generate scrap that, through recycling, has an effect of CO<sub>2</sub> emission reduction. As that scrap recycling effect offsets the CO<sub>2</sub> emissions in the BF process, environ-mental impacts of the BF and EAF routes in total terms are the same over the life cycle of steel.

This approach is recognized in the ISO 20915 and the JIS Q 20915 and is becoming a global standard.

## 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. Our aim is to advance toward "the best steelmaker with world-leading capabilities" by incorporating a diversity of DNAs of people and companies and taking up the challenges of making major reforms, which can be described as the second foundation of the company, to achieve further global growth. While providing products and solutions that contribute to world sustainable growth, we strive to enhance corporate value





Results and outlook

Risks and strategies

and Investo

## The value creation process and Nippon Steel's strengths

#### Corporate Philosophy D+p.4

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.85-100**

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 D.15-18

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

### Nippon Steel's strengths

value creation Cost competitiveness, enabled by our process technology and operational technology

Global expansion in response to Japanese customers' overseas expansion and local deman

Products and solutions that contribute to customers'

		reciniology	CUSL	Being global
Global top-level R&D resources as a steelmaker	p.25	•	•	
Practical use of advanced technology by R&D centers and steelworks research divisions	p.19	•	•	
Joint development with customers based on long relationships of trust	p.44	•		
Rich product portfolio	p.47	•		
The world's top-class energy efficiency	p.24		•	
The top-runner approach in many steelworks	p.39		•	
Large blast furnace operating technology	p.39		•	
Stable, mass production technology of high- grade steel	p.39	•	•	
Synergy with the non-steel segments	p.45	•	•	
Global production framework	p.20			•
Alliances with some global leading steelmakers	p.40			•
Presence in the growing Asian market	p.44			•
High domestic shares; No. 3 in the world in production volume	p.44			•

Business model

## INPUTS

capita

p.29-30

Finan capi

p.31

capital

ufactured capital U .19-22	Global production capacity – approx. 90 MN tons/yr Tangible fixed assets – approx. ¥2.8 tn in book value
latural capital U .23-24	Iron ore- 57.77 mmCoking coal- 26.24 mmIndustrial water- 700 mm
ellectual apital .25-28	R&D expenses — ¥77 R&D staff (non-consol.) — app Patents (non-consol.) Japan — app Overseas — app
	Normhan of annulation of farmed

Number of employees (consol.) 106,599 (non-consol.) 27,096

inancial	Interest-bearing debt — approx. ¥2.5 tn
capital	Equity attributable to
Ū	owners of the parent — approx. ¥2.6 tn
p.31-34	D/E ratio – approx. 0.74 times

Social an **Coexistence with communities** Relationship of trust and cooperation with customers p.35-36







business activities that harmonize with stakeholders and the natural environment in its mother mills in Japan, which are a source of its development and technological prowess, and its overseas manufacturing bases, which support Japanese customers' overseas expansion and respond to local customer demand.

#### OUTPUTS BUSINESS ACTIVITIES **p.37-46** Vealth of steel products and solution proposals for diverse applications Mother mills in Japan - a source of technological prowess Construction products Long-accumulated operational and equipment products Plate Bar & wire rod technology under the large blast furnace and seaside integrated steelworks model Pipes & tubes Titanium Technology in high-grade steel products Stainless steel developed while responding to customers' advanced needs Vehicles, Ships, Energy, Electric appliances, Containers, Industrial machinery, Civil engineering, **Global production system** Construction ECO PRODUCTS Support Japanese customers' overseas expansion and meet local growing **Products using by-products** demand, based on the strengths of mother mills in Japan Steel slag products, coal chemical products Non-steel business roducts and services ies between the steelmaki

Environment and energy; urban infrastructure, steelmaking plant, chemicals, functional materials, composite materials; IT consulting; DX promotion; IT outsourcing; modernization

Curbing of CO<sub>2</sub> emissions: 99% recycling of by-products; air, water, soil contamination risk management

#### 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

#### **Operating results and outlook**

and three other segments

Steelmaking

Seament

nemicals a

Materials

olutions

#### **p.55-60** FY2019 results

Record-high loss, partly due to impairment loss, under the environment of "higher raw material prices and lower steel product prices"

#### FY2020 outlook

Significant loss in the first half due to a drop in demand, caused by COVID-19. Aim at business profit in the second half. Resolute in a profit turnaround in the parent steelmaking business, post-COVID-19.

- steelmakers
- Climate change measures Aging facilities

Risks and strategies

and Investor

- The Nippon Steel Group creates value by long-term stable provision of diverse products and solutions through its
  - The Group thereby contributes to industrial and social development.





#### **p.47-54**



#### **ECO SOLUTION**

Overseas transfer of environmental, energy preservation technologies

#### **Minimal emissions**





#### Creation of economic value

#### Creation of sustainable corporate value and profit distribution

- Securing sustainable profit
- Profit distribution
- Investment for further growth
- Enhancement of corporate value



#### Creation of social value

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

Risks and opportunities, and business strategy **p.61-84** 

Japan's aging and declining population

- Trend of "local production and local consumption" and "favoring domestic
- production" in various regions
- The CASE (Connected, Autonomous, Shared,
- and Electric) trend in the automotive industry Intensifying competition with Chinese
- Early transition to an optimal production framework in Japan and enhancement of competitiveness • Enhancement of globally-competitive strategic
- products in terms of quality and quantity
- Deepening of overseas business, addressing to local production and local consumption
- Innovative technology development as a response to climate change issues
- Promotion of digital transformation

supports the very existence and growth of the company.

stakeholders, the corporate philosophy and values, as well as growth strategy.



### 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 environmentallyfriendly 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 CO<sub>2</sub> 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.

Risks and strategies

and Investo

#### 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 KPI

#### Materiality KPIs and status of major initiatives

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. We express our ESG materiality in and out of the company, steadily promote its execution and follow-up by checking the Key Performance Indicators (KPI) to assess outcome, and strive to contribute to sustainable social development, as well as maintenance and improvement of our corporate value.

Materiality			Key Performance Indicator (KPI)	Major Initiatives and Achievements in FY2019 Page		
1. Safety, envir	onment, and dis	saster prevention				
(1) Safety and hea	alth		Accident frequency rate of 0.10 or less     Zero fatal accident	Prevention and risk reduction of accidents, based on safety risk evaluation     Promotion 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	Accident frequency rate: 0.09     Number of fatal accidents: 3	p.41
		• Three ecos to reduce CO <sub>2</sub> emissions	<ul> <li>JISF's Commitment to a Low-Carbon Society's CO<sub>2</sub> emission reduction target (down 3mn tons-CO<sub>2</sub> from Business As Usual (BAL) in FY2020 vs. 2005)</li> </ul>	Promotion of Eco Process (enhancement of energy efficiency)	• Down 2.21mn tons-CO <sub>2</sub> from BAU1 (JISF result in FY2018)	p.75
	1) Promotion of	Implementation of "Eco Process"	Maintaining high-level effective use of energy	• Effective use of byproduct gas (coke oven gas, blast furnace gas etc.) and waste gas	Use of byproduct gas: 100%     Use of waste gas in steam generation: 83%     In-house generated energy use in in-house power generation: 81%	p.23-24
	countermeasures to prevent		Promotion of adopting advanced energy-saving technology	• Adoption of high-efficiency power generation equipment and oxygen plant; regeneration burner in reheating furnace	• Investment cost for energy-saving: ¥5.2bn	SR p.19
	global warming	Enhancement of "Eco Products"	Supply of high-performance steel products to help reduce CO <sub>z</sub> emissions through use of their end products	Acquisition of the EcoLeaf Environmental Label for ten H-shaped steel products, including the newly-launched Mega NS Hyper Beam <sup>™</sup> Proposal of a next-generation vehicle structure concept, "NSafe <sup>™</sup> -AutoConcept"     Development of the CLEANWELL <sup>™</sup> DRY ST, which further enhanced the strength and anti-corrosion properties of OCTG fastening screw joints		p.52/ SR p.27, P.29
(2) Environment		Contribute with "Eco Solutions"	<ul> <li>Transfer and dissemination of the world-leading energy-saving technology to help CO<sub>2</sub> emission reduction globally</li> </ul>	Growing cumulative CDQ delivery record by Nippon Steel Engineering in the group	<ul> <li>106 CDQ cumulative units (contributing to 20.74mn tons-CO<sub>2</sub> reduction, FY2018)</li> </ul>	p.53
	2) Contribution to construction of a	Realization of zero emissions within the company	Reduction in final disposal amount (down 70% vs. FY2000; less than 273,000 tons/year in FY2020, including former Nippon Steel Nisshin)	Promotion of recycling of byproducts (slag, dust, sludge, etc.) in and out of the company	• Final waste disposal: 289,000 tons	p.54
	circular economy	Recycling of waste generated in society	Contribution to constructing of a recycle system of plastic containers and packaging	Aggressive promotion of recycling treatment, according to the Chemical Recycling Act	• Packaging/container plastic waste treatment: 210,000 tons (equivalent to 32% of Japan's total plastic waste)	SR p.37
			NOx and SOx; Keep low-level emissions	Installment of equipment that reduces SOx and NOx emissions; shifting to low-sulfur fuel; adoption of low NOx regenerating burners	• SOx: 14mn Nm <sup>3</sup> • NOx: 27mn Nm <sup>3</sup>	p.42/ SR p.38
	3) Promotion of environmental risk management	Air environment preservation	<ul> <li>Maintaining of lower discharge levels than voluntary targets in chemical substances VOC (volatile organic compounds): 1,106 tons/year (down 30% vs. FY2000, including former Nippon Steel Nisshin) Benzene: 172 tons/year (voluntary target, along with the government target, including former Nippon Steel Nisshin)</li> </ul>	Continual efforts based on the voluntary reduction plan	VOC: 639 tons     Benzene: 88 tons	p.42/ SR p.40
		Water environment preservation	Recycling of water; high-level stable use of recycled water	Water treatment, recycling and reuse of freshwater used by the company	Use of recycled water: app. 90%	p.42/ SR p.40
(3) Disaster prevention	1) Elimination of disa	aster risks and group-wide sharing of effective measures	Zero serious disaster-related accident	Prevention of recurrence via corporate-wide implementation of measures against risks emerged from the accidents     Risk assessment to detect new disaster risks; execution of measures from hard/soft aspects to reduce risk and control residual risk     Self-monitoring (auditing) by those in charge of disaster prevention in steelworks; and management by the head office management through interviews	• Serious disaster-related accidents: 0	p.42/ SR p.45
2. Quality						
(1) Quality contro	l and guarantee		Systemization and automation aimed at more credibility in testing and inspection	Automatic input of inspection results from testing/analytical devices and measurement devices		p.43
(2) R&D and intellectual property management		agement	Strategic R&D, aimed at sustainable growth     Protection and use of intellectual property	<ul> <li>Creation of the Digital Innovation Division as a planning division to tackle company-wide issues of utilization of information telecommunication technologies (ICT) (April 2020)</li> <li>The eighth consecutive year of being named as one of the world's most innovative companies in the Top 100 Global Innovator 2020; award in intellectual property and patent areas</li> </ul>	<ul> <li>R&amp;D expenditures: ¥77.6bn (consolidated)</li> <li>Number of patents: app. 36,000 (15,000 in Japan and 21,000 overseas)</li> </ul>	p.25-28
(3) Solution that result in customer satisfaction		tisfaction	Number of awards from customers, government, and institutions	The 66th Okochi Memorial Production Prize; the 52nd Ichimura Prize in Industry for Distinguished Achievement and in Industry against Global Warming for Distinguished Achievement; 2019 Minister of MEXT Award (Prize for Science and Technology, Development Division); the 8th Monodzukuri Nippon Grand Award (METI Minister's Prize and Excellence Prize), etc.	Number of awards from customers, government, and institutions: 15	SR p.13,57
3. Production						
(1) Stable produ	ction and supply		Initiatives for more stable production and supply (hardware and software)	Start of operation of a leading-edge continuous casting facility in the Kyushu Works; coke oven refurbishment in the East Nippon Works Kimitsu Area and the Muroran Works     Standardization of operational skills of veteran workers and active use of experts		p.68/ SR p.46-47
4. Securing an	d fostering of pe	ersonnel				
(1) Respect for hu	ıman rights, diversity	/ & inclusion	<ul> <li>Number of women as managers (2x by 2020 and 3x by 2025 vs. 2014)</li> <li>Number of women appointed in managerial positions (assistant managers and above) [of which non-union members]: 48 [21] in 2014 → 96 [42] in 2020 → 144 [63] in 2025</li> </ul>		Number of women appointed in managerial positions (assistant managers and above) [of which non-union members]: 123 [39] in 2020	p.29-30
(2) Utilization and	d fostering of person	nel	• Promotion of measures to develop human resources	Details in the section "Initiatives for Human Resources Development" <b>1 p.29-30</b>	<ul> <li>Ratio of women in hired staff: 34% in staff, 14% in operation and maintenance, and 20% in overall hired staff (average of FY2018-2020)</li> <li>Hours of training and education: 1.54 million hours/year (57 hours/person, year)</li> </ul>	p.29/ SR p.50
(3) Health enhand	cement		<ul> <li>Enhancement of health promotion measures for wellness of employees, and encouragement of employees' own efforts for wellness improvement</li> </ul>	• Review of subject age and frequency for each type of cancer test, aimed at early cancer detection and a higher response rate to cancer test	-	p.30/ sr p.51
5. Harmony wi	th local commu	nities and society				
(1) Environmenta	l preservation/creatio	on activities in communities	Green space development to contribute to the local environment	Tree planting activities by new employees in steelworks     Funding for green space development and maintenance	<ul> <li>Greenery space: 830ha</li> <li>Expenses for green space development and maintenance: ¥2.9bn</li> </ul>	p.35/ SR p.19, p.42-43
(0) 1		f - 1	Ongoing promotion of hosting plant visits	Proactively accepting plant visits by shareholders, investors, and junior high/elementary school students	Number of plant visitors: app. 130,000	p.36
(2) Activities mainly in the support of education, sports, and arts		f education, sports, and arts	Continual execution of corporate philanthropy in the support of music via Nippon Steel Arts Foundation	Support of music activities via presentation of Nippon Steel Music Awards and operation of the Kioi Hall		p.36
6. Corporate va	alue enhanceme	nt and profit distribution				
(1) Securing of pr	ofit and enhancemer	nt of corporate value	ROS of 10% (2020 Mid-Term Management Plan)     ROE of 10% (2020 Mid-Term Management Plan)		• ROS of 1.3% (4.8% in case including impairment loss, etc.)	
	1) Payment of salar subcontracting c	y to employees of the company and related/ ompanies	Bonus payment amount     Revised amount of salary	Refer to the sections "Financial Capital" and "Financial Results and Outlook" of the Integrated Report for further information	KNC UI -14.7%     Base bonus amount: ¥1.00mn     Salav revision + ¥3.700 kg in wage revision + ¥3.700 in	p.31-34 p.55-60
(2) Profit distribution	2) Appropriate tax	payment	Tax payment (consol)	■ p.31-34,p.55-60	periodic wage increase) • Tax payment (consol.): ¥92.5bn	p.99-104 Fact Book p 54
	3) Dividend payme	nt to shareholders	Dividend payment according to the dividend policy of about 30% in consolidated payout ratio (2020 Mid-Term Management Plan)		• Dividend per share: ¥10/year	. 200 0000 0.04
Thorough impl	ementation of c	compliance				
Adhering to laws	and regulations as a	base of all activities		Details in the section "Corporate Governance" in the Integrated Report <b>p.85-100</b>		p.85–100

Outputs and outcomes	Results and outlook	Risks, opportunities, and strategies	Corporate governance	informatio and Investo informatio
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SR : Sustainability Report 2020

\* BAU(Business as usual)

#### Manufactured capital Mother mills in Japan as a source of advanced technology and a strategic

global expansion

Global	crud	е	ste
produc	tion	Ca	apao

el Tangible fixed asset city book value

Approx. 90 mn tons/year Approx. ¥2.8 tn\* +2020.3E

The Nippon Steel Group's annual crude steel production capacity is approximately 54 million tons in Japan and 17 million tons outside Japan. The Group's steel product capacity totals approximately 37 million tons/year.

Muroran Works

### 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.



### 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.



M: Simple sum of crude steel production at full capacity of 1) companies with a 30% or more stake (parent company, subsidiaries, and equity method affiliates, incl. USIMINAS), subject to World Steel Association's crude steel production statistics; and 2) equity method affiliates with a so% stake, to which Nippon Steel product Steel production statistics; and 2) equity method affiliates with less than 30% stake, to which Nippon Steel products (AGIS, PATIN, STP, VSB). Excl. double counting due to intra-group supply of original sheet (I/N KOTE, 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 product manufacturing capacity\*1 (by region and sector)

	Integrated		Autom	otive		Energy &		Home	Downstream	Total
	steel mill	Flat products	Bars & wire rods	Pipes & tubes	Crankshafts <sup>2</sup>	Resources	Infrastructure	containers, etc.	capacity*3	Totat
Overseas total	1,900	1,200	170	45	15	145	440	145	1,900	3,700
ASEAN		148	13	25			<b>271</b> * <sup>10</sup>	43	470	470
China		264	9	5	4			100	380	380
India	984	60	<b>24*</b> <sup>4</sup>	2	4				70	1,050
Middle East						43	45		90	90
North/Central America	20	626*8	11	11	8	1	125*6		760	780
South America	790	103*9				<b>100*</b> <sup>5</sup>			100	<b>790</b> *11
Europe	110		113* <sup>7</sup>						5	115

\*3 Excl. I/N KOTE 0.86 MMT/Y; \*9: Incl. UNIGAL 1.03 MMT/Y; \*10: Incl. STP 0.24 MMT/Y; \*11: Excl. double counting of USIMINAS and UNIGAL 1.03 MMT/Y

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At present, the Group's overseas crude steel production capacity is approximately 17 million tons per year and its steel product capacity, approximately 37 million tons.

#### **p.39**

As of Oct. 2020

## (10,000 tons/year)











The NS steel p production 4.7 tons/	Group's roduct n capacity mn /year		ndia 5 8 9	13	SEA steel der 78 tons	Product mand Mn Sygear	
ASEAN							
Establishment	Company	Sector	Product	Capacity (10 thousand tons/year)	Inve ratio;p	estment bartner(%)	
1963	NSPT	Automotive	Pipes & tubes	16	10	00	
2 1988	STP*	Containers	Tinplates	27	16		
3 1995	NS-SUS	Automotive	Flat products	100	80		
<b>4</b> 1997	NSSPT	Automotive	Bars & wire rods	10	67		
<b>5</b> 1997	VNSP	Automotive	Pipes & tubes	5	60		
6 2005	INSP	Automotive	Pipes & tubes	4	90		
2006	LATINUSA	Containers	Tinplates	16	35	Krakatau	
8 2009	CSVC	Infrastructure	Flat products	120	30	CSC	
<b>9</b> 2010	NPV	Infrastructure	Pipes & tubes	6	76		
10 2011	TSW	Automotive	Bars & wire rods	2	51		
1 2012	KNSS	Automotive	Flat products	48	80	Krakatau	
12 2013	NSBS	Infrastructure	Flat products	96	50 N	IS BlueScope	
1 2015	VAM®BRN	Energy	Pipes & tubes		60	Vallourec	
1 2017	KOS	Infrastructure	Construction products	50	80	Krakatau	

China

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.



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

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\*1: Stock owne \*2: Excluding L \*1: Stock ownership with voting right \*2: Excluding UNIGAL's capacity from the regional total due to semi-finished products being supplied by USIMINAS \*3: VSB, whose products are sold by Nippon Steel, is added in the Group's worldsteel-based steel product production capacity

NIPPON STEEL CORPORATION

**Eco process** 

#### Natural capital

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

#### Coking coal Iron ore 57.77 million tons/year \* tons/year \*

26.24 million

700 million m<sup>3</sup>/year \* \*Fiscal 2019 performance

Industrial water

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.

Numbers represent FY2019 performance



Nippon Steel uses as raw materials iron ore mined overseas, coal as material of coke for reduction of iron ore, and steel scrap generated by society, and produces steel products by using industrial water and energy, such as electricity and fuel. Nippon Steel's manufacturing bases make utmost efforts at achieving efficient use of resources and energy in every

manufacturing process, and utilize limited resources and energy so as there can be no waste. Specific efforts include improvement in product yield, efficient use of equipment, enhancement of efficiency in combustion, and reduced electricity use.

#### Water resources

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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.



#### Recovery of 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.



#### Use of exhaust heat

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



#### 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. In recycling, 40% is recycled into hydrocarbon oil and transformed into plastic products by some group companies; another 40% is recycled into coke oven gas and used as fuel at a power plant within a steelworks; and the remaining 20% is used in the ironmaking process as a part of coke. We are in alliance with local governments across Japan and handle about 200,000 tons per year from them, equivalent to roughly 30% of waste plastics collected all over Japan.

### The world's top-class energy efficiency (+) Nippon Steel's strength

Diverse efforts described above have enabled the Japanese steel industry, including Nippon Steel, achieved significant energy saving and the world's top-class energy efficiency at present.



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#### Electricity

Nippon Steel itself generates 89% of the electricity it uses at steelworks, 81% of which is from internally generated energy sources such as exhaust heat and byproduct gases.





\*1: Including electricity purchased from cooperative

As much as 37% of the generated electricity is provided to local communities via electric power companies.



#### Recycling of 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.





The value creation process Overview Materiality Inputs Business activities Outputs and outcomes

#### Inputs

### Intellectual capital R&D activities and use of ICT- sources of value creation and competitiveness

#### R&D expenses R&D staff Patents

#### ¥77.6 bn/yr\*1 Approx. 800\*2 Japan Approx.15,000\*2 Overseas Approx.21.000\*2

\*1: FY2019 result; \*2: FY2019 results (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 R&D and intellectual property management

Materiality 2 (2)

#### Top-level R&D resources among world steelmakers (+) Nippon Steel's strength

Nippon Steel has approximately 800 researchers (nonconsolidated basis) working on steel-related projects. No other steel company in the world has such a large research staff. R&D expenses of the 2020 Mid-Term Management Plan have been raised from ¥210 billion to about ¥220 billion, up ¥10 billion. This financial resource is allocated according to priority and each project is carried out according to a road map which sets milestones, goals and delivered returns. Four major areas of development that our research emphasizes and that foresees potential change in customer needs are 1) development of high-function products, and related design and processing technology; 2) development of innovative processes; 3) response to challenges of sustainability issues, such as CO<sub>2</sub> emission reduction and recycling; and 4) use of advanced ICT and artificial intelligence (AI). We are resolved in our determination to develop technology which can become a key driver for innovation, and continue to lead the world in steel technology in the future.

Nippon Steel's approximately 800 R&D employees work in three core research centers-Futtsu in Chiba Prefecture, Amagasaki in Hyogo Prefecture, and Hasaki 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.

Our R&D capabilities feature six strengths:

(1) comprehensiveness and speed of development, facilitated by



#### **R&D** organization





the integration of R&D and engineering; (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

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



### Strategic establishment of brand families

At the occasion of our name change into Nippon Steel Corporation, we adopted a brandmark suitable to a global corporation, which was also adopted by our group companies as a master-brand to enhance our group identity. Concerning the SteeLinC<sup>™</sup>, a brand of the Bar & Wire Rod Unit, we are committed to increasing the value of customers' products resulting from the combination of our processing methods. We are also taking strategic measures to establish brand products with strong messages and appealing power in our other businesses and product areas so that our customers can accurately recognize their features and values. These brands include titanium products TranTixxii<sup>™</sup> designed for use in prominent works of architecture such as the roof of Sensoji Temple, the new stainless steel HRX19<sup>™</sup> for use in high-pressure hydrogen environments, and the abrasion resistant steel plate ABREX<sup>™</sup> in use for construction machinery.

and Investo

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.

#### Materiality 2 (2) Intellectual property R&D and intellectual property management

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.

- Enrich the function of establishing rights for inventions, discoveries, and IP
- Consider technical levels of patents in a totally global perspective and actively utilize overseas registered patents (recognized by being named a Derwent Top 100 Global Innovator for
- Increase the overseas assignment of personnel in charge of IP and establish a strategic
- Strictly deal with counterfeit products as well as any violation and illegal use of our



#### 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.

#### Expanding human resources in ICT sections

Nippon Steel's information system is managed by the System Section in each steelworks and the head office Information & Communication Technology Division. The latter division is engaged in management of corporate-wide information systems as well as planning and promotion of efficient adoption of the latest ICT devices and systems for the entire company. Nippon Steel alone has over 100 persons involved in systems work but NS Solutions (NSSOL) - a Group company and one of Japan's top-level IT services companies - has over 10 times more staff than in Nippon Steel steel-related divisions who are engaged in actual system development, maintenance, and management.

The Intelligent Algorithm Research Center (established in April



2018), one of research divisions of Nippon Steel, and NSSOL's Systems Research & Development Center are in charge of new information system-related technology development, in cooperation with the Information & Communication Technology Division. In order to accelerate adoption of the leading-edge technology and advance of digital innovation, these organizations cooperate with the Digital Innovation Division (established in April 2020; details in p. 84) - a planning division that on a one-stop basis works on corporate-wide issues related to use of ICT. They prepare the roadmap for overall ICT promotion, while making specific technological trend studies and enabling prompt actual adoption with the support from many divisions of NSSOL.



#### ICT realizes a new workstyle

We plan to use ICT to reduce to a bare minimum our employees' primary and incidental tasks at their work stations and to support their intelligent work, not just physical work, with the aim of 1) making possible communication at any time, anywhere, with anyone, 2) enabling work to be done regardless of the

environment, wherever the employee is, and 3) enabling people to focus more on intelligent work. We call this a Smart Plartform. Basic to the Smart Platform is use of mobile devices (i.e., smartphones, tablets) in all working environments. As a first step, we are currently distributing handheld devices to on-site



workers. This will enable them to do better and more efficient safety checks and instantly retrieve or enter actual site/product information, leading to greater assurance of stable quality and stable operation and at the same time raise yield and productivity by preventing trouble. Using the on-site workers' feedback and suggestions on new ways of using the devices, we are already creating smart production sites. Moreover, we have started verification of a self-operated wireless network, in anticipation of adopting local 5G communication. This is in order to ensure greater security and enhanced functionality.

In the case of our staff who work behind the manufacturing scenes, we plan to distribute mobile devices to more of our staff, and to promote efficient operation by use of telework as a new workstyle and for enhanced functionality. As we had already set up an internal



#### 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. Mobile devices make data literally fly out of mobile objects and that data is stored and analyzed by using the cloud. In such an era, we find it important to provide the reliable environment for employees to be comfortably engaged in the new workstyle. For that purpose, the latest security measures that incorporate the Zero Trust concept are to be

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network and started using web conferences and chat tools, we have been able to smoothly introduce working at home after the COVID-19 outbreak and have seamlessly continued business.

Going forward, we intend to establish an environment where all our information can be handled anywhere. Specific means to this include to automate incidental work by use of the Robotic Process Automation (RPA) and Self Business Intelligence (BI) processes, and to use NS-DIG<sup>™</sup>, a platform for comprehensive data analysis, to support intelligent production. In addition, by adopting KAMONOHASHI<sup>™</sup>, NSSOL's new AI development tool, NS-DIG<sup>™</sup> enables staff who are not system experts to develop AI models. We are hence promoting development of citizen scientists by use of this environment. Our corporate-wide efforts to promote AI will continue.

implemented in addition to promoting employees' enhanced IT literacy and resultant sensitivity to cybersecurity, not to neglect the conventional centralized cybersecurity measures. Zero Trust means to never trust and 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, which is 14 as of June 2020.

### Human capital Initiatives for human resources development

Number of employees (consol.)

Number of employees (non-consol.)

ESG Materiality 4-(2) Utilization

#### 106.599 27.096

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. Please see p.48-51 of our Sustainability Report 2020

#### Utilization and development of human resources

Nippon Steel's basic approach to personnel development is on-thejob (OJT) training and the Personnel Development Basic Policy has been adopted in order to clearly express and share the policy with all employees. For employees in office positions, diverse types of off-the-job training sessions, which include training that matches job levels, to acquire certain skills, and to learn international aspects of work, are conducted to complement OJT. In the recent years, we have been making efforts at training supervisors, such as the middle-management seminars to develop personnel capable of assuming responsibility in the future for work in domestic and overseas business, and to train line manager candidates. With regard to employees in manufacturing and maintenance, upon clarifying the skill to be acquired, their status of development and skill transfer is evaluated by using a skill map and, based on this evaluation, their specific development plan is ascertained and implemented.

#### **Diversity & inclusion**

In an aging society that has a declining birthrate, Nippon Steel has promoted diverse measures aimed at establishing such a work environment, whether at clerical, manufacturing, or maintenance work sites, that empowers diverse people, including elderly persons and women.

We have introduced programs such as a childcare leave system which is more generous than legally required, a leave program to assist overseas relocation of the spouse, and a temporary exempting program for employees who have difficulty in relocation for child or elderly care and other reasons. Moreover, we have opened 24-hour childcare centers for use by shift work employees in steelworks. We are thus enhancing programs to support employees' work-life balance.

At present, the ratio of women in overall hiring is about 20%. We are committed to steadily implementing various measures toward our target to double the number of women in managerial positions from the level in 2014 by 2020 and triple it by 2025.

Concerning promoting the empowerment of elderly, we have decided to raise the retirement age from 60 to 65 in fiscal 2021. This change reflects the decline in the working population and the raising of pension eligibility age, and was made also from the perspective of maintaining and enhancing our on-site manufacturing capacity.

and fostering of personnel Personnel development policy

- (1) Personnel development is nothing but one aspect of business.
- (2) OJT training is a basic of personnel development and is complemented with off-the-job training.
- (3) A supervisor shares clear objectives and outcomes of personnel development with his/her subordinates.

(4) Every employee ceaselessly strives to develop skills and knowledge.

Number of training/learning hours (FY2019)

**1.54 million hours/year** (57 hours/year per employee)

Status of employees (non-consolidated basis)

Number of employees (number of women in parenthesis)	27,096 (2,670) (March 31, 2020)
Number of new hires (number of women in parenthesis)	1,438 (228) (FY2020)
Average years of service	15.1 years (March 31, 2020)
Rate of voluntary termination	1.6% (FY2019)

#### ESG Materiality 4-(1) Respect for human rights, diversity & inclusion

Recognizing employment of the disabled as an important social challenge, we are implementing an action plan for their employment, using special-purpose companies, and by providing a friendly working environment.

#### Achievement related to diversity & inclusion

Achievement related to childcare support system (result in FY2019)	Number of users of the childcare leave system	265
	Ratio of returnees after childcare leave	96.3%
	Number of users of the short-work hour system for childcare	108
	Internal childcare centers	5 centers
	Users of internal childcare centers	100

The ratio of women in overall hiring (Average ratio from FY2018 to FY2020) Office staff and engineers 34% Operators and maintenance personnel 14%Overall hiring **20%** 

#### Number of women appointed in managerial positions (assistant managers and above) [of which non-union members

48 [21] in 2014 Target 123 [39] in 2020 Target to double the number of women in managerial positions by 2020 and triple it by 2025, compared to that of 2014 Number of those re-employed / Disabled-person employment rate (as of June 2020) 2,927 2.26% Promotion of balanced work-life

Nippon Steel complies with labor laws and regulations of each country where it operates, and strives to create a work environment that allows each and every employee to do best. We promote balanced work-life by encouraging employees to fully use their paid holidays and to control the number of hours worked, and to keep the time worked at a suitable level. This is done with cooperation by labor unions. As a part of initiatives on Workstyle Innovation, we are expanding the working system from the viewpoint of fully utilizing the optimized work time and

#### Promotion of the health of employees

To help ensure we are an energetic company where all employees work at their best and stay healthy from joining the company until retiring it, we implement health promotion measures with a focus on disease prevention. The company is committed to providing a full health checkup menu and enhanced aftercare to benefit the mental and physical wellness of employees, while employees are expected to also be committed to implementing measures for their own health maintenance.

Specifically we use the corporate-wide medical checkup system, thoroughly manages health guidance on the basis of managing risks, and run a recurring event to promote specific health guidance

#### **Respect for human rights**

#### 1 Respect for human rights

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.

#### 2 Communication on human rights with stakeholders within and outside the company

Nippon Steel considers it important to communicate with stakeholders within and outside the company to deal with human rights risks. We have set up a Compliance Consulting Room to

Risks and strategies

and Investor

to help enable all employees to realize their full capacity. In fiscal 2019 we began a telework program. In addition to being concerned with workstyle and operation management that leads to more efficient, higher-value-added output, the program is proactively utilized to cope with the COVID-19 infection problem. Nippon Steel also has diverse welfare programs to support employees' personal life: provision of housing, including dormitories and company housing, and a cafeteria plan (work-life support program).

#### ESG Materiality 4-(3) Health enhancement

and lifestyle modiffcation named the Health Challenge Campaign, as a measure to prevent and combat lifestyle-related diseases. In addition, cancer screening tests are broadly conducted for stomach cancer and bowel cancer, or for breast cancer and uterine cervix cancer, depending on age and gender of employees, with the aim of early detection.

Concerning mental wellness, 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. Using an annual stress check of employees, various measures are implemented according to the issues of a team or an individual.

#### ESG Materiality 4-(2) Utilization and fostering of personnel

receive notifications or inquiries concerning harassment and other abuse of human rights from the Group's employees and family members, and from business partners. Notification and consultation from other stakeholders are accepted in the form of responses to an inquiry menu on Nippon Steel's website. Each of these whistleblowing and consultation matters is given appropriate attention, including our providing guidance or training to the related parties, consistent with advice from lawyers and other professionals when needed.

#### 3 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.

#### 4 Respect the rights to organize and to bargain

Adhering to laws and the group-company labor agreements, and respecting the rights to organize and to bargain, Nippon Steel strives to establish sound labor relations by sincere talks with organized labor. We hold regular meetings to discuss diverse issues including management issues (i.e., safety and health, production), labor conditions (i.e., wages and bonuses), and balance in work-life. Through exchange of opinions with union representatives, we seek close labor-management communication.

Labor union membership and ratio (as of March 31, 2020)

25,765 (Membership ratio: 100%)

### Financial capital Financial discipline for achieving both financial soundness and corporate growth

Interest-	Shareholders'			
bearing debt	equity	Debt/Equity ratio		
$4000000$ $\pm 2.5$ tn*	$4000000 \pm 2.6 \text{ th}^*$	ADDROX 0.74 times		

 (adjusted for equit) \*2020.3E

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 is to maintain the D/E ratio of around 0.7. This will be by offsetting an increase in interestbearing debt with an increase in shareholders' equity during the 2018 – 2020 Management Plan when investing cash flow will be at a high level because we need large-scale refurbishment for domestic facilities and intend not to miss opportunities for overseas growth investment.

As of March 31, 2020, due to a decrease in shareholders' equity, caused by posting of impairment loss, the D/E ratio rose from a year ago to 0.94 times or 0.74 times after recognizing equity credit attributes of the subordinated loan and the hybrid bonds. 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.

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 already accomplished ¥380 billion asset compression in fiscal 2018 and 2019 combined. In fiscal 2020 we are considering and implementing an additional ¥120 billion or more asset compression, which is expected to bring the three-year cumulative asset compression to over ¥500 billion (additional ¥400 billion or more to the initial planned amount) during the current Mid-Term Management Plan period.







#### Asset compression



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 are making a high level of investment, such as for large-scale refurbishment of domestic facilities and overseas growth investment. These investments will be 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.

### FY2018-2020 revised cash flow plan



As a significant change in the business environment for the plan period, operating cash flow is significantly expected to undershoot the initial forecast. We therefore intend to make an additional asset compression of ¥400 billion or more and increase own funds, while reducing capital expenditures by over ¥300 billion so as to maintain financial soundness.

#### **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 highgrowth 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. 65-67). In addition to curbing investment in facilities to be shut



We will concurrently make 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 approx. ¥1,700 billion over three years during the 2018 - 2020 Mid-Term Management Plan but have decided to reduce the amount by around ¥300 billion to about ¥1,400 billion, mainly by taking the above 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.



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. **Business investment** 

Business investment, such as for M&A and establishment of new overseas manufacturing bases, is set at around ¥600 billion 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.

#### 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.



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.



#### Start-up and progress to follow

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. Accom

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.

#### ion of so

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

#### Decision on exit or restructuring

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

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We also intend to look at capturing growth investment opportunities – by product, customer sector, and region in Japan and abroad; and acquisition of interests in raw materials.

In terms of increasing overseas businesses' profit and reallocation of management resources, we thoroughly examine past investments and decide what to do, including sale of assets and withdrawal, in the case of businesses that cannot move into the black, businesses that have completed their roles, or businesses that are losing synergies. We will thus intend to improve our asset portfolio.

#### Social and relationship capital Coexistence with communities and 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, mainly through promotion of environmental preservation, and through education, music, and sports.

Please see p.52-53 of our Sustainability Report 2020



#### Initiatives on Conservation of Biodiversity

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



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



With the aim of showing children the joy of productmanufacturing, Nippon Steel held demonstrations on "tatara ironmaking" - Japan's indigenous ironmaking technique, organized a scientific stand for school children, gave a "travelling scientific lecture" at local primary and secondary schools and introduced the fascinating properties of iron and the mechanism of electricity generation to children, and took part in an Energy and Environmental Workshop held by a junior high school. We also donate to and support a project which aims at teaching children in the stricken areas of the East Japan Earthquake and Tsunami of 2011 to make appropriate judgment against risks of natural disasters. For a better understanding of the steel industry, Nippon Steel's steelworks also host plant visits and









Training Program for Educators in Amagasaki

Science class in Kashima

#### Social contribution through art, music, and sports

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





Basketball tourna



Nanatsu hasahall tournament

approximately 130,000 people participated in our plant visits in fiscal 2019.

We have been offering internship opportunities to students to help them learn our business and gain some work experience. We also endow a university course, which also contributes to one of our business strategies, "enhancement of our technological superiority." We also invite teachers for the "Training Programs for Educators at Private Companies", so that teachers can better understand how the steel industry is contributing to society and can better appreciate the fascination of "Monodzukuri" (product-manufacturing). In 2019, we hosted 128 teachers for the tours of our facilities and our human development activities.



Training Program for Educators in Muroran







ravelling scientific lecture in Oita

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.



**Business activities** 

## 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.



### 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.



### 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.



11: Simple sum of crude steel production at full capacity of 1) companies with a 30% or more stake (parent company, subsidiaries, and equity method affiliates, incl. USIMINAS), subject to World Steel Associat crude steel production statistics; and 2) equity method affiliates with less than 30% stake, to which Nippon Steel provides semi-finished products or for which Nippon Steel sells their products (AGIS, PATIN, STP, VSB) Excl. double counting due to intra-group supply of original sheet (I/N KOTE. 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 \*

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#### **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.

As of Oct. 2020

#### 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 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, ( Nippon Steel's strength seaside integrated steelworks

**p.19** 

in Oita, these being among the world's largest.

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 m<sup>3</sup> (to be raised to 4,900m<sup>3</sup> after planned shutdown of some), led by No. 1 and No. 2 blast furnaces (5,775 m<sup>3</sup>)

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

#### ( Nippon Steel's strength The top-runner approach for continuous improvement in technology level

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

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

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-valueadded 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
lippon 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 Bolten	High-tension bolts

#### How we think about global development

**p.20-22** (10,000 tons/year)

Downstream Integrated Automotive Home Total Energy & Resources processing Infrastructure steel mill appliances, containers, etc. Flat Bars & wire Pipes & tubes canacity\* Crankshafts<sup>2</sup> products 145 440 145 1,900 Overseas total 1,900 1.200 170 45 15 3,700 ASEAN 148 13 25 271\*10 43 470 470 5 100 380 380 China 264 9 4 984 60 24\*<sup>4</sup> 2 4 70 1,050 India 43 90 90 Middle East 45 North/Central 20 626\*8 125\*6 760 780 11 11 8 1 America 790 103\*9 100\*5 100 790\*11 South America 110 113\*7 5 115 Europe

As of Oct. 2020 \*1: Companies subject to World Steel Association's crude steel production statistics (incl. USIMINAS) and AGIS, PATIN, STP, and VSB; \*2: Calculated by basic unit conversion \*3 Excl. double counting with integrated mills (Mahindra Sanyo, VSB, Standard Steel, and OVAKO) and double counting due to intra-group supply of original sheet (I/N KOTE, STP) \*4: Mahindra Sanyo 0.24MMT/Y; \*5: Incl. USIB 1.00 MMT/Y; \*6: Incl. Standard Steel 0.20MMT/Y; \*7: Incl. Ovako 1.10MMT/Y \*6: Excl. I/N KOTE 0.86MMT/Y; \*9: Incl. UNIGAL 1.03MMT/Y; \*10: Incl. STP 0.24MMT/Y; \*11: Excl. double counting of USIMINAS and UNIGAL 1.03MMT/Y

#### (+) Nippon Steel's strength Becoming an insider in a most-suited way by region and product type

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**

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.



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



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."

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marketing, and managerial methods, nurtured in Japan, to other countries, in order to support our Japanese customers' overseas expansion and meet overseas demand.

It is therefore crucial to become an "insider" of a target country or region for Nippon Steel to respond to overseas demand growth and meet quality requirements.

We have been ahead of peers in becoming an insider in various regions in an optimal way by product type or region, by accurately assessing 1) steel market size and growth potential; 2) Japanese customers' expansion in a region; 3) needs of local customers; 4) level of difficulty to enter a market via export ("favoring of domestic production"); 5) level of systematic difficulty to enter a market, etc.

#### North America and China

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.



#### 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, 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.

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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 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.

ESG Materiality 1-(1)

Safety and health initiatives

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

When planning a new facility investment, we make a safety risk assessment and for existing facilities, we also make regular scheduled assessments, to prevent accidents and reduce risks. We also put in place safeguards and follow safety tips, aimed for even-greater safety of equipment, and take countermeasures against human error. We also actively

#### Safety training

We make efforts to improve training for accident prevention. The safety training programs are attended by all newly-appointed managers of manufacturing worksites. Our Taikan Program (an experience-based safety education program) allows employees to experience worksite risk through simulation, with installing new devices such as VR systems, so as to better prepare them in anticipating and managing risk.

promote use of IT in safety measures, such as checking worker location data via GPS, safety surveillance cameras, and helmetmounted cameras.

We compile and make known effective examples of accidentpreventive measures and measures based on analysis of actual accidents.

#### Acquisition of third-party certification

In fiscal 2019 Nippon Steel adopted a plan for all our workplaces to obtain the ISO (JIS O) 45001 Health and Safety certification (published in March 2018) by the end of fiscal 2021. The Kansai Works Wakayama Area became the first steelmaker in Japan to obtain it in December 2019, followed by the Amagasaki District of the same works.

#### Accident frequency rate



### 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.

#### **Disaster prevention**

In order to reduce risk of and minimize impact from natural disasters (i.e., earthquakes, tsunamis, typhoons) and accidents and disasters (i.e., fires, explosions), we promote essential disaster prevention improvement measures in manufacturing sites.

It is critically important to implement disaster preventive

#### Initiatives on reduction in disaster risks

Our initiatives to reduce disaster risks include three key initiatives as shown on the right. We promote essential disaster prevention improvement measures in manufacturing sites, with a goal set at zero serious disaster-related accidents.





#### ESG Materiality 1-(2)-③ Promotion of environmental risk management

#### Water risk management

We use approximately 6 billion m<sup>3</sup> 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) Aqueduct 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.

#### ESG Materiality 1-(3) Disaster prevention

and emergency response measures and to protect people, facilities, and local communities. We have established autonomous, continual scheme for disaster preventive initiatives, aimed at enhancing the management function, while reducing risks and preventing occurrence of accidents and disasters.

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

3 Voluntary monitoring (auditing) concerning appropriate implementation of points 1 and 2, by persons in charge of disaster prevention in each works; understanding of the control status through sessions with managers at the head office: and implementation of corrections if needed



ESG materiality 2-(1) Quality control and guarantee

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.

#### Concrete measures to enhance the quality management system

Nippon Steel's quality management system is based on autonomous quality management activities of each product type business division of a Group company, including overseas ones and each steelworks. The status of each is checked through auditing of the Quality Management Division in the Head Office.

The key points of this inspection include compliance with the guidelines\* of the Japan Iron and Steel Federation; compliance with standards and specifications; and confirmation of continual improvement activities for quality internal control. The auditing plan is written once a year for each steelworks and once every three years for each office of group companies, in order to reduce quality risks. We also receive external reviews, such as ISO9001 and JIS certifications to raise the credibility of the quality management system. 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, to raise the credibility of identification as well as testing and inspection of actual products.

In addition, diverse opportunities to acquire basic knowledge on quality compliance and quality management are provided internally and for group companies, and an e-learning program is offered to those in charge of quality compliance and quality management every year, to assist them to expand knowledge. For overseas group companies, the e-learning program is developed and delivered in each local language. We thus strive to raise quality awareness of all group employees. Using leverage of our quality management organization, we will continue our daily efforts to improve customer satisfaction and further raise our branding power of trust. \* Guideline Toward the Enhancement of Quality Management System(JISF, revised August 2016)



#### 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 internationallycompetitive 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.

#### 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

### 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. 3 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 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





#### Shipment breakdown by customer sectors



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.

> steelmakers, along with China's rapid growth in steel demand and production volume. At present, Nippon Steel is No. 3 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."

2000				1,3	46 million tons ir	1 2007			1,842	million ton	s in 2019
28.4		-	$\rightarrow$	1	ArcelorMittal	116.4			1	ArcelorMittal	97.3
27.7			1	2	Nippon Steel	35.7			2	BaoWu	95.5
24.1	_		$\rightarrow$	3	JFE	34.0	- F	$\rightarrow$	3	Nippon Steel	51.7
22.4	_			4	POSCO	31.1			4	HBIS	46.6
21.0	-			5	Baosteel	17.7			5	POSCO	43.1
20.0				6	TATA	26.5			6	Shagang	41.1
17.7				7	Angang	23.6			7	Angang	39.2
17.7				8	Shagang	22.9			8	Jianlong	31.2
16.0	-	Н		9	Tangshan Steel	23.3			9	TATA	29.4
15.6				10	U.S. Steel	23.2			10	Shagang	29.3
13.0	_										
11.4				20	Sumitomo Metals	11.6			Sourc	or World Stool	Accoriation

## (consol.)

## 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 ¥200-400 billion, achieving topclass profit levels in their respective business field.





(billion yen/year) Revenue (IFRS) from FY2017







Risks,

and strategies

and Investor

Results and













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on the three areas - semiconductor and electronics, industrial basics, and environmental and energy area.

2017 2018 2019 2020 (FY)

2013 2014 2015 2016

Outputs and outcomes

## Products and applications

The Nippon Steel Group manufactures almost all types of steel products manufactured in the world and has a comprehensive supply system, which includes secondary processed products. Applications also extend to the manufacturing, resources and energy, civil engineering and construction and all other industry sectors.

Steadily, globally, and over a long time we have been providing products and services that respond to customers' needs, contributing to their value creation and to sustainable growth of society. What we offer includes materials that bring out diverse properties and infinite potential of steel, solutions such as for customer-specified component design and production method, and diverse secondary products.

### Technological prowess that brings out diverse properties and infinite



#### Wealth of product groups (••• Nippon Steel's strength

Product types



Results and outlook

Risks, opportunities, and strategies

Corporate governance Financial information and Investor information

- Contribution to SDGs in society -

SUSTAINABLE G

Disaster prevention and reduction, National Resilience

Infrastructure to build in emerging countries and to rebuild in developed countries

Energy preservation, climate action, recycle-oriented society

Products and technological solutions in growth areas

**Stainless steel** Titaniun (Nippon Steel Stainless) ..... Plates Sheets Bar and rod materials Titanium alloys for mufflers Stainless cold-rolled sheets ion resistance operature resistance Lightweight Stainless cold-rolled sheets Titanium alloys for aircraft Appearance design Stainless plates TranTixxii™ resistance Hiah str Workabilit Civil engi Stainless cold-rolled sheets Civil e TP method and Titanium foil method Workability

## Products and solutions that design the future of automobiles



Automobiles are changing with the changing times: no more need to drive, 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?

We pursue infinite potential of steel and strive to develop steel-based multi-materials. We keep trying to advance materials as well as their structural design and method of

production. We propose comprehensive solutions desired for new kinds of automobiles.

We imagine not only the future of automobiles but also matters of the surrounding future of the automobiles, including the lives of drivers and passengers, the streets, roads, and highways used, and the global environment. We take it as our mission to be a partner in designing such a future.



of high-tensile steel sheets, and to make maximum use of the structure and function designs, method of development (including joint design), and performance evaluation, all of which could effectively bring out the material properties. The NSafe<sup>™</sup>-AutoConcept can make an all-steel vehicle body achieve weight reduction equal to that of an all-aluminum body. It can also contribute to enhanced collision safety. For achieving further lightweight, we intend to continue targeting maximal use of the potential of steel but at the same time we will make groupwide efforts at other approaches to making multi-material mainly from steel.

## Unique products that assist drilling for energy (natural gas) resources

Nippon Steel provides products and technology, aimed at assuring stable supply of energy to people day after day.

Emerging countries' economic growth is projected to expand the global energy demand. Need to develop gas fields has been increasing in particular, as natural gas has lower CO<sub>2</sub> emission at the time of combustion, relative to coal and oil, and is hence regarded as preferable energy in terms of environmental preservation and economic development.

#### Nippon Steel's seamless pipes

We help enhance efficiency in natural gas production and reduce development cost in gas fields, contributing to energy infrastructure building in various countries.

We provide high-strength high alloy seamless pipes with excellent corrosion resistance, to be used in the harsh corrosion environment of natural gas drilling.



#### Nippon Steel's material line-up and the drilling environment

We have developed high alloy steel products, which can be used in the environment, for containment of high-pressure carbon dioxide gas and hydrogen sulfide. Our line-up includes martensitic stainless steel, duplex stainless steel, and nickel alloy, select of which is made according to the usage environment.

We were the first in the world to establish mass production technology of large-diameter high-alloy OCTG, using the piercing and mandrel mill rolling method. We are thus providing solutions to help reduce gas field development cost.



and strategies

and Investo





## 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. Other important challenges are to eliminate missing links for rapid post-disaster restoration and subsequent speedy reaction for supporting functions. Policy also assigns importance of measures aimed at becoming a tourism-oriented country.

Among 169 Sustainable Development Goals adopted by the United Nations is included a goal to "develop guality, reliable,

**Risks that require** 

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. The next plan named the "Basic Policies on Economic and Fiscal Management and Reform 2020, overcoming crisis towards a new future," was approved by the Cabinet and measures to build national resilience are anticipated to be seamlessly enhanced and implemented. 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.

Aging

Restoration

PRODUCTS

oting measures agains

climate change

## **Eco products**<sup>TM</sup> (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  $CO_2$  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.







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

Promoting environmental risk management reservation of the enviro

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<sup>™</sup>-Hull

weight reduction

(steel cans)

Ultra-thin tin lar

Promoting the creation of circular economy prolonged service life and ed recyclability





inated steel foil

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





Titanium roofing



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

Storms and

Nippon Steel's solution examples for national resilience





Earthquakes and tsunamis; road and railway; s and structures

Outcomes to be

achieved

NS ECO-PILE<sup>™</sup> method

Construction with no waste soil, and high pull-out strength



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Risks and strategies

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Nippon Steel is contributing to reduction in CO<sub>2</sub> emissions through improved fuel efficiency such as by customers' use of high-tensile-strength steel sheets, which are thinner and more lightweight



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



Enhanced efficiency of motors for hybrid vehicles electrical steel sheet



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



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



Electrolytic chromatefree zinc-coated steel sheet for home appliances NS ZINKOTE<sup>™</sup> Black



Eco-friendly products for the energy sector OCTG connections CLEANWELL<sup>™</sup>DRY

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





Enhanced corrosion resistance for home appliances and construction products ion resistance coated steel sheet, SuperDyma



Japanese steel industry's international

cooperation in energy conservation

As a core member of the Japan Iron and Steel

Federation (JISF), Nippon Steel is involved in

multinational projects, such as those for the Environment Committee of the World Steel

Association. In addition, the JISF is promoting

1) joint meetings of public and private steel-

related parties, 2) preparation of customized

steelworks as to energy-saving status. These

list of technologies, and 3) assessment of

are the three pillars of collaboration for

other countries and regions.

bilateral energy-saving and environmental

cooperation with India, Southeast Asia, and

ment of steelworks as to energy-saving status

## Eco solution (Sharing our "Eco-solutions")

#### The Nippon Steel Group's technologies help solve the environmental challenges of various countries throughout the world.

With the understanding that the transfer of Japan's advanced energy-saving technologies overseas can be one of the most effective ways to globally reduce CO<sub>2</sub> emissions, Nippon Steel is participating in global energy-saving and environmental initiatives in various ways including multinational and binational undertakings, such as cooperative activities with China and India.

#### Please see p.30 of our Report 2020



Expansion of world use of the Japanese steel industry's energy-saving technologies (Numbers represent the number of units)



The Coke Dry Quenching (CDQ) power generation equipment uses the waste heat, which is recovered while the hot coke is quenched with inert gas. \* 106 units of CDQ equipment are all from the Nippon Steel Group (Nippon Steel Engineering)

## Minimizing waste

### Measures to prevent climate change (CO<sub>2</sub> emission reduction)

Nippon Steel has been working on CO<sub>2</sub> emission reduction from diverse starting points: improving efficient use of energy generated in steelmaking process (i.e., power generation from recovered by-product gas and waste heat); making operational improvements in each process; and use of waste plastics. As a result of these continual efforts, the Nippon Steel Group emitted 94 million tons of CO<sub>2</sub> in fiscal 2019, which represented reduction of about 12% compared to fiscal 1990.

\* Please see page 75 for calculation method, aggregation range etc.

#### Promotion of in-house zero emissions Contributing to construction of Circular Economy

In the iron and steel-making process, over 600kg of byproducts, such as steel slag, dust, sludge, and used refractory bricks, are generated for each ton of crude steel produced. In fiscal 2019, Nippon Steel produced 39.54 million tons of crude steel and generated 24.93 million tons of by-products.

The majority of these by-products are recycled inside and outside the company. In fiscal 2019 our final disposal of industrial waste amounted to approximately 290,000 tons, partly due to one-off factors, but the recycling rate was maintained at a high level of 99%.

### Promotion of environmental risk management

Nippon Steel is promoting atmospheric, water, and soil risk management. Specific measures include installation of effective equipment to reduce emissions of sulfur oxide (SOx) and nitrogen oxide (NOx) and to curb emissions of soot and dust; enhancement of constant monitoring and regular patrols; installation of devices such as automatic waste water detectors, waste water shut-off gates, and emergency water storage pits.

#### Emission of SOx and NOx



#### Nippon Steel Group's energy-derived CO<sub>2</sub> emissions

CO<sub>2</sub> emissions, Scope 1 (left scale) CO<sub>2</sub> emissions, Scope 2 (left scale) (million tons of CO<sub>2</sub>) — CO<sub>2</sub> emission for each ton of crude steel production (tons of CO<sub>2</sub>/ton) (right scale) 2.90 120



#### Nippon Steel's final disposal amounts



In accordance with the laws concerning the management of volatile organic compounds (VOC) and other chemical substances and the voluntary control manual developed by the Japan Iron and Steel Federation (JISF) and Nippon Steel, we appropriately manage and try to improve the control of production, handling, and discharge or disposal of chemical substances.



**Results and outlook** 

## FY2019 Results

#### 2020 Mid-Term Management Plan targets

Nippon Steel set ROS (Return-on-Sales) of 10% and ROE (Return-on-Equity) of 10% as its targets for fiscal 2020 in due consideration of the cost of capital, expected return for shareholders, desirable profit level for becoming the "best steelmaker with world-leading capabilities," maintenance and improvement of credit ratings, and other factors. We have made a specific plan to achieve 10% in both ROS and ROE in the 2020 Mid-Term Management Plan (FY2018-FY2020) by profit improvement, which should more than offset an increase in depreciation expenses for investment

to refurbish production facilities. The tactics for profit improvement include the following measures: 1) restoration of production and shipment volume to the crude steel production level of 45 million tons/year; 2) margin improvement; 3) ¥150 billion annual cost reduction over the three years; and 4) profit improvement of group companies, including generation of synergy with Nippon Steel Nisshin, Sanyo Special Steel, and Ovako, which recently joined the Nippon Steel Group.

#### Fiscal 2019 business environment

The business environment surrounding Nippon Steel has significantly changed from what we initially assumed in devising the Mid-Term Management Plan to the unprecedented harsh environment.

#### 1 Higher raw material prices and lower steel product prices

Demand for steel products had been relatively favorable up to 2018 but has slowed down and has been depressed since 2019. On the back of the prolonged U.S.-China trade friction, the global economic slowdown has depressed the global steel market, mainly through a drop in demand from the manufacturing industry.

In the meantime, China - the world's largest steel producing and consuming country - has been actively investing in infrastructure, as a part of stimulative measures by its government, and its crude steel production has been at all-time high, mainly driven by long products used in civil engineering and construction, resulting in boosting prices of iron ore and other material prices. That is why "depressed demand and market for steel products" and "high-level prices of raw materials and fuel" occurred simultaneously, resulting in an unprecedented combination of "higher raw material prices and lower steel product prices." In the export commodity market, in particular, the sales margin of steel products has become slimmer.



#### 2 Decline in steel demand in Japan

In Japan, demand for indirect exports, mainly for automotive parts and industrial machinery, had been depressed, breaking past the 60 million ton level in fiscal 2019, for the first time in 10 years since the global financial crisis.

Nippon Steel's crude steel production (non-consolidated) was also below 40 million tons at 39.54 million tons for the first time in a decade.





#### 3 Increase in purchasing cost, other than that of main raw materials

Further aggravating the situation is an increase in purchasing cost, other than that of main materials of iron ore and coal. In the last several years, prices of alloy metals (i.e., manganese, molybdenum, vanadium, etc.), freight rates for imported raw materials, oil prices used for shipping fuel and fuel in steelworks, cost of refractory and

#### Fiscal 2019 result summary

Under that harsh business environment, we recorded a consolidated business loss of ¥284.4 billion and loss attributable to owners of the parent of ¥431.5 billion - the worst loss ever in both



other materials, and prices of coke purchased from outside have all been rising. As a result, the cost per ton of steel product has cumulatively risen by about ¥5,000 since 2016. This cost increase has not been fully reflected in sales prices, hence, resulting in a slimmer sales margin for us.

The recording of ¥482.6 billion impairment losses mainly on tangible fixed assets of domestic steelworks has significantly affected the results. However, even excluding the impairment losses, the fact remains that consolidated business profit substantially deteriorated.

#### 1 Business deterioration

Consolidated business profit, excluding impairment losses, decreased by ¥260.0 billion from the previous year to ¥76.5 billion in fiscal 2019, mainly due to a decrease in production and shipment volume and margin deterioration, particularly in the export spot market.

#### FY2018 ► FY2019 (before impairment loss, etc.) Business profit (consol.) Down ¥260.0 bn (¥336.9 bn →¥76.5 bn)

1 Volume	-70.0 bn
2 Steel prices, product mix, raw material prices	-119.0 bn
3 Cost reduction	+60.0 bn
4 Inventory valuation difference (39.0→1.0)	-40.0 bn
5 Group companies, non-steel	-58.0 bn
6 Disaster damage (-35.0→42.0)	-7.0 bn
7 Others	-26.0 bn

Noteworthy is the non-consolidated operating loss of ¥119.3 billion, which represents earnings of Nippon Steel's core business of manufacturing steel products in Japan and their sales in and out of Japan. Effective non-consolidated operating profit and loss, excluding inventory evaluation difference, has been in red for the past three years since fiscal 2017 and the level of loss has been expanding.

We think there are mainly two external factors and three internal factors behind our profit deterioration (see right side).

#### 2 Impairment losses

According to the accounting rules, we calculated the present value of expected cash flow concerning steelworks which had been in the red for three years in a row, with due consideration of the current harsh business environment. As the estimated present value turned out to be less than the book value of fixed assets, impairment loss was recorded.

Three of our steelworks conformed to this situation and posted impairment losses of ¥317.9 billion in total. The Kashima Works has a high export ratio of steel sheets, the margin of which had been sluggish; the Nagoya Works has a high sales ratio of automobiles, where improvement in long-term contracted prices was half way toward achieving its target; and

			(billion yen)
	FY2017	FY2018	FY2019
Business profit and loss (consol.)	288.7	336.9	-2,844
Business profit and loss (consol.) before impairment losses ROS	288.7	336.9 5 5%	76.5
Kos	J.270	J.J /0	1.370
Operating profit and loss (non-consol., ex. inventory valuation difference)	6.4 (-57.0)	25.1 (-14.0)	-119.3 (-117.0)
Steelmaking group companies	256.9	231.3	161.8
Non-steel segments	49.8	61.1	55.3
Non-operating items (non-consol), inter-company eliminations, etc.	-24.4	19.4	-21.3
Impairment losses	_	_	-360.9
Exceptional items	_	-718	-121.7
Profit attributable to owners of the parent	180.8	251.1	-4.315
ROE	6.0%	7.9%	-14.7%

#### Total impairment losses **A482.6** billion $\leftarrow$

External, one-off factors

Deteriorating business environment

Natural disasters, etc.

Increase in the scale of fixed cost

Operational and maintenancerelated troubles

• Insufficient correction in long-term contract prices

the Hirohata Works has a high upstream processing cost burden caused by the concentration there of treating dust of the entire company and having steel scrap as raw material. Regarding former Nippon Steel Nisshin's Kure Works, an impairment loss of ¥78.7 billion for its entire fixed assets was generated, as a shutdown of the facility has been decided as a part of the production facility structural measures announced on February 7.

In addition, from the perspective of becoming more selective in businesses in and out of Japan, potential loss that can be expected of related companies was also posted as another one-off loss. All of these resulted in posting of ¥482.6 billion in total impairment losses.

#### FY2019 dividend payment and remuneration for directors

Nippon Steel's basic profit distribution policy for shareholders is to pay dividends from distributable funds at a consolidated annual payout ratio target of around 30%.

Giving due consideration to recording of net loss in fiscal 2019, management regretfully decided to forgo a year-end dividend payment for 2019 and to leave the full-year dividend at ¥10 per share, which was paid as an interim dividend.



Nippon Steel's compensation for Directors is all based upon performance of the Company and the compensation from July to June of the next year is determined by the previous fiscal year's results. Due to deteriorated earnings in fiscal 2019, the compensation for Directors from July 2020 has been cut back (down less than 30% to 40+%, depending on the position rank) but prior to this, from February 2020, Directors immediately returned their compensation by 10-20%.

## Factors for current operating profit on a non-consolidated basis deterioration and measures for each

We recognize that mainly five factors have deteriorated our current operating profit and loss on a non-consolidated basis. We have identified issues to be addressed regarding these factors and are making efforts for early return to operating profit on an non-consolidated basis and for securing of a sufficient level of consolidated business profit. Moreover, we are carrying out structural measures, growth investment, and other strategies, addressing medium- to long-term risks and opportunities. (More on medium- to long-term measures on pages 61–84, "Risks and opportunities, and Nippon Steel's strategy.")

#### 1 Deteriorating business environment

Due to "higher raw material prices and lower steel product prices" and "a decline in domestic demand," our production and shipments has been cut back and margin has

#### 2 Natural disasters, etc.

Unprecedented levels and frequency of lightning, heavy winds and rains, etc. caused disaster-related loss of ¥35 billion in fiscal 2018 and ¥42 billion in fiscal 2019. We are

#### 3 Increase in the scale of fixed cost

Nippon Steel's main steelworks have been in use for more than 50 years since construction and are in need of largescale facility refurbishment. Capital expenditures, primarily in the upstream steelmaking process and energy sectors, boosted depreciation expenses and maintenance cost, thereby raising overall fixed cost.

We have decided to shut down some facilities as part of

#### 4 Operational and maintenance-related troubles

Since around 2017, operational and maintenance-related troubles occurred one after another, which has deteriorated per-ton fixed cost and variable cost. Our group-wide efforts

#### 5 Insufficient adjustment in long-term contract price

We have been striving to correct sales prices of our products on long-term contracts, which are mainly for customers in the manufacturing industry in and out of Japan. Concerning a cost increase of as much as ¥5,000 per ton of steel product, this being caused by price increases of alloy and other raw materials, and distribution, we have been asking the entire supply chain, including customers, to fairly share the burden.

We are also asking customers to help us achieve prices that reflect our product value and contribution to them, prices that we need in order to realize sustainable production. Our contribution means that we have Corporate governance Financial information and Investor information

deteriorated, mainly for exports to spot market. We are controlling the level of production to the economically justifiable level of filling the orders.

working on disaster preventive measures both on their hard aspect, such as equipment, as well as on their soft aspect, such as training.

the production facility structural measures, as stated on pages 65–67. In FY2020, we plan to reduce fixed cost by approximately ¥200 billion. This includes reduction in maintenance cost due to less maintenance needs resulting from facilities to be shut down, and a decline in depreciation expenses, associated with recording of impairment loss and a change in the depreciation method.

to restore our strength in manufacturing have finally led to stabilizing production in many facilities in FY2019. We will continue efforts to raise our ability to produce as planned.

devoted management resources in R&D expenses, capital expenditures, business investment, and other items in order to develop and manufacture high-grade steel products that meet the needs of customers, make solution proposals to address diverse needs, and build a supply network in response to customers' global expansion. Up to fiscal 2019 we were able to make some progress in improving long-term contractual prices, though less than sufficiently, which therefore was one of the factors for depressed earnings. We will continue to make efforts to improve the long-term contract prices in and after fiscal 2020.

## FY2020 outlook and toward returning to generate operating profit (non-consol.) post-COVID-19

#### Impact of the COVID-19 outbreak

#### Steel demand

Domestic steel demand has dropped sharply since April 2020 and demand in the first half of fiscal 2020 is expected to be 24 million tons, down 20% y-o-y. In particular demand from the manufacturing sector is likely to be 15 million tons, down 24% y-o-y. Demand, however, is expected to bottom out in the first half and slightly recover to around 26 million tons in the second half, mainly driven by the manufacturing sector.

#### Production

In response to a sharp drop in demand, we promptly put 6 out of 15 blast furnaces in banking (a method to temporarily stop blast furnace production in a condition that enables production to restart) and, together with reduced blast furnace productivity and extension of blowing-stop times, cut back production by a method that minimizes the associated cost increase.

Our crude steel production (non-consol.) was 7.2 million tons in the first quarter and is expected to be 14.9 million tons in the first half and around 16.9 million tons in the second half.

#### Temporary closure

As a part of measures to maintain employment, all domestic workplaces have implemented temporary closure since April and applicable workplaces have received the employment adjustment subsidy from the government.

#### Procurement and supply chain

imposed lockdown had a little impact but the overall shipment to us was little affected, with no problem in procurement, partly thanks to alternative procurement. Also, procurement of other materials and equipment has been affected little, as we closely coordinated with the suppliers and adjusted delivery timing, if needed.

#### **Measures to prevent COVID-19 infections**

Based on the policies and action plans of the Japanese government and municipalities, we place safety of customers and employees first, thoroughly take measures to prevent COVID-19 infections, and strive for efficient, appropriate continuity of business. Foreseeing potential prolonged needs against COVID-19, we are promoting new work styles, which could further raise operating efficiency.

New workstyle

3 Meetings

**4** Business travel

#### Active use of telework (work-at-home)

#### **2** In case of work in the office

• Flexible work time and staggered commuting hours are encouraged. Thorough adoption of infection prevention measures: wear masks, wash hands and fingers, and avoid the "Three Cs"-Closed spaces, Crowded places, and Close-contact settings.



Column

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



• Active use of IT tools, such as video or web conferencing, for internal meetings

• Active use of video or web conferences for meetings with outside parties • In case of face-to-face meetings, thorough adoption of infection prevention

• Only essential business travel shall be allowed but thorough comply with

infection prevention measures, even during movement.

• Overseas travel shall be prohibited, in principle.

measures: wear masks, wash hands and fingers, and avoid the "Three Cs."

In procurement of iron ore, coal, and other raw materials, a decline in the operating rate of material suppliers in countries which

## Consolidated business profit

#### FY2019 (before impairment loss) FY2020 estimated Consolidated business profit decrease of ¥197.0 billion (Profit of ¥76.5 bn to loss of ¥120.0 bn)

1Q (A)

-27.5

(billion yen)						
1 Volume		-280	Improvement in variable cost	+50 🔵		
2 Steel prices, product mix, raw material price	es	-53	Reduction in fixed cost in cash	+90 🔵		
3 Cost reduction (incl. cost increase caused by pr	roduction cuts)	+140 •	Decrease in depreciation expenses	+110 0		
4 Depreciation expenses		+110 🔿	Reduction in fixed cost	+200		
5 Inventory valuation difference		-38	Cost increase caused by production cut	1		
6 Group steel companies, non-steel segments		-108	Improvement in additional variable cost, All			
7 Disaster damage		+42	caused by low-level production offsetti			
8 Others		-10 Reduction in additional fixed cost, caused by low-level production				
				•		
Column Change in the depreciation method	Nippon straight 1 Incro 2 Pror the	Steel has changed its deprec t-line method since the first ease the ratio of capital expe mote preventive, planned ma equipment service life; and	iation method from the declining-balance r quarter of fiscal 2020 due to the following enditures for facility refurbishment in total intenance and normalized maintenance ex	nethod to the reasons: investment; penses over		



Fiscal 2020 initiatives toward returning to generate operating profit (non-consol.)

Prior to emergence of the COVID-19 outbreak, we had a good prospect of returning to operating profit (non-consol.) and recovering some business profit (consol.) in fiscal 2020 by implementing the following measures.

products, which forces us to record a substantial loss in the first half of fiscal 2020, but we forecast a return to profit in the second half.

Sharp production cuts are causing an increase in variable cost but we are making utmost efforts to improve

profitability by improved variable cost control, reduction in

Additional cost reduction, driven by low-level production, to offset cost increase caused by production cut

1 efforts to minimize demerits;

(2) tighter cost control under conditions of low-level production (i.e., greater use of low-cost raw materials); and 3 additional reduction in fixed cost, driven by low-level production

FY2019

-284.4

76.5

Further profit-oriented production

illion/year: Selective input (suppressing input to facilities scheduled to be shutdown): enhancement of maintenance efficiency in reorganized steelworks; thorough facility inspection management by use of advanced IT, etc.

x. ¥110 billion/year: Impairment loss-related (¥60 billion); change in depreciation method (¥50 billion)

mprovement through capital investment planned in the ditional improvement measures; operation optimization easures, etc.

en across the supply chain for cost increase of raw iate sales prices that reflect Nippon Steel's product value

#### ings outlook

- fixed cost, and additional cost reductions, driven by making use of low-level production, to offset the cost increase
- caused by production cuts.
- We are determined to implement the stated measures
- and restore profitability in the parent steelmaking business
- whatever the ambient circumstances may be in the post-COVID-19 world.

Substantial increase in variable cost (i.e., low production rate to depress per-unit cost; decrease in by-product gas generation to change the energy structure) caused by production cuts will be offset by

(i.e., temporary closure, employment adjustment subsidy, less maintenance expenses, and less general expenses)

We seek downward production tolerance and profit-oriented order receipt and production.

1H (E)	2H (E)	FY2020 (E)	2019→2020(E)
-150.0	30.0	-120.0	(b/f impairment loss) -197.0

3 Improve comparability to other global steel companies and IFRS-adopted companies.

Risks, opportunities, and strategies

## Risks, opportunities, and strategies

A decline in steel demand in Japan, associated with a declining and aging population, gives cause for concern, but global steel demand is expected to continue growing, mainly driven by emerging countries. Demand for high-grade steel products is expected to increase in terms of quality and volume, because improvement in functions and quality of steel, a basic material that supports society and industry, is critically important for changing social/industrial structure, realization of a sustainable society, and improvement in labor saving efficiency and labor productivity needed in society with a declining and aging population.



Being immersed in changes, Nippon Steel must take a strategy that accurately captures risks and opportunities for its continual sustainable growth.

The first strategy is the dual tactics of selection and concentration in facilities, products, and businesses. Specifically, we are shifting into an optimal production framework in Japan at an early stage to enhance competitiveness, while promoting the quality/volume enhancement of globally-competitive strategic products and deepening our overseas business, which responds to the trend of favoring local production and local consumption.

The second strategy is to tackle environmental issues - an important mission for the steel industry. We respond to climate change issues, using our innovative technology development, such as by reduction in greenhouse gas. The third is digital transformation. By proactive use of data and digital technology we are promoting business process reinvention and production process reinvention to become more competitive.

Overview Materiality Inputs Business activities Outputs and outcomes

## The steel market's potential risks and opportunities

## 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

vear is estimated to be made from iron ore using the blast furnace and other methods even in 2050.



#### 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 exportoriented 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.







1960 '65 '70 '75 '80 '85 **'**90 '95 2000 '05 '10 '15 (Year) (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.

At present, about 100 million tons of steel products produced per year can be roughly broken down to 40 million tons for the domestic manufacturing industry, 20 million tons for the domestic civil engineering and construction sector, 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.

#### 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

#### 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<sup>™</sup>, which contribute to preservation of resources and energy and reduction in environmental impact, and products that





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.

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. ▶ P.47-52

## Pursuit of lean & optimal production framework

#### Basic concept of the production facility structural measures

In Japan's steel market, demand is expected to decline mainly due to shrinking construction demand, driven by the aging and declining population, and customers' expansion of overseas production. The overseas steel market is likely to grow in the long term but the export market is expected to become more competitive as the trend of "favoring domestic production" will progress in the midst of rising protectionism

in many countries and as Chinese steelmakers are increasing integrated steel production capacity in China's coastal regions and ASEAN.

In the meantime, more than 50 years have passed since the construction of Nippon Steel's main steelworks and largescale capital expenditures for facility refurbishment have to be made as we enter into a so-called "second foundation stage."



Based on these assumptions, our plan for domestic facilities is to consolidate production into more competitive facilities in terms of comprehensive assessment of integrated production and output capacity, cost and product competitiveness, and other factors; and to shut down less-competitive facilities, which correspond to

excessive upward tolerance, in order to achieve optimal production capacity levels and become more competitive. By establishing a lean and optimal production framework, we intend to keep fixed cost at an appropriate level, increase the ratio of high value added products, maximize marginal profit, and ultimately enhance our profit base.

#### Basic concept

To build an efficient optimal production framework centered on competitive integrated steelworks

Specific plans

Comprehensively review competitiveness of integrated steelworks, from the perspective of system and capability of integrated manufacturing of high-value-added products

Shut down less-competitive facilities and concentrate production in competitive facilities

Strategic selective investment to improve productivity and strengthen the business structure

Pursuit of lean & optimal production framework

Increase in the ratio of high-value-added products

Maximization of marginal profit under adequate fixed cost level

### Structural measures to realize a lean & optimal production framework

		Target steelworks	Target facility for shutdown	Approximate time of shutdown
		Catauchi Marka Kura Araa	Upstream facilities (BF, sintering, and steelmaking)	Sep. 2021
Strengthening competitiveness		Setouchi works kure Area	All other facilities (incl. hot strip mill and pickling line)	Sep. 2023
in upstream	אן	Kansai Works Wakayama Area	#1 BF, #5-1 sintering machine, #4/5 coke ovens, and part of #3 continuous caster	First half of FY2022
production		Kyushu Works Yawata Area (Kokura)	Upstream facilities	First half of FY2020
		Setouchi Works Hirohata Area	A melting furnace (installation of EAF)	Sep. 2023
Raising efficiency of the steel sheet		Setouchi Works Hanshin Area (Sakai)	Continuous annealing and processing line, electro-galvanizing line, and #1 continuous aluminizing line	March 2021
production system		Setouchi Works Hirohata Area	Tinplate mill	Second half of FY2020
Strengthening of the steel plate business		Nagoya Works	Steel plate mill	Second half of FY2022
Withdrawal from	ĺ	Kansai Works Osaka Area	Titanium round bar line	March 2023
the unprofitable titanium business	<b>`</b>	Kyushu Works Oita Area (Hikari Pipe & Tube Div.)	Titanium ERW line	Sep. 2021
Strengthening of the stainless steel business		Nippon Steel Stainless Steel Kinuura Works	Hot strip mill Precision product lines	Dec. 2020 Sep. 2020
Strengthening of		East Nippon Works Kashima Area	UO pipe mill	Done by Oct. 2019
the pipe & tube business		East Nippon Works Kimitsu Area (Tokyo)	Small-diameter seamless pipe mill	Done by May 2020

#### Enhancing competitiveness of upstream integrated production

In consideration of comprehensive competitiveness of each steelworks, the Kyushu Works Yawata Area Kokura blast furnace was shut down and the Setouchi Works Kure Area and the Kansai Works Wakayama Area No. 1 blast furnace will also be shut down. We will focus on strengthening other steelworks and improving their competitiveness in upstream integrated production.

#### Strengthening of tinplate production

In response to a decline in domestic demand for tinplate and a decline in profitability, caused by an overseas supplydemand gap, tinplate production will be consolidated into two lines in Yawata Works and Nagoya Works.

#### Withdrawal from the unprofitable titanium business

Considering the business environment and absence of prospects for profit recovery in the titanium round bar (mainly for aircraft engines) and titanium welded pipe business (mainly for nuclear/thermal power plants), we will terminate their production and withdraw from the business.

#### Pipe & tube business (UO pipes)

The East Nippon Works Kashima Area's UO pipe mill was shut down and its production was consolidated into the Kimitsu Area. The business targets the high-end market and will be strengthened.

Risks, opportunities. and strategies

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#### Enhancing efficiency of the steel sheet production system

With a focus on production near a high demand area, shut down a part of production lines of the Setouchi Works Hanshin Area (Sakai) and consolidate production into competitive lines, such as in Kimitsu and Nagoya.

#### Strengthening of the steel plate business

Consolidate the production of steel plates into the Kashima Works, the Kimitsu Works, and the Oita Works, considering the overall competitiveness of the entire manufacturing process, to strengthen the business by improving the capacity utilization ratio and productivity.

#### Strengthening of the stainless steel business

Nippon Steel Stainless Steel Kinuura Works' hot strip mill will be shut down and their production consolidated into Nippon Steel.

Nippon Steel Stainless Steel Kinuura Works' precision product lines was shut down and their production was consolidated into the company's Yamaguchi Works.

#### Pipe & tube business (seamless pipes)

A small-diameter seamless pipe mill in the East Nippon Works Kimitsu Area (Tokyo) shut down and its production was consolidated into the Kansai Works Wakayama Area (Kainan).

### Expected effects of the production facility structural measures

By implementing the production facility structural measures decided so far, the number of blast furnaces will be decreased by 4 from 15 (as of April 2020) to 11, and annual crude steel production capacity will decline by approx. 5 million tons. The effects are expected to save

approx. ¥100 billion per year mainly in reduction in fixed cost, and improvement in variable cost. We will make efforts to realize the effect early and at maximum and at the same time to raise labor productivity and improve variable cost so as to reinforce our profit base.







<ul> <li>Suspension of maintenance expenses for facilities to be shutdown</li> <li>Less depreciation cost due to recognizing of impairment loss in Kure</li> </ul>	FY2020 approx. ¥ <b>35</b> bn					approx. ¥100 bn/y
2019	2020	2021	2022	2023	2024	•••• (FY)
Kashima/ UO pipe mill 00	t. 2019					
Kimitsu (Tokyo)/ Seamless pipe mill	May 2020					
Yawata (Kokura)/ Upstream facility; Kinuura/Precision product lines	1H of F	Y2020				
Kinuura/ Hot strip mill	D	ec. 2020				
Hanshin (Sakai)/ a part of the flat steel sheet mill; Hirohata/ Tinplate mill		2H of FY2020				
Kure/ Upstream facility; Oita (Hikari)/ Titanium pipe mill		1H of F	/2021			
Wakayama/ BF and related facilities			1H of FY	2022		
Nagoya/ Steel plate mill, Osaka/Titanium round-bar mill				2H of FY2022		
Kure/ Hot strip mill, etc.; Hirohata/Melting furnace				1H of FY	2023 	

(Excluding) Investment Avoid capital expenditures, which would be needed for BFs, coke ovens, avoided by facility shutdown sintering machines, energy equipment, etc. over the next 10 years or so.

Aiming for earlier realization of the effects

### Pursuit for more optimal production framework

In addition to the measures being implemented, we will continue considering other measures for establishing more competitive framework and implement additional ones in

response to the changing environment, while adapting to the supply-demand balance in Japan and overseas and our potential profit trend.

### **Facility refurbishment**

We will selectively make strategic investment in facilities that are competitive in terms of integrated production and output capacity, cost, product, etc. and will be indispensable in our future optimal framework. We thus aim at improving productivity and profitability.

Our plans for relining and other investments in blast furnaces, coke ovens, and other facilities are summarized below.

The Nagoya Works has decided to reline its No. 3 blast furnace, where it has been about 20 years since the previous relining, as a part of strengthening competitiveness of upstream integrated production, so as to appropriately respond to customers' needs and jointly succeed in global competition. The Nagoya Works is a main base for highgrade steel sheet integrated production, and is leading the world in optimal integrated production technology for steel sheets for automobiles. After relining, the blast furnace will



adopt advanced IT and other new technologies in order to realize stable production and higher productivity.

The Setouchi Works Hirohata Area - a base for high-grade steel sheet, such as electric steel sheets and sheets for automobiles - will renovate its scrap melting process, making it to an electric arc furnace (EAF), which enables more flexible production with excellent energy efficieny. The state-of-the-art EAF will make use of our strong smelting technology and high-quality raw materials, originating from the blast furnace process, and manufacture electric steel sheets and other high-purity, high-grade steel sheets.

In the Kyushu Works Yawata Area, when its Kokura plant was shut down, the most advanced bloom continuous caster with the world largest class radius was newly installed in its Tobata plant, with the aim of improving quality,

	FY2019	FY2020	FY2021	FY2022	
ecis	sion	2H/2020: Co	mpletion		
		June 2020: Dec	ision 1H/202	2: Completion	-
mp	oletion				
Со	mpletion				
201	9: Completion				
eci	sion	1H/20	21: Completion		
201	9: Completion				
	Nov. 2019: Decis	sion	1H/202	2: Completion	-

merchanizability, and productivity of wires, rods, and rails.

# Enhancement of globally-competitive strategic products in quality and quantity

Global change in the social and industrial structure and progress of SDG initiatives, are making properties required for materials to be more diversified and advanced.

By making use of our strength in technology to provide solutions concerning material development, utilization and processing technology, and other matters in response to changing needs of customers and society, we are investing in the high-grade steel area, which contributes to customers' value creation and a sustainable growth of society. As shown below, electrical steel sheet is an example of high value added products, in which we have competitive advantage and in which we are currently investing.

#### Electrical Steel Sheets: investments for greater capacity and guality improvement, with the aim of meeting demand growth in electricity and eco cars and of enhancing the energy-saving function

#### What are electrical steel sheets?

Electrical steel sheets are materials used power generators used in power plants, transformers (on transmission lines to factories and residences), and in the iron core of motors of various electric appliances. By controlling the orientation of iron crystals, the favorable magnetic properties of steel can be used and energy loss generated in iron cores (iron loss) can be reduced. Electrical steel sheet is one of highly functional steel materials.

There are two types of electrical steel sheets: Grain-oriented (GO) and Non-oriented (NO). The GO type is processed in such a way that the optimal properties are developed in the rolling direction for efficient magnetism and electricity conversion, and is mainly used for transformers. The NO type is processed so that crystal orientation is evenly randomly arranged, and is mainly used for motors.

#### 1 Grain oriented (GO) electrical steel sheets

The world's electricity demand outlook (trillion kWh)

Global demand for electricity is estimated to double by 2050. In the meantime, from the perspective of energy saving and environmental protection, regulations on energy



Source: The Institute of Energy Economics, Japan





efficiency of transformers have been tightened in various countries. In order to raise energy efficiency of transformers, GO electrical steel sheets are indispensable.

#### Tightening of electric transformer efficiency regulations

Regulation	Current	Outlook (Nippon Steel's estimates)
Top	Tier 2	Tier 3
Runner	7% improvement vs. T1	10% improvement vs. T2
	Tier 1	Tier 2
Ecodesign	40% improvement vs. pre-regulation	10% improvement vs. T1
	Regulation Top Runner Ecodesign	RegulationCurrentTop RunnerTier 27% improvement vs. T1EcodesignTier 140% improvement vs. pre-regulation

nergy loss (iron loss) of electrical steel sheet as required by regulations

#### 2 Non-oriented (NO) electrical steel sheets

Electric vehicles (EVs), Plug-in Hybrid Vehicles (PHVs), Hybrid Vehicles (HVs), and other eco cars, which have a driving motor, are increasing their share in the world vehicle market. Along with a growth in eco cars, demand for NO electrical steel sheets is projected to increase. Moreover, demand for the highest-grade electrical steel

#### World vehicle production outlook





#### Promoting investments for greater capacity of electrical steel sheets and their quality improvement

We are investing in capacity increase and guality improvement of electrical steel sheets, in response to the demand growth and greater needs for quality improvement of electrical steel sheets, and in order to contribute to energy saving and climate control measures. We will continue capital expenditures for these objectives and announce when specific plans are decided. Similar investments are to continue to be carried out for

Risks, opportunities. and strategies

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sheets, that have various high-performance properties such as minimized core loss, enabling higher efficiency, high magnetic flux density, higher torque, and high strength against higher rotation, will increase as a valuable means of realizing efficient, lighter-weighted driving motors that would help improve electricity saving of eco cars.

#### World demand outlook for electrical steel sheets for vehicles

high-tensile steel sheets – another area in the high-grade steel with high demand growth, where further investments are also under consideration.

Area		Approximate investment amount	Announcement
Kyushu Works	First	$\pm 46$ billion	Aug. 1, 2019
Yawata Area	Second	$\pm 10$ billion	May 8, 2020
Setouchi Works Hirohata Area		¥ <b>14</b> billion	Nov. 1, 2019

## Deepening of overseas business, addressing to local production and local consumption

### Acquisition of an integrated steelmaking base in India

The Nippon Steel Group is expanding overseas with a focus on "markets where we see assurance of demand growth potential" and "areas where our technology and product capacity can be used." In December 2019 Nippon Steel and ArcelorMittal jointly acquired Essar Steel India Limited, one of India's four major steelmakers, and started its joint operation as equal partners, under a new company name AM/NS India. The steel market in India is one of the promising steel markets in the world over the medium- to long-term but an extremely difficult market to enter via exports or local investment due to there being a preference for domestically produced steel products. In 2016 the Insolvency and Bankruptcy Code entered into force and heavily-indebted steelmakers became targets for acquisition and reorganization - Essar Steel being the largest target.

ArcelorMittal, with rich experience in business reconstruction, has been a proven JV partner of Nippon Steel for many years and the joint acquisition of Essar Steel was a precious opportunity for Nippon Steel to enter into the market in India. The total acquisition amount of INR500bn can be economically justified as investment in an integrated steelworks. Our plan is to make use of existing manufacturing facilities, workforce, sales force, and sales channels of the former Essar Steel, use management know-how and technology of Nippon Steel and ArcelorMittal, and invest in production capacity expansion and environmental measures, with the aim of responding to demand growth in India's steel market and contributing to the country's economic growth.



Hot-rolled sheets

3.1 MMT/Y

Cold-rolled sheets 0.8

MMT/Y 14%

18%

The acquisition and implementation of the resolution plan will resolve the reasons that former Essar Steel was forced to apply for the Insolvency and Bankruptcy Code status.

#### Low operating rate

- Low operating rate of MIDREX, a main upstream facility, due to the procurement problem of LNG, a reducing agent
- Strived to expand capacity of the upstream facility, which did not depend on LNG but could not complete it due to a shortage of funds.

#### The JV's response

Make capital spending based on the resolution plan and reorganize production processes to expand production capacity and reduce cost.

#### Resolution plan

#### Productivity improvement via completion of ongoing capital spending projects

Coke oven, CSP (Compact Strip Production), Dabuna beneficiation plant, Paradeep pellet, environmental investment, etc.

Investment in upstream facilities for capacity expansion

Blast furnace, coke oven, oxygen furnace, etc. (aimed at full capacity production)

- Longer-term possibility to expand capacity to approx.12–15MMT/Y(under consideration)
- Timing and details of future capital spending partially depends on the business environment.

#### Facility



#### Total acquisition amount INR500bn (approx. ¥770bn)

Acquisition amount INR420 bn. (¥650 bn) > Repayment of Essar's existing debts Initial cash injection INR80 bn (¥120 bn.) AM/NS India's capital expenditures, working capital, etc.

Nippon Steel's amounts	▶ ¥310 bn (INR500bn X 40% = INR200bn)
In equity	▶¥103 bn (¥310 bn X 1/3)
In debt guarantee	▶ ¥207 bn (¥310 bn X 2/3)

All figures are approximate amounts

#### AM/NS India



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Going forward, the company will maintain sound operation and financial management and steadily benefit from India's market growth.





#### India's steel market, a secular, steady growth market

#### High growth potential

India's steel demand is expected to steadily increase from the current approx. 100 million tons level to approx. 230 million tons by 2030, according to India's National Steel Policy (NSP). India's current population is about 1.3 billion and its demographic composition is now shifting from a bottom-heavy type to a middle-heavy type. The population is expected to keep growing and exceed that of China in 10 years to become the world's most populated country.

India's annual steel demand per capita is 71 kg, which is lower than ASEAN countries (132 kg) or Brazil (approx. 100 kg). Per-capita steel demand increases in line with GDP growth. In

#### case of Japan, the annual steel demand per capita increased to 800 kg during the high-growth period when there was a surge in infrastructure building, and has since been at around 500 kg. India's GDP per capita is at a low level of about \$2,000 but industrialization and urbanization will boost GDP and steel demand per capita, mainly for infrastructure, will surely increase to approx. 158 kg by 2030, according to the NSP. Anticipating synergies of population growth and economic growth, India therefore is the most certain promising growth market in steel demand in the world.

#### Steel demand (MMT) 230 250 ммт China Domestic 200 steel deman in India 150 ·ASEAN 96 100 21 1985 1990 1995 2000 2005 2010 2015 2020 2025 2030 (Year)

Source: World Steel Association. Nippon Steel's estimation etc

India's population (bn) 2.0 1.6 1.3 1.2 0.8 0.4 2005 2010 2015 2020 2030 2040 2050 2000 (Year) Steel demand per capita (kg/person)





#### Anticipating India's supply-demand balance in steel will be tightened

While steel demand is expected to increase significantly, new integrated steelworks are unlikely to be constructed in the near future. This is because of restrictions in acquisition and utilization of property sites and some past cases which took a long time to get started or which were canceled. The supply-demand balance therefore may get tightened as a growth in supply capacity cannot catch up with growth in demand. (According to the Indian National Steel Policy, a certain level of supply and demand tightening is projected.)

#### High domestic production rate

India's steel market has had a high domestic production rate and demand growth so far has been covered by supply growth by India's steelmakers.

India's government, under its "Make in India" policy, is resolutely protecting India's steel industry as a key industry. Major steel materials, such as hot-rolled sheets, plates, and cold-rolled sheets, are currently protected by trade measures and 90% of their demand were satisfied by domestic steelmakers (domestically-produced products) in 2018. This structure of domestic steelmakers filling demand growth is expected to remain unchanged even if demand continues growing in the future.

#### Rapid progress in industry consolidation

India's steel market is fragmented with low concentration in top-tier companies and little progress in industry consolidation. In 2016 the Insolvency and Bankruptcy Code entered into force and heavily-indebted steelmakers became targeted for acquisition and reorganization. Largescale industry consolidation is rapidly progressing and further concentration into top-tier makers is expected with a possibility for a more stable market.

#### India's steel supply/demand balance forecast (India's National Steel Policy; 2017) (100 mn tons/year)







Top-three share in crude steel production (FY2018)

\* Numbers of remaining companies are as of FY2016.

## Coping with Climate Change

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. In order to make our operation sustainable, we strive to curb impacts of climate change by promoting energy conservation, CO<sub>2</sub> emission reduction, and improvement in energy efficiency throughout the entire supply chain, from manufacturing to transportation, and at the stage of final use of products.

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

Nippon Steel has been working on energy conservation from diverse starting points: improving efficient use of energy generated in 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; conversion to regenerative burners in reheating furnace. As a result of these continual efforts, the Nippon Steel Group consumed 1,089 petajoules (PJ) of energy in fiscal 2019, down about 13% vs. the volume in fiscal 1990. CO<sub>2</sub> emissions intensity increased from the previous year to 2.06 t-CO<sub>2</sub>/ton in fiscal 2019 as production output declined partly due to COVID-19, however CO<sub>2</sub> emission dropped by about 12% relative to fiscal 1990 to 94 million tons (preliminary).\*3

#### Nippon Steel Group's energy consumption



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, associated EAF mills (Osaka Steel, Sanyo

Special Steel, Nippon Steel Stainless Steel, Oji Steel, and Tokai Special Steel), Nippon Coke & Engineering and three Sanso Center companies\*

As a core member of the Japan Iron and Steel Federation (JISF), we are actively involved in the JISF's Action Plans for a Low-Carbon Society by promoting our "three ecos" and further CO<sub>2</sub> emission reduction.

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			
CO2 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			
FY2018 results	2.21 million t-CO <sub>2</sub>	34 million t-CO <sub>2</sub>	65.53 million t-CO <sub>2</sub>			
Phase I FY2020	3 million t-CO <sub>2</sub> + $\alpha^{*1,2}$	34 million t-CO <sub>2</sub>	70 million t-CO <sub>2</sub>			
Phase II FY2030	9 million t-CO <sub>2</sub> *1	42 million t-CO <sub>2</sub>	80 million t-CO <sub>2</sub>			
The base to be time in CO and interval and the Director when here and						

¹ The target reductions in CO₂ emission volume are set for FY2005 as the base year and based on a certain crude steel production assu

\*2 The primary focus is on a 3 million ton reduction in CO<sub>2</sub> 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 FY2005 is counted as the amount of reduction in emis

#### Nippon Steel Group's energy-derived CO<sub>2</sub> emissions \*6



\*3 Preliminary figure: The amount of CO<sub>2</sub> per unit of purchased electricity from a General Electricity Utility in fiscal 2019 is assumed to be the same amount as in fiscal 2018.

- \*4 Excluding energy consumption and  $CO_2$  emission associated with the IPP operation by the steelworks \*5 For these four companies, equivalent energy consumption required to manufacture
- materials purchased by the Nippon Steel Group is included. \*6 CO<sub>2</sub> emissions associated with the use of electricity purchased from Cooperative Thermal Power Companies are included in Scope 2 from fiscal 2019. Accordingly,
- past figures are retroactively revised.

### Contributing with eco-friendly products (Eco Products)

Nippon Steel has expertise in high-function steel products that help customers save energy when using final products made of materials supplied by Nippon Steel. Eco Products are numerous and include high-tensile steel and electromagnetic steel sheets. Making these high-function products emits a little more in CO<sub>2</sub> but use of these materials contributes to significantly higher emission reduction when used in final products.

### Contribution in the global value chain (Eco Solution)

Japanese steel industry's energy-saving technologies are spreading globally, contributing to worldwide CO<sub>2</sub> emission reduction. In particular, Nippon Steel Engineering in our Group has transferred technology of its Coke Dry Quenching (CDQ) facilities, which had the result of reducing  $CO_2$  emission in FY2018 by 20.74 million tons.

### Promotion of innovative technology development

Nippon Steel's R&D divisions are engaged in R&D aimed at CO<sub>2</sub> emission reduction and recycling and fixation of CO<sub>2</sub> as top-down projects. As a core member of the JISF, we also participate in the COURSE50 project - "Environmentally Harmonized Steelmaking Process Technology Development" - which aims at reducing CO<sub>2</sub> emissions from a blast furnace by converting a part of reduction by carbon in the furnace to reduction by hydrogen. Moreover, we are taking up the challenge of developing hydrogen reduction steelmaking technology, which enables zero CO<sub>2</sub> emission during steelmaking; we are doing so by participating in the public-private cooperation project for technology development to realize zerocarbon steel

We are also actively engaged in development of technology to fixate and utilize CO<sub>2</sub> such as by converting recycled CO<sub>2</sub> to use as raw

### Setting of individual companies' goals on CO<sub>2</sub> emission reduction

Amid the intensifying awareness on the climate change issues worldwide, Nippon Steel has established a "Zero Carbon Steel Committee," attended by all five Executive Vice Presidents. The committee began discussion on subjects, such as individual companies' scenarios (targets for 2030 and 2050 vision) toward a decarbonized society and R&D related to low CO<sub>2</sub> emission technologies. We plan to disclose individual companies' specific scenarios within the current fiscal year.

### 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

### Work to achieve CO<sub>2</sub> emission reduction by raising efficiency in logistics

Nippon Steel maintains a high modal shift rate\*<sup>1</sup> of 96.6%, improves transportation efficiency by using large vessels (changing from 700-ton vessels to 1,500-ton vessels) in domestic coastal transport and taking other measures, and improve fuel economy by introducing energy-saving tires, lightweight vehicles, etc. As a new measure, we introduced "Utashima" - a hybrid-type cargo vessel, equipped with lithium-

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materials of plastics or fuels, and to extend sea forest development that uses slag and further develop Blue Carbon technology that is effective in absorbing CO<sub>2</sub>. Many of these diverse innovations toward a decarbonized society are registered in "Challenge Zero," an initiative of the Nippon Keidanren (Japan Business Federation).

#### Development of technologies specific to iron & steel sector



Prepared by Nippon Steel based on the JISF's Long-Term Vision for Climate Change Mitigation

- 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.
- ion batteries
- The Utashima was awarded the Small Cargo Vessel Award of the Ship of the Year 2019\*<sup>2</sup> for realizing energy saving, low vibration, low noise, reduction in labor burden, and improved living quarter for crew members.

<sup>\*1</sup> Modal shift rate: Modal shift means replacing a means of transport from trucks to trains and ships. The modal shift rate, according to the definition by the Ministry of Land, Infrastructure, Transport and Tourism, is a ratio of volume transported by trains and marine transportation (including ferries) in long distance transport of over 500km. \*2 Award by the Japan Society of Naval Architects and Ocean Engineers

### CO<sub>2</sub> emissions in the value chain

In addition to CO<sub>2</sub> emissions originated from energy source and generated in Nippon Steel's manufacturing process (Scope 1<sup>\*1</sup> and Scope  $2^{*2}$ ), CO<sub>2</sub> emissions in the value chain (Scope  $3^{*3}$ ) are also calculated by using the Green Value Chain Platform of the Ministry of the Environment and other methods.

Category		CO <sub>2</sub> emissions (thousand tons-CO <sub>2</sub> )	Calculation method*4
1	Purchased goods and services	13,834	[Amount purchased of procured iron ore and $coal^{s}$ ] X [Emission factor]
2	Capital goods	1,656	[Amount of capital expenditures] X [Emission factor]
3	Fuel and energy related activities not included in Scope 1 or 2	305	[Amount of electric power procured and fuel used] X [Emission factor]
4	Transportation and delivery (upstream)	683	[Transportation distance reported in the Energy Saving Law document] X [Emission factor]
5	Waste generated in operations	5	[Amount of waste] X [Emission factor]
6	Business travel	4	[Number of employees] X [Emission factor]
7	Employee commuting	13	[Number of employees] X [Emission factor]
15	Investments	1,119	[Emissions by subsidiaries and affiliates that emit GHG of over 10,000 tons] X [Equity stake of each company]

[Boundary of data collection] Nippon Steel

\*1 Scope 1: Direct emissions from owned sources associated with use of fuel **2** Scope 2: Indirect emissions from the generation of purchased energy

\*3 Scope 3: All indirect emissions (not included in scope 2) that occur in the value chain of the reporting company

\*4 Source of emission factors: the Ministry of the Environment's emissions unit value database for accounting of greenhouse gas emissions throughout the Supply Chain (ver. 3.0) \*5 CO<sub>2</sub> emission associated with the purchased coking coal is calculated by using wet weight

#### Other initiatives (use of by-products and waste in CO<sub>2</sub> 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  $CO_2$  a year.

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 320kg in  $CO_2$ emission per one ton of cement (over 40% reduction compared to ordinary cement production).

#### Blue carbon

A basic research project was launched on the impact of the carbon capture and storage by using steel slag in Nippon Steel's initiatives to create sea forests. Our unique marine simulator (sea laboratory) is used for this.

Column

#### **Blue Carbon Initiatives**

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 a global warming measure. We started to collect basic data on how much CO<sub>2</sub> can be fixated by using steel slag and creating shallow bottoms, tideland, and seaweed beds. A massive amount of data collection is required as there are many research challenges concerning the evaluation method of carbon fixation capacity in the blue carbon ecosystem, including understanding of the biomass amount, the ratio of the amount to be fixated for a long time without being dissolved, and the dynamic of carbon in the complicated coastal ecosystem. Those challenges stem from the fact that types of species and geographical differences substantially vary in the marine ecosystem.

Nippon Steel's approach is to use our own large water tank (sea laboratory), collect potential data of carbon fixation by type of species (i.e., kelp seaweed bed, sargassum bed, and eelgram bed) and by area, and establish an evaluation method.

By doing so, we can launch a large-scale experimental project aimed at social implementation of blue carbon. Such is how we intend to contribute to creation of a blue carbon system with the sea area utilization technology that uses steel slag.

Our initiatives to improve the marine environment by use of steel slag is expected to be effective as a climate change measure that fixates CO<sub>2</sub>, in addition to contribute to the preservation of biodiversity and the protection of the bounty of the sea.



Large water tank Sea Laboratory

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

#### Status of climate changes and actions of the steel industry

- Since 2015 when the Paris Agreement that pledged to advance greenhouse gas emission reduction across the world was adopted, institutions in the international community have been required to seek ways to enable sustainable economic and social growth, while restraining impact on the environment.
- Steel is broadly used in our society an indispensable material element for social infrastructure and durable consumer goods, such as road, railway, buildings, automobiles, and home electric appliances. This is because steel has outstanding features required in many aspects as a basic material, such as abundance as a resource, cost advantages, diverse features, low environmental impact in the manufacturing stage, and endless capability for recycling into all kinds of durable products, in addition to having ideal features for building of infrastructure.
- Medium- to long-term growth in global steel demand is projected (from 1.62 billion tons in 2015 to 2.68 billion tons in 2050), 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. In contrast, as generation of end-of-life scrap increases in proportion to an increase in steel stock, use of scrap will increase in steelmaking (from 0.56 billion tons in 2015 to 1.55 billion tons in 2050). This increase is not enough to satisfy the

#### Support for TCFD recommendations and Nippon Steel's strategies

- Climate-related risks and opportunities could be significant for many companies' financial positions and the related disclosure could reduce risks of financial destabilization. Because of this, in response to the request from the G20, the Financial Stability Board (FSB) established the industry-led Task Force on Climaterelated Financial Disclosures (TCFD or Task Force) to develop climate-related disclosures in December 2015 and the TCFD released its recommendations in June 2017.
- 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 CO<sub>2</sub> emissions; (2) changing trends of steel users, including the automobile sector (i.e., increase in electric vehicles, shift to non-steel lightweight materials prompted by tightened

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

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entire steel demand. It is therefore indispensable to make steel from natural resources. Pig iron production in the blast furnace route is also expected to increase (from 1.22 billion tons in 2015 to 1.40 billion tons in 2050).

- In order to achieve goals of the Paris Agreement, the steel industry is required to significantly reduce CO<sub>2</sub> emissions in steelmaking, with an increasing focus on the shift to production by electric furnaces, which have a lower CO2 emission coefficient than blast furnaces. However, as recognized by international and Japanese industrial standards, namely the ISO and the JIS, the environmental impact is essentially the same for steel products made by the blast furnace (BF) route and by the electric arc furnace (EAF) route. This judgment is based on Life Cycle Assessment that incorporates recycling impact. The BF route remains to be indispensable as discussed above and we thus need to establish technology that realizes lower carbon in its use. Moreover, development of ultra-innovative technology that may break through these routes is also desired for realizing the Paris Agreement's long-term goals.
- In addition to containing CO<sub>2</sub> emission in steelmaking, we are also required to respond to customers' requirements for lightweight, high-strength materials in the automotive area due to tighter environmental regulations and increase in electric vehicles.

environmental regulations); and (3) adoption of carbon pricing that leads to an increase in operating cost.

- Given the international community's commitment to achieving long-term goals of the Paris Agreement, Nippon Steel signed the statement of support for the Task Force on Climate-related Financial Disclosures (TCFD) in May 2019, considering the climate change as one of priorities that the planet is facing today.
- In order to expand information disclosed as recommended by the TCFD, we analyzed selected two climate change scenarios (2°C scenario and 4°C scenario\*) for a long-term span to 2050 and after. Specifically, we identified our potential risks and opportunities driven by climate change, considered their significance, and organized their impacts and our initiative options related to them. Please see the following page for details on the TCFD scenario analysis.

#### TCFD scenario analysis

Scenario	Factor	Events	Impact to Nippon Steel		Nippon Steel's strategy
	Transition factor 1 Advance in electric vehicles (EVs); decline in powertrain-related steel demand	Estimates for 2050*1 EVs: 342mn units (17% of total) Internal combustion engine vehicles (ICEVs): 1656mn units (83%)	Opportunities in demand growth of steel	<ul> <li>Potential decline in the ratio of powertrain-related steel demand, but potential increase in demand for the global cumulative number of vehicles (ICEVs incl. HVs, PHVs).</li> <li>Increase in demand for high-performance steel for EVs.</li> </ul>	■ Capturing growing demand by providing high-performance steel products (high-tensile steel, electric steel sheet), using its global supply network, and total solutions (NSafe <sup>™</sup> - AutoConcept).
	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	<ul> <li>Switch to other lightweight materials is possible but should not be significant as steel remains superior in environmental impact from the LCA viewpoint.</li> <li>Increase in demand for high-strength steel, carbon fiber reinforced plastics (CFRP), titanium steel, etc.</li> </ul>	<ul> <li>Penetration of the LCA concept</li> <li>Advance in strength of high-strength steel and provision of total solutions (NSafe<sup>™-AutoConcept</sup>) to compete with other lightweight materials</li> <li>Cooperation with Group companies (Nippon Steel Chemical &amp; Material) to capture demand for CFRP, etc.</li> </ul>
2°C	Transition factor 3 Shift to the electric arc furnace (EAF) route	Progress in shift from the blast furnace (BF) route to the EAF route, which has lower environmental impact in manufacturing	Opportunities in demand growth for steel	■ Increase in the ratio of use of scrap (25% to 47%*²), 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	<ul> <li>Penetration of the LCA concept (the same LCA-based evaluation including the recycling impact for steel products made by the BF route and by the EAF route)</li> <li>Outstanding low-carbon operating technology to help capture the BF steel demand (promotion of innovative technology development including top-level energy efficiency; COURSE50 aimed at commercial application by 2030, CCU, and hydrogen reduction steelmaking)</li> <li>High-grade steel made by the EAF route by the Group companies to capture demand</li> </ul>
	Transition factor 4 Increase in operating cost caused by adoption of carbon pricing	Adoption of carbon pricing	Possibility of loss of competitiveness if an increase in cost cannot be passed on to product price	Significant impact for steel being an international product if carbon pricing is adopted.	<ul> <li>Hydrogen reduction steelmaking and use of scrap to reduce CO<sub>2</sub> emission</li> <li>Carbon pricing impact to be alleviated by securing pricing advantages, realized by our higher value-added product strategy, based on our technological strength and solution proposals</li> <li>Need to discuss with customers on passing cost increase on product price</li> </ul>
·	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	<ul> <li>Profit growth by provision of the Group's products and solutions that support a hydrogen-oriented society</li> <li>[Ex] Stainless steel for high-pressure hydrogen (HRX19<sup>m</sup>); hydrogen station (Nippon Steel Engineering)</li> </ul>	Enhancement of the Group's product menu and expanding sales in Japan and overseas
	Transition factor 6 Higher needs for energy- efficient products and technology in the world	Eco-friendly technology solution to boost demand	Opportunities in demand growth for eco-friendly technology	<ul> <li>Profit growth, driven by our Group's long- proven technology solutions</li> <li>[Ex] Dissemination of CDQs, all of which are handled by Nippon Steel Engineering, into emerging countries</li> </ul>	<ul> <li>Expansion in provision of Eco Products in the world</li> <li>Government-private cooperation; Technologies customized list; and steel plant diagnosis to provide energy- saving technologies to emerging countries (contribution to the global value chain)</li> </ul>
	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 on risk of suspended operation by raw material suppliers	<ul> <li>Limited assumed risk in securing stable procurement of raw materials by taking the following measures, despite some possibility in temporary procurement cost increase caused by a deterioration in supply/demand balance</li> <li>Material sourcing from multiple regions in the world</li> <li>Keeping raw material inventories in steelworks and ships</li> </ul>	<ul> <li>Continual procurement from multiple sources</li> <li>Appropriate days of inventory; risk management</li> </ul>
4°C	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.	Continual implementation of adaptation measures, with consideration of long-term trends: Measures against typhoons and heavy rain; measures to prevent crane overturns; measures against earthquakes and tsunamis (securing emergency evacuation places, embankment reinforcement, etc.)
	Physical factor 3 Heightened needs for solutions for "National Resilience" against natural disasters	Natural disaster caused by abnormal weather	Opportunities in 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.	Enhancement of the Group's product menu and expanding sales in Japan and overseas

\*1 Source for EV-related data: IEA ETP2017

EVs only refer to battery electric vehicles (BEVs) with no internal combustion engine (ICE). ICEVs include plug-in hybrid vehicles (PHVs).

\*2 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."

#### Innovative technology development for "Challenge Zero"

We recognize the urgent need to tackle climate change issues, the importance of boldly taking up the challenge for innovation toward realizing a decarbonized society, and the significant role that Nippon Steel plays as a major innovator. We therefore stated our agreement with the Challenge Zero declaration, announced by Keidanren in June 2020. Through this, we disclosed the following 10 specific challenges.

#### Nippon Steel's ten challenges

#### Name of challenge

Achieving zero emission in the hydrogen reduc	ction steelmaking process					
Development of $\ensuremath{\text{CO}_2}$ emission reduction technology that uses hydrogen in blast fur reduction steelmaking						
Development of chemical absorption method to collection of $\text{CO}_2$ at low cost	Development of chemical absorption method technology that enables separation a collection of $\mbox{\rm CO}_2$ at low cost					
Contributing to hydrogen infrastructure establ hydrogen stations	lishment via diffusion of HRX19™ for					
Development and diffusion of Eco Products that products are used (Nsafe <sup>™</sup> -AutoConcept, electric	help reduce CO2 emission when final : steel sheet)					
Improved efficiency in recycling of waste plast	ics					
Establishing a manufacturing method of dimethyl carbonate (DMC) from CO <sub>2</sub>						
Zero-emission hydrogen manufacturing techno	Zero-emission hydrogen manufacturing technology via artificial photosynthesis					
CO2 fixation by Blue Carbon, which uses steel s	slag					
Provision of "National Resilience" solutions to	ward adapting to climate change					
(1) Net zero emission technologies	Technologies of not emitting gree					
(2) Transition technologies	Innovative energy-saving and oth including emerging countries. Th					
(3) Technology for adaptation, resilience, etc.						

#### Examples of Nippon Steel's taken-up challenges

#### Achieving zero emission in the hydrogen reduction steelmaking process

Roughly 70% of CO<sub>2</sub> emission in the steelmaking industry government and other companies. are generated in the blast furnace pig iron making process Nippon Steel, JFE Steel, Kobe Steel and the Japan Research and (reduction reaction to remove oxygen from iron oxides to Development Center for Metals (JRCM), all being members of make steel). As the thermodynamic efficiency of Japan's blast the Japan Iron and Steel Federation, applied for participation in furnace technology has improved close to a theoretical value, a public offering project on "technology development toward further reduction in CO<sub>2</sub> emission is extremely difficult. That realizing zero carbon steel," sponsored by the New Energy and is why we are taking up the challenge in hydrogen reduction Industrial Technology Development Organization (NEDO) and steelmaking process, in which hydrogen is used for reduction was accepted in June 2020. As this is an R&D project in the of iron ore, replacing coal as a reducing agent. Strengths frontier field efforts toward zero carbon steel, our objective is to in insights and element technology for hydrogen reduction identify multiple promising innovative technologies focused on steelmaking, which have been accumulated in the COURSE50 decarbonization in the steelmaking process. We further aim at project since 2008, are our strength in this challenge. drawing a road map for technology development that could be As hydrogen reduction reaction of iron ore is endothermic used by Japan's steel industry. reaction, what we need at this stage is to establish Reduction of Iron Ore by Carbon Reduction of Iron Ore by Hydrogen technologies to supply heat to a reaction furnace from outside and to stably supply a massive amount of hydrogen gas to CO Iron Ore Iron Ore a reaction furnace with due consideration to hydrogen's **C** 0 Fe 0 4 Fe O combustion characteristics. Moreover, hydrogen is carbon-Fe Fe free but its stable supply at low cost in massive volume is an important requirement. We must therefore cooperate with the

Results and

Risks, opportunities. and strategies

and Investor







enhouse gas (GHG) or technology to absorb or use GHG

er technology that contributes to significant GHG reduction in the world, is technology is needed in the course of realizing a decarbonized society

limate change that contribute to adaptation (preparation to curb the e, etc. in areas other than mitigation (GHG reduction)



#### **Innovative Technology Development**

Since the 1970s, Nippon Steel has been striving for energy saving and reduction of  $CO_2$  emission. At present, we are developing

innovative technology that will enable us to make zero-carbon steel\*1 by 2100. This effort has the four aspects of

1 reducing CO<sub>2</sub> emission, 2 separating and recovering CO<sub>2</sub>, 3 recycling CO<sub>2</sub>, and 4 storing CO<sub>2</sub>.

\*1 Zero-carbon steel is produced from iron ore without using carbon (= zero carbon) but by using hydrogen. Aside from ultimately aiming at zero carbon, our research and development teams are also working on reduction in use of carbon, as well as separation, recovery, reuse and storing of CO2-

	Development completed	l	
1970	20	10 20	)20
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#### Development of blast furnace mathematical modeling

We properly adjust gas flow, solid flow, and liquid flow, burden distribution, and other basic factors in blast furnace route with the result that we have reduced the ratio of coke and other reducing agents, and this has reduced CO<sub>2</sub> emissions.



#### Coke Dry Quenching (CDQ) for largescale waste heat recovery

Hot coke made in the coke oven is guenched with inert gas, and the heat is used to generate steam for power generation. Compared to wet quenching, 40% energy saving has been achieved. The first CDQ unit was installed in the Kyushu Works Yawata Area in 1976.



#### Next generation coke oven Scope21 We developed the next-generation coke oven

that uses an advanced coke-making technology, including prior rapid heat treatment of coal, and enabled significant energy saving. The first commercial models started operation in the Kyushu Works Oita Area in 2008 and the Nagoya Works in 2013.



#### Burden distribution threedimensional DEM model

Distribution of charged materials from the top of a blast furnace is precisely shown by using a three-dimensional discrete element method (DEM) model, with the aim of arranging the burden distribution that enhances reaction efficiency, which leads to reduction in  $CO_2$  emission.



## **CO**<sub>2</sub> separation and recovery

#### Commercializing ESCAP<sup>™</sup> (Energy Saving CO<sub>2</sub> Absorption Process)

This technology for recovering CO<sub>2</sub> by using a particular liquid is used as the first step in CO<sub>2</sub> recycling, with the world's top-class performance. Two units are currently in commercial operation in Muroran City and Niihama City.



#### Under development

#### The COURSE50 Project (Technological Development and Innovative Steelmaking Process)<sup>2</sup>

Since 2008, the COURSE50 has been developing technologies to lower  $CO_2$  emissions by 30%: a 10% cut in CO<sub>2</sub> emissions from a blast furnace by adopting technologies to reduce iron ore by use of hydrogen and a 20% cut in CO<sub>2</sub> emissions by adopting technologies to capture – separate and recover –  $CO_2$  contained in blast furnace gas. Concerning the former case, a 10% cut has been verified at a 12m<sup>3</sup> experimental blast furnace at the Kimitsu Area of the East Nippon Works and we also undertook simulation for the size of an actual blast furnace, moving the project closer to adoption of this innovative reduction technologies in commercial-use blast furnaces.



COURSE50 test blast furnace

## **CO**<sub>2</sub> recycling

#### Research on producing raw materials for plastics from CO<sub>2</sub>

Technology to synthesize a carbonate ester (shown as DMC, or dimethyl carbonate in the figure below) from CO2 and alcohol. Polycarbonate and other compounds are made from carbonate ester



## **Carbon** fixation

## farmland

agricultural products and help sequestrate CO2 in farmland.



Outputs and	doutcomos	opportunities, and strategies		te nce	
outputs and	outcomes	 			IIIIOIIIIatioii
2030			2050	(vear)	
2030			2000	(year)	

Dicke

## Toward development of a hydrogen reduction steelmaking process that takes blast furnace production into a new phase

#### Project for the "Development of Zero-Carbon Steel Technologies<sup>\*2</sup>" – hydrogen reduction steelmaking technologies

With the aim of achieving net zero emission in steelmaking process, we are taking up a challenge of developing hydrogen reduction steelmaking technologies that replace coal with hydrogen as reducing agent. This was adopted as a national project and we are getting engaged in this publicprivate cooperative project.

\*2 Commissioned project by the New Energy and Industrial Technology Development Organization (NEDO)

#### A new hydrogen production process, which contributes to reduction in CO<sub>2</sub> emissions

By developing a proprietary high-performance photocatalyst material, we aim at hydrogen production with zero emission through use of solar energy.

#### Research on producing basic chemical compounds and fuel from CO<sub>2</sub>

Technology to make basic chemical compound and fuel from CO<sub>2</sub> by using a new catalytic technology. This is to realize a process that does not use fossil fuel as raw material.

## Promoting digital transformation

### Operational innovation via digital power

Digital transformation (DX) is a concept that means penetration of IT improves people's welfare on all fronts. For companies, this means use of digital technology in business innovation, which is becoming an increasingly important decisive factor determining corporate competitiveness. Nippon Steel has long worked on achieving higher quality and stable production in safe, competitive manufacturing sites and advanced general operations. We aim at augmenting these achievements at a more advanced level by



#### The double foundation of DX: business process innovation and production process innovation

We have so far worked on cost reduction and quality enhancement by thoroughly collecting and analyzing a huge amount of data from various manufacturing sites and business workplaces. In production, sales, distribution, maintenance, procurement, profit management, and other various operations, we have established many internal business systems and have accumulated an enormous volume of data. We believe this data resource can give us strength, maximum use of which, however, requires the "strength in connecting" of disparate data. Our DX for business process information means we are to use advanced IT and processing function and organically connect enormous data volumes, some of which had been lost in the past due to lack of capability for aggregation. Our aim is to create a system of advanced, comprehensive decision-making, enabling total optimization. By facilitating seamless access to judgment data, we will make a system that allows users to

easily provide feedback and verify data and make appropriate judgments and optimization, based on the changing situation. It can only be achieved, because the Nippon Steel Group can use its comprehensive capabilities.

use of AI, IoT, and big data. In promoting DX, we seek to

transform our corporate culture to use digital technology

and continually propose and implement innovation while

aim at acquiring a continual operation innovation cycle:

and made more advanced, gradually standardized and

automated, and we are to make new proposals and

Speeding-up and

enhancement of precision

Automati

people's operational decision-making is to be speeded up

innovations based on the resultant insights and resources.

Datar

Digital

technology

Forecasting an

encouraging human-digital collaboration. In other words, we

Concerning Operational process innovation, we have led the steel industry since 1960s in automation by use of computer systems, and we are now pursuing optimal operation by use of digital technology. Our DX for production process information starts from proactive assessment and introduction of advanced digital technology, such as 1) data collection using sensing IoT or drones; 2) advanced image and language processing and predictive diagnosis, using deep learning and other AI tools; and 3) local 5G and other up-to-date communication networks. By doing so, we acquire the desired "strength in maneuvering" through formidable process control and automation based on highly accurate information while we also enhance "strength in manufacturing."



By coordinating business process innovation and production process innovation, we believe we can raise the value of the information via our "strength in connecting," advance our "strength in maneuvering," and enhance our



#### Customers

### Positioning of the Digital Innovation Division

The Digital Innovation Division, established in April 2020, works comprehensively as one-stop solution provider on crossdivisional issues related to use of digital technology. First, in order to connect inconsistent data from different divisions, the division focuses on the enhancement of data

#### Improving ICT literacy

We make efforts to improve ICT literacy of employees as all of them should be capable of using ICT and engaged in innovation by themselves in the forthcoming DX era. Since 2014, we have formed a company-wide organization to disseminate experience and examples of present usage of advanced IT. We also hold consortium meetings where developers discuss technology development. In FY2018 we launched an internal machine learning contest, using the NS-DIG<sup>™</sup> environment. As a step to improve ICT literacy of all employees, the ICT literacy training has been included in the training program for new employees since FY2019. Through

"strength in manufacturing" and "strength in sales and marketing." This will therefore become a source of our continual value creation.

management (data governance), such as standardization of data items and creation of usage rules. The division also centrally controls planning and verification of adopting the latest technology (AI technology, local 5G, etc.) and provides it in an easy-to-use structure to be adopted in actual machines.

employee training and promotion of advanced IT and AI, we aim at increasing Citizen Data Scientists, who can use NS-DIG, even without any advanced expert knowledge, and come up with advanced solutions, using data.



## Corporate governance

The Nippon Steel Group is engaged in business activities based on its Corporate Philosophy - that we will pursue worldleading 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.

#### Review of corporate design concerning corporate governance, streamlining of the management structure, and increasing efficiency of the corporate organization and operations efficiency

For the purpose of appropriately responding to greater fluctuation of changes in the surrounding business environment and accelerated speed of change, Nippon Steel made a transition from a Company with an Audit & Supervisory Board to a Company with an Audit & Supervisory Committee

Through this change, Nippon Steel 1) aims to enhance discussions by the Board of Directors relating to matters such as the formulation of management policies and strategies and strengthen the supervisory function of the Board of Directors over management; and 2) delegates part of the decisions regarding execution of important operations according to the policy and strategy to the Representative Director and Chairman and Representative Director and President, thereby expediting management decision-making.



#### 1 Corporate Governance System

Currently, 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. Outside Directors account for more than one-third (7 out of 18) of all members of the Company's Board of Directors.

Of the above, the Directors (excluding Directors who are Audit & Supervisory Committee Members) are comprised of eight (8) Executive Directors who were employees of Nippon Steel with intimate knowledge of Nippon Steel's businesses, and three (3) Outside Directors who have vast experience in, and deep insights into, such areas as employment, labor, corporate management, international affairs, economies and cultures. The Directors who are Audit & Supervisory Committee Members are comprised of three (3) Directors who were employees of Nippon Steel with intimate knowledge of Nippon Steel's businesses, and four (4) Outside Directors who have vast experience in, and deep insights into, such areas as laws, public administration, public finances, corporate accounting and economies. The execution of important matters concerning the management of Nippon Steel and the Nippon Steel Group is determined at the Board of Directors' meeting (held about once per month) after deliberations in the Corporate Policy Committee (once a week, in principle) comprised of the Representative Director and Chairman, Representative Director and President, Representative Directors and Executive Vice Presidents, and other members, pursuant to Nippon Steel's rules.

As corporate organizations engaging in deliberations before the Corporate Policy Committee and the Board of Directors, there are 23 company-wide committees in total, including 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

Measures implemented to enhance corporate governance							
	Reduction of the number of directors in the Articles of Incorporation from 48 to 15* (* Increase to 20 when Ninnen Steel & Sumitome	June 2015	Adoption of a limited liability contract with full-time Audit & Supervisory Board Members				
ine 2006	Metal Corporation was established in 2012) Adoption of the Executive Management System Adoption of a limited liability contract with External Auditors	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)				
une 2014	Appointment of Outside Directors (two) Adoption of a limited liability contract with Outside Directors	June 2020	Transition to a Company with an Audit & Supervisory Committee				

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Committee, and the Risk Management Committee, depending on each purpose and each area.

In fiscal 2019 the Board of Directors' meeting was held 15 times.

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 Nomination and Compensation Advisory 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 2019 the Nomination and Compensation Advisory Committee meeting was held in June and December.

#### 2 Enhancing the supervisory function over management and expediting management decision-making

At Nippon Steel, by all Directors appropriately fulfilling their roles and responsibilities, prompt decision-makings are achieved corresponding to changes in the management environment, and multifaceted deliberations and objective and transparent decision-making by the Board of Directors are secured.

Due to a transition to a Company with an Audit & Supervisory Committee, 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 enhances strengthens the supervisory function of the Board of Directors over management compared to a company structure with an Audit & Supervisory Board, which the Company had previously adopted.

In accordance with the transition, the Board of Directors of Nippon Steel 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.

#### 3 Streamlining of the management structure

In accordance with the transition to a Company with an Audit & Supervisory Committee, Nippon Steel has streamlined the management structure.

In light of the absorption of Nippon Steel Nisshin Co., Ltd. as of April 1, 2020, the number of attendees at the meeting of the Board of Directors of Nippon Steel was reduced by 2 from 20 (13 Directors and 7 Audit & Supervisory Board Members) prior to the General Meeting of Shareholders held in 2020 to 18 (11 Directors (excluding Directors who are Audit & Supervisory Committee Members) and 7 Directors who are Audit & Supervisory Committee Members).

#### 4 Increasing efficiency of the entire corporate organization and operations

In addition to expediting management decision-making and streamlining of the management structure, Nippon Steel has been further increasing efficiency in the corporate-wide organization and business management.

As of April 1, 2020, as a part of reviewing the entire corporate organization and operations with the aim of raising autonomy and efficiency of manufacturing sites and restoring "strength in manufacturing\*," the biggest challenge, Nippon Steel integrated and reorganized the 16 works (including those of Nippon Steel Nisshin) into an organization of six steelworks (Muroran, East Nippon, Nagoya, Kansai, Setouchi, and Kyushu) and the organization of each steelworks was substantially restructured and the number of divisions was reduced by over 30% in order to eliminate organizational redundancy and establish an efficient management structure. The headquarters also reduced the number of departments by 30% through bundling of the current organization while the entire-company control function of each division has been maintained. Similar streamlining efforts to integrate and reorganize divisions and departments have been carried out in domestic office and branches, R&D Laboratories, and other organizations.

By taking these streamlining efforts of the entire corporate organization, the Company strives to build an organization that enables more efficient business operation with a smaller staff and, at the same time, share technology, skills, and know-hows by a broader organization. Through pursuit and realization of merits from optimization and speedy problem solving, the Company aims at the enhancement of the steelmaking business.

\* Capability of stable production as planned in line with demand, with a focus on cost control

Muroran Works

East Nippon Works



Kansai Works Kvushu Works Nagova Works . Setouchi Works

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#### Internal control system and risk management

#### 1 Internal control system based on autonomous internal controls

To comply with applicable laws and regulations, and ensure integrity of financial reporting and effectiveness and efficiency of business, 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.

#### 2 Risk management supervisory system

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.26-30.

https://www.nipponsteel.com/ir/pdf/ nipponsteel\_jp\_br\_2019\_all.pdf (available only in Japanese)

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#### **3** Internal control system of the Group

Nippon Steel has established an operational organization for its internal control systems. This organization consists of the Internal Control & Audit Division (23 full-time and 22 concurrently with their other posts), which is responsible for the internal control plan and internal audits, and functional divisions responsible for managing risk in each field (about 700 staff members). Nippon Steel has also designated persons in charge of risk management (about 150 for Nippon Steel) and persons responsible for risk management (about 550 in Group companies) who are engaged in planning and promoting autonomous internalcontrol activities in each division and each Group company. Each division and each Group company are encouraged to take autonomous initiatives and share information on internal control and risk management in regularly-held meetings and other venues.

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, carry out education and enlightenment through the survey, and complement 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.

#### 4 Whistleblower system

As a whistleblower system, the Compliance Consulting Room (internal contact: the Internal Control & Audit Division; external contact: an external professional organization) 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 (that may be made anonymously) 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 2019, there were 425 cases of internal reporting and consultations.

#### **Supervision**

1 Supervision by the 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.

Specifically, Audit & Supervisory Committee Members who are mutually elected by the Committee cooperate closely with Internal Audit Departments, 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 audit and supervisory standards, and the policies and plans of audit and supervision 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 the 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 strive to exchange opinions with the Executive Directors and staff in Internal Audit Departments 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

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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, 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, as well as opportunities for exchanging opinions exclusively among Outside Directors. Nippon Steel has established the Audit & Supervisory

Committee Members' Office and has assigned dedicated staff members, in order to assist the Audit & Supervisory Committee in the smooth execution of its duties. In addition, the Head of the Human Resources Division discusses with the Audit & Supervisory Committee in advance the transfer and evaluation, etc. of the dedicated staff members to ensure their independence from the executive divisions and the effectiveness of the Audit & Supervisory Committee's instructions to the dedicated staff members.

#### 2 Cooperation between the Audit & Supervisory Committee and Internal Audit Departments

The full-time Audit & Supervisory Committee Members attend quarterly meetings of the Risk Management Committee. The Audit & Supervisory Committee receives regular reports from the Internal Control & Audit Division, and both parties exchange opinions to ensure close collaboration. In addition, the Audit & Supervisory Committee regularly interviews functional divisions managing important risks, such as safety, environment, disaster prevention, quality assurance and other matters, on the status of their respective activities, to enhance the effectiveness of audit activities. Moreover, the Internal Control & Audit Division and functional divisions

formulate an annual plan based on the opinions of the Audit & Supervisory Committee.

#### 3 Cooperation between the Audit & Supervisory Committee and the Accounting Auditor

At the beginning of a fiscal year, the Audit & Supervisory Committee and the Accounting Auditor exchange opinions on matters of concern from the previous fiscal year, items of focus in the audit and other matters, based on the audit plan drafted by the Accounting Auditor, so that an effective accounting audit can be executed.

Moreover, at each quarter, the Audit & Supervisory Committee Members, particularly the full-time Members, receive a report on the progress and the results of the

#### Policies on and Procedures in the Nomination of Director Candidates and the Appointment and Dismissal of Senior Management

#### 1 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.

#### 2 Procedures in the Nomination of Director Candidates and the Appointment of Senior Management The nomination of Director candidates and the appointment of senior management are resolved at the

Risks and strategies

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quarterly review from the Accounting Auditor and exchange opinions regarding matters stated in the guarterly report including non-financial information. Furthermore, at the end of a fiscal year, the Audit & Supervisory Committee receives the Auditor's Report and a report on the audit results including the priority audit items for the period from the Accounting Auditor, and uses such reports for the basis of the Audit Report, which is subsequently prepared by the Audit & Supervisory Committee.

In addition, the Audit & Supervisory Committee Members, particularly the full-time Members, and the Accounting Auditor cooperate and mutually contribute to forming their respective audit opinions by exchanging opinions on audit activities at regular liaison conferences.

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 in 1 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.

#### 3 Procedures in the Dismissal of the President and Other Senior Management

In the event that any disqualification for Directors as stipulated by laws and regulations occurs to the President or other senior management, Nippon Steel shall dismiss him or her from the President or other managerial positions by the resolution of the Board of Directors. In addition, in the event that the President or other senior management has engaged in any acts suspected of committing fraud or breach of trust, or in the occurrence of an incident to the President or other senior management that has caused significant hindrance to the continuation of duties, etc., Nippon Steel may dismiss him or her from the President or other managerial positions by the resolution of the Board of Directors, while also taking into account discussions and deliberations at the Nomination and Compensation Advisory Committee as necessary.

#### Policies on and Procedures in Determining the Compensation of the Directors by the Board of Directors

#### 1 Policies on Determining the Compensation

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

Nippon Steel sets the base amount of compensation for each Director's rank taking into consideration each Director's required skills and responsibilities, and this base amount varies within a specific range based on Nippon Steel's consolidated results, and the amount of each Director's monthly compensation is determined within the limit approved by the General Meeting of Shareholders.

Such limit was approved at 140 million yen per month (of which 12 million yen is for Outside Directors) by the 96th General Meeting of Shareholders held on June 24, 2020.

(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 Director's responsibilities, depending on its rank and whether the Director is full-time or part-time.

Such limit was approved at 22 million yen per month by the 96th General Meeting of Shareholders held on June 24, 2020.

#### (Performance-linked compensation)

Compensation for Directors (excluding Directors who are Audit & Supervisory Committee Members and Outside Directors) consists only of monthly compensation, and is all based upon performance of Nippon Steel, in order to give incentives for the Group's sustainable growth and improvement of its corporate value.

Although compensation for Directors who are Audit & Supervisory Committee Members (excluding Outside Directors) is fixed compensation in principle, the amount of compensation will be increased or decreased only in the event of significant changes in the consolidated performance of Nippon Steel.

Although compensation for Outside Directors is fixed compensation in principle, 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 the steelmaking segment, which accounts for about 90% of consolidated revenues, while taking into account other factors including revenue targets in the Mid-Term Management Plan.

Nippon Steel abolished its retirement benefits for Directors in 2006. Furthermore, the policies relating to bonuses were deleted from the "Policies regarding the Decision on the Amount of Compensation for Directors" in 2013, and this has continued since the transition to a Company with an Audit & Supervisory Committee.

#### 2 Procedures for Determining the Compensation

The policies on determining compensation mentioned in 1. above for Directors (excluding Directors who are Audit & Supervisory Committee Members) and the specific amount of monthly compensation of each Director (excluding Directors who are Audit & Supervisory Committee Members) 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 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.

The policies on determining compensation for Directors who are Audit & Supervisory Committee Members and the specific amount of monthly compensation of each Director who is Audit & Supervisory Committee Member are determined by discussions of the Directors who are Audit & Supervisory Committee Members.

#### Total amounts of Compensation for Directors and Audit & Supervisory Board Members (FY2019)

Category	Number of recipients	Aggregate amount of remuneration (millions of yen)
Directors	15	910
Of which, Outside Directors	3	43
Audit & Supervisory Board Members	9	210
Of which, Outside Audit & Supervisory Board Members	5	57
Total	24	1,120

\* The above number of recipients includes two (2) Directors and two (2) Audit & Supervisory Board Members (including one (1) Outside Audit & Supervisory Board Member) who re at the conclusion of the 95th General Meeting of Shareholders held on June 25, 2019.

#### 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 the 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.

The Board of Directors, at its meeting held in June 2020, analyzed and evaluated the effectiveness of the Board of Directors for fiscal 2019, confirming that the Board of Directors functions effectively because, among other reasons, all of the

#### **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

#### Independence of Outside Directors, and supporting system for Outside Directors

#### 1 Independence of Outside Directors

Nippon Steel decides the independence of Outside Directors in accordance with the independence standards set by the financial instruments exchanges in Japan (e.g. Tokyo Stock Exchange), considering each individual's personal relationship, capital relationship, transaction relationship, and other interests with Nippon Steel.

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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, after discussion among Directors and Audit & Supervisory Board Members, from the point of view of improvement of Nippon Steel's corporate value in the mid- to long-term or other various perspectives, with relevant information being provided in advance. In addition, from the standpoint of further enhancing the effectiveness of the Board of Directors, Nippon Steel has decided to take the opportunity of the transition to a Company with an Audit & Supervisory Committee to enhance discussions by the Board of Directors relating to matters such as the formulation of management policies and strategies, enhance the supervisory function of the Board of Directors over management, and devise and improve the operation of meetings that contribute to these efforts, based on the opinions voiced by each Director and Audit & Supervisory Board Member in the effectiveness evaluation for fiscal 2019.

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.

#### 2 Supporting System for Outside Directors

Nippon Steel supports the performance of responsibilities by Outside Directors by assigning a sufficient number of staff members in the General Administration Division and the Audit & Supervisory Committee Members' Office, and timely and appropriately providing company information such as offering prior explanations about the matters to be submitted for deliberation or reported to meetings of the Board of Directors and other important meetings.

#### Reasons for designation as Independent Directors

Outside Directors	Reasons
Noriko Iki	Although Ms. Iki serves as President of Japan Institute for Women's Empowerment & Diversity Management, to which Nippon Steel outsources a part of its in-house trainings and pays the membership fee, since the amount of outsourcing fee paid to the said institute accounts for less than 1% of the consolidated selling, general and administrative expenses of Nippon Steel, the said institute is not a specified associated service provider of Nippon Steel. The annual membership fee paid to the said institute by Nippon Steel is 650,000 yen. She does not conflict with the independence standards as set by each financial instruments exchange on which Nippon Steel is listed (e.g. Tokyo Stock Exchange), and does not have any special interests with Nippon Steel. Because Nippon Steel believes that there is no possibility of a conflict of interest between her and the general shareholders as stated above, Nippon Steel has designated her as an Independent Director.
Tetsuro Tomita	Although Mr. Tomita is engaged in the execution of business of East Japan Railway Company, which has a business relationship with Nippon Steel for transactions of steel and other products/services, since the amount of transactions with the said company accounts for less than 1% of the consolidated revenue of NIPPON STEEL, the said company is not a specified associated service provider of Nippon Steel. He does not conflict with the independence standards as set by each financial instruments exchange on which Nippon Steel is listed (e.g. Tokyo Stock Exchange), and does not have any special interests with Nippon Steel. Because Nippon Steel believes that there is no possibility of a conflict of interest between him and the general shareholders as stated above, Nippon Steel has designated him as an Independent Director.
Masato Kitera	Mr. Kitera does not conflict with either the independence standards or attribute information as set by each financial instruments exchange on which Nippon Steel is listed (e.g. the Tokyo Stock Exchange), and does not have any special interests in Nippon Steel. Because Nippon Steel believes that there is no possibility of a conflict of interest between him and the general shareholders as stated above, Nippon Steel has designated him as an Independent Director.
Hiroshi Obayashi	Mr. Obayashi does not conflict with either the independence standards or attribute information as set by each financial instruments exchange on which Nippon Steel is listed (e.g. the Tokyo Stock Exchange), and does not have any special interests in Nippon Steel. Because Nippon Steel believes that there is no possibility of a conflict of interest between him and the general shareholders as stated above, Nippon Steel has designated him as an Independent Director.
Jiro Makino	Mr. Makino does not conflict with either the independence standards or attribute information as set by each financial instruments exchange on which Nippon Steel is listed (e.g. the Tokyo Stock Exchange), and does not have any special interests in Nippon Steel. Because Nippon Steel believes that there is no possibility of a conflict of interest between him and the general shareholders as stated above, Nippon Steel has designated him as an Independent Director.
Seiichiro Azuma	Mr. Azuma does not conflict with either the independence standards or attribute information as set by each financial instruments exchange on which Nippon Steel is listed (e.g. the Tokyo Stock Exchange), and does not have any special interests in Nippon Steel. Because Nippon Steel believes that there is no possibility of a conflict of interest between him and the general shareholders as stated above, Nippon Steel has designated him as an Independent Director.
Hiroshi Yoshikawa	Although Mr. Yoshikawa was engaged in the execution of business of The University of Tokyo until March 2016, to which Nippon Steel makes donations, he currently does not engage in the execution of business of the university. Furthermore, the university is not a specified associated service provider of Nippon Steel. Nippon Steel donates eighteen million (18,000,000) yen annually for a corporate sponsored research program in the School of Engineering at The University of Tokyo. He does not conflict with the independence standards as set by each financial instruments exchange on which Nippon Steel is listed (e.g. Tokyo Stock Exchange), and does not have any special interests with Nippon Steel. Because Nippon Steel believes that there is no possibility of a conflict of interest between him and the general shareholders as stated above, Nippon Steel has designated him as an Independent Director.

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#### The Basic Policy on the Composition of Persons to Control the Decision-Making over the Financial and Business Policies of the Company

Under the corporate philosophy that the Nippon Steel Group will pursue world-leading technologies and manufacturing capabilities, and contribute to society by providing excellent products and services, the Nippon Steel Group aims to improve its corporate value, and further the common interests of its shareholders, by enhancing its competitiveness and profitability through the planning and execution of management strategies.

Nippon Steel believes that in the event a third party proposes the acquisition of substantial shareholdings in Nippon Steel (a "Takeover Proposal"), the ultimate decision as to whether or not to accept the Takeover Proposal should be made by the then shareholders of Nippon Steel. On the other hand, Nippon Steel believes that such Takeover Proposals could include those with the potential to cause clear damage to the corporate value of Nippon Steel or the common interests of the shareholders of Nippon Steel or those with the potential to practically coerce shareholders

#### Significance of having listed subsidiaries

Nippon Steel is aiming at the Group's sound and sustainable growth, improvement of its corporate value in the medium- to long-term, and winning the trust of society under the "Corporate Philosophy of the Nippon Steel Group." In addition, Nippon Steel establishes and appropriately manages an internal control system suitable for the business of the Group to comply with applicable laws and regulations, and ensure integrity of financial reporting, as well as effectiveness and efficiency of business, and continues to improve such system. Under this basic policy, Nippon Steel and its Group companies share business strategies and manage the Group as a whole, while taking into account the business characteristics of each Group company. With respect to control of the Group companies, Nippon Steel sets forth basic rules in the Rules for Control of Group companies, and ensures their appropriate application, while each Group company builds and maintains its internal control system based on autonomous internal controls, and seeks to improve measures relating to internal controls based on support, guidance, and advice from Nippon Steel. In order to ensure the independence of listed subsidiaries, each listed subsidiary confirms that the terms and conditions of

Significance of having listed subsidiaries is stated in the Corporate Governance Report, p.14-16.

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into selling their shares of Nippon Steel.

Consequently, Nippon Steel pays close attention to the status of trading of shares of Nippon Steel and changes of its shareholders in order to prepare for such disadvantages to the shareholders of Nippon Steel in the event a Takeover Proposal is made by a third party, and, for the occasions where a Takeover Proposal is actually made, makes efforts to enable its shareholders to make an appropriate informed judgment based on sufficient information and with a reasonable time period to consider such proposal. If a Takeover Proposal is reasonably judged to damage the corporate value of Nippon Steel, which could result in harm to the common interests of shareholders of Nippon Steel, Nippon Steel aims to protect its corporate value and the common interests of its shareholders by taking prompt and appropriate measures to the extent permitted under the then applicable laws and regulations.

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.

Furthermore, in order to ensure independent decision-making at listed subsidiaries, each listed subsidiary has a system in place where one-third or more of Directors are Independent Outside Directors, or where one-third or more of attendees at the meetings of the Board of Directors are Independent Outside Directors and Independent Outside Audit & Supervisory Board Members, and the Company believes that the autonomous management has been achieved for each listed subsidiary in this manner.

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

#### 1 Policy on Strategic Shareholdings

Nippon Steel, from the standpoint of sustainable growth and improvement of its corporate value in the mid- to longterm, 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.

#### 2 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, 2020). 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 308 stocks were held as of March 31, 2020 (total value on the balance sheet was 237.9 billion yen).

#### **3** 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 shareholdings in **2** 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 midto long-term, Nippon Steel takes various measures to enhance constructive dialogues with the shareholders. The dialogues with the shareholders and investors are generally supervised by the Director responsible for General Administration and the Director responsible for Accounting and Finance, and the General Administration Division and the Accounting & Finance Division work in conjunction with other divisions of Nippon Steel to enhance the measures.

Specifically, for shareholders, in addition to striving to actively provide information to the shareholders and sincerely responding to their questions and comments in the General Meeting of Shareholders, Nippon Steel holds management business briefings and plant tours, regularly in various locations, and issues information booklets. On the other hand, for institutional investors, Nippon Steel not only explains its management strategies, business lineups, business performance and other related matters, by means of briefings on financial results in each quarter, briefings on the Mid-Term Management Plan, steelworks/

"Nippon Steel Corporate Disc		
https://www.nippor	Nippon Steel's website	
on corporate governance Report and Secur	Please see details	
LIRL https://www.nippor	Corporate Governance Report	
(available only in Japanese)	Securities Report	

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research laboratory tours, and other opportunities, but also holds small meetings for investors and various conferences, and visits to overseas institutional investors. Senior management and an officer in charge of IR attend these dialogues, as necessary.

Nowadays, Nippon Steel also puts efforts on dialogues on ESG. In December 2019, the Company held a briefing on sustainability, the first one as a Japanese steel company, made a presentation on the Company's environmental management, response to climate change issues, contribution to a circular economy, and other themes, and had an active Q&A session with about 100 attendees. Nippon Steel is also engaged in constructive dialogues in the "Climate Action 100+", an initiative led by institutional investors worldwide, who call on companies to take action on climate change.

Opinions and other comments received from the shareholders and investors through the above-listed initiatives 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.

osure and Dialogue Policy"

nsteel.com/en/ir/management/disclosure.html.

in Nippon Steel's Corporate Governance ities Report.

nsteel.com/en/ir/library/pdf/cg.pdf

steel.com/ir/pdf/nipponsteel\_jp\_br\_2019\_all.pdf

#### Executives

#### (As of June 24, 2020)



Representative Director and Chairman Kosei Shindo

Status of attendance at the meetings 100% the Board of Directors(FY2019)

April 1973	Joined Nippon Steel Corporation(NSC)
June 2005	Director (Member of the Board) and General Manager, Corporate Planning Division of NSC
June 2006	Director (under the Executive Management System) and General Manager, Corporate Planning Division of NSC
April 2007	Director (under the Executive Management System) and General Manager, 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
October 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 President Eiji Hashimoto

Status of attendance at the meetings **100%** 

pril 1979	Joined NSC
pril 2009	Director (under the Executive Management System), Director, Plate Division and Director, Structurals Division of NSC
pril 2011	Director (under the Executive Management System) of NSC
ctober 2012	Executive Officer of the Company
pril 2013	Managing Executive Officer of the Company
uly 2015	Managing Executive Officer, Vice Head of Global Business Development and Project Leader, Usiminas Project, Global Business Development Sector of the Company
pril 2016	Executive Vice President and Head of Global Business Development of the Company
une 2016	Representative Director, Executive Vice President and Head of Global Business Development of the Company
pril 2019	Representative Director and President of the Company



Sta of t

Representative Director and Executive Vice President Shinji Tanimoto

us	of attendance at t	he meetings	01.
he	Board of Directors	(FY2019)	74%

April 1982	Joined NSC
April 2009	Director
	General Superintendent, Sakai Works, Structurals Div.
April 2011	Director
	General Superintendent, Yawata Works
October 2012	Executive Officer
	Head of Works, Yawata Works
April 2013	Managing Executive Officer
	Head of Works, Yawata Works
April 2015	Managing Executive Officer and Head of Center, Plant
	Engineering and Facility Management Center of the Company
June 2015	Managing Director, Member of the Board and Head of Center,
	Plant Engineering and Facility Management Center of the
	Company
April 2017	Managing Director, Member of the Board of the Company
April 2018	Representative Director and Executive Vice President of the
	Company
December 2019	Representative Director, Executive Vice President and Deputy
	Project Leader, India Iron and Steel Project, Global Business
	Development Sector 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 Deputy Project Leader, India Iron and Steel Project, Global Business Development Sector; Cooperating with Executive Vice President A. Migita on Environment



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Representative Director and Executive Vice President Shinichi Nakamura

Status of attendance at the meetings for the Board of Directors (FY2019) 100%

(pint 1702	Somed HSe
April 2013	Executive Officer, Head of Unit, Construction Products Unit of the Company
April 2016	Managing Executive Officer, Head of Unit, Flat Products Unit, Project Leader, Shanghai-Baoshan Cold-rolled & Coated Sheet Products Project, Global Business Development Sector and Project Leader, India Continuous Annealing and Processing Line Project, Global Business Development Sector of the Company
une 2016	Managing Director, Member of the Board, Head of Unit, Flat Products Unit, Project Leader, Shanghai-Baoshan Cold- rolled & Coated Sheet Products Project, Global Business Development Sector and Project Leader, India Continuous Annealing and Processing Line Project, Global Business Development Sector of the Company
April 2018	Representative Director and Executive Vice President of the Company

Marketing Administration & Planning; Transportation & Logistics; Project Development; Machinery & Materials Procurement; Steel Products Units; Domestic Office and Branches; Cooperating with Executive Vice President K. Miyamoto on Overseas Offices (including Corporate Entities)



Representative Director and Executive Vice President Katsuhiro Miyamoto

Status of attendance at the meetings 100% the Board of Directors(FY2019)

April 1981	Joined NSC
April 2012	Director
	General Manager, Accounting & Finance Div.
October 2012	Executive Officer
	Head of Div., Accounting & Finance Div.
April 2015	Managing Executive Officer of the Company
April 2016	Managing Executive Officer, Vice Head of Global Business Development, Project Leader, CSVC Project, Global Business Development Sector and Project Leader, Wuhan Tin Mill Project, Global Business Development Sector of the Company
April 2018	Executive Vice President of the Company
June 2018	Representative Director and Executive Vice President of the Company
April 2019	Representative Director, Executive Vice President and Head of Global Business Development of the Company
December 2019	Representative Director, Executive Vice President, Head of Global Business Development, and Project Leader, India Iron and Steel Project, Global Business Development Sector of the Company

Head of Global Business Development; Project Leader, India Iron and Steel Project, Global Business Development Sector; Accounting & Finance; Raw Materials; Overseas Offices (including Corporate Entities)



April 1984	Joined NSC
April 2015	Executive Officer and Head of Division, Technical Administration & Planning Division of the Company
April 2018	Managing Executive Officer and Head of Works, Kimitsu Works of the Company
April 2019	Managing Executive Officer and Head of Works, 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

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Representative Director and Executive Vice President Akio Migita

Status of attendance at the meetings  $100\%^{*2}$  of the Board of Directors(FY2019)

April 1984	Joined NSC
April 2014	Executive Officer
	Head of Div., Flat Products Marketing Div., Flat Products Unit
April 2015	Executive Officer and Head of
	Division, Human Resources Division
	of the Company
April 2017	Managing Executive Officer and
	Head of Division, 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

Corporate Planning; Group Companies Planning; General Administration; Legal; Internal Control & Audit; Digital Innovation; Information & Communication Technology; Human Resources; Environment; Business Transformation & Standardization



Managing Director, Member of the Board Tadashi Imai

Status of attendance at the meetings \_\*3 of the Board of Directors(FY2019)

April 1988	Joined NSC
November 2014	General Manager and Head of Division, Production & Technical Control Division, Nagoya Works of the Company
April 2016	Executive Officer and Head of Works, Nagoya Works of the Company
April 2019	Managing Executive Officer of the Company
June 2020	Managing Director, Member of the Board of the Company

Corporate Planning; Technical Administration & Planning (including Standardization); Ironmaking Technology; Steelmaking Technology; Energy Technology; Rendering Assistance to Executive Vice President S. Nakamura on Steel Products Units; Rendering Assistance to Executive Vice President A. Migita on Digital Innovation; Rendering Assistance to Executive Vice President S. Onoyama on Corporate Planning for Research and Development; Cooperating with Managing Executive Officer T. Hirose on Transportation & Logistics Technology



Directors, Members of the Board Noriko Iki<sup>1</sup>

Status of attendan of the Board of Dire	100%	
Outside Director	Independent Di	rector

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
September 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
March 2018	Director of Japan Institute for Women's Empowerment & Diversity Management
June 2018	President of Japan Institute for Women's Empowerment & Diversity and Management
June 2018	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 by reason of 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, as well as her appropriate actions and remarks as an Outside Director of the Company since her appointment at the 94th General Meeting of Shareholders held on June 26, 2018.



Directors Members of the Board Masato Kitera<sup>1</sup>

of the Board of Dire	ectors(FY2019) -*3
Outside Director	Independent Director
Joined Ministry of For	reign Affairs of Japan
Director-General for A Affairs of Japan	African Affairs, Ministry of Foreig
Discretes Company Links	mational Connertion Duranu M

July 2008 January 2010

April 1976

January 2008

September 2012 November 2012 April 2016

prector-General, International Cooperation Bureau, Ministry of Foreign Affairs of Japan Deputy Minister, Ministry of Foreign Affairs of Japan Assistant Chief Cabinet Secretary Ambassador of Japan to the People's Republic of China Ambassador of Japan to the French Republic



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

Status of attendance at the meetings 100%\*2,4

April 1981 Joined Sumitomo Metal Industries, Ltd. April 2012 Managing Executive Officer

	General Manager of Personnel & Industrial Relations Dept.
October 2012	Executive Officer Head of Div., General Administration Div.
April 2015	Managing Executive Officer and Head of Division, General Administration Division of the Company
April 2016	Managing Executive Officer and Head of Office, Osaka Office
April 2019	Executive Officer and Advisor to the President of the Company
June 2019	Senior Audit & Supervisory Board Member
June 2020	Director, Member of the Board (Senior Audit & Supervisory Committee Member) (Full time)



July 2004

Directors, Members of the Board Tetsuro Tomita<sup>1</sup>



	Planning Headquarters of East Japan Railway Company
une 2008	Executive Vice President and Representative Director, and Director General of Life-Style Business Development Headquarters of East Japan Railway Company
une 2009	Executive Vice President and Representative Director, and

- Japan Railway Company President and Representative Director, and Director General of April 2012 Corporate Planning Headquarters of East Japan Railway Company
- June 2012 President and Representative Director of East Japan Railway Company
- April 2018 Chairman and Director of East Japan Railway Company
- June 2020 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 by reason of the deep insight and ample experience in corporate management.

December 2019 Retired from Ambassador of Japan to the French Republic June 2020 Outside Director of the Company

Material concurrent position > Outside Director, Marubeni Corporation

#### Reasons for the election as Outside Director

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



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

Status of attendance at the meetings \_\*3 of the Board of Directors(FY2019)

#### April 1985 Joined NSC

March 2014 Head of Division, Legal Division of the Company April 2016 Executive Officer and Head of Division, 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)



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

Status of attendance at the meetings \_\*3 of the Board of Directors(FY2019)

April 1982	Joined Nisshin Steel Co., Ltd.
April 2008	Executive Officer, General Manager, Finance Dept.
April 2010	Executive Officer, General Manager, Corporate Planning Dept.
April 2012	Managing Executive Officer, General Manager, Corporate Planning Dept.
June 2014	Director, Managing Executive Officer and Head of Division, Corporate Planning Division of Nisshin Steel Co., Ltd.
April 2015	Director and Managing Executive Officer of Nisshin Steel Co., L
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)



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

Jiro Makino\*1

#### Status of attendance at the meetings $100\%^{\star4}$ of the Board of Directors(FY2019) rector Independ

pril 1973	Joined Ministry of Finance
uly 2003	Director-General, Financial Bureau, Ministry of Finance
ctober 006	President, Policy Research Institute, Ministry of Finance and President, Account Center, Ministry of Finance
uly 2007	Commissioner, National Tax Agency
uly 2008 -	Retired from Commissioner, National Tax Agency
uly 2008	Vice Chairman, General Insurance Rating Organization of Japan (retired in November 2009)
lovember 009	Vice Chairman, The General Insurance Association of Japan
pril 2012	Vice Chairman, The General Insurance Association of Japan
une 2014	Audit & Supervisory Board Member (Outside Audit & Supervisory Board Member) of the Company
une 2020	Director, Member of the Board (Audit & Supervisory Committee Member)

#### Reasons for the election as Outside Director

Nippon Steel believes that Mr. Jiro Makino is well-qualified for the position by his 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)

Hiroshi Yoshikawa<sup>1</sup>

Status of attendance at the meetings 92%\*2,4 of the Board of Directors(FY2019) utside Director Inder

February 1993	The University of Tokyo	June 2016	University of Tokyo
April 1996	Professor of Graduate School of Economics, The University of Tokyo	April 2019	President of Rissho University
October 2009	Dean of Graduate School of Economics, The University of Tokyo	June 2019	Audit & Supervisory Board Member (Outside Audit & Supervisory Board Member) of the Company
October 2011	Professor of Graduate School of Economics, The University of Tokyo	June	Director, Member of the Board (Audit & Supervisory Committee
April 2016	Professor of Faculty of Economics, Rissho University	2020	Member)

#### Reasons for the election as Outside Director

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



Outputs an	d outcomes	Results a outlook	nd opport and st	sks, tunities, rategies	Corporate governance	Fina inforr and Ir inforr	ncial nation ivestor nation
		Director, M (Audit & Su <b>Hirosh</b>	lember of the upervisory Con	Board nmittee Me <b>1i*</b> 1	ember)		
		Status of at of the Boar	tendance at th d of Directors(F	e meetings Y2019)	100%*4		
April 1972	Prosecutor Tol	Outside Di	rector Inc	dependent D Superinte	Director	Γοκνο	
May 2001	Public Prosecu	tor's Office	June 2010	High Publ	ic Prosecutors Offic	ce	
101ay 2001	Rehabilitation Ministry of Jus	Bureau, tice	June 2010	the Supre Office	me Public Prosecu	utors	
January 2002	Deputy Vice-M Ministry of Jus	inister, tice	December 2010	Retired fr General, 1 Prosecuto	om Prosecutor- he Supreme Publi ors Office	с	
June 2004	Criminal Affair Ministry of Jus	al, s Bureau, tice	March 2011	Registere	d as Attorney-at-l	aw	
June 2006	Vice-Minister, Justice	Ministry of	June 2014	Audit & S Member ( Superviso	upervisory Board Outside Audit & ry Board Member)	) of	
July 2007	Superintending Prosecutor, Sa Public Prosecu	g oporo High tors Office	June 2020	Director, (Audit & S	Member of the Bo Supervisory Comm	ard ittee	
				Member)			
Material co	ncurrent posit	ion > Outsic Securi Outsic Outsic	le Audit & Sur ties Co. Ltd. le Director, M le Audit & Sur	oervisory B itsubishi El pervisory B	oard Member, Daw ectric Corporation oard Member, Japa	wa I an	
Reasons fo	or the election	Tobac as Outside	co Inc. Director				
Nippon St position b	eel believes tha y reason of his	t Mr. Hirosh deep insight	i Obayashi is v as a legal pro	vell-qualifi ofessional a	ed for the and ample		
experience	e as Prosecutor	General and	l other key pos	sitions.			
	2						
C		Director, M	ember of the	Board amittee Me	ember)		
	257	Seiichi	ro Azuma	1*1	mbery		
		Status of at	tendance at th	e meetings	100~*4		
		of the Board Outside Di	d of Directors(F rector Inc	Y2019) dependent [	virector		
December 1975	Joined Tohmat	su Awoki & (	Co. (current De	loitte Toucł	ne Tohmatsu LLC)		
July 1991	Partner of Toh	matsu & Co	. (current Delo	itte Touch	e Tohmatsu LLC)		
June 2007 Partner and Member of Management Council and General Manager, Kansai Block of Tohmatsu & Co. (current Deloitte Touche Tohmatsu LLC)							
June 2009	Partner and Me Kansai Block o	ember of Ma f Deloitte To	nagement Cou uche Tohmatsu	ncil and Ge I LLC	neral Manager,		
November         Partner and Chairman of Management Council of Deloitte Touche           2013         Tohmatsu LLC							
November 2015: Partner of Deloitte Touche Tohmatsu LLC							
June 2016	Retired from [	Deloitte Tou	che Tohmatsu Mombor (Out	LLC	e Supoprison		
Julie 2010	Board Membe	r) of the Cor	npany				
July 2016	Accountant Of	ic Accountar ffice	nt, Selichiro Az	zuma Certi	ned Public		
June 2020	Member)	ber of the B	oaru (Audit &	Supervisor	y committee		
Material co	ncurrent posit	ion ► Outsic Kansa	le Audit & Sup i Paint Co., Lto	ervisory B d.	oard Member,		
Reasons fo	or the election	as Outside	Director				
Nippon Sto by reason accountar	eel believes tha of his deep insi nt possessing de	t Mr. Seiichir ight and am eep familiari	o Azuma is we ple experience ty with corpor	ell-qualified as a certif ate accoun	for the position ied public ting.		

Financial

\*1: Outside Director as provided for in the Article 2-15 of the Companies Act \*2: Status of attendance at the 12 meetings of the Board of Directors held since his/her appointment. \*3: Assumed the post on June 24, 2020

\*4: Attendance of the meetings of the Board of Directors as an Audit & Supervisory Committee Member

### **11-Year Financial Performance**

						JGA	۱P				IFR	5		
	FY	2009	2010	2011	2012* <sup>6</sup>	2013	2014	2015	2016	2017		2017	2018	2019
Operating Results (Fiscal yea	ar) <millions of="" yen=""></millions>										Operating Results (Fiscal year) < Millions of	yen>		
Net sales	Nippon Steel*1 Sumitomo Metals	3,487,714 1,285,845	4,109,774 1,402,454	4,090,936 1,473,367	4,389,922 693,601	5,516,180	5,610,030	4,907,429	4,632,890	5,668,663	Revenue	5,712,965	6,177,947	5,921,525
Operating profit (loss)	Nippon Steel Sumitomo Metals	32,005 (928)	165,605 56,301	79,364 76,801	20,110 15,759	298,390 -	349,510	167,731	114,202 -	182,382		-	-	
Ordinary profit (loss)	Nippon Steel Sumitomo Metals	11,833 (36,634)	226,335 34,049	143,006 60,803	76,931 10,815	361,097	451,747	200,929	174,531 -	297,541	Business profit	288,700	336,941	(284,417)
Profit (loss) before income taxes	Nippon Steel Sumitomo Metals	11,242 (39,758)	185,377 (27,991)	120,053 (51,251)	(136,970) (134,831)	399,147 -	376,188	230,778	181,692	289,860	Profit before income tax	271,760	248,769	(423,572)
Profit (loss) attributable to owners of parent	Nippon Steel Sumitomo Metals	(11,529) (49,772)	93,199 (7,144)	58,471 (53,799)	(124,567) (133,849)	242,753	214,293	145,419	130,946	195,061 -	Profit for the year attributable to owners of parent	180,832	251,169	(431,513)
Capital expenditure*2	Nippon Steel Sumitomo Metals	329,356 136,643	287,236 109,934	281,748 115,797	355,873 N.A.	257,019	304,389	304,643	351,038	411,930	Capital expenditure	423,428	440,830	481,310
Depreciation and amortization* <sup>3</sup>	Nippon Steel Sumitomo Metals	284,092 120,853	291,587 126,267	280,940 122,937	288,770 49,757	331,801	320,046	308,276	304,751 -	340,719	Depreciation and amortization	366,565	408,616	417,339
Research and development costs	Nippon Steel Sumitomo Metals	46,824 22,845	46,663 22,783	48,175 22,842	60,071 N.A.	64,437	62,966	68,493	69,110 -	73,083	Research and development costs	74,071	72,043	77,691
Financial Position (End of fiscal year) <millions of="" yen=""></millions>										Financial Position (End of fiscal year) <mi< td=""><td>llions of yen&gt;</td><td></td><td></td></mi<>	llions of yen>			
Total assets	Nippon Steel Sumitomo Metals	5,002,378 2,403,670	5,000,860 2,440,761	4,924,711 2,386,158	7,089,498	7,082,288	7,157,929	6,425,043	7,261,923	7,592,413	Total assets	7,756,134	8,049,528	7,444,965
Shareholders' equity*4	Nippon Steel Sumitomo Metals	1,844,382	1,860,799 766 777	1,828,902	2,394,069	2,683,659	2,978,696	2,773,822	2,948,232	3,145,450	Total equity attributable to owners of parent	3,136,991	3,230,788	2,641,618
Total net assets*4	Nippon Steel	2,335,676	2,380,925	2,347,343	2,938,283	3,237,995	3,547,059	3,009,075	3,291,015	3,515,501	Total equity	3,524,896	3,607,367	2,996,631
Interest-bearing debt*5	Nippon Steel	1,383,794	1,337,851	1,334,512	2,543,061	2,296,326	1,976,591	2,008,263	2,104,842	2,068,996	Interest-bearing debt	2,157,755	2,369,231	2,488,741
	Sumitomo Metals	1,138,353	1,173,382	1,172,120	-	-		-	-	-				
Cash Flows (Fiscal year) <mill< th=""><th>ions of yen&gt;</th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th>Cash Flows (Fiscal year) <millions of="" yen=""></millions></th><th></th><th></th><th></th></mill<>	ions of yen>										Cash Flows (Fiscal year) <millions of="" yen=""></millions>			
Cash flows from operating activities	Nippon Steel Sumitomo Metals	437,668 67,002	369,500 202,340	237,414 88,065	313,317 N.A.	574,767	710,998	562,956	484,288	458,846	Cash flows from operating activities	485,539	452,341	494,330
Cash flows from investing activities	Nippon Steel Sumitomo Metals	(412,827) (172,933)	(325,781) (144,009)	(226,096) (120,110)	(327,336) N.A.	(196,856)	(263,667)	(242,204)	(343,738)	(353,419)	Cash flows from investing activities	(363,170)	(381,805)	(345,627)
Cash flows from financing activities	Nippon Steel Sumitomo Metals	(79,985) 87.843	(47,244)	(31,785) (32,714)	33,332 N.A.	(367,115)	(451,843)	(337,555)	(135,054)	(89,190)	Cash flows from financing activities	(104,969)	(42,900)	(14,582)
Amounts per Share of Com	1mon Stock*7,*8 <ven< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>Amounts per Share of Common Stock <ver< td=""><td>&gt;</td><td></td><td></td></ver<></td></ven<>										Amounts per Share of Common Stock <ver< td=""><td>&gt;</td><td></td><td></td></ver<>	>		
Profit (loss) attributable to owners of parent per share	Nippon Steel	(1.83)	14.81 (1 54)	9.29	(16.23)	26.67	23.48	158.71*8	147.96	221.00	Basic earnings per share	204.87	281.77	(468.74)
Cash dividends per share	Nippon Steel Sumitomo Metals	1.5 5.0	3.0 3.5	2.5 2.0	1.0	5.0	5.5	45.0*9	45	70	Cash dividends per share	70	80	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.

annual dividend for fiscal 2015 works out to be ¥45 per share. Figures in parentheses indicate negative figures.

first half (April 1 to September 30) of fiscal 2012.

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\*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

\*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

### **11-Year Financial Performance**

		JGAAP										
	FY	2009	2010	2011	2012*8	2013	2014	2015	2016	2017		
Financial Indices											Financial Indices	
Return on sales	Nippon Steel*1	0.3%	5.5%	3.5%	1.8%	6.5%	8.1%	4.1%	3.8%	5.2%	Determine and a	
((Ordinary profit / Net sales)x 100)	Sumitomo Metals	(2.8%)	2.4%	4.1%	-	-	-	-	-	-	Return on sales	
Return on equity	Nippon Steel	(0.7%)	5.0%	3.2%	(5.9%)	9.6%	7.6%	5.1%	4.6%	6.4%		
[average for the period]) x 100)	Sumitomo Metals	(5.9%)	(0.9%)	(7.3%)	-	-	-	-	-	-	Return on equity	
Shareholders' equity ratio	Nippon Steel	36.9%	37.2%	37.1%	33.8%	37.9%	41.6%	43.2%	40.6%	41.4%	Ratio of total equity a	
((Shareholders'equity / Total assets) x 100)	Sumitomo Metals	34.5%	31.4%	29.7%	-	-	-	-	-	-	owners of parent	
Number of shares issued as	Nippon Steel	6,806,980	6,806,980	6,806,980	9,503,214	9,503,214	9,503,214	950,321	950,321	950,321	Number of shares issu	
of end of period*2 <in thousands=""></in>	Sumitomo Metals	4,805,974	4,805,974	4,805,974	-	-	-	-	-	-	end of period	
Share price at end of period*	2 Nippon Steel	367.0	266.0	227.0	235.0	282.0	302.5	2,162.0	2,565.0	2,336.5		
<yen></yen>	Sumitomo Metals	283.0	186.0	167.0	-	-	-	-	-	-	Share price at end of j	
Net Sales by Industry Seg	ment* <sup>3</sup> <millions of="" td="" ye<=""><td>in&gt;</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>Segment revenue <milli< td=""></milli<></td></millions>	in>									Segment revenue <milli< td=""></milli<>	
Steelmaking and steel fa	brication	2,823,193	3,473,495	3,476,855	3,790,450	4,877,909	4,939,239	4,283,923	4,052,261	5,017,245	Steelmaking and stee	
Engineering and construct	ion	331,905	254,941	248,934	303,002	314,174	348,699	315,727	267,545	294,268	Engineering and const	
Urban development		80,073	86,556	80,419	-	-	-	-	-	-	-	
Chemicals		179,412	193,896	197,669	195,719	230,130	212,777	181,823	174,227	200,767	Chemicals	
New materials		58,799	60,888	54,245	42,211	37,241	36,449	36,280	34,519	37,050	-	
System solutions		152,234	159,708	161,582	171,980	179,856	206,032	218,941	232,512	244,200	System solutions	
Elimination of inter-segm	ent transactions	(137,904)	(119,711)	(128,769)	(113,442)	(123,132)	(133,168)	(129,267)	(128,175)	(124,868)	Elimination of inter-se transactions	
Segment Profit (Loss)*3 <m< td=""><td>1illions of yen&gt;</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>Segment profit <million< td=""></million<></td></m<>	1illions of yen>										Segment profit <million< td=""></million<>	
Steelmaking and steel fa	brication	(20,589)	181,968	98,846	41,522	321,287	401,987	160,088	138,017	245,708	Steelmaking and stee	
Engineering and construc	tion	31,655	14,883	12,775	18,189	17,702	18,758	12,163	6,838	9,110	Engineering and const	
Urban development		2,937	9,273	9,371	-	-	-	-	-	-	-	
Chemicals		10,431	13,244	13,598	9,778	10,057	6,898	1,093	4,518	15,480	Chemicals	
New materials		444	2,111	607	984	1,391	2,482	3,073	1,786	1,919	-	
System solutions		10,732	11,332	11,215	11,673	12,760	16,565	19,493	22,113	23,292	System solutions	
Elimination of inter-segm	ent transactions	(3,607)	(6,478)	(3,408)	(5,217)	(2,101)	5,053	5,017	1,256	2,030	Elimination of inter-seg	
Non-Financial Performanc	ce										Non-Financial Perform	
	Nippon Steel (Consolidated)	2,992	3,492	3,244	4,603	4,816	4,732	4,453	4,517	4,682	Crude steel production	
Crude steel production <ten of="" thousands="" tons=""></ten>	Nippon Steel (Non-consolidated)*4	2,750	3,246	3,020	4,355	4,567	4,496	4,217	4,262	4,067	Crude steel production consolidated)	
	Sumitomo Metals (Non-consolidated)*5	1,165	1,290	1,272	-	-	-	-	-	-		
Steel products shipments	Nippon Steel	2,709	3,135	2,909	4,097	4,202	4,188	3,962	3,978	3,779	Steel products shipme	
(Non-consolidated) <ten of="" thousands="" tons=""></ten>	Sumitomo Metals*6	1,089	1,172	1,124	-	-	-	-	-	-	(Non-consolidated) <ten td="" the<=""></ten>	
Average steel selling price	Nippon Steel	75.4	81.7	86.2	80.1	86.0	87.2	77.1	72.6	84.7	Average steel selling p	
(Non-consolidated) <thousands of="" per="" ton="" yen=""></thousands>	Sumitomo Metals*6	88.0	94.2	103.5	-	-	-	-	-	-	(Non-consolidated) <thousa< td=""></thousa<>	
Export ratio (Value basis,	Nippon Steel	38%	40%	39%	44%	46%	47%	45%	42%	41%	Export ratio Value basis as	
non-consolidated)* <sup>7</sup> <%>	Sumitomo Metals*6	43%	42%	41%	-	-	-	-	-	-		
Number of employees	Nippon Steel	52,205	59,183	60,508	83,187	84,361	84,447	84,837	92,309	93,557	Number of employees	
(Consolidated)	Sumitomo Metals	23,674	22,597	23,007	-	-	-	-	-	-	interior or emptoyees	

\*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

 A Doctober 1, 2015, NSSMC performed a 1-for-10 share consolidation.
 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.

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IFRS			
	2017	2018	2019
S			
5	5.1%	5.5%	(4.8%)
ty	6.0%	7.9%	(14.7%)
quity attributable to nt	40.4%	40.1%	35.5%
res issued as of	950,321	950,321	950,321
end of period	2,336.5	1,954.0	925.4
Je <millions of="" yen=""></millions>			
nd steel fabrication	5,017,245	5,454,536	5,257,344
d construction	294,268	356,707	340,404
	-	-	-
	237,817	247,067	215,733
	-	-	-
ns	244,200	267,503	273,294
inter-segment	(80,565)	(147,867)	(165,251)
<millions of="" yen=""></millions>			
nd steel fabrication	245,708	274,672	(325,341)
d construction	9.110	9.474	10.717
	-	-	-
	17,399	25,095	18,477
		-	-
ns	23,292	26,576	26,162
ter-segment transactions	(6,809)	1,122	(269,984)
erformance			
duction(Consolidated)	4,702	4,784	4,705
duction (Non-	4,067	4,100	3,954
shipments <ten of="" thousands="" tons=""></ten>	3,779	3,797	3,631
elling price <thousands of="" per="" ton="" yen=""></thousands>	84.7	89.9	87.3
e basis, non-consolidated)* <sup>7</sup> <%>	41%	40%	40%
oloyees (Consolidated)	97,996	105,796	106,599

### Consolidated Statements of Financial Position

		(Millions of Yen)
	March 31, 2019	March 31, 2020
ASSETS		
Current assets		
Cash and cash equivalents	163,176	289,459
Trade and other receivables	968,333	826,596
Inventories	1,567,116	1,532,181
Other financial assets	16,915	17,340
Other current assets	143,669	119,396
Total current assets	2,859,211	2,784,974
Non-current assets		
Property, plant and equipment	3,246,669	2,812,542
Right-of-use assets	-	93,663
Goodwill	52,803	45,486
Intangible assets	106,131	96,677
Investments accounted for using the equity method	793,146	878,271
Other financial assets	812,668	481,117
Defined benefit assets	82,247	58,643
Deferred tax assets	88,357	186,457
Other non-current assets	8,292	7,132
Total non-current assets	5,190,316	4,659,990

	March 21, 2010	(Millions of Yen)
	Marcii 31, 2019	Marcii 31, 2020
LIABILITIES		
Current liabilities		
Trade and other payables	1,611,403	1,449,801
Bonds, borrowings and leas liabilities	se 515,355	376,900
Other financial liabilities	1,017	2,189
Income taxes payable	38,719	27,323
Other current liabilities	34,042	38,978
Total current liabilities	2,200,538	1,895,192
Non-current liabilities		
Bonds, borrowings and leas liabilities	se 1,853,876	2,111,841
Other financial liabilities	6,501	4,621
Defined benefit liabilities	186,755	236,758
Deferred tax liabilities	28,253	27,765
Other non-current liabilitie	es 166,235	172,154
Total non-current liabilitie	<b>es</b> 2,241,622	2,553,141
Total liabilities	4,442,160	4,448,333
EQUITY		
Common stock	419,524	419,524
Capital surplus	393,917	394,404
Retained earnings	2,300,175	1,870,948
Treasury stock	(58,831)	(58,505)
Other components of equit	ty 176,000	15,245
Total equity attributable t owners of the parent	<b>o</b> 3,230,788	2,641,618
Non-controlling interests	376,579	355,013
Total equity	3,607,367	2,996,631

#### Total assets

7,444,965

8,049,528

Total liabilities and equity

8,049,528 7,444,965

## Consolidated Statements of Profit or Loss

			(Mill	lions of Yen)
	Fiscal 201	8	Fiscal 2019	9
Revenue	6,177,947	100.0%	5,921,525	100.0%
Cost of sales	(5,391,493)		(5,312,367)	
Gross profit	786,453	12.7%	609,158	10.3%
Selling, general and administrative expenses	(568,409)		(571,781)	
Share of profit in investments accounted for using the equity method	86,411		38,395	
Other operating income	102,606		104,844	
Other operating expenses	(70,120)		(465,035)	
Business profit (loss)	336,941	5.5%	(284,417)	(4.8%)
Losses on natural disaster	(22,349)		-	
Losses on reorganization	(49,480)		(121,702)	
Operating profit (loss)	265,111		(406,119)	
Finance income	6,104		7,706	
Finance costs	(22,445)		(25,159)	
Profit (loss) before income taxes	248,769	4.0%	(423,572)	(7.2%)
Income tax expense	8,809		(2,548)	
Profit (loss) for the year	257,579	4.2%	(426,120)	(7.2%)
Profit (loss) for the year attributable to				
Owners of the parent	251,169	4.1%	(431,513)	(7.3%)
Non-controlling interests	6,409		5,393	
Earnings (loss) per share				
Basic earnings (loss) per share (Yen)	281.77		(468.74)	

## Consolidated Statements of Comprehensive Income or Loss

		(Millions of Yen)
—	Fiscal 2018	Fiscal 2019
Profit (loss) for the year	257,579	(426,120)
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	(104,557)	(83,305)
Remeasurements of defined benefit plans	(3,531)	(1,449)
Share of other comprehensive income of investments accounted for using the equity method	(2,953)	(6,785)
Subtotal	(111,042)	(91,540)
Items that might be reclassified to profit or loss		
Changes in fair value of cash flow hedges	1,522	(1,821)
Foreign exchange differences on translation of foreign operations	(41,256)	(14,812)
Share of other comprehensive income of investments accounted for using the equity method	(21,687)	(9,346)
Subtotal	(61,421)	(25,981)
Total other comprehensive income, net of tax	(172,464)	(117,521)
Total comprehensive income for the year	85,114	(543,642)
Comprehensive income for the year attributable to:		
Owners of the parent	84,126	(543,881)
Non-controlling interests	988	238

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## Consolidated Statements of Changes in Equity

						(Millions of Yen)
		Equ	ity attributable to	owners of the pa	arent	
					Other compor	nents of equity
Fiscal 2018	Common stock	Capital surplus	Retained earnings	Treasury stock	Changes in fair value of financial assets measured at fair value through other comprehensive income	Remeasurements of defined benefit plans
Balance as of March 31, 2018	419,524	386,867	2,141,658	(132,162)	334,701	-
Changes of the year						
Comprehensive income						
Profit (loss) for the year			251,169			
Other comprehensive income					(104,254)	(4,369)
Total comprehensive income	-	-	251,169	-	(104,254)	(4,369)
Transactions with owners and others						
Cash dividends			(70,710)			
Purchases of treasury stock				(82)		
Disposals of treasury stock		(1,427)		73,656		
Changes in ownership interests in subsidiaries		8,477				
Transfer from other components of equity to retained earnings			(21,942)		17,573	4,369
Changes in scope of consolidation				(242)		
Subtotal	-	7,050	(92,652)	73,331	17,573	4,369
Balance as of March 31, 2019	419,524	393,917	2,300,175	(58,831)	248,020	

						(Millions of Yen)
	Equ	ity attributable to ov	wners of the pare	ent		
	Othe	r components of equi	ity			
Fiscal 2018	Changes in fair value of cash flow hedges	Foreign exchange differences on translation of foreign operations	Total	Total equity attributable to owners of the parent	Non-controlling interests	Total equity
Balance as of March 31, 2018	(6,600)	(6,998)	321,101	3,136,991	387,905	3,524,896
Changes of the year						
Comprehensive income						
Profit (loss) for the year			-	251,169	6,409	257,579
Other comprehensive income	2,166	(60,586)	(167,043)	(167,043)	(5,420)	(172,464)
Total comprehensive income	2,166	(60,586)	(167,043)	84,126	988	85,114
Transactions with owners and others	S					
Cash dividends			-	(70,710)	(7,604)	(78,315)
Purchases of treasury stock			-	(82)		(82)
Disposals of treasury stock			-	72,228		72,228
Changes in ownership interests in subsidiaries			-	8,477	(94,092)	(85,614)
Transfer from other components of equity to retained earnings			21,942	-		-
Changes in scope of consolidation			-	(242)	89,383	89,140
Subtotal	-	-	21,942	9,670	(12,314)	(2,643)
Balance as of March 31, 2019	(4,433)	(67,585)	176,000	3,230,788	376,579	3,607,367

		Equi	ty attributable to	owners of the pa	rent	
					Other compor	nents of equity
Fiscal 2019	Common stock	Capital surplus	Retained earnings	Treasury stock	Changes in fair value of financial assets measured at fair value through other comprehensive income	Remeasurements of defined benefit plans
Balance as of March 31, 2019	419,524	393,917	2,300,175	(58,831)	248,020	-
Changes of the year						
Comprehensive income						
Profit (loss) for the year			(431,513)			
Other comprehensive income					(85,278)	(2,429)
Total comprehensive income	-	-	(431,513)	-	(85,278)	(2,429)
Transactions with owners and others						
Cash dividends			(46,101)			
Purchases of treasury stock				(49)		
Disposals of treasury stock		(104)		625		
Changes in ownership interests in subsidiaries		591				
Transfer from other components of equity to retained earnings			48,387		(50,817)	2,429
Changes in scope of consolidation				(250)		
Subtotal	-	486	2,286	325	(50,817)	2,429
Balance as of March 31, 2020	419,524	394,404	1.870.948	(58,505)	111.924	-
	Eq	uity attributable to c	owners of the pare	ent	_	
	Uthe	Foreign exchange	ulty		Non controlling	
Fiscal 2019	Changes in fair value of cash flow hedges	differences on translation of foreign operations	Total	attributable to owners of the parent	interests	Total equity
Balance as of March 31, 2019	(4,433)	(67,585)	176,000	3,230,788	376,579	3,607,367
Changes of the year						
Comprehensive income						
Profit (loss) for the year			-	(431,513)	5,393	(426,120)
Other comprehensive income	(387)	(24,271)	(112,367)	(112,367)	(5,154)	(117,521)
Total comprehensive income	(387)	(24,271)	(112,367)	(543,881)	238	(543,642)
Transactions with owners and others						
Cash dividends			-	(46,101)	(8,045)	(54,146)
Purchases of treasury stock			-	(49)		(49)
Disposals of treasury stock			-	520		520
Changes in ownership interests in subsidiaries			-	591	(942)	(351)
Transfer from other components of equity to retained earnings			(48,387)	-		-
Changes in scope of consolidation			-	(250)	(12,817)	(13,067)
Subtotal	-	-	(48,387)	(45,288)	(21,804)	(67,093)
Balance as of March 31, 2020	(4,821)	(91,857)	15,245	2,641,618	355,013	2,996,631

		Equi	ty attributable to	owners of the pa	rent	
					Other compor	ents of equity
Fiscal 2019	Common stock	Capital surplus	Retained earnings	Treasury stock	Changes in fair value of financial assets measured at fair value through other comprehensive income	Remeasurements of defined benefit plans
Balance as of March 31, 2019	419,524	393,917	2,300,175	(58,831)	248,020	-
Changes of the year						
Comprehensive income						
Profit (loss) for the year			(431,513)			
Other comprehensive income					(85,278)	(2,429)
Total comprehensive income	-		(431,513)	-	(85,278)	(2,429)
Transactions with owners and others						
Cash dividends			(46,101)			
Purchases of treasury stock				(49)		
Disposals of treasury stock		(104)		625		
Changes in ownership		(104)		020		
interests in subsidiaries		591				
Transfer from other components of equity to retained earnings			48,387		(50,817)	2,429
Changes in scope of consolidation				(250)		
Subtotal	-	486	2,286	325	(50,817)	2,429
Balance as of March 31, 2020	419.524	394.404	1.870.948	(58,505)	111.924	
	Equ	uity attributable to o	owners of the pare	ent	_	
	Othe	er components of equ	uity			
Fiscal 2019	Changes in fair value of cash flow hedges	Foreign exchange differences on translation of foreign operations	Total	Total equity attributable to owners of the parent	Non-controlling interests	Total equity
Balance as of March 31, 2019	(4,433)	(67,585)	176,000	3,230,788	376,579	3,607,367
Changes of the year						
Comprehensive income						
Profit (loss) for the year			-	(431,513)	5,393	(426,120)
Other comprehensive income	(387)	(24,271)	(112,367)	(112,367)	(5,154)	(117,521)
Total comprehensive income	(387)	(24,271)	(112,367)	(543,881)	238	(543,642)
Transactions with owners and others						
Cash dividends				(46,101)	(8.045)	(54,146)
Purchases of treasury stock			-	(49)		(49)
Disposals of treasury stock				520		520
Changes in ownership			-	591	(942)	(351)
Transfer from other components of equity to retained earnings			(48,387)	-		-
Changes in scope of consolidation			-	(250)	(12,817)	(13,067)
Subtotal	-	-	(48,387)	(45,288)	(21,804)	(67,093)
	(4.004)	(01 057)	15 245	2 641 618	355 013	2,996,631

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- -

(Millions of Yen)

## Consolidated Statements of Cash-Flows

-		(Millions of Yen)
	Fiscal 2018	Fiscal 2019
Cash flows from operating activities		
Profit (loss) before income taxes	248,769	(423,572)
Depreciation and amortization	408,616	417,339
Impairment losses	-	333,968
Finance income	(6,104)	(7,706)
Finance costs	22,445	25,159
Share of profit in investments accounted for using the equity method	(86,411)	(38,395)
Gain on sales of property, plant and equipment and intangible assets	(5,801)	(6,105)
Losses from reorganization	49,480	121,702
(Increase) decrease in trade and other receivables	(114,662)	157,635
(Increase) decrease in inventories	(129,483)	13,864
Increase (decrease) in trade and other payables	81,058	(152,856)
Other, net	21,640	98,809
Subtotal	489,547	539,842
Interest received	5,796	7,887
Dividends received	57,088	61,024
Interest paid	(19,278)	(21,913)
Income taxes paid	(80,811)	(92,510)
Net cash flows provided by operating activities	452,341	494,330
Cash flows from investing activities		
Purchase of property, plant and equipment and intangible assets	(438,758)	(460,555)
Proceeds from sale of property, plant and equipment and intangible assets	12,841	13,283
Purchases of investment securities	(8,362)	(1,793)
Proceeds from sales of investment securities	87,693	191,924
Purchases of investments in associates	(2,787)	(112,302)
Proceeds from sale of investments in associates	5,348	12,404
Purchases of shares of subsidiaries resulting in change in scope of consolidation	(35,658)	-
Loans to associates and others	(11,870)	(225,850)
Collection of loans from associates and others	3,948	238,418
Other, net	5,798	(1,155)
Net cash flows used in investing activities	(381,805)	(345,627)
Cash flows from financing activities		
Increase (decrease) in short-term borrowings, net	67,401	(89,452)
Proceeds from long-term borrowings	285,857	46,020
Repayments of long-term borrowings	(192,799)	(211,628)
Proceeds from issuance of bonds	60,000	377,550
Redemption of bonds	(85,700)	(60,000)
Purchases of treasury stock	(55)	(43)
Cash dividends paid	(70,710)	(46,101)
Dividends paid to non-controlling interests	(7,604)	(8,045)
Proceeds from changes in ownership interests in subsidiaries that do not result in change in scope of consolidation	-	1,910
Other, net	(99,289)	(24,791)
Net cash flows used in financing activities	(42,900)	(14,582)
Effect of exchange rate changes on cash and cash equivalents	(7,328)	(7,838)
Net increase in cash and cash equivalents	20,306	126,283
Cash and cash equivalents at beginning of the year	142,869	163,176
Cash and cash equivalents at end of the year	163,176	289,459

### Segment Infomation

		Reportab	le segment				
(Year ended March 31, 2019)	Steelmaking and Steel Fabrication	Engineering and Construction	Chemicals and Materials*1	System Solutions	Subtotal	Adjustments*2	<sup>3</sup> Consolidated
Revenue							
Revenue from external customers	5,408,633	321,346	243,014	204,952	6,177,947	-	6,177,947
Inter-segment revenue or transfers	45,902	35,360	4,052	62,550	147,867	(147,867)	-
Total	5,454,536	356,707	247,067	267,503	6,325,814	(147,867)	6,177,947
Segment profit (loss)	274,672	9,474	25,095	26,576	335,818	1,122	336,941
Other items							
Depreciation and amortization	398,702	2,605	6,644	4,872	412,825	(4,208)	408,616
Share of profit in investments accounted for using the equity method	76,337	801	1,339	(5)	78,473	7,938	86,411
Segment assets	7,404,841	289,083	194,622	231,994	8,120,542	(71,013)	8,049,528
Other items							
Investments accounted for using the equity method	672,853	6,313	23,629	309	703,105	90,041	793,146
Capital expenditure	431,775	3,021	8,855	2,542	446,194	(5,363)	440,830
Segment liabilities (Interest- bearing debt)	2,365,587	5,937	7,075	2,631	2,381,231	(12,000)	2,369,231

\*1: The Group changed its segments from the year ended March 31, 2019. The Group Integrated Chemicals segment and New Materials segment to form Chemicals and Materials segment upon the establishment of Nippon Steel Chemical & Material Co., Ltd. by a merger of Nippon Steel & Sumikin Chemical Co., Ltd. and Nippon Steel & Sumikin Materials Co., Ltd. in October 2018. \*2: The adjustments of support sector a summary and the sector and the sector adjustments of support sector a summary sector a support sector sector a support sector sector sector a summary sector sect

\*3: The adjustments of segment liabilities include the elimination of inter-segment borrowings.

					(	Millions of Yen)
Reportable segment						
Steelmaking and Steel Fabrication	Engineering and Construction	Chemicals and Materials	System Solutions	Subtotal	Adjustments*1	<sup>2</sup> Consolidated
5,207,033	296,443	210,338	207,709	5,921,525	-	5,921,525
50,310	43,960	5,395	65,584	165,251	(165,251)	-
5,257,344	340,404	215,733	273,294	6,086,777	(165,251)	5,921,525
(325,341)	10,717	18,477	26,162	(269,984)	(14,433)	(284,417)
403,127	3,722	8,403	6,664	421,918	(4,578)	417,339
31,586	(1,615)	1,240	29	31,240	7,154	38,395
6,785,775	308,372	196,280	248,778	7,539,206	(94,240)	7,444,965
752,893	4,385	23,114	338	780,732	97,538	878,271
451,989	2,749	11,641	7,365	473,746	7,564	481,310
2,471,822	6,500	6,661	15,757	2,500,741	(12,000)	2,488,741
	Steelmaking and Steel Fabrication 5,207,033 50,310 5,257,344 (325,341) 403,127 31,586 6,785,775 6,785,775 752,893 451,989 2,471,822	Reportable           Steelmaking and Steel Fabrication         Engineering and Construction           5,207,033         296,443           50,310         43,960           5,257,344         340,404           (325,341)         10,717           403,127         3,722           31,586         (1,615)           6,785,775         308,372           752,893         4,385           451,989         2,749           2,471,822         6,500	Reportable segment           Steelmaking and Steel Fabrication         Engineering and Construction         Chemicals and Materials           5,207,033         296,443         210,338           50,310         43,960         5,395           5,257,344         340,404         215,733           (325,341)         10,717         18,477           403,127         3,722         8,403           31,586         (1,615)         1,240           6,785,775         308,372         196,280           752,893         4,385         23,114           451,989         2,749         11,641           2,471,822         6,500         6,661	Reportable segment           Steelmaking and Steel Fabrication         Engineering and Construction         Chemicals and Materials         System Solutions           5,207,033         296,443         210,338         207,709           50,310         43,960         5,395         65,584           5,257,344         340,404         215,733         273,294           (325,341)         10,717         18,477         26,162           403,127         3,722         8,403         6,664           31,586         (1,615)         1,240         29           6,785,775         308,372         196,280         248,778           752,893         4,385         23,114         338           451,989         2,749         11,641         7,365           2,471,822         6,500         6,661         15,757	Reportable segment           Steelmaking and Steel Fabrication         Engineering and Construction         Chemicals and Materials         System Solutions         Subtotal           5,207,033         296,443         210,338         207,709         5,921,525           50,310         43,960         5,395         65,584         165,251           5,257,344         340,404         215,733         273,294         6,086,777           (325,341)         10,717         18,477         26,162         (269,984)           403,127         3,722         8,403         6,664         421,918           31,586         (1,615)         1,240         29         31,240           6,785,775         308,372         196,280         248,778         7,539,206           752,893         4,385         23,114         338         780,732           451,989         2,749         11,641         7,365         473,746           2,471,822         6,500         6,661         15,757         2,500,741	(1           Reportable segment           Steelmaking Fabrication         Engineering and Steel Fabrication         Chemicals Construction         System and Materials         System Solutions         Subtotal         Adjustments*1           5,207,033         296,443         210,338         207,709         5,921,525         -           50,310         43,960         5,395         65,584         165,251         (165,251)           5,257,344         340,404         215,733         273,294         6,086,777         (165,251)           (325,341)         10,717         18,477         26,162         (269,984)         (14,433)           403,127         3,722         8,403         6,664         421,918         (4,578)           31,586         (1,615)         1,240         29         31,240         7,154           6,785,775         308,372         196,280         248,778         7,539,206         (94,240)           752,893         4,385         23,114         338         780,732         97,538           451,989         2,749         11,641         7,365         473,746         7,564           2,471,822         6,500         6,661         15,757         2,500,741         (12,

Notes: \*1. The adjustments of segment profit of (14,433) million yen include investment return of 7,151 million yen from the equity method associate Nippon Steel Kowa Real Estate Co., Ltd., and elimination of inter-segment revenue or transfers of (21,585) million yen. \*2. The adjustments of segment liabilities include the elimination of inter-segment borrowings.

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### Total Shareholder Return, Stock Price and Market Cap, and Strategic Shareholdings

	FY	2015	2016	2017	2018	2019
Total shareholder return (TSR) (%)		73.0	87.8	82.5	72.5	38.9
(Comparative indicator: Dividend-included TOPIX; %)		(89.2)	(102.3)	(118.5)	(112.5)	(101.8)
Highest share price (¥)		350.5	2,912.0	3,132.0	2,527.0	2,081.0
(After the 1-for-10 share consolidation on October 1, 2015; ¥)		(2,608.0)				
Lowest share price (¥)		225.3	1,787.5	2,228.0	1,794.0	857.0
(After the 1-for-10 share consolidation on October 1, 2015; ¥)		(1,773.5)				
Market cap (fiscal year end; ¥ bn)		2,054.5	2,437.5	2,220.4	1,856.9	879.4
Strategic shareholding : Number of issues recorded amount		408	372	361	345	308
Amount reported on the balance sheet (¥ bn)		441.8	603.4	635.9	464.8	237.8
Nikkei Stock Average (fiscal year end; ¥)		16,758.67	18,909.26	21,454.30	21,205.81	18,917.01

\*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 To Disclosure of Corporate Affairs. TSR = (Stock price at end of each fi scal year + Cumulative per-share dividends paid since FY2015)/ Price at the end of FY2014

\*2: TOPIX tracks all domestic companies listed in the First Section of the Tokyo Stock Exchange

\*3: Nippon Steel performed a 1-for-10 share consolidation on October 1, 2015. The share prices in FY2015 indicate the year's high and low before the share consolidation. The year's high and low after the share consolidation are in parentheses.

#### Investor Information (As of March 31, 2020)

#### Head Office

2-6-1, Marunouchi, Chiyoda-ku, Tokyo 100-8071, Japan Phone: +81-3-6867-4111 URL: https://www.nipponsteel.com/en/

#### Inception April 1, 1950

#### Common Stock ¥419,524 million

Stock Code 5401

Common Shares (Issued) 950,321,402 shares

Common Shares (Authorized) 2.000.000.000 shares

Number of Shareholders 439,491

#### Listings Tokyo Stock Exchange Nagoya Stock Exchange

Fukuoka Stock Exchange Sapporo Securities Exchange

#### ADR Information

Trading market: OTC (Over-the-counter) ADR ratio: 1 ADR: 1 share of common stock Ticker symbol: NPSCY OUSIP number: 65461T101 Depositary bank: JPMorgan Chase Bank, N.A. Contact for inquiries regarding our ADR program: JPMorgan Chase Bank N.A. P.O. Box 64504 St. Paul, MN 55164-0504, U.S.A. Phone: +1-800-990-1135 (Toll-free within the U.S.A.) +1-651-453-2128 (Outside the U.S.A.) Website: https://www.adr.com/contact/jpmorgan

#### **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)

Number of Shares per Trading Unit 100 shares

#### Share Ownership by Category

Ratio of shares held to the total number of common shares (issued)



Overseas investors	32.0%
Financial institutions	31.8%
Individuals and others in Japan	20.8%
Other companies	10.7%
Securities companies	1.7%
Treasury stock	3.0%

#### 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.

#### **Integrated Report** This report conveys overall business and management information to investors.

https://www.nipponsteel.com/en/

#### https://www.nipponsteel. com/en/ir/ library/ annual\_report.html



#### Principal Shareholders

Name	Shares owned (Thousands)	Shareholding ratio (%)*
The Master Trust Bank of Japan, Ltd. (Trust Account)	41,192	4.5
Japan Trustee Services Bank, Ltd. (Trust Account)	30,070	3.3
J.P. MORGAN BANK LUXEMBOURG S.A. 1300000	27,286	3.0
Nippon Life Insurance Company	24,532	2.7
Japan Trustee Services Bank, Ltd. (Trust Account 9)	18,808	2.0
Japan Trustee Services Bank, Ltd. (Trust Account 5)	18,053	2.0
JP MORGAN CHASE BANK 385151	14,330	1.6
Sumitomo Corporation	14,209	1.5
Meiji Yasuda Life Insurance Company	14,064	1.5
STATE STREET BANK WEST CLIENT - TREATY 505234	12,275	1.3

\* The shareholding ratio is calculated after treasury stock owned by Nippon Steel Corporation is excluded from the number of common shares (issued)

Integrated Report 2020

#### Disclaimer regarding forward looking statements

This integrated report is not disclosure document statutory required by the Act on Financial Instruments and Exchange and other laws and does not guarantee accuracy and completeness of the information. This report contains statements that constitute forward looking statements including expectations based on the assumptions, projections, and plans as of the published date of this report. It should be noted that actual business results and other matters could differ materially from the details contained in this report. This report is not prepared for the purpose of providing the basis for an investment decision. The Company is not responsible for any damages or loss incurred due to the information available on this report.

#### Sustainability Report

This report describes Nippon Steel's Environmental, Social, and Governance initiatives.

#### https://www. nipponsteel.com/en/csr/



#### Various reports for investors

- Basic Facts About Nippon Steel
- Financial Results Summary
- Corporate Governance Report
- Documents related to the General Meeting of Shareholders, etc.