



Basic Facts About Nippon Steel & Sumitomo Metal

2018

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NIPPON STEEL & SUMITOMO METAL CORPORATION

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- Figures are for NSSMC (nonconsolidated), unless otherwise stated.
- The figures indicating sales and other financial data, numbers of shares outstanding, and orders received are stated by discarding fractional amounts less than the nearest number, while all other figures are stated by rounding to the nearest number. Accordingly, total or subtotal amounts may not always equal the sum of the relevant figures.
- Each data is as of March 31, 2018, unless otherwise specified.
- Tonnage figures are in metric tons, unless otherwise specified.
- : Nil; ...: Unavailable or Undecided
- This publication includes forecasts and projections that are based on the assumptions and beliefs of NSSMC's management in light of the information available to it as of the date on which the information is first distributed, and actual results may differ from such forecasts and projections.

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■ Group's Guiding Principles · Employee Action Guidelines

Corporate Philosophy

Our Values

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

Management Principles

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

Employee Action Guidelines

What we strive for:

Creativity, Innovation and Growth

We constantly seek self-improvement, pursue ambitious goals with enthusiasm, and continuously challenge ourselves to do better.

What we value most:

Self-empowerment, Workplace and Essentiality

We observe rules, keep our promises, and pierce to the heart of matters by actively investigating the facts.

What we encourage:

Dialogue, Collaboration and Sharing of Knowledge

We build mutual trust through dialogue and collaboration, and seek to pass on our spirit and skills to the next generation.

We vow to be guided by these principles, and act fairly and equitably throughout the world.

Overview

Outline

Company Name NIPPON STEEL & SUMITOMO METAL CORPORATION

Head Office 2-6-1 Marunouchi, Chiyoda-ku, Tokyo 100-8071, Japan

Incorporated October 1, 2012 (Business integration)

Common Stock ¥419,524million

Fiscal Year End March 31

Stock Listings Tokyo, Nagoya, Fukuoka, Sapporo

Symbol Mark and Logotype The triangle in the logo represents a blast furnace and the people who create steel. It reflects the fact that steel, indispensable for civilization, brightens the world. The center point can be viewed as a peak, which represents the best steelmaker. It can be also viewed as the destination of a road, which represents the unlimited future of steel as a material. The blue color represents leading technology and reliability.



**NIPPON STEEL &
SUMITOMO METAL**

Scope of Business

Business Segment	Main Products	
Steelmaking and Steel Fabrication	Bars and shapes	Billets, rails, sheet piles, H-beams, other shapes bars, bars, bars-in-coils, wire rods, special wire rods
	Flat-rolled products	Heavy plates, medium plates, hot-rolled sheets, cold-rolled sheets, tinplates, tin-free steel, hot-dipped galvanized sheets, other metallic coated sheets, pre-coated sheets, cold-rolled electrical sheets
	Pipes and tubes	Seamless, butt-welded, electric resistance-welded, electric-arc welded, cold-drawn, and coated pipes and tubes
	Railway/automotive/machinery parts	Parts for railway vehicles, die-forged products, forged aluminum wheels, retarders, ring-rolled products, forged steel products
	Specialty steel	Stainless steel, machine structural carbon steel, structural alloy steel, spring steel, bearing steel, heat-resistant steel, free-cutting steel, piano wire rods, high tensile strength steel
	Secondary steel products	Steel and synthetic segments, NS-BOX, metro deck, PANZERMAST, vibration-damping sheets and plates, structural steel sheet members, columns, welding materials, drums, bolts/nuts/washers, wire products, OCTG accessories, building and civil engineering materials
	Pig iron, steel ingots and others	Steelmaking pig iron, foundry pig iron, steel ingots, iron and steel slag products, cement, foundry coke
	Businesses incidental to Steelmaking and Steel Fabrication	Design/maintenance/installation of machines/electrical equipment/measurement apparatuses, marine transport, port/harbor transport, land transport, loading/unloading, warehousing, packaging, material testing/analysis, measurement of working environments, surveys on technical information, operation and management of facilities, security services, services related to payment of raw materials, iron-and steelmaking plant construction engineering, operating assistance, steelmaking know-how provision, rolls
Others	Rolled titanium products, power supply, real estate, services and others	
Engineering and Construction	Iron and steelmaking plants, industrial machinery and equipment, industrial furnaces, resources recycling and environment restoration solutions, environmental plants, waterworks, energy facilities and plants, chemical plants, storage tanks, on-land and offshore pipelines laying works, energy-related solutions, offshore structure fabrication/construction, civil engineering work, pipe piling work, building construction, steel-structure construction, trusses, standardized buildings products, base-isolation and vibration-control devices	
Chemicals	Pitch coke, pitch, naphthalene, phthalic anhydride, carbon black, styrene monomer, bisphenol A, styrene resin, epoxy resin, adhesive-free copper-clad laminated sheet for flexible printed circuit boards, liquid crystal display materials, organic EL materials, UV/thermosetting resins	
New Materials	Rolled metallic foils, semiconductor bonding wire and microballs, fillers for semiconductor encapsulation materials, carbon-fiber composite products, metal catalyst carriers for cleaning automotive emissions	
System Solutions	Computer systems engineering and consulting, outsourcing and other services using IT	

Management Structure

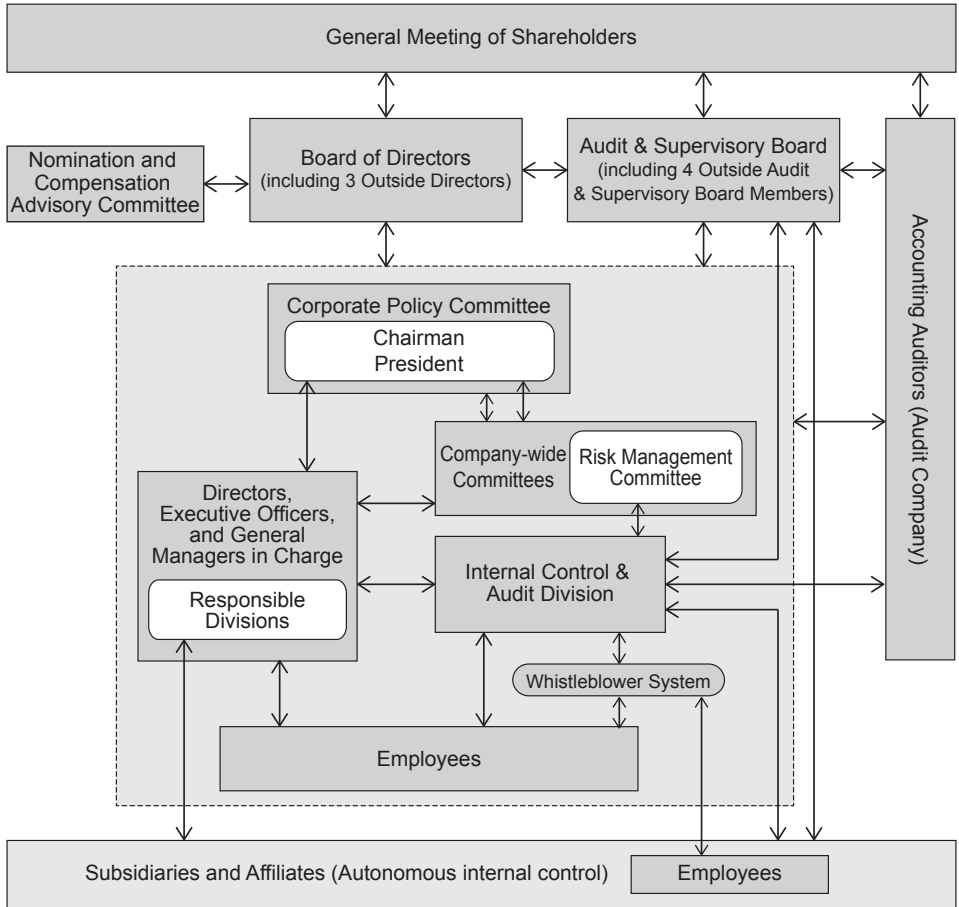
NSSMC is a business holding company, which comprises five businesses.

NIPPON STEEL & SUMITOMO METAL CORPORATION GROUP

<p>Steelmaking and Steel Fabrication Business</p>	<p>PLATE</p>	<p>NSSMC contributes to enhancing the safety of structures and the development of society by delivering high-performance steel plates for large industrial and social structures such as ships, bridges, and high-rise buildings; marine structures for oil and gas extraction; and high performance steel plates used for tanks and other energy-related products.</p>
<p>Engineering and Construction Business Nippon Steel & Sumikin Engineering Co., Ltd.</p>	<p>FLAT PRODUCTS</p>	<p>NSSMC supports various industries and people's lives by delivering steel sheet used to make automobiles, electrical appliances, housing, beverage cans, transformers, and other goods. Having production and processing bases worldwide, this unit provides high quality, high-performance products and services in Japan and overseas.</p>
<p>Chemicals Business* Nippon Steel & Sumikin Chemical Co., Ltd.</p>	<p>BAR & WIRE ROD</p>	<p>NSSMC delivers high-quality high-performance bars and rods to a wide range of industries including the automotive, construction, and industrial machinery industries. In the automotive business, this unit focuses on high end products used in important automotive components such as engines, drive trains, and suspensions.</p>
<p>New Materials Business* Nippon Steel & Sumikin Materials Co., Ltd.</p>	<p>CONSTRUCTION PRODUCTS</p>	<p>NSSMC delivers H-beams, steel sheet piles, steel pipe piles, rails, and other steel materials used in the civil engineering and construction sectors in Japan and overseas. By responding to diverse needs, this unit contributes to the development of infrastructure that supports people's lives.</p>
<p>System Solutions Business NS Solutions Corporation</p>	<p>PIPE & TUBE</p>	<p>NSSMC is a world-leader in high-end seamless pipes used in oil and gas development and other energy areas. Large-diameter tubes for pipelines and steel tubes for automobiles, and construction and industrial machinery are also areas of strength.</p>
<p>R&D Laboratories The NSSMC Group has research laboratories in Futtsu, Amagasaki and Hasaki. These laboratories lead the world in manufacturing technology development that includes new product development and process improvement, mainly in high-growth sectors, as well as basic research to support these sectors.</p>	<p>RAILWAY, AUTOMOTIVE & MACHINERY PARTS</p>	<p>NSSMC is the only manufacturer of railway steel wheels and axles in Japan. This unit's major products are railway rolling stock components and forged crankshafts for automobiles. The unit has two manufacturing bases for railway wheels and axles, and four bases for crankshafts in the world.</p>
<p>* Nippon Steel & Sumikin Chemical Co., Ltd. and Nippon Steel & Sumikin Materials Co., Ltd. will be integrated to Nippon Steel Chemical & Material Co., Ltd. in October 2018.</p>	<p>TITANIUM & SPECIALTY STAINLESS STEEL</p>	<p>Utilizing titanium's lighter, high-strength, and corrosion-resistant properties, NSSMC is a world-leader in titanium products for construction, aviation, general industrial, and consumer-related applications. The unit also provides products with excellent heat resistance, corrosion resistance, and formability made of specialty stainless steel that is used in the automotive, IT, environmental, and energy sectors.</p>
	<p>STAINLESS STEEL</p>	<p>Nippon Steel & Sumikin Stainless Steel Corporation (NSSC) provides steel users with a wide range of high-quality stainless steel products that includes steel plates, sheets, bars, and wire rods by leveraging its most advanced technologies in the world. This subsidiary has developed the world's first Sn-added low-interstitial ferritic steel grades, named the "FW (forward) series," and a new type of duplex stainless steel.</p>

Corporate Governance

Corporate Governance Structure and Internal Control System



NSSMC has established a corporate governance system suited to the businesses of the NSSMC Group in order to achieve the sound and sustainable growth of the NSSMC Group and increase its corporate value over the medium- to long-term, in response to the mandate delegation of responsibilities by and trust of from all stakeholders, including its shareholders and business partners.

NSSMC has adopted a company structure with an Audit & Supervisory Board, having determined that this system is effective in ensuring the efficiency and soundness of management. Under this system, the Board of Directors, consisting chiefly of Directors with intimate knowledge of NSSMC's businesses (which are mainly steelmaking and steel fabrication), makes decisions not only on basic management policies, but also on the execution of important business matters; and the Audit & Supervisory Board Members, with strong legal authority, attend meetings of the Board of Directors to independently supervise the execution of responsibilities by Directors and officers. NSSMC's Articles of Incorporation stipulate that, as a corporate governance structure, NSSMC shall have a Board of Directors and not more than 20 Directors as well as the Audit & Supervisory Board and not more than 7 Audit & Supervisory Board Members, and accounting auditors.

To ensure the soundness of management, Senior Audit & Supervisory Board Members with intimate knowledge of NSSMC's businesses and Outside Audit & Supervisory Board Members with a high degree of expertise, collaborate with NSSMC's Accounting Auditor, Internal Control and Audit Division, and others and audit, among others, the status of performance of responsibilities by the Board of Directors, the status of NSSMC's assets on a day-to-day basis. NSSMC also appoints several Outside Directors with a deep experience relating to corporate management, etc. in order to make decisions with a diverse range of perspectives and enhance the Board of Directors function of supervising management.

NSSMC's Board of Directors consists of 11 Executive Directors, as well as 3 Outside Directors, who are not involved with business execution, and 7 Audit & Supervisory Board Members (of whom 4 are Outside Audit & Supervisory Board Members). This ensures full, multifaceted deliberations, and objective decision-making. NSSMC decides the independence of Outside Directors and Outside Audit & Supervisory Board Members in accordance with the independence standards set by the financial instruments exchanges in Japan. Since NSSMC believes that each of the Outside Directors and Outside Audit & Supervisory Board Members is independent, NSSMC has reported all of them as Independent Directors or Audit & Supervisory Board Members to each financial instruments exchange in Japan. In addition, to clarify responsibilities for the results of each business unit and division, NSSMC has introduced an executive officer system under which executive officers strive to ensure the proper execution of business activities.

Based on internal rules, executive decisions on key issues that may affect the activities of NSSMC and the NSSMC Group are determined by the Board of Directors, which convenes once or twice a month, after such matters have been discussed by the Corporate Policy Committee, a group that includes participation by the Chairman, the President, the Executive Vice Presidents, and other members, and that normally meets once a week. In addition, NSSMC has set up 20 Companywide committees, each with its own objective, where details on designated themes are hashed out before the Corporate Policy Committee and the Board of Directors embark on decision-oriented discussions.

The execution of business strategies mandated by the Board of Directors and other executive structures is promptly addressed by the Directors responsible for these businesses, executive officers, and the general managers of relevant units/divisions, under the direction of the Chairman, Representative Director, as well as the President, Representative Director. These actions are accomplished by stipulating in writing the ordering authority, oversight responsibility, and procedures required to implement strategies.

NSSMC has resolved its Basic Policy concerning internal control system at its Board of Directors meeting and stipulates its Basic Rules for Internal Control for establishing a system for internal controls and risk management based on autonomous internal control activities.

- NSSMC establishes an annual plan on internal controls and risk management and acts accordingly.
- It regularly confirms the status of internal controls and the risk management system through the Risk Management Committee, chaired by the executive vice president in charge of internal control & audit.
- Each division of the company designates a person in charge of risk management, while each group company designates a person responsible for risk management. This is to encourage each division and company to take initiatives and share information about risk management among the company and group companies through regular meetings and other means.
- NSSMC regularly checks the group-wide status of internal controls by establishing measures to check and supervise matters related to internal controls and risk management.
- NSSMC has set up a whistleblower system, namely, the Compliance Consulting Room within the company and the Compliance Hotline run by the company's attorney as a conduit for communication, to handle risk-related concerns raised by group employees, staff of purchase agreement companies, and other group employees regarding the execution of operations. This helps prevent accidents and the violation of laws and regulations preemptively and also improves operations.

Chronology

Nippon Steel & Sumitomo Metal Corporation

- 2019 Nippon Steel & Sumitomo Metal Corporation will be renamed Nippon Steel Corporation.
- 2018 The 2020 Mid-Term Management Plan was formulated.
- 2017 Nisshin Steel Co., Ltd. was acquired and made into a subsidiary.
- 2014 Yawata Works and Kokura Works were integrated to become Yawata Works.
Wakayama Works and Sakai Works were integrated to become Wakayama Works.
Kimitsu Works and Tokyo Works were integrated to become Kimitsu Works.
- 2012 Incorporated on October 1, integrating Nippon Steel Corporation and Sumitomo Metal Industries.

Nippon Steel Corporation

- 2011 Agreed to commence consideration of business integration with Sumitomo Metal Industries, Ltd.
- 2006 Engineering and construction business was spun off to Nippon Steel Engineering Co., Ltd.
New materials business was spun off to Nippon Steel Materials Co., Ltd.
- 2003 Stainless steel business was spun off to Nippon Steel & Sumikin Stainless Steel Corporation.
- 2002 Announced alliances with Sumitomo Metal Industries, Ltd. and Kobe Steel, Ltd.
All operations of Nippon Steel's Urban Development Division were integrated into Nippon Steel City Produce, Inc.
- 2001 Operations of Nippon Steel's Electronics & Information Systems Division and its subsidiary Nippon Steel Information & Communication Systems Inc. were integrated to organize NS Solutions Corporation.
- 2000 Divisionally integrated operation system within the Nippon Steel Group based on product item or business area was introduced in the steelmaking and steel fabrication sector.
- 1997 Silicon Wafer Division was organized (abolished in April 2004).
- 1993 Semiconductor Division was organized (abolished in April 1999).
- 1991 Technical Development Bureau was organized by integrating Central R&D Bureau and Plant Engineering & Technology Bureau, and R&E Center began operation.
- 1989 Urban Development Division was organized.
- 1987 Electronics & Information Systems Division, New Materials Division, and Service Business Division (integrated to Urban Development Division in June 1992) were organized.
- 1986 Electronics Division was organized.
- 1984 New Materials Projects Bureau was organized.
Nippon Steel Chemical Co., Ltd. was inaugurated through the merger of Nippon Steel Chemical Co., Ltd. and Nittetsu Chemical Industrial Co., Ltd.
- 1974 Engineering Division Group was organized.
- 1971 Nippon Steel absorbed Fuji Sanki Pipe & Tube Co., Ltd.
Oita Works began operation.
- 1970 Yawata Iron & Steel and Fuji Iron & Steel merged to form Nippon Steel Corporation.
- 1968 Yawata Iron & Steel absorbed Yawata Steel Tube Co., Ltd.
- 1967 Tokai Steel became Nagoya Works of Fuji Steel.
- 1965 Kimitsu Works of Yawata Iron & Steel began operation.
- 1961 Sakai Works of Yawata Iron & Steel began operation.
- 1958 Tokai Iron & Steel Co., Ltd. was established.
Yawata Iron & Steel inaugurated the Tobata Area of Yawata Works.
- 1955 Hikari Works of Yawata Iron & Steel began operation.
- 1950 Yawata Iron & Steel Co., Ltd. and Fuji Iron & Steel Co., Ltd. were established (Company's founding).

Sumitomo Metal Industries, Ltd.

- 2012 Merged with Sumitomo Metals (Kokura), Ltd. and Sumitomo Metals (Naoetsu), Ltd.
- 2011 Agreed to commence consideration of business integration with Nippon Steel Corporation.
- 2008 The titanium business was split and was absorbed by Sumitomo Metals (Naoetsu), Ltd.
- 2003 The stainless business was split off and became Nippon Steel & Sumikin Stainless Steel Corporation.
Wakayama Works' upstream operation was split off and became Sumikin Iron & Steel Corporation (present Nippon Steel & Sumikin Koutetsu Wakayama Corporation.)
- 2002 Announced alliances with Nippon Steel Corporation and Kobe Steel, Ltd.
Silicon wafer business was transferred to Silicon United Manufacturing Corporation (present SUMCO Corporation).
- 2000 Sumitomo Metals spun off its Kokura Works and Naoetsu Works and made them into Sumitomo Metals (Kokura), Ltd. and Sumitomo Metals (Naoetsu), Ltd. respectively.
- 1998 Merged with Sumitomo Sitix Corporation.
- 1994 Kashima Stainless Steel Works was integrated in Kashima Works.
- 1992 Merged with Nippon Stainless Co., Ltd. (Naoetsu Works and Kashima Stainless Steel Works were established.)
- 1990 Electronics Division was established.
- 1988 Kainan Steel Tube Works was integrated in Wakayama Works.
- 1980 Merged with Kainan Steel Tube Co., Ltd. (to form Kainan Steel Tube Works).
- 1977 Engineering Division was established, marking entry into engineering business.
- 1974 Hasaki Research Center, present Hasaki R&D Center, was established.
- 1968 Kashima Works was established.
- 1966 Kainan Steel Tube Co., Ltd. was established.
- 1963 Sumitomo Special Metals Co., Ltd. (former Magnetic Steel and Electronic Parts Manufacturing Departments) was established.
- 1961 Sumitomo Precision Products Co., Ltd. (former Aircraft Instruments Department) was established.
- 1959 Sumitomo Light Metal Industries, Ltd. (former Copper Rolling and Aluminum Rolling Department) was established.
Central Research Laboratories, present Amagasaki R&D Center, was established.
- 1953 Merged with Kokura Steel Manufacturing Co. and established Kokura Works, an integrated steelmaker.
- 1952 Shin-Fuso Metal Industries, Ltd. was renamed Sumitomo Metal Industries, Ltd.
- 1950 Narumi China Corporation (former China Manufacturing Department) was established.
- 1949 Shin-Fuso Metal Industries, Ltd. was established (Company's founding).

Executive Management and Fellows

Executive Management

(As of July 1, 2018)

Name (Date of birth)	Responsibilities	Joined the company Assumed the position	Education
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Representative Director and Chairman

Shoji Muneoka (May 3, 1946)		Apr. 1970 Oct. 2012	Mar. 1970 Tokyo U. (Agriculture)
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Representative Director and President

Kosei Shindo (Sep. 14, 1949)		Apr. 1973 Apr. 2014	Mar. 1973 Hitotsubashi U. (Economics) June 1982 Harvard Business School MBA
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Representative Directors and Executive Vice Presidents

Eiji Hashimoto (Dec. 7, 1955)	Head of Global Business Development Overseas Offices	Apr. 1979 June 2016	Mar. 1979 Hitotsubashi U. (Commerce) June 1988 Harvard Kennedy School of Government Master of Public Policy
Toshiharu Sakae (Jan. 25, 1956)	General Administration; Legal; Internal Control & Audit; Business Process Innovation; Human Resources; Environment; Raw Materials	Apr. 1980 June 2016	Mar. 1980 Tokyo U. (Law) Dec. 1988 University of Illinois MBA
Shinji Tanimoto (May 24, 1957)	Intellectual Property; Safety; Plant Safety; Technical Administration & Planning; Standardization; Quality Management; Plant Engineering and Facility Management; Ironmaking Technology; Steelmaking Technology; Energy Technology; Slag & Cement Cooperating with EVP T. Sakae on Environment	Apr. 1982 Apr. 2018	Mar. 1982 Sophia U. (Graduate School of Mechanical Engineering)
Shinichi Nakamura (Feb. 15, 1959)	Marketing Administration & Planning; Transportation & Logistics; Project Development; Machinery & Materials Procurement; Steel Products Units; Domestic Office and Branches Cooperating with EVP E. Hashimoto on Overseas Offices	Apr. 1982 Apr. 2018	Mar. 1982 Tokyo U. (Law)

Note: "Time of joining the company" means the time of entering either the former Nippon Steel Corporation or Sumitomo Metal Industries, Ltd.

Name (Date of birth)	Responsibilities	Joined the company Assumed the position	Education
Akihiko Inoue (Aug. 21, 1957)	Head of Research and Development	Apr. 1982 June 2018	Mar. 1982 Tokyo U. (Graduate School of Industrial Mechanical Engineering) June 1990 Massachusetts Institute of Technology Master of Science
Katsuhiko Miyamoto (Oct. 22, 1956)	Corporate Planning; Group Companies Planning; Accounting & Finance	Apr. 1981 June 2018	Mar. 1981 Hitotsubashi U. (Law) June 1988 London Business School Sloan Fellowship programme

Managing Directors, Members of the Board

Shin Nishiura (June 26, 1958)	Head of Unit, Pipe & Tube Unit; Project Leader, VSB Project, Global Business Development Sector	Apr. 1981 June 2018	Mar. 1981 Hitotsubashi U. (Law)
Atsushi Iijima (June 12, 1958)	Head of Unit, Flat Products Unit; Project Leader, Shanghai-Baoshan Cold-rolled & Coated Sheet Products Project, Global Business Development Sector; Project Leader, India Continuous Annealing & Processing Line Project, Global Business Development Sector Marketing Administration & Planning; Transportation & Logistics	Apr. 1982 June 2018	Mar. 1982 Tokyo U. (Economics)
Yutaka Andoh (Sep. 30, 1958)	Intellectual Property; Safety; Plant Safety; Technical Administration & Planning; Standardization; Quality Management; Plant Engineering and Facility Management; Ironmaking Technology; Steelmaking Technology; Energy Technology; Slag & Cement Rendering Assistance to EVP S. Nakamura on Steel Products Units Cooperating with Managing Director A. Iijima on Transportation & Logistics Technology	Apr. 1981 June 2018	Mar. 1981 Tokyo U. (Engineering)

Directors, Members of the Board

Mutsutake Otsuka (Jan. 5, 1943)	(Outside Director)	- June 2014	Mar. 1965 Tokyo U. (Law)
Ichiro Fujisaki (July 10, 1947)	(Outside Director)	- June 2014	Mar. 1969 Keio U. (Economics) Before graduating due to joining the Ministry of Foreign Affairs

Name (Date of birth)	Responsibilities	Joined the company Assumed the position	Education
Noriko Iki (Mar. 21, 1956)	(Outside Director)	- June 2018	Mar. 1979 Tokyo U. (Law)
Managing Executive Officers			
Hirotsune Satoh (Apr. 30, 1956)	General Administration; Internal Control & Audit; Business Process Innovation; Business Transformation & Standardization	Apr. 1981 Apr. 2014	Mar. 1981 Keio U. (Economics)
Masato Matsuno (May 29, 1957)	Head of Office, Osaka Office Rendering Assistance to EVP T. Sakae on Matters relating to General Administration	Apr. 1981 Apr. 2015	Mar. 1981 Tokyo U. (Economics)
Hiroyuki Uchida (Sep.27, 1958)	Deputy Project Leader, Shanghai-Baoshan Cold-rolled & Coated Sheet Products Project, Global Business Development Sector; Deputy Project Leader, India Continuous Annealing and Processing Line Project, Global Business Development Sector Cooperating with Head of Unit, Flat Products Unit on Support for Overseas Business in Flat Products Technology	Apr. 1981 Apr. 2018	Mar. 1981 Tokyo U.(Engineering) June 1988 Stanford University Master of Mechanical Engineering
Yoichi Furuta (Dec. 28, 1958)	Rendering Assistance to EVP E. Hashimoto on Global Business Development in Southeast Asia and India Cooperating with Executive Officer T. Nomura on Overseas Offices in Southeast Asia and India	Apr. 1981 Apr. 2015	Mar. 1981 Tokyo U. (Law) June 1990 Harvard Business School MBA
Hideo Suzuki (Dec. 10, 1958)	Environment Rendering Assistance to EVP E. Hashimoto on Global Business Development Rendering Assistance to EVP S. Tanimoto on Energy, Recycling and Slag	- Apr. 2016	Mar. 1981 Kyoto U. (Law) May 1988 Yale University Master of International Development Economics June 1989 University of Washington Master of Law
Kazuhiro Egawa (Feb. 24, 1959)	Project Leader, Usiminas Project, Global Business Development Sector Rendering Assistance to EVP E. Hashimoto on Global Business Development in the Americas	Apr. 1981 Apr. 2016	Mar. 1981 Hitotsubashi U. (Economics)
Toru Takegoshi (May 16, 1958)	Head of Unit, Railway, Automotive & Machinery Parts Unit Machinery & Materials Procurement	Apr. 1982 Apr. 2016	Mar. 1982 Keio U. (Law)

Name (Date of birth)	Responsibilities	Joined the company Assumed the position	Education
Toshihiko Kunishi (July 24, 1959)	Vice Head of Global Business Development; Deputy Project Leader, VSB Project, Global Business Development Sector Cooperating with Head of Unit, Pipe & Tube Unit on Pipe & Tube	Apr. 1982 June 2018	Mar. 1982 Waseda U. (Law)
Kazuhiro Nakashima (Oct. 24, 1960)	Vice Head of Unit, Pipe & Tube Unit; Deputy Project Leader, VSB Project, Global Business Development Sector	Apr. 1983 Apr. 2017	Mar. 1983 Osaka U. (Engineering)
Naoki Satoh (Mar. 23, 1961)	Head of Works, Kashima Works	Apr. 1983 Apr. 2017	Mar. 1983 Kyushu Institute of Technology (Engineering)
Akio Migita (Oct. 19, 1961)	Head of Division, Human Resources Division Group Companies Planning Cooperating with Managing Director Y.Andoh on Safety	Apr. 1984 Apr. 2017	Mar. 1984 Tokyo U. (Law)
Yoshimi Yamadera (June 30, 1959)	Head of Works, Wakayama Works	Apr. 1985 Apr. 2018	Mar. 1985 Waseda U. (Graduate School of Mechanical Engineering)
Yasushi Aoki (Mar. 8, 1960)	Raw Materials Head of Division, Raw Materials Division-II	Apr. 1983 Apr. 2018	Mar. 1983 Hitotsubashi U. (Commerce)
Kazuhisa Fukuda (Dec. 8, 1960)	Head of Works, Hirohata Works	Apr. 1986 Apr. 2018	Mar. 1986 Keio U. (Graduate School of Mechanical Engineering)
Shuhei Onoyama (Dec. 20, 1961)	Head of Works, Kimitsu Works	Apr. 1984 Apr. 2018	Mar. 1984 Tokyo U. (Engineering)
Hiromitsu Ueno (Feb. 23, 1962)	Head of Works, Oita Works	Apr. 1986 Apr. 2018	Mar. 1986 Tokyo U. (Graduate School of Mineral Development Engineering)
Executive Officers			
Hideki Murakami (Mar. 2, 1960)	Head of Laboratories, Process Research Laboratories, R&D Laboratories	Apr. 1985 Apr. 2016	Mar. 1985 Osaka U. (Graduate School of Chemical Engineering) Mar. 1994 Canada McGill U. Ph. D. (Engineering)

Name (Date of birth)	Responsibilities	Joined the company Assumed the position	Education
Atsuki Matsumura (May 18, 1961)	Head of Division, Business Process Innovation Division Rendering Assistance to EVP K. Miyamoto on Corporate Planning	Apr. 1986 Apr. 2016	Mar. 1986 Tokyo U. (Graduate School of Mathematical Engineering and Information Physics) Nov.1993 Tokyo U. Doctor (Engineering) July 1995 Imperial College, University of London, Electrical Engineering, Academic Visitor (post-Dr.)
Kimitoshi Yonezawa (Jan. 16, 1961)	Head of Works, Muroran Works, Bar & Wire Rod Unit	Apr. 1985 Apr. 2016	Mar. 1985 Tohoku U. (Graduate School of Metallurgical Engineering) July 1993 Technische Universitaet Clausthal Ph. D. (Engineering)
Shuji Sohma (Sep. 14, 1961)	Head of Division, Flat Products Technology Division, Flat Products Unit Cooperating with Head of Division, Technical Administration & Planning Division on Hot Rolling Technology	Apr. 1986 Apr. 2016	Mar. 1986 Nagoya Institute of Technology (Graduate School of Mechanical Engineering for Production)
Hiroaki Matsuoka (Aug. 31, 1960)	Head of Unit, Bar & Wire Rod Unit	Apr. 1985 Apr. 2016	Mar. 1985 Waseda U. (Political Science and Economics)
Shozo Furumoto (Jan. 19, 1961)	Head of Division, Legal Division	Apr. 1985 Apr. 2016	Mar. 1985 Kyoto U. (Law) May 1993 Georgetown U. Master of Law
Hidetake Ishihara (July 7, 1962)	Head of Division, Accounting & Finance Division Rendering assistance to Managing Executive Officer H.Satoh on Public Relations	Apr. 1985 Apr. 2016	Mar. 1985 Tokyo U. (Law) July 1993 London Business School Master of Science in Management
Takashi Hirose (Apr. 19, 1962)	Head of Unit, Plate Unit	Apr. 1986 Apr. 2016	Mar. 1986 Tokyo U. (Letters) Apr. 1995 University of Michigan MBA
Takahiro Nagayoshi (June 23, 1962)	Head of Division, Corporate Planning Division	Apr. 1986 Apr. 2016	Mar. 1986 Tokyo U. (Economics)

Name (Date of birth)	Responsibilities	Joined the company Assumed the position	Education
Tadashi Imai (May 22, 1963)	Head of Works, Nagoya Works	Apr. 1988 Apr. 2016	Mar. 1988 Tokyo U. (Graduate School of Metallurgical Engineering) Feb. 1997 Massachusetts Institute of Technology Ph. D. (Engineering)
Yoshiaki Shimada (Feb. 18, 1964)	Vice Head of Unit, Flat Products Unit	Apr. 1986 Apr. 2016	Mar. 1986 Keio U. (Law)
Taisuke Nomura (Nov. 8, 1959)	Vice Head of Global Business Development; Head of Center, Global Business Support Center, Global Business Development Sector Overseas Offices	Apr. 1982 Apr. 2017	Mar. 1982 Tokyo U. (Economics) May 1992 Cornell University MBA
Hidenori Kinugasa (Feb. 8, 1962)	Head of Works, Amagasaki Works, Pipe & Tube Unit	Apr. 1987 Apr. 2017	Mar. 1987 Osaka U. (Graduate School of Industrial Mechanical Engineering)
Junichi Tani (Nov. 26, 1962)	Head of Works, Yawata Works	Apr. 1987 Apr. 2017	Mar. 1987 Osaka U. (Graduate School of Metallurgy)
Yuji Kubo (Mar. 15, 1963)	Head of Division, R & D Planning Division, R & D Laboratories	Apr. 1987 Apr. 2017	Mar. 1987 Tokyo U. (Graduate School of chemistry)
Takeshi Honda (Mar. 6, 1964)	Head of Center, Plant Engineering and Facility Management Center	Apr. 1988 Apr. 2017	Mar. 1988 Tokyo Institute of Technology (Graduate School of Precision Machinery Systems)
Nozomu Takahashi (Jan. 9, 1963)	Head of Office, Beijing Office Rendering Assistance to EVP E. Hashimoto on Global Business Development in China	Apr. 1985 Apr. 2018	Mar. 1985 Waseda U. (Political Science and Economics)
Kazuhiro Koshikawa (Aug. 10, 1961)	Head of Branch, Nagoya Marketing Branch	Apr. 1986 Apr. 2018	Mar. 1986 Keio U. (Economics)
Toshinori Onishi (Feb. 25, 1963)	Vice Head of Office, Osaka Office	Apr. 1986 Apr. 2018	Mar. 1986 Sophia U. (Law)
Kazuma Yamanaka (Aug. 10, 1963)	Head of Division, Machinery & Materials Procurement Division	Apr. 1986 Apr. 2018	Mar. 1986 Hitotsubashi U. (Law)

Name (Date of birth)	Responsibilities	Joined the company Assumed the position	Education
Ichiro Satoh (Feb. 19, 1964)	Head of Division, Global Business Development Division, Global Business Development Sector; Project Leader, CSVC Project, Global Business Development Sector; Project Leader, Wuhan Tin Mill Project, Global Business Development Sector Rendering Assistance to Head of Unit, Flat Products Unit on CSVC Project and Wuhan Tin Mill Project concerning Flat Products	Apr. 1986 Apr. 2018	Mar. 1986 Keio U. (Economics)
Kazumasa Shinkai (Oct. 4, 1962)	Head of Division, General Administration Division	Apr. 1987 Apr. 2018	Mar. 1987 Tokyo U. (Law)
Hirofumi Funakoshi (June 17, 1963)	Cooperating with Head of Division, Corporate Planning Division on Corporate Planning Cooperating with Head of Division, General Administration Division and Head of Division, Business Process Innovation Division on Business Transformation & Standardization	July 1987 Apr. 2018	June 1987 Tokyo U. (Law)
Nobuhiro Fujita (Sep. 20, 1964)	Head of Laboratories, Steel Research Laboratories, R&D Laboratories	Apr. 1989 Apr. 2018	Mar. 1989 Tokyo Institute of Technology(Graduate School of Metallurgical Engineering) July 2000 University of Cambridge Ph. D. (Metallurgical Engineering)
Hiroyuki Minato (Feb. 23, 1965)	Head of Division, Technical Administration & Planning Division Cooperating with Head of Division, Business Process Innovation Division on Business Process Innovation	Apr. 1989 Apr. 2018	Mar. 1989 Kumamoto U. (Graduate School of Metallurgical Engineering)
Yoshio Sato (May 1, 1964)	Head of Unit, Construction Products Unit	Apr. 1988 Apr. 2018	Mar. 1988 Kobe U. (Economics)
Shinji Kido (July 4, 1963)	Head of Division, Bar & Wire Rod Technology Division, Bar & Wire Rod Unit	Apr. 1989 June 2018	Mar. 1989 Ritsumeikan U. (Graduate School of Mechanical Engineering)
Senior Audit & Supervisory Board Members			
Yutaka Takeuchi (Dec. 10, 1956)		Apr. 1980 June 2015	Mar. 1980 Tokyo U. (Economics)
Atsuhiko Yoshie (May 1, 1955)		Apr. 1980 June 2016	Mar. 1980 Tokyo U. (Graduate School of Naval Engineering) Nov. 1994 Kyushu U. Doctor (Engineering)

Name (Date of birth)	Responsibilities	Joined the company Assumed the position	Education
Audit & Supervisory Board Members			
Masato Tsuribe (Oct. 14, 1958)		Apr. 1982 June 2016	Mar. 1982 Tokyo U. (Law) May 1990 Columbia University Master of Law
Katsunori Nagayasu (Apr. 6, 1947)	(Outside Audit & Supervisory Board Member)	- June 2013 Reappointed In June 2017	Apr. 1970 Tokyo U. (Law) June 1990 Massachusetts Institute of Technology Sloan School of Management MBA
Hiroshi Obayashi (June 17, 1947)	(Outside Audit & Supervisory Board Member)	- June 2014 Reappointed In June 2018	Mar. 1970 Hitotsubashi U. (Law)
Jiro Makino (Oct. 22, 1949)	(Outside Audit & Supervisory Board Member)	- June 2014 Reappointed In June 2018	Mar. 1973 Tokyo U. (Economics)
Seiichiro Azuma (July 23, 1951)	(Outside Audit & Supervisory Board Member)	- June 2016	Mar. 1975 Kobe U. (Business Administration)

Executive Management System

In order to facilitate decision-making by management with greater speed and mobility in responding to changes in business environments, NSSMC has adopted the Executive Management System. Executive officers are “important employees” (under the Company Law of Japan) who execute their respectively assigned important business responsibilities.

Fellows*

(As of April 1, 2018)

Name (Date of birth)	Responsibilities	Joined the company Assumed the position	Education
Kazuo Okamura (May 31, 1959)	Computational elastoplasticity	Apr. 1984 Apr. 2014	Mar. 1984 Kobe U. (Graduate School of Systems Engineering) Jan. 2001 Kyoto U. Doctor (Energy Science)
Ryoichi Kanno (Mar. 6, 1960)	Steel structures	Apr. 1984 Apr. 2014	Mar. 1984 Tokyo Institute of Technology (Graduate School of Civil Engineering) Aug. 1993 Cornell University Ph. D. in Engineering
Koji Saito (Aug. 21, 1958)	Ironmaking processes and characterization of raw materials	Apr. 1984 Apr. 2015	Mar. 1984 Nagoya Institute of Technology (Graduate School of Industrial Chemistry) Jun. 1994 Tohoku U. Doctor (Science)
Mitsuo Miyahara (Nov. 22, 1961)	Fatigue and fracture of steel products	Apr. 1986 Apr. 2017	Mar. 1986 Kyoto U. (Graduate School of Mechanical Engineering) Sep. 2001 Kyoto U. Doctor (Energy Science)
Katsuhiro Sasai (Aug. 2, 1961)	Steelmaking and process metallurgy	Apr. 1988 Apr. 2017	Mar. 1988 Kyoto U. (Graduate School of Earth Resources Engineering) Jan. 1996 Nagoya U. Doctor (Engineering)
Naoki Yoshinaga (Dec. 17, 1962)	Physical metallurgy	Apr. 1988 Apr. 2017	Mar. 1988 Tokyo Institute of Technology (Graduate School of Materials Science and Engineering) Dec. 1999 Ghent University Doctor (Applied Science)
Shunichi Hayashi (May 15, 1960)	Head of Laboratories, Advanced Technology Research Laboratories, R&D Laboratories surface analysis and environmental analysis	Apr. 1986 Apr. 2018	Mar. 1986 Tokyo Institute of Technology (Graduate School of Electronic Chemistry) Sep. 1996 Osaka U. Doctor (Engineering)

Name (Date of birth)	Responsibilities	Joined the company Assumed the position	Education
Kaori Kawano (May 24, 1964)	Microstructure design of structural steels	Apr. 1989 Apr. 2018	Mar. 1989 Nara Women's U (Graduate School of Physics) Mar. 2005 Osaka U. Doctor (Engineering)

* The Fellow Selection Committee selects fellows from researchers with outstanding achievements and according to professional specialization. Fellows are treated as executive officers.

Major Posts Outside the Company

Post and name	Major outside posts	Hobbies
Representative Director and Chairman Shoji Muneoka	Chairman, The Japan Iron and Steel Federation (May 27, 2008-May 28, 2010) Vice Chairman, Keidanren (May 28, 2009-June 4, 2013) Chairman, All Japan Judo Federation (Aug. 21, 2013-June 23, 2017) Chairman, Japan Project - Industry Council (June 27, 2014-) Chairman, Japan-China Economic Association (July 7, 2015-)	• Listening to classical music, golf
Representative Director and President Kosei Shindo	Chairman, The Japan Iron and Steel Federation (May 30, 2016-May 25, 2018) Vice Chairman, Keidanren (May 31, 2017-) Chairman, World Steel Association (Oct. 17, 2017-)	• Sport watching, golf

Past Chairmen and Presidents

Nippon Steel Corporation

■ Yawata Iron & Steel Co., Ltd.

Chairman	Tenure	President
—	Apr. 1, 1950-Apr. 9, 1952	Takashi Miki
—	May 10, 1952-Jan. 6, 1956	Gisuke Watanabe
—	Jan. 13, 1956-May 28, 1962	Arakazu Ojima
Arakazu Ojima	May 28, 1962-May 29, 1967	Yoshihiro Inayama
—	May 29, 1967-Mar. 30, 1970	

■ Fuji Iron & Steel Co., Ltd.

Chairman	Tenure	President
—	Apr. 1, 1950-Mar. 30, 1970	Shigeo Nagano

■ Nippon Steel Corporation

Chairman	Tenure	President
Shigeo Nagano	Mar. 31, 1970-May 30, 1973	Yoshihiro Inayama
Yoshihiro Inayama	May 30, 1973-Jun. 29, 1976	Tomisaburo Hirai
	Jun. 29, 1976-Jan. 18, 1977	Teruyoshi Tasaka
	Jan. 20, 1977-Jun. 29, 1981	Eishiro Saito
Eishiro Saito	Jun. 29, 1981-Jun. 26, 1987	Yutaka Takeda
Yutaka Takeda	Jun. 26, 1987-Jun. 29, 1989	Hiroshi Saito
Akira Miki	Jun. 29, 1989-Jun. 29, 1993	
Hiroshi Saito	Jun. 29, 1993-Mar. 31, 1998	Takashi Imai
Takashi Imai	Apr. 1, 1998-Mar. 31, 2003	Akira Chihaya
Akira Chihaya	Apr. 1, 2003-Jan. 22, 2007	Akio Mimura
—	Jan. 23, 2007-Mar. 31, 2008	
Akio Mimura	Apr. 1, 2008-Sep. 30, 2012	Shoji Muneoka

Sumitomo Metal Industries

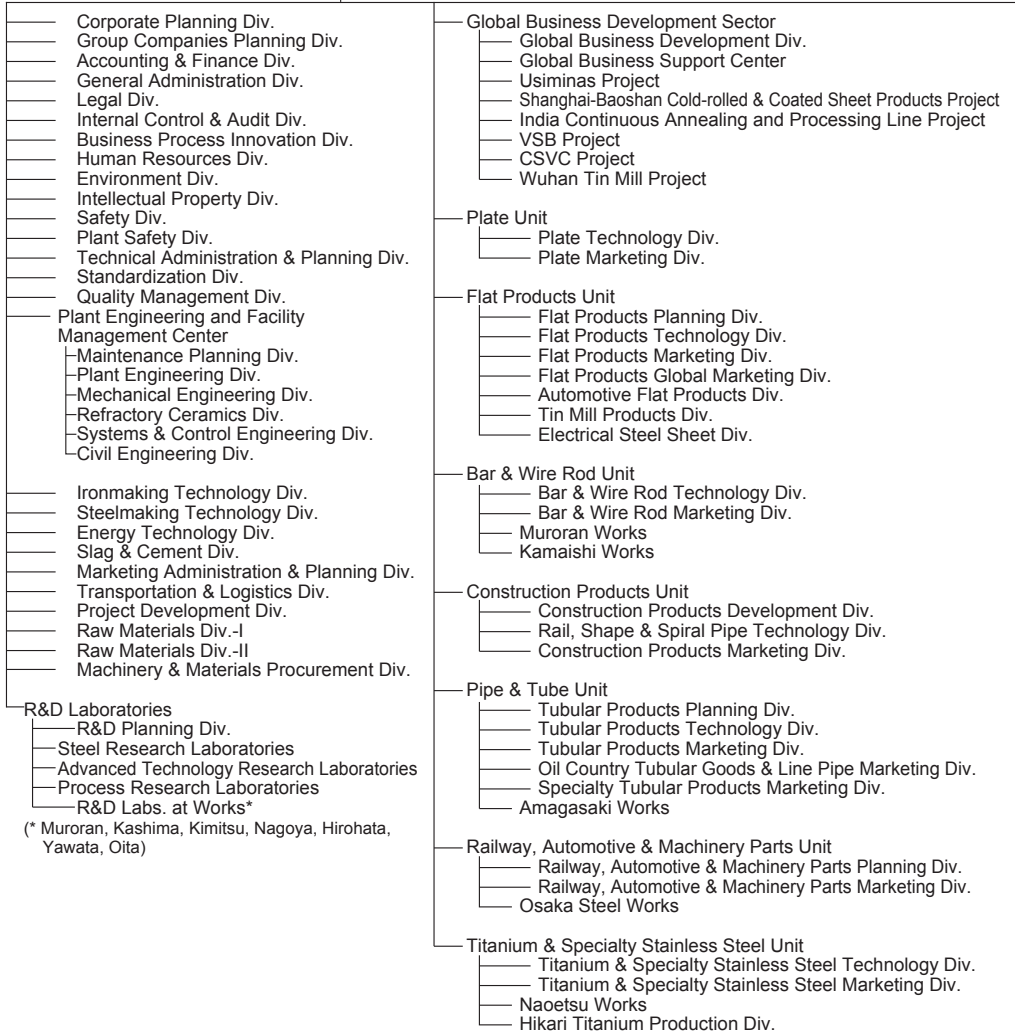
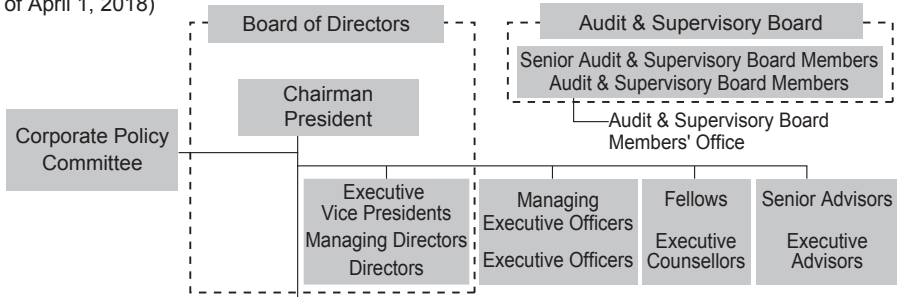
Chairman	Tenure	President
	Jul. 1, 1949-Nov. 28, 1962	Hisakazu Hirota
Hisakazu Hirota	Nov. 28, 1962-May 29, 1973	Hosai Hyuga
—	May 29, 1973-Nov. 28, 1974	
Hosai Hyuga	Nov. 28, 1974-Jun. 28, 1978	Noboru Inui
	Jun. 28, 1978-Jun. 27, 1986	Yoshifumi Kumagai
Yoshifumi Kumagai	Jun. 27, 1986-Jun. 29, 1988	Yasuo Shingu
—	Jun. 29, 1988-Jun. 26, 1992	
Yasuo Shingu	Jun. 26, 1992-Jun. 27, 1996	Tameaki Nakamura
	Jun. 27, 1996-Jun. 26, 1998	Matao Kojima
Reijiro Mori	Oct. 26, 1998-Jun. 29, 2000	
Matao Kojima	Jun. 29, 2000-Jun. 28, 2001	Hiroshi Shimozuma
—	Jun. 28, 2001-Jun. 29, 2005	
Hiroshi Shimozuma	Jun. 29, 2005-Jun. 26, 2012	Hiroshi Tomono
—	Jun. 26, 2012-Sep. 30, 2012	

Nippon Steel & Sumitomo Metal Corporation

Chairman	Tenure	President
Shoji Muneoka	Oct. 1, 2012-Mar. 31, 2014	Hiroshi Tomono
	Apr. 1, 2014-	Kosei Shindo

Organization

(As of April 1, 2018)



- Kashima Works
- Kimitsu Works
- Nagoya Works
- Wakayama Works
- Hirohata Works
- Yawata Works
- Oita Works

- Osaka Office
- Hokkaido Marketing Branch
- Tohoku Marketing Branch
- Niigata Marketing Branch
- Hokuriku Marketing Branch
- Ibaraki Marketing Branch
- Nagoya Marketing Branch
- Chugoku Marketing Branch
- Shikoku Marketing Branch
- Kyushu Marketing Branch

Overseas Subsidiaries and Offices

NIPPON STEEL & SUMITOMO METAL U.S.A., INC.

(Head Office: New York, Chicago, Houston, Mexico City)

NIPPON STEEL & SUMITOMO METAL Empreendimentos Siderúrgicos Ltda.

(Head Office: São Paulo, Belo Horizonte)

European Office

(Düsseldorf)

NIPPON STEEL & SUMITOMO METAL Australia Pty. Limited

(Head Office: Sydney)

NIPPON STEEL & SUMITOMO METAL Consulting (Beijing) Co., Ltd.

(Head Office: Beijing, Shanghai, Guangzhou)

PT. NIPPON STEEL AND SUMITOMO METAL INDONESIA

(Head Office: Jakarta)

NIPPON STEEL & SUMITOMO METAL VIETNAM COMPANY LIMITED

(Head Office: Ho Chi Minh City, Ha Noi)

NIPPON STEEL & SUMITOMO METAL Southeast Asia Pte. Ltd.

(Head Office: Singapore)

NIPPON STEEL & SUMITOMO METAL (Thailand) Co., Ltd.

(Head Office: Bangkok)

NIPPON STEEL & SUMITOMO METAL India Private Limited

(Head Office: New Delhi)

Dubai Office

(Dubai)

Business Plan

Mid-Term Management Plan (announced on March 2, 2018)

Press release URL: <http://www.nssmc.com/en/ir/library/strategy.html>

Major Features of the 2020 Mid-Term Management Plan

1. Delivering materials and solutions to address changes in society and industry

Requirements for properties of materials are becoming diverse and advanced: automobiles are becoming lighter and more electrified, and electronic components are required to be even lighter, thinner, shorter, and smaller, as well as more reliable. NSSMC will develop materials that address evolving customer needs and expand its offer of solutions in areas such as application and processing technologies. This will include supporting customers through stable supply of and further enhanced performance of high-grade steel such as high-tensile steel sheet, high-efficiency electrical steel sheet, high-corrosion resistant seamless pipes, stainless steel for high-pressure hydrogen environment, and high-strength rails. NSSMC will thus aim to contribute to customers' value creation and to achieve growth in its own sales.

Moreover, NSSMC will respond to customer needs for multi-materials by organically allying technologies and products of its non-steel material businesses (Chemicals and New Materials) with steel. To advance this initiative, Nippon Steel & Sumikin Chemical Co., Ltd. and Nippon Steel & Sumikin Materials Co., Ltd. will be integrated to strengthen their capabilities in providing comprehensive material solution proposals (the integration is planned for October 2018).

2. Strengthening and expanding global business

Leveraging its product technology capability, cost competitiveness, and global supply network to the maximum extent, NSSMC will expand the supply of steel products in the automotive, energy and resources, and infrastructure sectors in Japan and overseas.

NSSMC will meet increasing overseas demand by the combination of exports of high-grade steel from Japan and supplies from overseas production bases. In order to expand supply of steel products to areas where demand for infrastructure in particular is increasing, and to prepare for rising protectionism and a shift towards self-sufficient markets, NSSMC will expand overseas integrated steel production bases. NSSMC is currently working with ArcelorMittal on joint acquisition of Essar Steel India Limited, an Indian integrated steelmaker.

In implementing these initiatives, NSSMC will continue to undertake alliances with major companies and M&As, with speed and flexibility.

3. Continuing to strengthen “manufacturing capabilities” of domestic mother mills

NSSMC's domestic mother mills will aim to strengthen their “manufacturing capabilities” and to continue to improve as bases for technology development, cost competitiveness, and productivity. The mother mills will be committed to stable supply of steel products in Japan and overseas and assisting overseas businesses.

(1) Further enhancing facilities and human resources capabilities

NSSMC will further increase capital expenditures by about ¥ 100 billion per year in addition to the capital expenditures in the 2017 Mid-Term Management Plan (“2017 Plan”), which were at a higher level than the previous years, in order to undertake refurbishment of blast furnaces, coke ovens, and other facilities and to introduce advanced equipment, thereby improving stability, productivity, and cost.

As for the enhancement of human resources, NSSMC will maintain the number of newly-hired employees at the increased level of the 2017 Plan and promote the succession of skills and know-how and employee training, and in parallel, promote labor-saving measures (i.e., use of IT and automation) to address labor shortage expected due to Japan's declining population.

(2) Establishing an optimal production framework

NSSMC will promote the development of an optimal production framework in order to build a lean manufacturing framework that can address changes in the business environment. In addition to the measures implemented under the 2017 Plan, namely, the consolidation of rolling and surface-treatment facilities and the ceasing of operation of the No. 3 blast furnace of Kimitsu Works, the following measures will be implemented as part of the 2020 Plan:

- 1) Yawata Works' advanced continuous caster will start operation (in FY2019) and the upstream facilities (the blast furnace and the steelmaking mill in the Kokura Area) will cease operation at around the end of FY2020, as scheduled. Kokura's production of special steel bars and wire rods will be maintained at the current level. (as already announced)
- 2) At Wakayama Works, production will be switched from the No. 5 blast furnace to the new No. 2 blast furnace, which has been on standby, at around the end of FY2018, increasing steel production capacity by 500,000 tons per year. The steelmaking mill of Nippon Steel & Sumikin Shapes Corporation located in Wakayama Works will cease operation at around the end of FY2019, after which steel slabs will be supplied by the Wakayama Works steelmaking mill.
- 3) The small-diameter seamless pipe & tube mill (former Tokyo Works) in Kimitsu Works will cease operation at around May 2020 and production will be consolidated to the Kainan Area of Wakayama Works.

4. Developing world-leading technologies and utilizing advanced IT (AI, IoT, and big data)

NSSMC will make the best of its R&D operations, which is the largest in scale (with about 800 researchers) and highest level in quality in the global steel industry, and promote technology development, a key driver for innovation. Specifically, NSSMC will work on the development of high-end products (e.g., products that provide lighter weight, higher strength, more corrosion-resistance, and lower electricity loss) by anticipating and addressing evolving customer needs. The company will also promote advances in design and processing technology as well as technology to minimize environmental impact through the use of steel products over their life cycle from manufacturing to use and recycling. NSSMC will thereby continue to demonstrate world-leading capabilities by "creating the value of steel".

Utilizing IT, which is continuously evolving, is becoming an essential element that determines the competitiveness of a company. Taking advantage of the system solutions business within the Group (NS Solutions Corporation) and utilizing advanced IT (AI, IoT, and big data), NSSMC will aim to achieve safety and competitiveness in manufacturing frontlines, stability in production, improvement in product quality, and sophistication in business operations.

5. Enhancing the operating structure of the NSSMC Group

NSSMC will enhance alliances within the Group to strengthen the Group's overall capabilities in order to deliver higher value to customers and society through materials and solutions, utilizing the Group's core competency in steel. At the same time, NSSMC will undertake further reorganization within the Group and advance concentration on core business operations.

(1) Synergies with Nisshin Steel Co., Ltd.

NSSMC and Nisshin Steel Co., Ltd., which became a subsidiary of NSSMC in March 2017, will realize synergies of ¥ 20 billion per year by the end of FY2020. In addition, the companies will further expand alliances in steel sheet, stainless steel, and other products, as well as in iron-making. The refurbishment of the Kure No. 1 blast furnace of Nisshin Steel Co., Ltd. has been deferred from the

end of FY2019 to the end of FY2023 by utilizing NSSMC's technology to extend the life of a blast furnace.

- (2) Through alliance of the steel business and integrated chemicals and new materials businesses, the NSSMC Group will strengthen its capability to respond to leading-edge needs in areas including vehicles and batteries, thereby advancing its business strategy.
- (3) The Engineering Business segment will work at strengthening the competitiveness of each of its businesses and enhancing its alliances within the NSSMC Group. In addition, to pursue synergies through collaboration with companies outside the Group, Nippon Steel & Sumikin Engineering Co., Ltd. will work on expanding its profitability through a comprehensive collaboration with Toyo Engineering Corporation.
- (4) Further growth in the System Solutions segment and enhancement of the Group's IT infrastructure NS Solutions Corporation is strengthening its capability to provide solutions to customers in the areas of IoT and AI, through its IoX Solution Business Promotion Department (established in April 2016) and its AI R&D Center (opened in October 2017). Taking advantage of NS Solution Corporation, the NSSMC Group will work on strengthening its IT infrastructure and utilizing advanced IT.

6. Proactively investing in growth

(1) Capital expenditures in Japan

NSSMC will implement capital expenditures of around ¥ 1,700 billion over the three-year term, an increase of ¥ 350 billion from the 2017 Plan, in order to (a) enhance facilities through the introduction of advanced equipment and maintenance of the soundness of facilities (e.g., relining of blast furnaces and coke ovens) and (b) capture demand in growth areas by strengthening its production capability.

(2) Business investments

NSSMC will implement business investment of around ¥ 600 billion over the three-year term. In addition to growth investment in (a) domestic and overseas businesses to be developed on product, customer sector, and region bases and (b) interests in raw materials, NSSMC will be alert for new opportunities through mergers and acquisitions.

(3) Hiring

In order to enhance its human resources capability, NSSMC plans to hire about 1,100 employees per year, similar to the 2017 Plan level.

In addition, NSSMC will further advance concentration on core business operations on a group-wide basis and proceed with asset compression (targeting approximately ¥ 100 billion within the three-year term), which will fund part of the growth investment above.

	2020 Plan targets	Forecasts for FY2015-2017	2017 Plan targets (FY2015-2017)
Capital expenditures in Japan (consolidated basis)	Approx. ¥1,700bn / 3 years	¥1,260bn / 3 years	Approx. ¥1,350bn / 3 years
Business investment (consolidated basis)	Approx. ¥600bn / 3 years	¥210bn / 3 years	Approx. ¥300bn / 3 years
R&D spending (consolidated basis)	Approx. ¥220bn / 3 years	¥210bn / 3 years	Approx. ¥210bn / 3 years
Number to be newly employed (non-consolidated basis)	Approx. 1,100 employees / year	Approx. 1,300 employees / year	Approx. 1,300 employees / year
Asset compression (consolidated basis)	Approx. ¥100bn / 3 years	Approx. ¥300bn / 3 years	Approx. ¥200bn / 3 years

7. Profit and financial targets and shareholder return

(1) Under the 2017 Plan, NSSMC has implemented measures to enhance facilities and human resources capabilities as ways to fortify mother mills in Japan and measures to improve cost competitiveness. However, NSSMC experienced a large production decline due to equipment trouble and other reasons. In addition, depressed oil prices caused a decline in demand in the energy sector. As a result, the company does not expect to achieve the target level of 10% in return on sales (ROS) and return on equity (ROE) by the end of the 2017 Plan period.

(2) Through implementation of the measures outlined above under the 2020 Plan, including global business development, strengthening of "manufacturing capabilities" and enhancement of the Group operating structure, NSSMC aims to advance towards "the best steelmaker with world-leading capabilities." Through these measures, the company aims at a medium-to-long-term growth in profit and an expansion of cash flow generating ability, with a target ROS of about 10% and ROE of about 10% in FY2020.

(3) After incorporating facility enhancement investment and growth investment, NSSMC aims to achieve a debt-to-equity ratio of about 0.7 at the end of FY2020, a level similar to that at the end of FY2017.

(4) With respect to return to shareholders, NSSMC will raise the targeted payout ratio from the current "around 20-30%" on a consolidated basis to "around 30%" (to be applied to FY2018 onwards).

2020 Mid-Term Management Plan Targets

	FY2020 targets	FY2017 forecasts	2017 Plan targets
Return on sales	About 10%	5.3%	10% or more
Return on equity	About 10%	About 6%	10% or more
D/E ratio	About 0.7	About 0.7	About 0.5
Payout ratio	Around 30%	About 30%	Around 20-30%

8. A company with integrity and reliability

(1) Corporate Philosophy

"The NSSMC Group will pursue world-leading technologies and manufacturing capabilities, and contribute to society by providing excellent products and services."

- (2)NSSMC's priorities in manufacturing are "safety, environment, and disaster prevention," "quality," "production," and "cost and profit" in this order. NSSMC will continuously work at appropriate risk management and implement preventive measures, based on lessons learned from past events and accidents.
- (3)NSSMC will implement and appropriately manage internal control systems and strive to continuously improve them in order to comply with laws and regulations and to ensure credibility of its financial reporting, as well as the validity and efficiency of its operations.
- (4)NSSMC will achieve the Workstyle Innovation as endorsed by the Japanese government by standardization of operations and improvement in efficiency of operations as well as further utilization of IT.
- (5)NSSMC will promote the establishment of a recycling-oriented society and preservation of the environment through its three Eco's (Eco Process, Eco Products™, and Eco Solutions) and development of innovative technologies, such as COURSE50.

By implementing these measures, the NSSMC Group will aim to continue to be trusted companies in society.

History of Management Plans and Organizational Reshuffling (Nippon Steel / NSSMC)

1970	• Nippon Steel Corporation was established.	
1974	• Engineering Divisions Group was organized.	
1977	• The Project Planning & Development Bureau was organized.	
1978	First Modernization Plan →	To rationalize annual crude steel production by reducing output from 47 million tons to 36 million tons by 1980. Major equipment closure: One large section mill each at Kamaishi and Yawata Works, one plate mill at Hirohata Works
1979	• Entire organization was reformed into basic five units: head office, steelworks, company-wide unit, engineering business and development business.	
1981	• The technical department was reorganized to establish Technical Development Bureau and Central R&D Bureau.	
1982	Second Modernization Plan → • The personnel system was reorganized as a three-tier position system.	To urgently bring the annual crude steel production scale down to 28 million tons Major equipment closure: One blast furnace each at Muroran, Hirohata and Sakai Works
1984	Third Modernization Plan → • Nippon Steel Chemical Co., Ltd. was established by the merger of Nippon Steel Chemical Co., Ltd. and Nittetsu Chemical Industrial Co., Ltd.	To realize the production scale appropriate for the medium-term annual crude steel production of 27 to 28 million tons Major equipment closure: One large section mill each at Muroran and Hirohata Works, one blast furnace at Kamaishi Works, one hot-rolling mill at Sakai Works
	• The articles of incorporation were changed to become a comprehensive materials maker with the establishment of the New Materials Projects Bureau and the Titanium Division.	
1985	• The Engineering Divisions Group was shifted to the divisional operating system. • The New Business Planning & Development Division was newly organized.	
1986	• The Electronics Division was organized.	
1987	First Medium-Term Business Plan (Fourth Modernization Plan) → • The articles of incorporation were changed to provide for multiple-business management with the establishment of the Electronics & Information Systems Division, New Materials Division, Service Business Division and Biotechnology Business Division.	Plan duration: Four years, FY1987 to FY1990 To realize the production system that can secure profits even if annual crude steel production in FY1990 dropped to 24 million tons Major equipment closure: One blast furnace each at Yawata, Kamaishi, Hirohata, Muroran and Sakai Works To propose the medium- and long-term visions for multiple-business management (by reform of operating structures) *
1988	• The Electronics & Information Systems Division was spun-off to establish Nippon Steel Information & Communication Systems Inc.	
1989	• The Urban Development Division was organized.	

1991	<p>Second Medium-Term Business Plan →</p> <ul style="list-style-type: none"> • The Technical Development Bureau was organized and the R&E Center was completed as an organization to integrate research, development and engineering. • The Nippon Steel Fellow System was introduced. 	<p>Plan duration: Three years, FY1991 to FY1993</p> <p>Basic policies</p> <ul style="list-style-type: none"> • Strengthening of the competitiveness of the steel business • Promotion of electronics and information systems, urban development and building construction as a major force to expand new businesses <p>Realization of the world's most competitive steel business</p> <ul style="list-style-type: none"> • Development of new products • Innovation in production and logistics systems • New equipment investment of more than ¥600 billion in three years • Improvement of labor productivity by 15%
1993	<ul style="list-style-type: none"> • Nippon Steel Semiconductor Corporation was established and the LSI Division was organized. 	
1994	<p>Third Medium-Term Business Plan →</p> <ul style="list-style-type: none"> • The Corporate Policy Committee was organized. 	<p>Plan duration: Three years, FY1994 to FY1996</p> <ol style="list-style-type: none"> 1. Restructuring of international competitiveness of the steel business <ul style="list-style-type: none"> • Restructuring of cost performance superior to that of the strongest competitor (Cost reduction by ¥300 billion) • Structuring of the 20,000 employee organization 2. Restructuring of management software <ul style="list-style-type: none"> • Slimming-down of head office functions (leaner head office) • Integration of sales and technical divisions and product-wise divisional operations 3. Strengthening and promotion of multiple-business management and group strategies 4. Incessant efforts for market development
1995	<ul style="list-style-type: none"> • The articles of incorporation were changed to add electricity supply to the business line. 	
1997	<p>Medium-Term Business Plan →</p> <ul style="list-style-type: none"> • The personnel system was revised (reduction of positions and introduction of a group system). • The Stainless Steel Division was organized. • Business divisions of the Engineering Divisions Group were reorganized. 	<p>Plan duration: Three years, FY1997 to FY1999</p> <ol style="list-style-type: none"> 1. Structuring of multiple-business management 2. Innovation of management software 3. Strengthening of consolidated management 4. Creation of new demands and development of new markets <p>Management targets</p> <ul style="list-style-type: none"> • Securing of appropriate ordinary profits (ordinary profits of more than ¥100 billion/year on a stable basis) • Strengthening of financial structure • Consolidated sales of ¥3,050 billion for FY1999
1998	<ul style="list-style-type: none"> • The Engineering Divisions Group was positioned as an autonomous company in management and operation. 	

2000	Medium-Term Consolidated Business Plan →	Plan duration: Three years, FY2000 to FY2002 1. Strong consolidated business and the robust Nippon Steel Group 2. Strengthening of consolidated management for improved consolidated business results Consolidated target for FY2002 • Ordinary profit ¥180 billion or more • Free cash flow ¥500 billion for 3 years • ROS 7.5%, ROA 5.5%
	<ul style="list-style-type: none"> • Organizational and operating systems of the steel business were examined with the objective to promote divisionally integrated operations within the group based on product item or business area. • The articles of incorporation were changed to add gas supply and waste treatment/recycling to the business lines. 	
2001	<ul style="list-style-type: none"> • Operations of Nippon Steel's Electronics and Information Systems Division and its subsidiary Nippon Steel Information & Communication Systems Inc. were integrated to organize NS Solutions Corporation. 	
2002	<ul style="list-style-type: none"> • All operations of Nippon Steel's Urban Development Division were integrated into Nippon Steel City Produce, Inc. (company name changed from Nippon Steel Life Planning Co., Ltd. in April 2001). • The articles of incorporation were changed to add manufacture and sale of machinery and equipment, such as environmental plants, water supply and sewage-related facilities, and supply of heat and other energy to the business lines. 	
2003	Medium-Term Consolidated Business Plan →	Plan duration: Three years, FY2003 to FY2005 1. Substantial improvements of its financial structure 2. Completion of selection and concentration of its business segments, and enhancement of overall efficiency 3. Investment decision aimed at improving both quality and capacity in high value-added market segments that will bring future profit growth in its steel business Consolidated target for FY2005 • Ordinary profit Approx. ¥250 billion • ROS Approx. 9% • ROA Approx. 9% • Interest bearing debt Approx. ¥1,600 billion • Shareholders' equity Approx. ¥1,000 billion
	<ul style="list-style-type: none"> • The articles of incorporation were changed to add manufacture and sale of electronic components to the business lines. • Nippon Steel & Sumikin Stainless Steel Corporation was established. 	
2004	<ul style="list-style-type: none"> • Business divisions of the Engineering Divisions Group were reorganized. 	

2006 **Medium-Term Consolidated Business Plan** →

Plan duration: Three years, FY2006 to FY2008

1. Completion of the group's 40 million ton crude steel production base
2. Implementation of "Global Player Strategy"
3. Enhancement of the alliance network with domestic and overseas steel manufacturers
4. Construction of a strong group management system uniting the six business segments' strengths
5. Strengthening of financial position (Acquisition of international credit rating A1)

Target for FY2008 (Consolidated)

- Net sales Approx. ¥4,200 billion
- Ordinary profit ¥500 billion or more
- Net income ¥300 billion or more (EPS ¥44 or more per share)
- ROA Approx. 12%
- Interest bearing debt ¥1,000 billion or less
- Debt-Equity ratio 0.5 or less
- Capex, investing & financing Approx. ¥850 billion per three years

- Amendments to the Articles of Incorporation. Amendments in relation to the new Company Law.
- Amendments to the provisions related to the Board of Directors and the Corporate Auditors.
- Introduction of the Executive Management System.
- Nippon Steel Engineering Co., Ltd. and Nippon Steel Materials Co., Ltd. were established.

2010 **Medium-Term Management Plan** →

Plan duration: Three years, FY2009 to FY2011

1. "Reinforcing our corporate strengths and establishing a secure revenue base" and "building a stronger global production and supply base" in the Steel Industry
2. Maximizing the synergy of the group
3. Policies relating to global warming
4. Policies to be a "trusted and reliable company"
5. Laying grounds for a New Growth Path
 - Further strengthen its competitive edge
 - Build a global tri-polar (Domestic, Asia, American and Pan-Atlantic) production and processing base network. (Envisaging a global capacity of 50 to 60 million tons)
 - Realize a "Global Corporate Group"

- 2011 • Oita Works and the Hikari Pipe & Tube Division were integrated and reorganized

<p>2013 Mid-Term Management Plan →</p>	<p>Plan duration: About 3 years from FY 2013</p> <ol style="list-style-type: none"> 1. Five key initiatives for the Steel Business <ol style="list-style-type: none"> ① Enhancing NSSMC's technological superiority ② Building world-leading cost competitiveness ③ Optimizing the production network by rationalization of iron-making, steelmaking, and rolling facilities ④ Promoting global strategy ⑤ Strengthening the group companies 2. Maximization of combined group strength 3. Balancing financial strengths and growth investments 4. Promoting organizational and business management 5. Continuing to be a company with integrity and reliability 6. Paths toward new growth <p>Minimum ROS target of 5%, with the further goal of achieving 10%</p>
<p>2014 Yawata Works and Kokura Works were integrated to become Yawata Works. Wakayama Works and Sakai Works were integrated to become Wakayama Works. Kimitsu Works and Tokyo Works were integrated to become Kimitsu Works.</p>	
<p>2015 2017 Mid-Term Management Plan was formulated</p>	<p>Plan duration Three years, FY2015 to FY2017</p> <ol style="list-style-type: none"> 1. Steel business <ol style="list-style-type: none"> ① Enhancing mother mill's competitiveness ② Promoting global strategy ③ Enhancing technological superiority ④ Establishing world-leading cost competitiveness ⑤ Strengthening group companies of the Steel business 2. Maximization of combined Group strength 3. Investing management resources for growth 4. Continuing to be a company with integrity and reliability 5. Accelerating towards becoming the "best steelmaker with world-leading capabilities" <p>2017 Mid-Term Management Plan targets ROS 10% or more, ROE 10% or more, D/E ratio about 0.5</p>

* Operation of Blast Furnaces
(Nippon Steel / NSSMC)

Works	Fourth Modernization Plan	BFs in operation as of Oct. 2012	BFs in operation as of Mar. 2018	Reference
Muroran	1 → 0 (units)	1 (units)	1 (units)	※ Succeeded to Hokkai Iron & Coke in April 1994
Kamaishi	1 → 0	0	0	Closed on March 1989
Hirohata	1 → 0	0	0	Closed on June 1993
Sakai	1 → 0	0	0	Closed on March 1990
Yawata	2 → 1	1	1	One BF operation system from December 1988
Nagoya	2 → 2	2	2	
Kimitsu	2 → 3	3	2	Three BF operation system from July 1988 Two BF operation system from March 2016
Oita	2 → 2	2	2	
Total	12 → 8	9	8	(including Hokkai Iron & Coke)

(Sumitomo Metals / NSSMC)

Works	BFs in operation as of Mar. 1987	BFs in operation as of Oct. 2012	BFs in operation as of Mar. 2018	Reference
Kashima	2(Units)	2(Units)	2(Units)	
Wakayama/ Nippon Steel & Sumikin Koutetsu Wakayama Corporation	3	2	2	Two BF operation system from September 1990
Yawata (Kokura Area)	1	1	1	Planned to close at the end of fiscal 2020
Total	6	5	5	

History of Management Plans and Organizational Reshuffling (former Sumitomo Metals)

1986	Revised Medium-Term Business Plan →	<ol style="list-style-type: none"> 1. Slimline production implemented to enable output of 90 million tons of raw steel nationally Consolidation of facilities in order to raise the efficiency of the manufacturing systems Main facilities placed on inactive status: Wakayama/Steel Slabs; Amagasaki/Steel Tubes 2. Expansion of businesses specific to increasing competitiveness <ol style="list-style-type: none"> (1) Reinforcing the Steel Sheet Division (increasing competitiveness through high quality and high value-added products) (2) Bolstering non-ferrite business (new businesses: electronics, new advanced materials, chemical products, engineering and titanium)
1988	Medium-Term Business Plan → FY 1988 - FY 1990	<ol style="list-style-type: none"> 1. Expansion of Diversified Business Divisions (Steel Engineering, Electronics & Information Services, New Advanced Materials & Chemical Products, 'Soft' Services, etc.) 2. Reinforce the competitiveness of the Steel Division <ol style="list-style-type: none"> (1) Cost reductions (Reductions in fixed costs, such as investment in facilities and rationalization of human resources; streamlining of the functions of the Head Office, etc.) (2) Move to increase sales of high-grade and high value-added products; improve user services in terms of quality and delivery schedule
<p>• Kainan Steel Tube Works integrated into Wakayama Works</p>		
1990	Vision 2000 →	<ol style="list-style-type: none"> 1. Actual policy implementation: "Management that Puts People First" Bolstering welfare facilities, etc.; improving and strengthening system that involve people; contributing to society; responding to the needs of internationalization 2. Actual policy implementation; "Business Built on Layers of Technology" By trying to develop original technologies, products, fields and businesses, etc., Sumitomo Metals is working towards its aim of creating a company dedicated about strategic technology. Strategic integration of materials technology; bolstering the development and promotion of technology; better work environment and facilities to deliver improved developmental potential.

Three-Year Action Plan →

1. Improve competitiveness of the steel business divisions
 - (1) Radical improvement in productivity
Targets for improving productivity: at least 20% in 3 years; Establish a system for all 10,000 technical employees in the Steel Business divisions
 - (2) Reinforce manufacturing systems
Bolster the manufacturing systems for steel sheets at Kashima Works, improve the competitiveness of Wakayama Works (improvements to the efficiency of the upstream processes)
2. Promotion of a diversified business

• Electronics Business Division was established.

1992 • Merged with Nippon Stainless Steel Co., Ltd. (Naetsu Works established; Kashima Stainless Steel Works established)

1993 **New Three-Year Action Plan** →

1. Renovate the Wakayama Works; a new seamless mill, reinforcement of upstream processes focused on steel production
2. Establish a corporate system that will secure profit levels that will allow the company to pay a dividend in 1995
 - (1) Steelmaking business
Increase productivity
rationalization to a structure of 11,800 engineers/technicians
Indirect divisions: 20% (800 employees) rationalization
 - (2) Diversification of business
Resource investments: increase personnel by 700, ¥50 billion invested in businesses
Sales targets: Construction, branding, systems, titanium, electronics - ¥400 billion

1994 **Restructuring Plan** →
(up to FY 1995)

1. Restructuring of management software:
Establish a small Head Office
Establish a Management Reform Strategy Committee
2. Improve the Steel Business
General Costs: Reduction of 15% (¥150 billion per year)
Technicians/engineers: 11,000
Admin staff; clerical/technical staff: 4,100
15,000 employees in the Steel Business
3. Diversification of business:
Sales targets: Construction, branding, systems, titanium, electronics - ¥340 billion

• Kashima Stainless Steel Works was integrated into Kashima Works.

1995 • The Steel business divisions were reorganized by product type.

1996	New Medium-Term Business Plan →	<ol style="list-style-type: none"> 1. Reinforcing the infrastructure of the steel business to improve competitiveness on an international level: <ul style="list-style-type: none"> · Construction of a new steel mill at Wakayama Works · 11,200 employees by the end of FY 1997 2. Promote and expand the diversification of the business to the next level <ul style="list-style-type: none"> · Capital Investment: ¥10 billion per year; an increase of 400 employees · Sales Targets: ¥340 billion (¥300 billion in 1995)
1998	Medium-Term Business Plan "Plan 2000" (FY 1998 - FY 2000) →	<ol style="list-style-type: none"> 1. Strengthen competitiveness of the steel business to the next level 2. Allocation of business assets to aid business expansion and increased revenue for the diversification of important an effective businesses 3. Strengthen the Corporate Group 4. Proactive implementation of policies to improve the global environment
<ul style="list-style-type: none"> · Merged with Sumitomo Sitix Corporation 		
1999	Business Reform Plan →	<ol style="list-style-type: none"> 1. Build a Steel Business that will survive and thrive into the 21st Century <ul style="list-style-type: none"> · Radical reform of the seamless pipe business · Establish a New Wakayama System · Strive to take steel sheet competitiveness to the next level at the production locations at the Kashima Works · In order to improve management efficiency, promote the spinning off of businesses into separate companies 2. Reorganization of affiliated companies as part of moves to improve management efficiencies 3. Diversification of businesses: selection and concentration <ul style="list-style-type: none"> · Development of the Silicon Wafer business · Reorganization of electronics-affiliated businesses 4. Create an employment structure with sufficient resilience for the 21st Century
2000	<ul style="list-style-type: none"> · Sumitomo Metals spun off its Kokura Works and Naoetsu Works and made them into Sumitomo Metals (Kokura), Ltd. and Sumitomo Metals (Naoetsu), Ltd. respectively. 	

2001	Implementation of Revolution & Rebirth Plan →	<p>The materials field, centered on iron, needs to be No.1 in terms of Customer Evaluations as well as highly profitable</p> <ol style="list-style-type: none"> 1. Creation of a corporate system to emerge as a winner in the era of intense competition <ul style="list-style-type: none"> ·From October 2002 onwards, initiate a rapid transition to a pure holding company 2. Strengthening of company structure following the transition to a pure holding company <ul style="list-style-type: none"> < Reforming the functions of the Head Office and bolstering the systems of the Corporate Group > < Increasing the competitiveness of the Steel Business > <ul style="list-style-type: none"> ·Aiming to make the Seamless Pipe Business No.1 in the world < Reduction of Fixed Expenses > <ul style="list-style-type: none"> ·Reduction of the overall cost of labor ·Deliver highly efficient use of capital 3. Complete integration of the Silicon Wafer business to the Silicon United Manufacturing Corporation (present SUMCO Corporation) <ul style="list-style-type: none"> ·Aiming to be the No.1 supplier in the world
2002	Medium-term Business Plan →	<ol style="list-style-type: none"> 1. Steel business divisions - radical structural reform and strengthening of competitiveness <ol style="list-style-type: none"> (1) Mass produced steel sheet products concentrated at Kashima Works; Dedicated production of high grade steel sheet at Wakayama Works (2) Full scale operations for upstream processes at Wakayama Works <ul style="list-style-type: none"> → Completion of structural reforms at Wakayama Works (3) Integration of the stainless steel business through the establishment of a new company with Nippon Steel (4) Mutual collaboration and cooperation between Nippon Steel and neighboring steel works on issues such as procurement of raw materials, other materials and equipment as well as logistics (5) Mutual collaboration and cooperation between Kobe Steel, Ltd. and the Titanium business divisions on issues such as procurement of raw materials, other materials and equipment as well as logistics, etc. <ul style="list-style-type: none"> → Mutual investment by Nippon Steel and the Kobe Steel, Ltd.

2. Strengthen the financial basis of the company (on a consolidated base)
 - (1) Reduce loan balance to less than ¥1 trillion
 - (2) ROA of more than 5%
 - (3) Proportion of shareholder equity to total assets greater than 20%

- The silicon wafer business was transferred to Silicon United Manufacturing Corporation (present SUMCO Corporation).
- Internal Company System was introduced.

2003 • Nippon Steel & Sumikin Stainless Steel Corporation was established.

2006 **Medium-Term Business Plan** →

1. Continuous improvement of corporate value with an emphasis on quality
 2. Acceleration of the differentiation process
Based upon: "Making our strong areas even stronger"; "No.1 in Customer Evaluations"; "Emphasize the Balance between Quality and Size"
 - Focus on energy and automotive fields
 - Product type structure is realigned to emphasize high-end products
 - Deepening the relationship with customers
 - Concentration of resources on lucrative product types
 3. Brush up approach to invisible assets such as Customers, Human Resources and Technologies; strengthen physical and financial assets at the Works, etc.; formulate a fixed business infrastructure
- < Fundamental reinforcement of Works infrastructure to increase competitiveness >
- Kashima: 8 million ton system, continuous full operation, world-class cost and quality competitiveness
 - Wakayama: Continuous full operation - No.1 brand seamless sheet steel and long-term contracts for steel slabs
 - Kokura: Establish Kokura as a leading brand for specialty steel

2008 • Titanium business was split and was absorbed by Sumitomo Metals (Naoetsu), Ltd.

2012 • Merged with Sumitomo Metals (Kokura), Ltd. and Sumitomo Metals (Naoetsu), Ltd.

Business Integration among Group Companies

(From October 1, 2012)

	Integration Date
Nippon Steel Pipeline Co., Ltd. and Sumitomo Metal Pipeline and Piping, Ltd. were integrated to NIPPON STEEL & SUMIKIN Pipeline & Engineering Co., Ltd.	Oct. 1, 2012
Bar & wire processing companies in Thailand were integrated to NIPPON STEEL & SUMIKIN Steel Processing (Thailand) Co., Ltd.	Jan. 2, 2013
High-tension bolt businesses of Nippon Steel & Sumikin Precision Forge, Inc. and NS Bolten Co., Ltd. were integrated to NIPPON STEEL & SUMIKIN Bolten CORPORATION	Jan. 4, 2013
Nippon Steel Logistics Co., Ltd. and Sumitomo Metal Logistics Service Co., Ltd. were integrated and reorganized to NIPPON STEEL & SUMIKIN LOGISTICS CO., LTD.	Apr. 1, 2013
Nippon Steel Techno Research Corporation and Sumitomo Metal Technology, Inc. were integrated to NIPPON STEEL & SUMIKIN TECHNOLOGY CO., LTD.	Apr. 1, 2013
Nittetsu Shinko Shearing Corporation and Shearing Kozyo, Ltd. were integrated to NSS SHEARING CORPORATION	Apr. 1, 2013
Sumikin Bussan Corporation and Nippon Steel Trading Co., Ltd. were integrated to NIPPON STEEL & SUMIKIN BUSSAN CORPORATION	Oct. 1, 2013
Taihei Kogyo Co., Ltd. and Nittetsu Elex Co., Ltd. were integrated to NIPPON STEEL & SUMIKIN TEXENG.CO., LTD.	Oct. 1, 2013
Sumitomo Pipe & Tube Co., Ltd. and Nittetsu Steel Pipe Co., Ltd. were integrated to NIPPON STEEL & SUMIKIN Pipe Co., Ltd.	Oct. 1, 2013
7 operational support service companies were reorganized to 5 companies by location.	Jul. 1, 2014
5 slag sales companies were integrated to NIPPON STEEL & SUMIKIN SLAG PRODUCTS CO., LTD.	Jul. 1, 2014
8 equipment engineering & maintenance companies were integrated to NIPPON STEEL & SUMIKIN TEXENG. CO., LTD.	Oct. 1, 2014
Integration and reorganization of railway-related business (Nippon Steel & Sumikin Technology Co., Ltd. and Nippon Steel & Sumikin Kansai Industries, Ltd. were integrated to NIPPON STEEL & SUMIKIN RAILWAY TECHNOLOGY CO., LTD.	Apr. 1, 2015
Integration and reorganization of a processing company for Osaka Steel Works (The machining business and the business of manufacturing of dies for forging of Nippon Steel & Sumikin Kansai Industries, Ltd. and the business of manufacturing business of forged rolls of Kantoc Roll, Ltd. were integrated to NIPPON STEEL & SUMIKIN KANSAI MACHINING CO., LTD.)	Apr. 1, 2015
Nippon Steel & Sumikin Fine Technology Co., Ltd. and Nippon Tubular Products Co., Ltd. were integrated to Nippon Steel & Sumikin Precision Machining Co., Ltd.	Jul. 1, 2016
The Siam United Steel (1995) Co., Ltd. and Nippon Steel & Sumikin Galvanizing (Thailand) Co., Ltd. were integrated to NS-Siam United Steel Co., Ltd.	Sep. 1, 2016
NIPPON STEEL & SUMIKIN CHEMICAL CO., LTD. and NIPPON STEEL & SUMIKIN MATERIALS CO., LTD. will be integrated to NIPPON STEEL Chemical & Material Co., Ltd.	Oct. 1, 2018
Stainless Steel Sheet Businesses of Nippon Steel & Sumitomo Metal Corporation, Nisshin Steel Co., Ltd., and Nippon Steel & Sumikin Stainless Steel Corporation will be integrated.	Apr. 1, 2019

Global Network

Alliances with Steelmakers

Alliances with Domestic Steelmakers

Former Nippon Steel, Former Sumitomo Metals, and Kobe Steel (up to the time NSSMC was formed)

- Dec. 2001 Nippon Steel Corporation (NSC) and Kobe Steel began alliance for strengthening each other's competitiveness (complementing of iron- and steelmaking materials and cost reduction)
- Feb. 2002 NSC and Sumitomo Metal Industries (SMI) began alliance for strengthening each other's competitiveness (cooperation in iron- and steelmaking materials and downstream processes, cooperation in the stainless steel business, and cost reduction)
- Jul. 2002 NSC and SMI integrated their welding-materials business (establishment of Nippon Steel & Sumikin Welding Co., Ltd.)
- Nov. 2002 NSC and SMI began cooperation for hot rolled steel sheets, strengthened the alliance, and agreed on mutual capital subscription (of about ¥5 billion each)
NSC and Kobe Steel strengthened cooperation, and agreed on mutual capital subscription (of about ¥3 billion each)
- Sep. 2003 NSC and Kobe Steel integrated their plate fusion-cutting business (establishment of Nittetsu Shinko Shearing)
- Oct. 2003 NSC and SMI integrated their stainless-steel business (establishment of Nippon Steel & Sumikin Stainless Steel Corp.)
- Jan. 2005 NSC, SMI, Sumitomo Pipe & Tube Co., Ltd., and Sumitomo Corporation began alliance in the automotive steel tube business in China (start of commercial production by Guangzhou You-Ri Automotive Parts Co., Ltd.)
- Mar. 2005 NSC, SMI, and Kobe Steel began studying to deepen their cooperation and to mutually acquire each other's shares
- Apr. 2005 NSC and Kobe Steel began supplying hot rolled steel sheets to SMI
- Jun. 2005 NSC and Kobe Steel subscribed part of the capital of East Asia United Steel Corporation (10% and 2%, respectively)
Joint use of the iron- and steelmaking facilities of Wakayama Works of Sumitomo Metals (start of slab supply to Nippon Steel)
- Dec. 2005 NSC, SMI, and Kobe Steel additionally cross-purchased each other's shares on the back of expanded and enhanced cooperation
- | | |
|--------------------------------|-------------|
| Nippon Steel → Sumitomo Metals | 2.55%→5.01% |
| Sumitomo Metals → Nippon Steel | 0.52%→1.81% |
| Nippon Steel → Kobe Steel | 1.80%→2.05% |
| Kobe Steel → Nippon Steel | 0.29%→0.41% |
| Sumitomo Metals → Kobe Steel | 1.80%→2.05% |
| Kobe Steel → Sumitomo Metals | 1.52%→1.71% |
- Mar. 2006 NSC, SMI, and Kobe Steel agreed to deepen their cooperation (joint studies on deepening the cooperation and how to cope with a takeover bid)
- Apr. 2006 NSC and SMI jointly undertook their cast-steel rolling-mill roll business (establishment of Nippon Steel & Sumikin Rolls Corporation)
- Dec. 2006 The Nippon Steel Group and the Sumitomo Metals Group integrated their structural steel sheet business, and their road and civil engineering business (establishment of Nippon Steel & Sumikin Coated Sheet Corporation and Nippon Steel & Sumikin Metal Products Co., Ltd.)

- Oct. 2007 NSC, SMI, and Kobe Steel began study of deepening and expanding their cooperation
 (•NSC and SMI to more effectively utilize the expanded iron- and steelmaking capacity of SMI's Wakayama works.
 •NSC and SMI to secure high-grade steel sheet supply capacity and to jointly deal with SMI's Naoetsu operation.
 •NSC and Kobe Steel to cooperate in the environmental and recycling areas and to exchange iron-making technology.)
- Dec. 2007 NSC, SMI, and Kobe Steel additionally cross-purchased each other's shares on the back of expanded and enhanced cooperation
 (NSC → SMI 5.01%→9.4%
 SMI → NSC 1.81%→4.2%
 NSC → Kobe Steel 2.05%→3.4%
 Kobe Steel → NSC 0.41%→0.8%
 SMI → Kobe Steel 2.05%→3.4%
 Kobe Steel → SMI 1.71%→2.3%)
- Apr. 2008 SMI began consigning production of stainless steel boiler tubes to Kobe Special Tube Co., Ltd.
- Oct. 2008 NSC and Kobe Steel undertook the business of steel dust recycling and production and utilization of directly-reduced iron on a joint basis (establishment of Nittetsu Shinko Metal Refine Co., Ltd.)
- Jul. 2009 The Nippon Steel group and the Sumitomo Metals group integrated their arc-welded stainless steel pipe and tube business (establishment of Sumikin & Nippon Steel Stainless Steel Pipe Co., Ltd.)
- Oct. 2012 NSC and SMI integrated their business and formed NSSMC
 (NSSMC → Kobe Steel 2.9%
 Kobe Steel → NSSMC 0.7%)

Nisshin Steel

- May 2000 Mutual supply of stainless steel hot rolled materials (chromium: Nippon Steel to Nisshin, nickel: Nisshin to Nippon Steel)
- Mar. 2017 NSSMC made Nisshin Steel a subsidiary. Aims to create synergies by bringing together the management resources of both groups and to promote alliance.
 NSSMC's ownership: 51.0%
- Jan. 2019 Nisshin Steel is scheduled to be a wholly owned.
- Apr. 2019 Integration of stainless steel sheet business of NSSMC, Nisshin Steel, and Nippon Steel & Sumikin Stainless Steel Corporation (scheduled)

Sanyo Special Steel

- Feb. 2006 Alliance for strengthening each other's competitiveness (mutual commissioning of production, cost reduction, and joint R&D)
 Sanyo Special Steel became an equity-method affiliate of Nippon Steel
 NSSMC's ownership: 14.6%
- * NSSMC is now considering making Sanyo Special Steel its subsidiary in March 2019.

Mitsubishi Steel Mfg.

- Apr. 1994 Mutual toll production with Mitsubishi Steel Muroan Inc.
- Jul. 2005 Purchase of a shut-down electric furnace of Mitsubishi Steel and re-start of its operation at Nippon Steel's Muroan Works
- Oct. 2017 NSSMC increase volume in outsourced manufacturing of steel billets to Mitsubishi Steel Muroan Inc.
 NSSMC's ownership: 1.4%

Aichi Steel

Nov. 2000 Cooperation in automotive special steel bar & wire rods (strengthening competitiveness on production and cost, and joint R&D)
NSSMC's ownership: 7.7%

Godo Steel

Jun. 2007 Alliance for strengthening each other's competitiveness (commissioning of production, effective utilization of infrastructure of Godo Steel)
Godo Steel became an equity-method affiliate of Nippon Steel
NSSMC's ownership: 15.0%

Topy Industries

Sep. 2008 Alliance for strengthening each other's competitiveness
Oct. 2008 Topy Industries became an equity-method affiliate of Nippon Steel
NSSMC's ownership: 20.1%

Alliances with Overseas Steelmakers

ArcelorMittal

Mar. 1990	Start of operation of I/N Tek, a joint venture with Inland Steel* for toll processing of cold rolled steel sheets (Nippon Steel 40%, Inland Steel 60%)
Oct. 1991	Start of operation of I/N Kote, a joint venture with Inland Steel for the manufacture and sale of coated steel sheets (Nippon Steel 50%, Inland Steel 50%)
Jan. 2001	Global strategic alliance agreement with Usinor* (furthering business cooperation in the automotive sheet steel area, license agreements for the existing technologies, joint R&D, etc.)
Apr. 2002	Technical cooperation arrangements made for automotive steel sheet with Arcelor and Tata Steel
Oct. 2003	Deepened the alliance with the Ispat group in North America (improvement of the high-grade steel sheet supply system for Japanese automotive makers in North America)
Jul. 2007	Memorandum of understanding concerning a joint venture in North America and a strategic alliance agreement
Apr. 2008	Agreement on running a joint venture in North America and revision of the strategic alliance agreement (installation of a new hot-dip galvanizing line for automotive sheets at I/N Kote)
Dec. 2008	Agreement on deferral of installation of a new hot-dip galvanizing line at I/N Kote
Feb. 2014	Joint acquisition of AM/NS Calvert LLC (ex. ThyssenKrupp Steel USA, LLC)

* Inland Steel became Ispat Inland in July 1998, and then Mittal Steel USA in May 2005. Usinor became Arcelor in February 2002. TOB for Arcelor by Mittal Steel was completed in July 2006. Integration of Arcelor and Mittal Steel was completed in July 2007.

POSCO

Dec. 1998	Mutual acquisition of stocks at the money values equal to those of the purchase of government-released securities attendant on the privatization of POSCO 〔 Nippon Steel → POSCO: 0.65% 〕 〔 POSCO → Nippon Steel: 0.24% 〕
Aug. 2000	Strategic Alliance Agreement and mutual capital subscriptions 〔 Nippon Steel → POSCO: about 3% 〕 〔 POSCO → Nippon Steel: a little over 2% 〕
Oct. 2006	Enhancement of strategic alliance and additional cross-purchase of shares 〔 Mutual supply of semi-finished products and joint work on dry-type dust recycling 〕 〔 Nippon Steel → POSCO: additional stock acquisition of about 2% 〕 〔 POSCO → Nippon Steel: stock acquisition in approximate equal monetary value 〕
Jan. 2008	Establishment of POSCO-NIPPON STEEL RHF Joint Venture, Co., Ltd. (PNR), a joint venture concerning direct-reduction iron supply and dry-dust recycling (Nippon Steel 30%, POSCO 70%)
Oct. 2010	Joint participation in Mozambique Revuboe coal mine for co-development
Mar. 2011	Joint participation in Brazilian Niobium company, CBMM, as a Japanese and Korean consortium

Vallourec Group

- 1976 Signed a license agreement on VAM[®], for premium joints to connect seamless pipes (In 1985, an R&D agreement was made)
- 1984 Started a joint venture to manufacture and service premium joint threading in the U.S.A. Subsequently similar ventures were started in Indonesia, Singapore, Vietnam, and China
- Jul. 2007 Established Vallourec & Sumitomo Tubos do Brasil Ltda. (VSB), a joint venture with Vallourec to manufacture seamless pipe in Brazil
- Feb. 2009 Agreed on mutual equity investments (Completed acquisition of equities in the first half of fiscal 2009)
- Sep. 2011 VSB started commercial operation
- Feb. 2016 Agreed on enhancement of strategic partnership
- Strengthening of the VAM[®] Premium Connection
 - The acceleration of product development / industrialization, and customer services as the newly expanded scope of collaboration for VAM[®].
 - Enhanced joint operation of the seamless pipe business in Brazil
 - Integrating Vallourec Tubos do Brasil S.A. ("VBR") and VSB.
 - Equity investment in vallourec
 - Increasing NSSMC's shareholding ratio to 15%.
 - ✕Vallourec issued new shares to its employees in December 2016, resulting in changing NSSMC's shareholding ratio
- Oct. 2016 VBR and VSB merged to become a new company Vallourec Soluções Tubulares do Brasil S.A. ("VSB").

China Steel Corporation

- Apr. 2002 Agreed on stable supply of slab
- May 2003 Signed a joint venture agreement for upstream operation at Wakayama Steel
- Jul. 2003 Established East Asia United Steel Corporation
- Nov. 2003 Established Sumikin Iron & Steel Corporation (Completed the joint venture framework for upstream operations)
- Spring of 2005 Expanded supply of slab to 1.8 million tons per year
- May 2007 The cumulative shipment of slab reached 5 million tons
- Aug. 2007 China Steel Group made capital investment in Thai Sumilox Co., Ltd.
- Mar. 2008 Made capital investment in CSGT Metals Vietnam Joint Stock Company (CSMV)
- Aug. 2008 Concluded agreement to establish China Steel Sumikin Vietnam Joint Stock Company (CSVC), a steel sheet joint venture in Vietnam
- May 2009 Established CSVK, a steel sheet joint venture company in Vietnam
- Apr. 2013 CSVK started operation

Maximizing the Effects of the Alliances in Japan and Abroad

NSSMC's ownership		Kobe Steel	Nisshin Steel	USIMINAS (Brazil)	POSCO (S. Korea)	ArcelorMittal (Europe)	Vallourec (Europe)	CSC (Taiwan)
	2.9%	51.0%	31.2%	3.3%	14.9%*			
Alliance		Mar. 2017: Subsidiary of NSSMC (scheduled) Jan. 2019: A wholly owned subsidiary (scheduled) Apr. 2020: Integration of stainless steel sheet business (scheduled)	Dec. 2006: Equity method affiliate 2012: New shareholders agreement (Participation of Ternium Group)	2000 Strategic alliance agreement	2001 Global strategic alliance agreement	2009 Agreement on mutual equity investments 2016: Enhancement of Strategic Partnership		
Cooperation in the supply of semi-products	Mutual supply of slabs & hot-rolled sheets	2000 Mutual supply of stainless hot-rolled sheets, etc.	2007 Mutual supply of semi-products during blast-furnace refining					Supply of slabs to CSC
Mutual cooperation in products					Joint research and cross-licensing, etc. of automotive sheet steel technologies	R & D agreement Trademark license agreement on VAN® [®] for premium joints		
Cost reduction in procurement & distribution of raw materials			2010: Investment in Mozambique Revaboe coal mine 2011: Investment in Brazilian Niobium company, CBMM					
Joint studies on iron- & steel-making processes	Exchanges in the department of iron-making technology		Support in production structure optimization	Joint studies & technical exchanges				
Joint operation of joint ventures	2005 East Asia United Steel	1999 UNIGAL			1987: JIN Tek 1989: JIN Kote 2014: AMNS Calvert	1984: Joint ventures for processing of and services for premium joints (VAM USA, VAM (Changzhou), etc) 2007: VSB	2003: East Asia United Steel 2007: Thai Sumilox 2009: CSVC	
Integration of subsidiaries & affiliates	Integration of shearing business							
Cooperation in environmental protection and recycling	2008 RHF JV (on the premises of Hirohata)	2010 Dust recycling (Kure → Hirohata JV)		2009 Start of operation of RHF JV (on the premises of Pohang & Gwangyang)	Joint studies & information exchanges			

* Integration of stainless steel sheet business of NSSMC, Nisshin Steel, and Nippon Steel & Sumitkin Stainless Steel Corporation (scheduled)

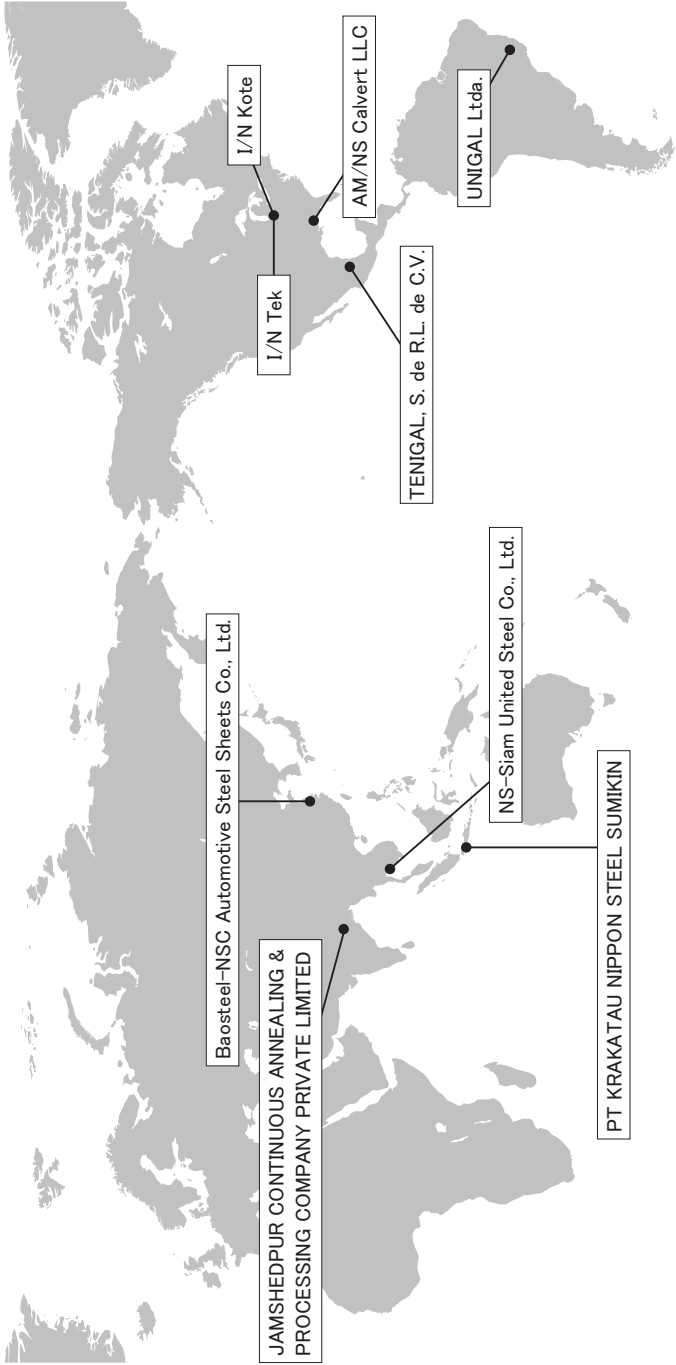
Major Overseas Steelmaking Operations

Usinas Siderúrgicas de Minas Gerais S/A (USIMINAS)	
• Business	Integrated steel manufacture
• Location	Belo Horizonte, Minas Gerais State, Brazil
• Capital	BRL 13,200 million
• NSSMC's equity share	31.2% (Ordinary shares, including indirect participation) [As of Mar. 2018]
• Employees	13,000 (Consolidated) [As of Mar. 31, 2018]
• Production & Sales	Clude steel production 3.01 million tons. Sales volume 4.03 million tons. [CY 2017]
• Steelworks	<p>Ipatinga Works (Ipatinga, Minas Gerais State)</p> <p>Blast furnaces (No.1 <885m³> / No.2 <885m³> / No.3 <3,162m³>)</p> <p>Plate mill (1.00 million tons/y)</p> <p>Hot-strip mill (3.45 million tons/y)</p> <p>Cold-rolling mill (2.20 million tons/y)</p> <p>[Hot-dip galvanizing line (1.03 million tons/y) by UNIGAL]</p> <p>Cubatão Works (Cubatão, São Paulo State)</p> <p>Blast furnaces (No.1 <1,829m³> / No.2 <3,365m³>)</p> <p>[Under temporary interruption of slab production]</p> <p>Plate mill (1.00 million tons/y)</p> <p>Hot-strip mill (2.30 million tons/y)</p> <p>Cold-rolling mill (1.20 million tons/y)</p>
• Others	<p>Acquisition of iron-ore mines of J. Mendes in Serra Azul region (Minas Gerais State) in Feb. 2008</p> <p>Establishment of Mineracao Usiminas SA for mining business in Aug. 2010 (Currently : USIMINAS 70%, Sumitomo Corporation Group 30%)</p> <p>Iron-ore production capacity was increased to 12 million tons/y in 2013</p>

Cooperation with USIMINAS

Dec. 1957	Establishment of an investment company, Nippon Usiminas Co., Ltd., with Nippon Steel as the largest stockholder (In 1967, the Japanese government made a capital subscription)
Jan. 1958	Establishment of USIMINAS (the Brazilian side 60%, Nippon Usiminas 40%)
Oct. 1962	Blowing-in of the No. 1 blast furnace of Ipatinga Works
After 1966	Nippon Steel's technical assistance started (seven consecutive programs until 2014).
Jun. 1999	Establishment of a joint venture between Nippon Steel and USIMINAS for hot-dip galvanized automotive steel sheet manufacture, UNIGAL (in operation since Oct. 2000)
Dec. 2006	Nippon Usiminas became a subsidiary of Nippon Steel, making USIMINAS Nippon Steel's equity-method affiliate (equity ratio: 23.4%, including indirect participation).
Jan. 2012	Execution of share purchase agreement (equity ratio: 29.2%, including indirect participation) and new shareholders agreement of USIMINAS
Jul. 2016	Subscription of additional shares according to the capital increase of Usiminas (equity ratio: 31.2%, including indirect participation)
Apr. 2018	Amendment of the shareholders agreement (executed in Jan. 2012)

Automotive Steel Sheet Manufacturing & Sales Bases



Automotive Steel Sheet Manufacturing & Sales Bases

I/N Tek

•Business	Commissioned rolling of cold-rolled steel sheets
•Location	New Carlisle, Indiana, U.S.A.
•Start-up	Mar. 1990 (established in Jul. 1987)
•Capital	US\$ 195 million
•President	Thomas Cayia
•Vice president	S. Itonaga (dispatched from NSSMC)
•Employees	269
•NSSMC's equity share	40.0%
•Major facilities	1 CDCM (continuous descaling and cold-rolling mill) — (1.7 million short tons/y), 1 C.A.P.L.(continuous annealing and processing line) — (1.2 million short tons/y)
•Sales destination	Coil centers, automobile makers, electric appliance makers, steel furniture makers and construction material makers, including Japanese companies via ArcelorMittal and/or NS Sales (NSSMC's subsidiary)

I/N Kote

•Business	Manufacture and sale of coated steel sheets
•Location	New Carlisle, Indiana, U.S.A.
•Start-up	Oct. 1991 (established in Sep. 1989)
•Capital	US\$ 120 million
•President	Thomas Cayia
•Vice president	S. Itonaga (dispatched from NSSMC)
•Employees	240
•NSSMC's equity share	50.0%
•Major facilities	1 continuous galvanizing line (500,000 short tons/y) 1 electrogalvanizing line (450,000 short tons/y)
•Sales destination	Japanese and U.S. automobile makers, parts makers, etc.

AM/NS Calvert LLC

•Business	Manufacture and sale of hot-rolled, cold-rolled, and coated steel sheets
•Location	Calvert, Alabama, U.S.A.
•Start-up	Feb. 2014 (Acquisition)
•Capital	US\$ 516 million
•CEO	Robrecht Himpe
•CTO	Y. Komuro (dispatched from NSSMC)
•Employees	1,507
•NSSMC's equity share	50.0%
•Major facilities	1 hot strip mill (5.3 million tons/y) 1 continuous pickling line (1.1 million tons/y) 1 pickling line & tandem cold rolling mill (2.5 million tons/y) 1 continuous annealing line (0.6 million tons/y) 3 continuous galvanizing lines (1.4 million tons/y)

TENIGAL, S. de R.L. de C.V.

•Business	Manufacture and sale of automotive hot-dip galvanized and galvanized steel sheets
•Location	In the vicinity of Monterrey City, Mexico
•Start-up	Aug. 2013 (established in Nov. 2010)
•Capital	US\$ 238 million
•CEO	Jeronimo Garcia De Brahi
•Director and a Member of the Board	S. Miyauchi (dispatched from NSSMC)
•Employees	160
•NSSMC's equity share	49.0%
•Major facility	1 hot-dip galvanizing line (420,000 tons/y)

UNIGAL Ltda.

•Business	Manufacture of hot-dip galvanized steel sheets
•Location	Ipatinga, Minas Gerais State, Brazil
•Start-up	Oct. 2000 (established in Jun. 1999)
•Capital	BRL 585 million
•President	Marcelo Dantas
•Vice president	N. Suzumura (dispatched from NSSMC)
•Employees	312
•NSSMC's equity share	30.0%
•Major facilities	2 continuous galvanizing lines (480,000 tons/y and 550,000 tons/y)

Baosteel-NSC Automotive Steel Sheets Co., Ltd. (BNA)

•Business	Manufacture and sale of cold rolled and hot-dip galvanized steel sheets
•Location	Shanghai, China
•Start-up	Mar. 2005 (established in Jul. 2004)
•Capital	RMB 3 billion
•President	Luo Wenqin
•Vice president	K. Chikamatsu (dispatched from NSSMC)
•Employees	716
•NSSMC's equity share	50.0%
•Major facilities	1 CDCM (continuous descaling and cold-rolling mill) — (2.4 million tons/y) 1 C.A.P.L.(continuous annealing and processing line) — (950,000 tons/y) Continuous galvanizing lines No.1 450,000 tons/y No.2 350,000 tons/y No.3 450,000 tons/y No.4 420,000 tons/y

NS-Siam United Steel Co., Ltd. (NS-SUS)

•Business	Manufacture and sale of cold-rolled steel and hot-dip galvanized and galvanized steel sheets
•Location	Hemaraj Eastern Industrial Estate (Maptaphut) , Rayong Province, Thailand
•Start-up	Sep. 2016 (established by amalgamation in Sep. 2016)
•Capital	THB 13,000 million
•President	H. Sato (dispatched from NSSMC)
•Employees	Approx. 1,080
•NSSMC's equity share	80.2%
•Major facilities	1 CDCM (continuous descaling and cold-rolling mill) : 1,000,000 tons/y 1 C.A.P.L. (continuous annealing and processing line) : 500,000 tons/y 1 CGL (continuous galvanizing line) : 360,000 tons/y

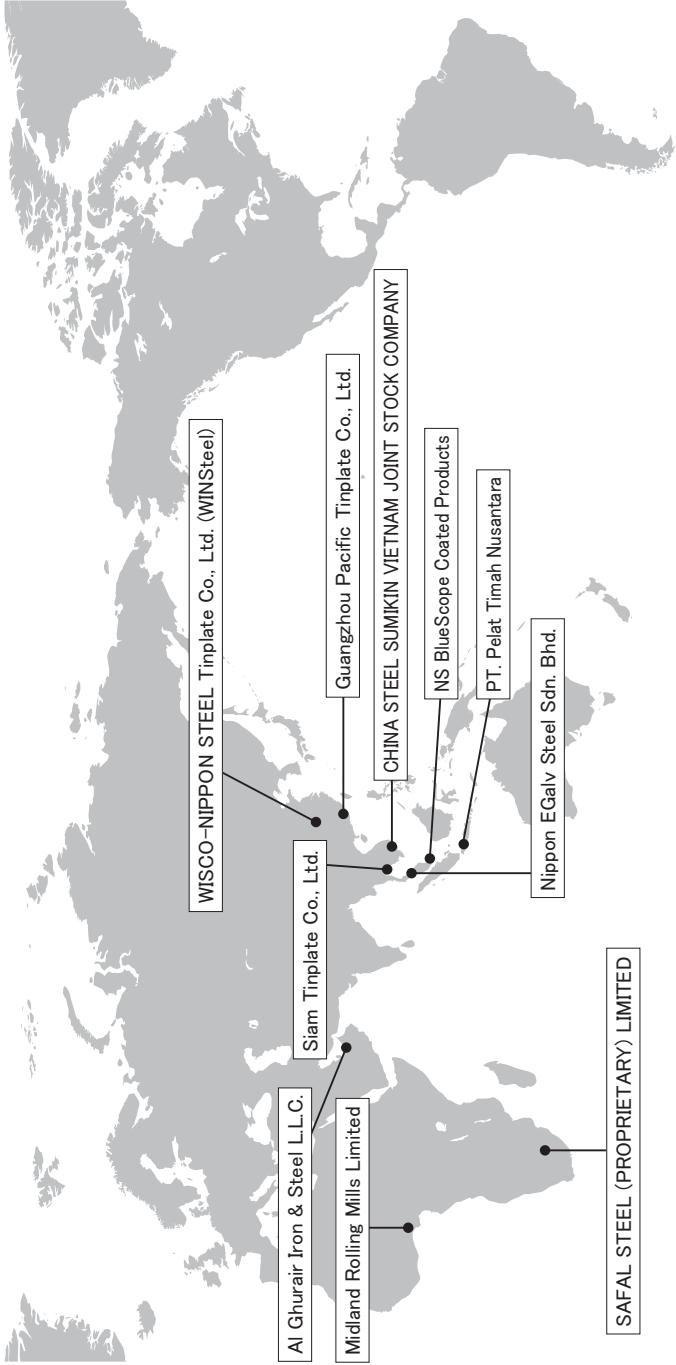
PT KRAKATAU NIPPON STEEL SUMIKIN (KNSS)

•Business	Manufacture and sale of cold-rolled steel and hot-dip galvanized steel products for automotive use
•Location	Cilegon, Banten Province, the Republic of Indonesia
•Start-up	July 2017 (established in Dec.2012)
•Capital	US\$ 142 million
•President	N. Arita (dispatched from NSSMC)
•Employees	Approx.280
•NSSMC's equity share	80.0%
•Major facility	1GAPL (continuous galvanizing annealing and processing line) (480,000 tons/y)

JAMSHEDPUR CONTINUOUS ANNEALING & PROCESSING COMPANY PRIVATE LIMITED (JCAPCPL)

•Business	Manufacture and sale of automotive cold-rolled steel sheets
•Location	Jamshedpur, Jharkhand, India
•Start-up	May 2014 (established in Aug. 2012)
•Capital	INR 9.3 billion
•Managing Director	CV Sastry
•Vice President	K. Imanaka (dispatched from NSSMC)
•Employees	Approx. 300
•NSSMC's equity share	49.0%
•Major facility	1 C.A.P.L. (continuous annealing and processing line) — (600,000 tons/y)

Non-Automotive Steel Sheet Manufacturing & Sales Bases



Non-Automotive Steel Sheet Manufacturing & Sales Bases

Guangzhou Pacific Tinplate Co., Ltd. (PATIN)

•Business	Manufacture and sale of tinplate
•Location	Guangzhou City, Guangdong Province, China
•Start-up	Apr. 1997 (established in Dec. 1994)
•Capital	US\$ 36 million
•President	Y. Muraoka (dispatched from NSSMC)
•Employees	223
•NSSMC's equity share	25.0%
•Production capacity	200,000 tons/y
•Major facilities	1 tinning line 3 shearing lines

WISCO-NIPPON STEEL Tinplate Co., Ltd. (WINSteel)

•Business	Manufacture and sale of tinplate, tin mill black plate, etc.
•Location	Wuhan City, Hubei Province, China
•Start-up	Dec. 2013 (established in Oct. 2011)
•Capital	RMB 2,310 million
•Vice president	T. Aoyama (dispatched from NSSMC)
•Employees	Approx. 500
•NSSMC's equity share	50.0%
•Major facilities	1 CDCM (continuous descaling and cold-rolling mill) (800,000 tons/y) 2 C.A.P.L. (continuous annealing and processing lines) (800,000 tons/y) 2 electrolytic tinning lines (400,000 tons/y)

Siam Tinplate Co., Ltd. (STP)

•Business	Manufacture and sale of tinplate and tin-free steel
•Location	Map Ta Phut Industrial Estate, Rayong Province, Thailand
•Start-up	Feb. 1992 (established in Aug. 1988)
•Capital	THB 800 million
•President	M. Kobayashi
•Vice president	A. Enomoto (dispatched from NSSMC)
•Employees	493
•NSSMC's equity share	15.6%
•Major facilities	1 tinning/tin-free steel line (150,000 tons/y) 1 tin-free steel line (120,000 tons/y) 4 shearing lines

CHINA STEEL SUMIKIN VIETNAM JOINT STOCK COMPANY (CSVC)

•Business	Manufacture and sales of pickled and oiled, cold rolled, electorical, and hot-dip galvanized steel sheet
•Location	My Xuan, Ba Ria-Vung Tau Province, Vietnam
•Start-up	Apr. 2013 (established in May 2009)
•Capital	US\$ 574 million
•President	Chen, Chung-Shin
•Employees	820
•NSSMC's equity share	30.0%
•Production capacity	1.2 million tons/y
•Major facilities	1 PLTCM (pickling and tandem cold mill) 1 CAL (continuous annealing line) 1 annealing and coating line 1 continuous galvanizing line

Nippon EGalv Steel Sdn. Bhd. (N-EGALV)

•Business	Manufacture and sale of electro-galvanized steel sheets
•Location	Prai Industrial Estate IV, Penang, Malaysia
•Start-up	Feb. 2009 (established in Jan. 2006)
•Capital	MYR 34.4 million
•President	N. Hanada (dispatched from NSSMC)
•Employees	166
•NSSMC's equity share	50.1%
•Major facility	1 electrogalvanizing line (120,000 tons/y)

NS BlueScope Coated Products (NSBS)

•Business	Manufacture and sale of hot-dip galvanized steel sheet, painted steel sheet, and roll-formed building products
•Location	ASEAN and USA
•Start-up	Mar. 2013 (capital participation by NSSMC)
•CEO	Charlie Elias
•Employees	Approx. 2,800
•NSSMC's equity share	50.0%
•Major facilities	cold-rolling (800,000 tons/y) hot-dip galvanizing (1,400,000 tons/y) painting (500,000 tons/y) steel manufacturing & roll-forming bases (31 bases)

PT. Pelat Timah Nusantara (Latinusa)

•Business	Manufacture and sale of tinplate
•Location	Industri KIEC Cilegon, Banten Indonesia
•Establishment	1982
•Capital	US\$ 26.8 million
•Vice President	M. Enjuji (dispatched from NSSMC)
•Employees	290
•NSSMC's equity share	35.0%
•Production capacity	160,000 tons/y
•Major facilities	1 tinning line 2 shearing line

Al Ghurair Iron & Steel L.L.C. (AGIS)

•Business	Manufacture and sale of hot-dip galvanized steel sheets
•Location	The Industrial City of Abu Dhabi, the United Arab Emirates
•Start-up	2009 (established in May 2005)
•Capital	AED 165 million
•President	Abu Bucker Husain
•Employees	543
•NSSMC's equity share	20.0%
•Major facilities	1 pickling line (500,000 tons/y) 1 cold-rolling line (360,000 tons/y) 2 continuous galvanizing line (400,000 tons/y)

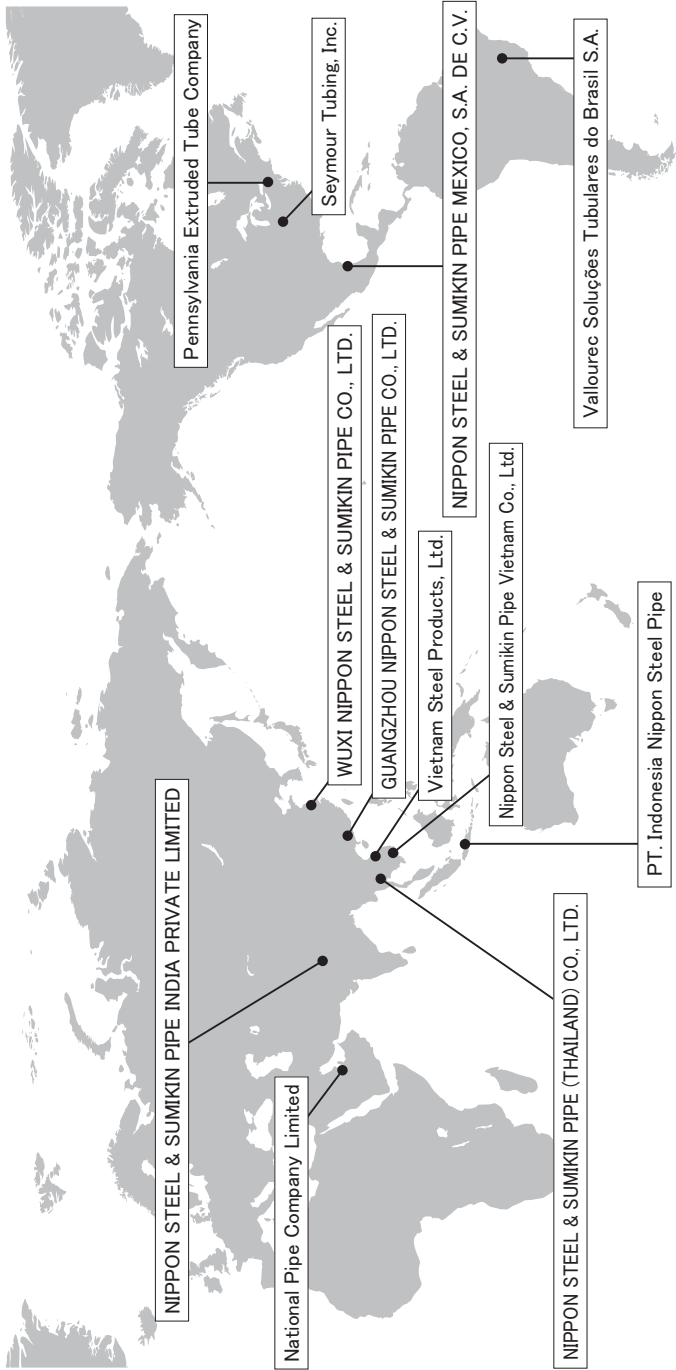
Midland Rolling Mills Limited (MRM)

•Business	Manufacture and sale of cold rolled steel sheets and coils
•Location	Abeokuta, Ogun State, Nigeria
•Start-up	Apr. 2011 (established in Nov. 2006)
•Capital	NGN 3.8 billion
•President	M. P. Singh
•Employees	170
•NSSMC's equity share	10.0%
•Major facilities	1 pickling line (300,000 tons/y) 1 cold rolling line (150,000 tons/y)

SAFAL STEEL (PROPRIETARY) LIMITED

•Business	Manufacture and sale of aluminum-zinc coated and color coated steel coils
•Location	Cato Ridge, Kwazulu Natal, South Africa
•Start-up	Apr. 2010
•Investment	ZAR 1.5 billion
•COO	Mosale J Raghuram
•Employees	350
•NSSMC's equity share	2.2%
•Major facilities	1 pickling line (300,000 tons/y) 1 cold-rolling mill (150,000 tons/y) 1 metal coating line (150,000 tons/y) 1 color coating line (100,000 tons/y)

Pipe & Tube and Building Materials: Manufacturing & Sales Bases



Pipe & Tube and Building Materials: Manufacturing & Sales Bases

■ Energy

Vallourec Soluções Tubulares do Brasil S.A. (VSB)

• Business	Production of seamless pipe at integrated steel works
• Location	Belo Horizonte, Minas Gerais State, Brazil
• Effective date	October 1, 2016
• Capital	BRL 7,088 million
• CEO	Alexandre Lyra
• Employees	5,359
• NSSMC's equity share	15.0%
• Production capacity	1,100,000 tons/y of seamless pipe
• Major facilities	Upstream facilities for iron & steel making processes Seamless pipe mill and finishing facilities

Pennsylvania Extruded Tube Company (PEXCO)

• Business	Manufacture of stainless seamless steel hot finished pipe
• Location	Clarks Summit City, Pennsylvania, U.S.A.
• Start-up	October 1993 (established in May 1992)
• Capital	US\$ 8.915 million
• President	Ruth Monahan
• Employees	79
• NSSMC's equity share	30.0%
• Production capacity	12,000 st/y
• Major facility	1 extrusion press machine (1,820 tons)

National Pipe Company Limited (NPC)

• Business	Production and sale of spirally welded and straight seam welded steel pipes
• Location	Al-Khobar City, Eastern Province, Saudi Arabia
• Start-up	Dec. 1980
• Capital	SAR 200 million
• President	M. Miura (dispatched from NSSMC)
• Employees	533
• NSSMC's equity share	51.0%
• Production capacity	430,000 tons/y
• Major facilities	2 helical mills (20"-84") (250,000 tons/y) 1 three roll bender (24"-60") (180,000 tons/y) Helical Pipe Final Welding Machine × 3

■ Mechanical

Seymour Tubing Inc. (STI)

•Business	Manufacture and sales of ERW & ERW cold drawn mechanical tube
•Location	Seymour, Indiana, U.S.A.
•Start-up	Feb. 1990 (established in Mar. 1989)
•Capital	US\$ 10 million
•President	K. Murashige (dispatched from Nippon Steel & Sumikin Pipe Co.)
•Employees	447
•NSSMC's equity share	(Nippon Steel & Sumikin Pipe Co. 80%)
•Production capacity	84,000 tons/y
•Major facilities	4 electric resistance welded pipe lines 5 cold draw benches heat-treating furnaces

NIPPON STEEL & SUMIKIN PIPE MEXICO, S.A. DE C.V. (NPM)

•Business	Manufacture and sale of machine structural steel pipe
•Location	Inland Port Industrial Park, Silao, Guanajuato, Mexico
•Start-up	May 2013 (established in Jun. 2012)
•Capital	US\$ 41.9 million
•President	T. Osawa (dispatched from Nippon Steel & Sumikin Pipe Co.)
•Employees	351
•NSSMC's equity share	(Nippon Steel & Sumikin Pipe Co. 73.7%)
•Production capacity	24,000 tons/y
•Major facilities	1 electric resistance-welded pipe line 1 cold-drawing machine 1 heat-treating furnace

GUANGZHOU NIPPON STEEL & SUMIKIN PIPE CO., LTD. (GYA)

•Business	Manufacture and sale of automotive steel pipe and automotive parts
•Location	Guangzhou City, China
•Start-up	Jul. 2004 (established in Nov. 2003)
•Capital	US\$ 6.47 million
•President	A. Zaima (dispatched from Nippon Steel & Sumikin Pipe Co.)
•Employees	158
•NSSMC's equity share	(Nippon Steel & Sumikin Pipe Co. 66%)
•Production capacity	24,000 tons/y
•Major facilities	2 electric resistance-welded pipe lines 7 cutting machines

WUXI NIPPON STEEL & SUMIKIN PIPE CO., LTD (WNSP)

•Business	Manufacture and sale of automotive steel pipe and automotive parts
•Location	Wuxi City, Chiangsu Province, China
•Establishment	Aug. 2004
•Capital	JPY 1,215 million
•President	T. Miura (dispatched from Nippon Steel & Sumikin Pipe Co.)
•Employees	313
•NSSMC's equity share	(Nippon Steel & Sumikin Pipe Co. 71%)
•Production capacity	24,000 tons/y
•Major facilities	2 electric resistance-welded pipe lines 4 cold-drawing machines 2 heat-treating furnaces

Note: Figures in parentheses for "NSSMC's equity share" are NSSMC's indirect ownership through share ownership of consolidated subsidiaries.

NIPPON STEEL & SUMIKIN PIPE (THAILAND) CO., LTD. (NSPCT)

•Business	Manufacture and sale of machine structural pipe and parts
•Location	Amatanakorn Industrial Park, Chonburi Province, Thailand
•Start-up	Jan. 2016 (established by amalgamation in Jan. 2016)
•Capital	THB 8,336 million
•President	J. Okamoto (dispatched from Nippon Steel & Sumikin Pipe Co. Ltd.)
•Employees	1,332
•NSSMC's equity share	(Nippon Steel & Sumikin Pipe Co. Ltd.ownership ratio 57.6%)
•Production capacity	155,000 tons/y
•Major facilities	6 electric resistance-welded pipe lines 9 cold-drawing machines 6 heat-treating furnaces

Vietnam Steel Products, Ltd. (VSP)

•Business	Manufacture and sale of machine structural steel pipe
•Location	Noi bai Industrial Zone. Quang Tien, Soc Son, Hanoi, Vietnam
•Start-up	Nov. 1997(established in Jun. 1997)
•Capital	VND 72,898 million
•President	K. Horiuchi (dispatched from Nippon Steel & Sumikin Pipe Co.)
•Employees	238
•NSSMC's equity share	(Nippon Steel & Sumikin Pipe Co. 60%)
•Production capacity	48,000 tons/y
•Major facilities	2 electric resistance-welded pipe lines 11 cutting machines

PT. Indonesia Nippon Steel Pipe (INP)

•Business	Manufacture and sale of automotive machine structural steel pipe
•Location	Bukit Indah Industrial Park, Cikampek, Karawang Province, West Jawa, Indonesia
•Start-up	Jan. 2007 (established in Dec. 2005)
•Capital	US\$11.6 million
•President	S. Manaka (dispatched from Nippon Steel & Sumikin Pipe Co.)
•Employees	534
•NSSMC's equity share	(Nippon Steel & Sumikin Pipe Co. 89.6%)
•Production capacity	42,000 tons/y
•Major facilities	2 electric resistance-welded pipe lines 3 cold-drawing machines 2 heat-treating furnaces

NIPPON STEEL & SUMIKIN PIPE INDIA PRIVATE LIMITED (NPI)

•Business	Manufacture and sale of automotive machine structural steel pipe
•Location	Neemrana Industrial Park, Rajasthan, India
•Start-up	Jan. 2012 (established in Sep. 2010) Jan. 2013 Integrated production system from the pipe-making process
•Capital	INR 2.18 billion
•President	I. Hiroshige (dispatched from Nippon Steel & Sumikin Pipe Co.)
•Employees	241
•NSSMC's equity share	(Nippon Steel & Sumikin Pipe Co. 99.28%)
•Production capacity	24,000 tons/y
•Major facilities	1 electric-resistance-welded pipe line 1 cold drawing 2 heat-treating furnace

Note: Figures in parentheses for "NSSMC's equity share" are NSSMC's indirect ownership through share ownership of consolidated subsidiaries.

■ Others

Nippon Steel & Sumikin Pipe Vietnam Co., Ltd. (NPV)

•Business	Manufacture and sale of steel pipe piles & steel pipe sheet piles
•Location	Phu My II Industrial Zone, Ba Ria-Vung Tau Province, Vietnam
•Start-up	May 2011 (established in Jun. 2010)
•Capital	US\$ 39 million
•President	Y. Tokita (dispatched from NSSMC)
•Employees	199
•NSSMC's equity share	76.3%
•Major facilities	1 spiral pipe line (60,000 tons/y)

Railway, Automotive & Machinery Part Manufacturing & Sales Bases



Railway, Automotive & Machinery Parts Manufacturing & Sales Bases

International Crankshaft Inc. (ICI)

•Business	Manufacture and sale of small-size forged crankshafts
•Location	Georgetown, Kentucky, U.S.A.
•Start-up	Apr. 1992 (established in Feb. 1990)
•Capital	US\$ 22 thousand
•President	K. Ohtsuki (dispatched from NSSMC)
•Employees	305
•NSSMC's equity share	80.0%
•Production capacity	4.0 million crankshafts/y
•Major facilities	1 5,000-ton die forging press line 2 6,000-ton die forging press lines 1 7,000-ton die forging press line

NIPPON STEEL & SUMIKIN CRANKSHAFT LLC

•Business	Manufacture and sale of machining crankshafts
•Location	Fostoria, Ohio, U.S.A.
•Start-up	Oct. 2008
•Capital	US\$ 25.5 million
•President	Y. Hida (dispatched from NSSMC)
•Employees	101
•NSSMC's equity share	60.0%
•Major facilities	5 Crankshaft machining lines (MQL drills, CBN grinders, pin milling machines, induction hardening machines, polishers, CMM / Adcole)

Standard Steel, LLC

•Business	Manufacture and sale of forged wheels and axles
•Location	Burnham, Pennsylvania, U.S.A.
•Establishment	1795
•Capital	US\$ 47 million
•CEO	N. Masuda (dispatched from NSSMC)
•Employees	625
•NSSMC's equity share	80.0%
•Production capacity	300,000 wheels/y
•Major facilities	1 9,000-ton forging press line

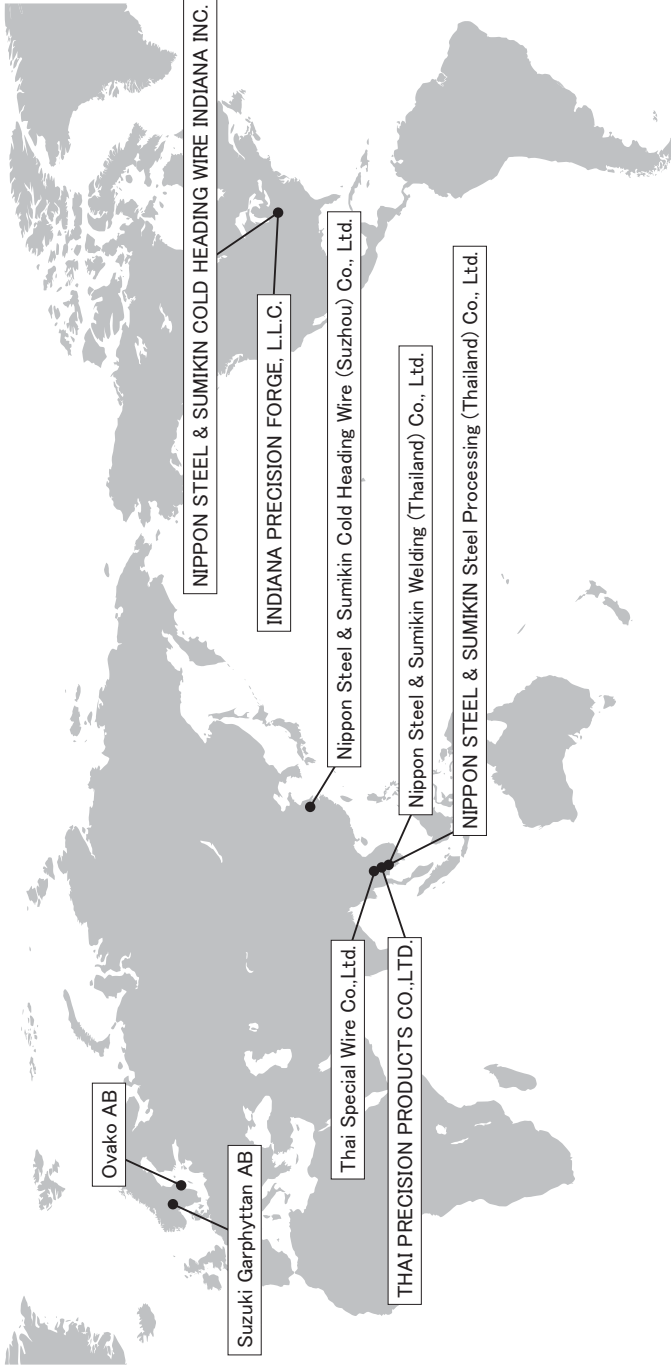
Huizhou Sumikin Forging Co., Ltd.

•Business	Manufacture and sale of small-size forged crankshafts
•Location	Huizhou City, Guangdong Province, China
•Start-up	Nov. 2004 (established in Jul. 2003)
•Capital	RMB 239 million
•President	J. Takaoka (dispatched from NSSMC)
•Employees	200
•NSSMC's equity share	60.0%
•Production capacity	2.1 million crankshafts/y
•Major facilities	1 6,000-ton die forging press line 1 5,000-ton die forging press line

SMI Amtek Crankshaft Private Limited

•Business	Manufacture and sale of small-size forged crankshafts
•Location	Dharuhera, Haryana, India
•Start-up	April 2010
•Capital	INR 1,540 million
•President	T. Sagara (dispatched from NSSMC)
•Employees	216
•NSSMC's equity share	40.0%
•Production capacity	2.2 million crankshafts/y
•Major facilities	1 4,000-ton die forging press line 1 5,000-ton die forging press line

Bar & Wire Rod Manufacturing & Sales Base and Processing & Service Bases



Bar & Wire Rod Manufacturing & Sales Base

Ovako AB

•Business	Manufacture and Sale of Special Steel and Secondarily Processed Products
•Location	Stockholm, Sweden (headquarter)
•Production bases	Sweden 4bases, Finland 1base
•Establishment	1969
•Total Assets	743 million Euros (2017)
•CEO	Marcus Hedblom
•Employees	Approximately 3,000
•NSSMC's equity share	100.0%
•Production capacity	1.1 million tons/y

Bar & Wire Rod Processing & Service Bases

Nippon Steel & Sumikin Cold Heading Wire (Suzhou) Co., Ltd. (NSCh (Suzhou))

•Business	Manufacture and sale of steel wire for cold heading
•Location	Jiangsu Sheng Suzhou Wuzhong Economic and Technological Development Zone, Jiangsu Province, China
•Start-up	Sep. 2007 (established in Sep. 2006)
•Capital	US\$ 15 million
•Managing director	T. Kawano (dispatched from NSSMC)
•Employees	87
•NSSMC's equity share	25.0%
•Production capacity	42,000 tons/y
•Major facilities	5 wire drawing machines 1 pickling and coating line 2 heat treatment furnaces

NIPPON STEEL & SUMIKIN Steel Processing (Thailand) Co., Ltd. (NSSPT)

•Business	Manufacture and sale of steel wire for cold heading and cold drawn bar
•Location	Eastern Seaboard Industrial Estate, Rayong Province, Thailand
•Start-up	Jan. 2013 (established in Jan. 2013)
•Capital	THB 570 million
•President	T. Nakamura (dispatched from NSSMC)
•Employees	276
•NSSMC's equity share	58.9%
•Production capacity	120,000 tons/y
•Major facilities	3 pickling and coating lines 11 wire drawing machines 7 heat treatment furnaces

Suzuki Garphyttan AB

•Business	Manufacture and sale of valve spring wire and stainless wire
•Location	Garphyttan, Orebro, Sweden
•Establishment	1906
•Capital	SEK 15 million
•President	Ad Raatgeep
•Employees	366
•NSSMC's equity share	(Nippon Steel & Sumikin SG Wire Co., Ltd. 100.0%)
•Production capacity	57,000 tons/y
•Major facilities	Wire drawing line Oil tempering line Manufacture and sale of valve spring manufacturing and sales base (3 bases)

NIPPON STEEL & SUMIKIN COLD HEADING WIRE INDIANA INC. (NSCI)

•Business	Manufacture and sale of steel wire for cold heading
•Location	Shelbyville, Indiana, USA
•Start-up	Apr. 2018 (established in Feb. 2016)
•Capital	US\$ 24 million
•President	H. Kimura (dispatched from NSSMC)
•Employees	Approx.40
•NSSMC's equity share	42%
•Production capacity	36,000 tons/y
•Major facilities	1 pickling and coating line 2 heat treatment furnaces 4 wire drawing machines

INDIANA PRECISION FORGE, L.L.C. (IPF)

•Business	Manufacture and sale of precision parts for automobiles
•Location	Shelbyville, Indiana, USA
•Establishment	Jul. 1996
•Capital	US\$ 7 million
•President	H. Kumagai
•Employees	Approx.80
•NSSMC's equity share	30% (Nippon Steel & Sumikin Precision Forge, Inc. 70%)
•Production capacity	37,000 tons/y
•Major facilities	Part formers Forging machine Numerical control lathe

THAI PRECISION PRODUCTS CO.,LTD. (TPP)

•Business	Manufacture and sale of precision parts for automobiles
•Location	Amata Nakorn Industrial Estate, Chonburi Province, Thailand
•Establishment	Aug. 2012
•Capital	THB 300 million
•President	K. Kawaguchi
•Employees	49
•NSSMC's equity share	(Nippon Steel & Sumikin Precision Forge, Inc. 80%)
•Production capacity	10,000 tons/y
•Major facilities	Punching machine Rolling machine Numerical control lathe Machining center

Thai Special Wire Co.,Ltd. (TSW)

•Business	Manufacture and sale of piano wire, hard steel wire and suspension steel wire
•Location	Pathumthani Province, Thailand
•Establishment	Mar. 1974
•Capital	THB 182 million
•President	Y. Hosoya
•Employees	180
•NSSMC's equity share	(Nippon Steel & Sumikin SG Wire Co., Ltd. 51.0%)
•Production capacity	20,000 tons/y
•Major facilities	1 pickling and coating line 2 heat treatment furnaces 10 wire drawing machines

Nippon Steel & Sumikin Welding (Thailand) Co., Ltd. (NSSWT)

•Business	Manufacture and sale of solid wire
•Location	Eastern Seaboard Industrial Estate, Rayong Province, Thailand
•Establishment	Jul. 2008
•Capital	THB 271 million
•President	T. Sugawara
•Employees	61
•NSSMC's equity share	(Nippon Steel & Sumikin Welding Co., Ltd. 64%)
•Production capacity	11,000 tons/y
•Major facilities	Pickling and coating line Wire drawing machine Copper plating line

Note: Figures in parentheses for "NSSMC's equity share" are NSSMC's indirect ownership through share ownership of consolidated subsidiaries.

Environmental Considerations

The NSSMC Group is committed to "contribute to society by providing excellent products and services" as stated in its Corporate Philosophy. By implementing our Three Eco-Friendly Initiatives and developing innovative technologies, we strive earnestly to reduce waste in production activities and manufacturing processes, promote recycling, and reduce environmental burden. We are also determined to take actions for solving global environmental issues such as global warming and effective utilization of resources and energy.

* The group intends to tackle the three "ecos" by drawing on the overall strength of its five business segments (steelmaking, engineering, chemistry, new materials, and system solutions).

ECO-PROCESS: The way we manufacture is "eco-friendly"

NSSMC uses world-leading resources and world-leading energy efficiency to manufacture steel products and aims to develop eco-friendly steelmaking processes by further improving efficiency.

ECO-PRODUCTS: What we produce is "eco-friendly"

We produce and offer eco-friendly "products" using our world-leading technological capabilities, thus conserving resources and energy and thereby contributing towards building a sustainable society.

ECO-SOLUTION: Sharing our "eco-solutions"

We contribute to the reduction of CO₂ emissions and other environmental burdens on a global scale by diffusing our Group's world-class environmental and energy-saving technologies in Japan and overseas.

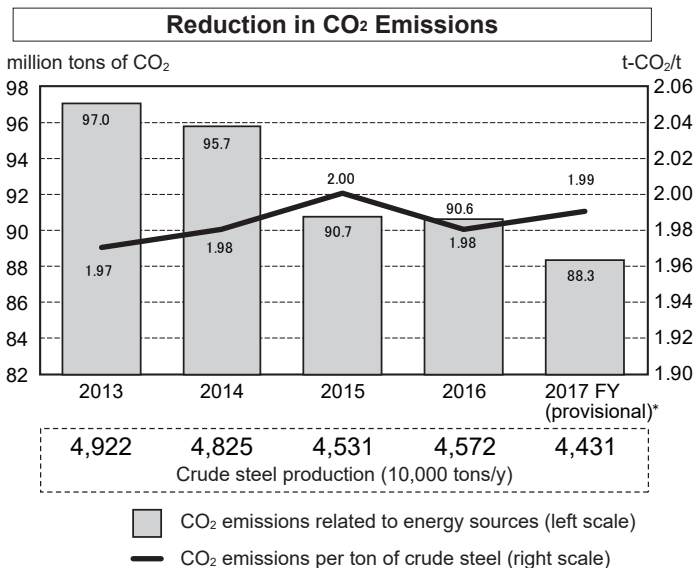
Development of innovative technology

Based on the objective of offering to society technologies and products that contribute to the saving of resources and energy and the reduction in environmental burden, we are developing innovative advanced technologies from a medium- to long-term perspective.

Tackling the issue of CO₂ reduction

From the time of the first oil shock in early 1970's to around 1990, the NSSMC Group intensively promoted measures such as the adoption of continuous processes and recovery of waste heat, and attained a significant energy saving of more than 20%. Then, the Japanese steel industry including the group addressed a voluntary action plan, and during the period from fiscal 2008 and fiscal 2012 the NSSMC Group achieved its target of a 10% reduction in energy consumption (9% reduction in CO₂ emissions) compared to fiscal 1990. At present, as a representative corporation in the Japanese steel industry, NSSMC is drawing up a low-carbon society implementation plan, aiming at achieving 3 million ton + α* reduction of CO₂ compared to the CO₂ emission quantity assumed to be emitted on the basis of a constant production volume of crude steel in fiscal year 2020, and a 9-million ton reduction of CO₂ in fiscal year 2030, by making full use of the most up-to-date technology.

* The primary focus is on a 3 million ton reduction in CO₂ emissions by steelmakers' own initiatives for efficient use of energy and other ways. Concerning collection of waste plastics and other ways, only an increase in the collected volume compared to FY2005 is counted as the amount of reduction in emissions.



Notes: Values in the above graph are the total for corporations consisting of NSSMC, related electric furnace companies, and others.

*A provisional value based on the assumption that the CO₂ level in a unit of purchased electricity in FY2017 is the same as in FY2016.

ECO-PRODUCTS (What we produce is “eco-friendly”)

	Promotion of measures against global warming (Energy conservation and CO ₂ reduction)	Promotion of environmental risk management (Environmental conservation and control over chemical substances)	Active participation in the creation of a recycling-based society (Longer life and recyclability of products)
Electrical power and energy	<ul style="list-style-type: none"> ■ Higher power generation efficiency <ul style="list-style-type: none"> ● Non-oriented electrical steel sheets ● High-temperature boiler steel pipes ● Stainless steel boiler tubes for ultra supercritical coal-fired power generation ● Stainless steel sheet for polymer electrolyte fuel cell separator ■ Higher transformer efficiency <ul style="list-style-type: none"> ● Grain-oriented electrical steel sheets (ORIENTCORE HI-B™) ■ Higher efficiency for energy transportation <ul style="list-style-type: none"> ● High-strength transportation line pipes ■ Promotion of energy conversion <ul style="list-style-type: none"> ● Super high-strength oil country tubular goods (OCTG) for sour service ● Stainless steel & High alloy OCTG ● Steam generator (SG) heat transfer tubes for pressurized water reactor (PWR) nuclear power plants ● Stainless steel line pipes ● New stainless steel for high pressure hydrogen environment (HYDEREXEL™) ■ Renewable energy <ul style="list-style-type: none"> ● Steel for Offshore wind power 	<ul style="list-style-type: none"> ■ Increased use for LNG <ul style="list-style-type: none"> ● Highly corrosion-resistant thick plates for smoke stacks ● 6-7% Ni steel for LNG storage tank ■ Materials free of environmentally hazardous substances <ul style="list-style-type: none"> ● “CLEANWELL™ DRY” oil well pipe joints 	<ul style="list-style-type: none"> ■ Measures to aid incineration plant. <ul style="list-style-type: none"> ● S-TEN™ 1 ● Highly corrosion-resistant steel pipes for boilers ■ Waste reduction through extended product lifespan <ul style="list-style-type: none"> ● Highly corrosion-resistant thick stainless steel plates for chemical tankers and food storage tanks
Automobiles	<ul style="list-style-type: none"> ■ Weight reduction and improved safety <ul style="list-style-type: none"> ● High-strength steel sheets (hot rolled, cold rolled, coated/dual phase, TRIP, high-hole expanding, hotstamping material, etc.) ● High-tensile strength steel tubes, three dimensional hot bending and quenching (3DQ) tubes ● High-strength steel sheets, pipes ● Extra-heavy wall, small diameter ERW tubes ● High-efficiency crash box ● High heat-resistance stainless steel “NAR-AH-4” for exhaust components and “dual-wall exhaust manifold” ● “NAR-301L HS1” stainless steel plate for cylinder head gaskets ● Forged aluminium wheel for heavy duty commercial vehicles ● Permanent magnet retarder ■ Higher efficiency for motors in hybrid cars <ul style="list-style-type: none"> ● Highly efficient non-oriented electrical steel sheets ■ Simpler manufacturing and forming processes for users <ul style="list-style-type: none"> ● High formable anti-rust steel sheets (L-treatment) 	<ul style="list-style-type: none"> ■ Materials free of environmentally hazardous substances <ul style="list-style-type: none"> ● Lead-free free-cutting steel for crank shafts (steel bar) ● Lead-free galvanized steel sheets for fuel tanks (ECOKOTE™-S) ● Chromate-free galvanized steel plates for automobiles ■ Improved purification performance for exhaust gas <ul style="list-style-type: none"> ● Heat-resistant stainless steel for exhaust emission parts ● High-pressure fuel injection pipe for diesel engines ■ Products that address noise and vibration <ul style="list-style-type: none"> ● Laminated damping steel sheets 	<ul style="list-style-type: none"> ■ Waste reduction through extended product lifespan <ul style="list-style-type: none"> ● Galvanized steel sheets with high corrosion-resistance ● SUPERNICKEL steel sheets for HV-EV car batteries

* ECO-products of NSSMC Groupe companies are also printed.

	Promotion of measures against global warming (Energy conservation and CO ₂ reduction)	Promotion of environmental risk management (Environmental conservation and control over chemical substances)	Active participation in the creation of a recycling-based society (Longer life and recyclability of products)
	<ul style="list-style-type: none"> ● Steel pipes for hydro-form processing ● Non-heat treated nitrocarburized high-strength crankshaft steel ● High-strength steel for forged connecting rods 		
Home appliances and electrical devices	<ul style="list-style-type: none"> ■ Improved motor efficiency <ul style="list-style-type: none"> ● Highly efficient non-oriented electrical steel sheets ■ Simpler manufacturing process for users <ul style="list-style-type: none"> ● Pre-coated steel sheets ● Steel sheets treated with lubricant film ● Thin highly workable stainless steel sheets ● Precoated antistatic steel sheets ■ Higher heat dissipation efficiency <ul style="list-style-type: none"> ● Steel sheets with higher endothermic properties ● Heat-releasing pre-painted steel sheets 	<ul style="list-style-type: none"> ■ Materials free of environmentally hazardous substances <ul style="list-style-type: none"> ● Lead-free galvanized steel sheets (ECOKOTE™, ECOTRIO™) ● Chromate-free electro-galvanized steel sheets for home appliances (NS ZINKOTE™, NS ZINKOTE™ COLOR) ● Chromate-free precoated steel sheets for home appliances (Non-Chro VIEWKOTE™) ● Low-carbon lead-free free-cutting steel ■ Reduced noise and magnetic shields <ul style="list-style-type: none"> ● Non-oriented electrical steel sheets ● Grain-oriented electrical steel sheets ● Stainless steel damping sheets 	<ul style="list-style-type: none"> ■ Waste reduction through extended product lifespan <ul style="list-style-type: none"> ● Transparent coated stainless steel sheets ● Galvanized steel sheets with high corrosion resistance ● Titanium sheets ● SUPERNICKEL steel sheets for secondary batteries
Containers	<ul style="list-style-type: none"> ■ Weight reduction of materials used in cans <ul style="list-style-type: none"> ● Extremely thin tinplate and laminated steel sheets 	<ul style="list-style-type: none"> ■ Materials free of environmentally hazardous substances <ul style="list-style-type: none"> ● Laminated steel sheets 	<ul style="list-style-type: none"> ■ Increased recycling rate <ul style="list-style-type: none"> ● Materials for steel cans (tinplate and laminated steel sheets)
Construction and civil engineering, etc.	<ul style="list-style-type: none"> ■ Improved construction efficiency <ul style="list-style-type: none"> ● Mechanical joint for steel pipe pile (Iaquican™ joint, Hi-SHJ™, Gachi-cam Joint™) ● Hat-type sheet pile ● HTUFF™ (Super High HAZ (heat-affected-zone) toughness technology with fine microstructure imparted by fine particles) steel ● Fixed external dimension H-section steel ● Fire-resistant steel "NSFR™" ● Super high tension bolt SHTB™ ■ Energy conservation <ul style="list-style-type: none"> ● "SMart BEAM™" lightweight welded H-beam ● Steel house (NS Super Frame™ method of construction) ● High-speed railway wheels, axles, and bogie trucks ● Pure titanium sheet for aircraft, titanium alloy rods for aircraft engines ■ CO₂ reduction <ul style="list-style-type: none"> ● Granulated blast furnace slag for Portland blast furnace slag cement 	<ul style="list-style-type: none"> ■ Environmental conservation (Reductions in surplus soil, noise and vibration, nature regeneration) <ul style="list-style-type: none"> ● NS ECO-PILE™, steel-pipe piles for gyro-press method™ ● GANTETSU™ pile, steel-pipe piles for TN Method ● Steel-pipe piles for TN-X Method ● Steel-Slit Dams Type A ● Water-permeable steel sheet pile ● Steel pipe pile of low noise, low ground vibration and highly bearing capacity "RS Plus™" ● Silent Driving Gear Unit ● Noise damped Wheel ● Non-frame method ■ Improved marine safety <ul style="list-style-type: none"> ● High-Strength steel plate for ship with Excellent Brittle Crack Arrestability ● Plate for Shipbuilding with Improved Collision Safety (NSafe™-Hull) ● NS-Ship-Safety 235 ■ Reduced use of rare metals <ul style="list-style-type: none"> ● Stainless steel that contains a very small amount of tin (NSSC FW1, FW2) 	<ul style="list-style-type: none"> ■ Longer life and improved endurance and reliability <ul style="list-style-type: none"> ● High performance steel for bridge (SBHS) ● Steel for high-strength structures, high-tensile steel wires ● Abrasion resistant steel plate (ABREX™) ● Rails for heavy-load railway ● Bogies equipped with steering devices for metro ● Architectural Titanium (including "TranTixij™") ■ Improved corrosion-resistance capabilities <ul style="list-style-type: none"> ● Ni-based weather-resistant steel (NAW-TEN™) ● COR-TEN™ ● Highly corrosion-resistant galvanized steel sheets (Super Dyma™, etc.) ● Zinc Alloy-coated Wire with High Corrosion Resistance (Tough Guard™ Mild, ToughGuard™ Frost, ToughGuard™ Hard) ● Highly corrosion-resistant steel plates for crude oil tankers (NSGP™-1, 2) ● Low alloy steel with superior anti-rusting resistance (ARU-TEN™)

	Promotion of measures against global warming (Energy conservation and CO ₂ reduction)	Promotion of environmental risk management (Environmental conservation and control over chemical substances)	Active participation in the creation of a recycling-based society (Longer life and recyclability of products)
			<ul style="list-style-type: none"> ● MARILOY™ ● Alloyed titanium (Super-TIX™) ● Corrosion Resistance steel for Painting cycle Extension (CORSPACE™) ■ Resource saving <ul style="list-style-type: none"> ● Iron and steel slag for road construction ■ Recycling <ul style="list-style-type: none"> ● Iron and steel slag fertilizer

ECO-PROCESS

(The way we manufacture is “eco-friendly”)

■ Recycling and Reuse of Resource: about 99% (of total by-products generated in steelworks is recycled)

Recycling steel slag and dust

Nearly all the steel slag, that makes up the majority of steel by-products is used as raw materials for cement, ground improvement material, road bed material, and so forth. This also helps natural resource conservation and energy conservation. Dust generated in the process of iron manufacture is processed by the “RHF” (rotary hearth furnace) equipment and to recover usable resources, thus establishing zero emission system for steel dust.

Recycling of resources from plastics of containers and packaging waste

Nippon Steel & Sumitomo Metal (NSSMC) recovers 100% of resources (oil, coke, coke oven gas) from the container and packaging plastics collected by individual local governments from ordinary homes. At present, NSSMC has established the world's largest, waste-plastics reception network by which its seven steelworks in nationwide locations are servicing the entire country. NSSMC recycles about 30% (200,000 tons) of the container and packaging plastic collected from municipalities throughout Japan, and has processed a total of 2.9 million tons (between 2000 and 2017). This is equivalent to a total CO₂ reduction of approximately 9.2 million tons. In addition, the company also recycles fiber products including discarded uniforms and food trays in cooperation with tray producing companies into petrochemical products, using our above-mentioned technology.

Recycling of resources from waste tire

Hirohata Works recycles waste tires gathered from all over the country. In resource recovery, waste tires are used as raw materials and fuel by the Scrap Melting Process (SMP) for iron manufacture. Also, the world's first technology of thermal cracking by the gasification recycling equipment for 100% resource recovery has been successfully established. These equipments can recycle 120,000 tons or about 10% of Japan's total quantity of waste tires. This is equivalent to about 300,000 tons a year in its effect in CO₂ reduction.

■Energy Recycling: about 78% (of the total power generation in steelworks is generated from recovered waste heat and by-product gas)

Electric power generation through recovered waste heat and by-product gases

NSSMC Group recovers high-temperature waste heat and 100% of by-product gas generated in coke ovens, blast furnaces, converters, and so on, and efficiently uses them as electric power.

78% of the total electric generation in steelworks is generated from the recovered waste heat and by-product gases.

CDQ (Coke Dry Quenching)

By introducing CDQ (a power generation system using recovered waste heat), a major-scale CO₂ reduction has been realized.

■Water Circulation: about 90% achieved

About 90% of the water used for cooling and cleaning products and manufacturing equipment is being re-circulated.

■Bio-mass from residual wood from the thinning of mountain forest, bio-mass from coffee grounds

Kamaishi Works and Oita Works are using such wood chips and non-commercial-grade timber for a coal-fired thermal power station. Mixing woody bio-mass with coal for combustion can serve the purpose of using less coal, which is a fossil fuel Japan imports, and thus reduce CO₂ emissions, while also helping to forest management. Kashima Works is making the similar effort by using coffee grounds.

ECO-SOLUTION (Sharing our “eco-solutions”)

■Contribute to the reduction of CO₂ emission on a worldwide scale

Japan's steel industry, including NSSMC, plays a leading role in the Global Sectoral Approach*, a worldwide initiative to preserve the environment and conserve energy based on technologies accumulated in the steel-working industry. We think that Japan's steel industry can contribute to the reduction of CO₂ emission on a worldwide scale by transferring its advanced energy-efficient technologies to emerging countries where there is the potential to improve energy efficiency.

* Global Sectoral Approach is a method to help solve global warming problems by seeking CO₂ reduction potential based on sector-specific technologies and adopting the world's best energy-saving technologies.

International cooperation for energy-efficiency by the Japanese steel industry

As a core member of the Japan Iron and Steel Federation (JISF), NSSMC is promoting bilateral energy-saving and environmental international cooperation with India, South East Asia, and other countries together with multinational projects such as for the Environment Committee of the World Steel Association to deploy Japanese excellent environmental conservation/energy-efficient technologies to the world.

Three pillars of international cooperation

- (1) Joint meetings of public and private steel-related parties
To transfer the energy-efficient technology to emerging countries at an early stage, the current status is shared by the government and private parties of both countries after analyzing the customized list of technologies and assessing the steelworks.
- (2) Customized list of technologies
It is a list of energy-efficient technologies, which are identified as appropriate for the target country or region, summarizing supplier information in addition to detailed technology information to promote the transfer of the energy-efficient technology from Japan.
- (3) Energy-efficient assessment of steelworks based on ISO14404
Energy-efficiency experts in Japan's steel industry visit the foreign steelworks in order to make proposals of energy-efficient technology introduction based on the customized list of technologies and to give advice on operational improvement according to the utilization status of facilities. The experts also analyze the status of energy usage by using an international standard, ISO14404, which specifies calculation methods for the CO₂ intensity of steelworks.

R&D of a Revolutionary Iron-making Method

■ COURSE50

The present iron-making process uses coal as a reducing agent for iron ores and, for this reason, unavoidably results in CO₂ emission. NSSMC and three other Japanese integrated steel producers, together with Nippon Steel & Sumikin Engineering Co., Ltd., are undertaking the CO₂ Ultimate Reduction System for Cool Earth 50 (COURSE50).

COURSE50 envisages the development of the iron-making technology of hydrogen reduction in the blast-furnace gas, utilizing hydrogen contained in the coke-oven gas, and the technology of separation and recovery of CO₂ from the blast-furnace gas. With the target reduction in CO₂ emissions relative of about 30% from the level of the present steelmaking process, the COURSE50 project aims at making the first prototype* by around 2030 and diffusing this model by around 2050 in accordance with the timing of renewing blast furnace related equipment.

* A precondition is to ensure the economic rationality in establishing the required infrastructure and in making actual equipment and facilities for CO₂ sequestration.

■ SCOPE21

This next-generation coke manufacturing technology, SCOPE21, designed for dramatic energy-saving, CO₂ emission reduction, and expansion of the use of low-grade metallurgical coal, was introduced at Oita Works in 2008 for the first time in the world. A second installation of the equipment was made at Nagoya Works in 2013.

Conservation of Biodiversity

■ Creation of Hometown Forests

In 1971, Nippon Steel launched "Creation of Hometown Forests" programs at all of its steelworks scattered throughout the country. After studies on natural vegetation inherent to the surrounding areas, seeding, and planting seedlings, the steelworks' programs have produced forests covering an area of about 900 hectares with 30-meter-high trees, providing habitats for various wild birds and animals.

■ Marine forest creation

Desertification of seashores has emerged recently as a new environmental problem. Decreasing seaweeds growth is an alarming sign of worsening environments for fish and other living things in coastal areas and telltale signs of immediate impact on coastal fisheries. One element of the causes is said to be a shortage of iron. To revitalize fields of seaweeds and marine plants, NSSMC has developed an iron-supply unit by mixing steel slag, a by-product of its iron manufacture, with humus and soil.

Personnel and Labor Relations

Employees

●Number of employees

As of March 31	2012	2013	2014	2015	2016	2017	2018
Employees by division							
Nippon Steel & Sumitomo Metal Corporation (Nippon Steel Corporation)*1	16,158	24,510	24,152	23,775	24,903	24,822	25,101
Those seconded to subsidiaries and other organizations (excluded from above numbers)	1,168	1,215	1,138	1,208	1,215	1,104	947
Sumitomo Metal Industries, Ltd.	8,413	—	—	—	—	—	—
Those seconded to subsidiaries and other organizations (excluded from above numbers)	156	—	—	—	—	—	—
• Head office (Nippon Steel & Sumitomo Metal (Nippon Steel))	1,473	2,173	2,122	2,071	2,048	2,098	2,132
• Head office (Sumitomo Metals)*2	1,407	—	—	—	—	—	—
• Steelworks							
Kashima	2,925	2,781	2,711	2,726	3,066	3,025	2,963
Kimitsu	3,510	3,521	3,504	3,550	3,560	3,494	3,437
Nagoya	2,994	3,006	2,982	3,010	3,127	3,127	3,076
Wakayama*3	1,166	1,197	1,132	1,377	1,974	1,962	1,984
Hirohata	1,286	1,255	1,239	1,224	1,241	1,256	1,275
Yawata	2,861	2,778	2,739	3,659	3,640	3,601	3,563
Oita	1,998	1,987	1,960	1,963	1,952	1,927	1,962
Hikari*4	—	—	—	—	—	—	—
Muroran	584	584	593	601	610	616	969
Kamaishi	223	226	231	228	237	236	234
Kokura*5*6	1,041	1,059	1,066	—	—	—	—
Sakai*7	332	324	328	—	—	—	—
Tokyo*8	116	113	107	—	—	—	—
Amagasaki	662	638	638	645	679	699	708
Osaka	982	1,062	1,058	1,072	1,138	1,157	1,157
Naoetsu*5	230	198	184	167	169	175	188
• Technical Development Bureau	—	1,180	1,165	1,097	1,079	1,067	1,079
(Futtsu)*9	549	(616)	(645)	(669)	(654)	(656)	(669)
(Amagasaki)	—	(416)	(385)	(330)	(328)	(320)	(318)
(Hazaki)	—	(148)	(135)	(98)	(97)	(91)	(92)
• Domestic sales offices	222	414	379	368	363	360	355
• Overseas offices*10	10	14	14	17	20	22	19

*1 Those seconded to Nippon Steel & Sumitomo Metal from other companies are included from 2013 onward.

*2 Those working at laboratories (Amagasaki, Hazaki) and domestic sales offices of Sumitomo Metals are included in Head office.

*3 Those working at Nippon Steel & Sumikin Koutetsu Wakayama Corporation are not included.

*4 Hikari Works was integrated into Oita Works in April 2011.

*5 In January 2012, Sumitomo Metals (Naoetsu), Ltd. and Sumitomo Metals (Kokura), Ltd. were merged to Sumitomo Metals. (Not included in Sumitomo Metals before the merger.)

*6 Kokura Works was integrated into Yawata Works in April 2014.

*7 Sakai Works was integrated into Wakayama Works in April 2014.

*8 Tokyo Works was integrated into Kimitsu Works in April 2014.

*9 Those shifted from T.D.B. to Plant Engineering and Facility Management Center in Head office, when reorganized in November 2011.

*10 Those working at following companies are included in those seconded to subsidiaries and other organizations.

NIPPON STEEL & SUMITOMO METAL U.S.A., INC., NIPPON STEEL & SUMITOMO METAL Empreendimentos Siderúrgicos Ltda., NIPPON STEEL & SUMITOMO METAL Australia Pty. Limited, NIPPON STEEL & SUMITOMO METAL Consulting (Beijing) Co., Ltd., PT.NIPPON STEEL & SUMITOMO METAL INDONESIA, NIPPON STEEL & SUMITOMO METAL Southeast Asia Pte. Ltd., NIPPON STEEL & SUMITOMO METAL (Thailand) Co., Ltd., NIPPON STEEL & SUMITOMO METAL VIETNAM COMPANY LIMITED, NIPPON STEEL & SUMITOMO METAL India Private Limited

(Reference, as of March 31, 2018)

Number of Employees	25,101	Average age	37.4	Average years of continuous service	15.4
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* Those seconded to subsidiaries and other organizations and those seconded to Nippon Steel & Sumitomo Metal from other companies are not included in the average age and the average years of continuous services.

●Number of newly employed

Fiscal Year	2015	2016	2017	2018
Sales & administration	116	162	170	221
Engineers	177	232	232	239
Workers*	600	1,420	740	740
Total	893	1,814	1,142	1,200
Female	200	336	266	300

* Mostly employees who are engaged in operation and maintenance of steelmaking facilities

●Number of employees studying abroad

Fiscal Year	2011	2012	2013	2014	2015	2016	2017	2018
Employees newly studying abroad	5	8	6	11	4	9	10	7

Note: Aggregated numbers of Nippon Steel and Sumitomo Metals from 2011 to 2012

Wages and Bonuses

●Increase in monthly wages

Fiscal Year	2011	2012	2013	2014	2015	2016	2017	2018
Wage improvement	0	0	0	1,000	1,000	1,500	1,000	1,500
Regular wage increase	3,700	3,700	3,700	3,700	3,700	3,700	3,700	3,700
Total wage increase	3,700	3,700	3,700	4,700	4,700	5,200	4,700	5,200

Note: Multiple-year (2 year) agreement from fiscal 1998

●Starting salaries

Fiscal Year	2013	2014	2015	2016	2017	2018
University graduates	203,000	203,500	204,500	205,500	210,000	211,500
High school graduates	160,000	160,000	161,000	163,500	167,000	168,500

●Annual bonus payment

(¥1,000/year)

Fiscal Year	2013	2014	2015	2016	2017	2018
Standard amount	1,200	1,610	1,700	1,410	1,380	1,530
Summer	600	805	850	705	690	765
Winter	600	805	850	705	690	765

The standard amount of bonus is determined by a method linked to business performance.

The following formula was adopted up to fiscal 2015.

The standard amount per employee = ¥1.2 million + the previous fiscal year's non-consolidated ordinary profit × ¥10,000 / ¥5,495 million

* In case ordinary profit is less than ¥25 billion, the standard amount is to be determined by negotiation between the management and the labor union.

The following formula is adopted in fiscal 2016-2018.

The standard amount per employee = ¥1.2 million + the steelmaking segment's consolidated ordinary profit for the previous fiscal year × ¥10,000 / ¥7,463 million

* In case the steelmaking segment's consolidated ordinary profit is less than ¥34 billion, the standard amount is to be determined by negotiation between the management and the labor union.

Working Hours

(days and hours)

Fiscal Year	2011	2012	2013	2014	2015	2016	2017	2018
Annual number of holidays								
Regular daytime workers	118	118	118	119	119	119	119	119
Daytime/nighttime shift workers	103	103	103	103	103	103	103	103
Annual fixed working hours								
Regular daytime workers	1,916	1,916	1,916	1,908	1,908	1,908	1,908	1,908
Daytime/nighttime shift workers	1,899	1,899	1,899	1,899	1,899	1,899	1,899	1,899
Average	1,908	1,908	1,908	1,904	1,904	1,904	1,904	1,904

Note: Daily working hours: 7.75 hours for regular daytime workers

7.25 hours for daytime/nighttime shift workers

Holidays and other support programs for child-rearing and nursing care

Child-rearing

●Child-rearing leave

- Employees can take child-rearing leave until his/her child(ren) reach 18months old, if there is some specific reason, for example in the case of lack of availability of baby nursery, this leave can be taken up to the child(ren)'s 3rd birthday.

●Reduced working hours

- Employees who have child(ren) of up to the third grade of primary school can reduce his/her regular working time by up to 2 hours a day.

●Telecommuting

- Employees who have child(ren) of up to 3 years old can work at his/her residence twice a month.

●Family holidays

- Expired paid holidays accumulated up to 50 days as "Family holidays" can be taken for the purpose of child-rearing on half day basis.

●Child-bearing holidays for male employees

- Male employees whose spouse is supposed to give birth to baby can take 2 paid holidays within the 10days period in which the day of delivery is included.

Nursing Care

● Long-term care leave

- Employees whose family member is in need of nursing care can take a leave of up to consecutive 12 months, or of up to 93 days in total in the case the employee chooses to take sporadic days-off.

● Reduced working hours

- Employees who have a family member in need of nursing care can reduce his/her regular working time by up to 2 hours a day.

● Family holidays

- Expired paid holidays accumulated up to 50 days as "Family holidays" can be taken for the purpose of nursing care on half day basis.

Career return system

- Employees who leave the company due to child-bearing, child-rearing, nursing care or transfer of his/her spouse can be employed, if approved by the company, within 5 years period after leaving the company.

Accompany Leave

- Employees whose spouse is transferred to other countries can take a leave of up to 3 years to accompany his/her spouse.

Benefit Program

● Company houses and apartments:

About 5,000 units (about 500 for head office area)

● Bachelor houses and apartments:

About 8,500 units (about 500 for head office area)

● Daycare center for infants

Oita Donguri-no-mori Daycare Center, Kazusa Midori-no-mori Daycare Center, Sayagatani Hotaru-no-sato Daycare Center, Tokai Sakura-no-michi Daycare Center*

*Scheduled to open in Oct., 2018

● Loan system for house purchase:

Loan limit of ¥50 million for employees with more than 10 years of continuous service and of more than 30 years of age

● Child education support system:

Loan limit of ¥5 million

● Family care support system:

Loan limit of ¥5 million

● Refreshment holiday system:

	Travel coupon	Special holidays
Employees with 15 years of continuous service	¥100,000	5 holidays
Employees with 30 years of continuous service	¥500,000	10 holidays
Employees with 40 years of continuous service	¥80,000	5 holidays

● Work-life support system:

- Day care center subsidy for raising children
- Support for tuition fee of raising children, medical, health, sport, leisure activities, etc.
- Membership discount service for affiliated leisure facilities

Sporting Activities

Judo – Hirohata Works, Head Office

■ Recent major results

- All-Japan Business Team Tournament Victory in 1996, 2nd best in 1997, victory in 1998, 3rd best in 1999, victory in 2000, 3rd best in 2001-2004, 2nd best in 2005-2006, 3rd best in 2009, victory in 2010-2011, 3rd best in 2013, 2nd best in 2014, 2nd best in 2015, 3rd best in 2016-2017
- All-Japan Team Tournament 2nd best in 1996-1997, 3rd best in 1998-1999

■ Recent major individual results at world tournaments

- Olympics
 - Barcelona (1992) -78 kg H. Yoshida Victory / -95 kg Y. Kai 7th place
 - Atlanta (1996) -86 kg H. Yoshida 5th place
 - Sydney (2000) -90 kg H. Yoshida Entry
 - London (2012) -90 kg M. Nishiyama 3rd place
- World Championship
 - Japan (1995) -86 kg H. Yoshida 2nd best / -95 kg S. Okaizumi 3rd place
 - Birmingham (1999) -90 kg H. Yoshida Victory
 - Munich (2001) -90 kg M. Tobitsuka Entry
 - Tokyo (2010) +100 kg K. Takahashi 5th place
- Kano Jigoro Cup
 - Japan (1996) Open N. Yabu 3rd place
- Grand Slam
 - Tokyo (2009) +100 kg K. Takahashi Victory
 - Rio de Janeiro (2010) +100 kg K. Takahashi Victory
 - Tokyo (2010) -90 kg M. Nishiyama Victory / +100 kg K. Takahashi 2nd best
 - Tokyo (2011) -90 kg M. Nishiyama Victory
 - Tokyo (2012) -90 kg M. Nishiyama 2nd best
 - Tokyo (2014) -90 kg D. Nishiyama 2nd best
 - Paris (2016) -90 kg D. Nishiyama Victory
- World Master
 - Kazakhstan (2012) -90 kg M. Nishiyama Victory
- Asian Games
 - China (2010) Open K. Takahashi Victory

■ Recent major individual results at Japanese tournaments

- All-Japan Championship
 - 1997 T. Ishida 3rd place / K. Masuchi 3rd place
 - 1998 K. Masuchi 3rd place / 2010 K. Takahashi Victory
- All-Japan Championship by Weight
 - 1997 -86 kg H. Yoshida 2nd best / 1999 -90 kg H. Yoshida Victory
 - 2000 -90 kg H. Yoshida Victory / -90 kg M. Tobitsuka 2nd best
 - 100 kg T. Inoue 3rd place +100 kg K. Masuchi 3rd place
 - 2001 -90 kg M. Tobitsuka Victory
 - 2009 -90 kg M. Nishiyama Victory +100 kg K. Takahashi Victory
 - 2012 -90 kg M. Nishiyama 2nd best
 - 2016 -90 kg D. Nishiyama Victory
 - 2018 -100 kg D. Nishiyama Victory
- Kodokan Cup All-Japan Championship by Weight
 - 1997 +100 kg N. Yabu 2nd best -100 kg S. Okaizumi 3rd place
 - 1998 +100 kg N. Yabu 2nd best -90 kg H. Yoshida Victory
 - 1999 +100 kg K. Masuchi 2nd best -100 kg T. Inoue 2nd best
 - 2000 -90 kg M. Tobitsuka Victory / 2001 -100 kg H. Yoshida 2nd best
 - 2005 -81 kg S. Yoshinaga Victory / 2008-2011 -90 kg M. Nishiyama Victory
 - 2009 +100 kg K. Takahashi Victory
 - 2014 -90 kg D. Nishiyama Victory

Volleyball – Sakai Blazers

(Incorporated in December 2000 as a 100% subsidiary of NSSMC)

■ Recent major results

- Japan League 3 continuous victories from 1988, 2nd best in 1991, 4th place in 1992, 3rd best in 1993, 13 cumulative victories
- V-League Victory in 1996, 1997, 2005, 2010 and 2012
2nd best in 1994, 1995, 2008 and 2009
3rd best in 2001, 2013

■ Athletes in national team

- Olympics
 - Seoul (1988) 10th place M. Manabe
 - Barcelona (1992) 6th place T. Ueda, Y. Nakagaichi
 - Beijing (2008) T. Ueda (Head Coach), K. Tomonaga, Y. Ishijima
- World Cup
 - Japan (1991) 6th place T. Ueda, Y. Nakagaichi
 - Japan (1995) 5th place M. Manabe, Y. Nakagaichi
 - Japan (2015) 6th place T. Dekita

- World Championship Japan (2006) Best 8 S. Chiba, K. Tomonaga, Y. Ishijima
- Asian Games China (2010) Victory T. Ueda (Head Coach), Y. Ishijima
- Republic of Korea (2014) 2nd best T. Dekita

Rugby—Kamaishi Seawaves RFC

(Reorganized as a club team centering on Kamaishi Works in April 2001)

■ Recent major results

- All-Japan Company Team Tournament Best 8 in 1992, 7 continuous victories since 1978
- All-Japan Championship 7 continuous victories since 1978

■ National team

- World Cup 1st (1987) K. Horaguchi, M. Chida, Y. Sakuraba
3rd (1995) Y. Sakuraba / 4th (1999) Y. Sakuraba

Baseball—Kashima, Kimitsu, Nagoya

■ Recent major results

- Inter-City Baseball Championship Tournament Victory: 1937, 1954 Yawata 1968, 1971 Hirohata 1982 Wakayama
2nd best: 1934 Yawata 1959 Kamaishi 1963 Murooran 1965, 1966 Wakayama 1974 Yawata 1983 Nagoya 1990 Hirohata

Kashima 2000 Best 4, 2005 Best 8, 2010 Best 4, 2011 Best 4

Kimitsu 1996 Best 8, 2000 Best 4

Nippon Steel & Sumitomo Metal Kazusa Magic 2013 Best 4

Nagoya 1995 Best 8

Nippon Steel & Sumitomo Metal Tokai REX 2017 Best 8

Hirohata 1981 Best 4, 1983 Best 4, 1991 Best 8

- Japan Amateur Baseball Championship Victory: 1976 Nagoya, 2013 Nippon Steel & Sumitomo Metal Kazusa Magic

Nippon Steel & Sumitomo Metal Kazusa Magic 2017 Best 8

■ National team

- Olympics Atlanta (1996) N. Matsunaka / Sydney (2000) S. Watanabe, K. Noda

* The baseball teams in Kimitsu and Nagoya became broad-area multi-corporate teams “Nippon Steel & Sumitomo Metal Kazusa Magic” and “Nippon Steel & Sumitomo Metal Tokai REX” respectively in 2003.

Cultural Activities

Nippon Steel & Sumitomo Metal Mixed Chorus

Chorus Timeline

- 1947 Established as the Fuso Metal Mixed Chorus
- 1952 Renamed as the Sumitomo Metals Mixed Chorus
- Oct. 2012 Renamed as the Nippon Steel & Sumitomo Metal Mixed Chorus (NSSMMC)
- At present 46 appearances in the Japan Choral Association National Choral Competition; winners of the Gold Medal on 27 consecutive occasions from 1987 to 2013; Gold Medal winners in a total of 32 occasions

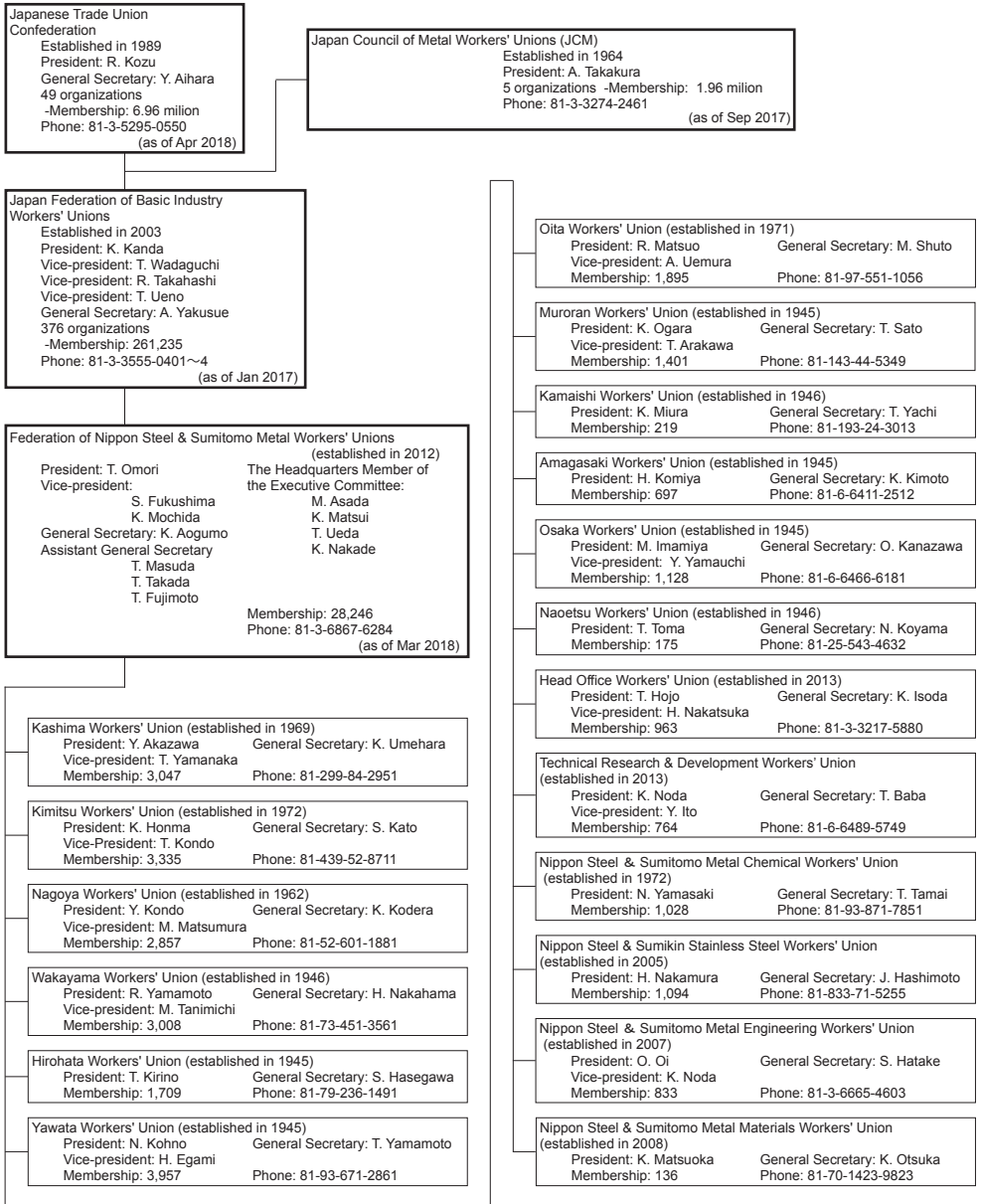
Recent Achievements

Gold Award in the National Choral Competition (University / Company / Community Choruses Division) held by the Japan Choral Association (2013, Chiba / 2016, Tottori)

Other Activities

- In addition to participation in competitions, the NSSMMC gives regular concerts in Osaka about once every four years and provincial concerts in workplace locations such as Tokyo, Kashima, Wakayama, Kokura, and Kamaishi.
 - The NSSMMC has accepted invitations to perform at special concerts in Okinoshima, Shimane Prefecture and in Koriyama City, Fukushima Prefecture. The Chorus also makes a broad contribution to society through its performances at charity concerts, etc.
 - In 2004, the NSSMMC was invited to perform in Shanghai, China as part of the 30th anniversary celebrations of the friendship city relationship between Osaka City and Shanghai. Accordingly, the NSSMMC gave its first overseas performance at the Japan Harmony Shanghai event.
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Reference: Organization of Labor Unions



Financial Summary

Nippon Steel & Sumitomo Metal Group (consolidated)

Fiscal year	2008	2009	2010
Crude steel (million tons)	31.24	29.92	34.92
Net sales	4,769,821	3,487,714	4,109,774
Operating profit (loss)	342,930	32,005	165,605
Ordinary profit (loss)	336,140	11,833	226,335
Profit (loss) attributable to owners of parent	155,077	(11,529)	93,199
Net assets	2,174,809	2,335,676	2,380,925
Total assets	4,870,680	5,002,378	5,000,860
Net assets per share *1	¥2,652.36	¥2,931.87	¥2,958.44
Net income (loss) per share *1	¥246.08	(¥18.32)	¥148.16
Net income per share after dilution *1	¥237.13	—	¥145.14
Shareholders' equity	1,668,682	1,844,382	1,860,799
Ratio of shareholders' equity to total assets (%)	34.3	36.9	37.2
Ratio of net income (loss) to shareholders' equity (%)	8.7	(0.7)	5.0
Ratio of cash dividends to net income (%)	24.4	—	20.2
Net cash provided by operating activities	127,540	437,668	369,500
Net cash used in investing activities	(306,603)	(412,827)	(325,781)
Net cash provided by (used in) financing activities	170,209	(79,985)	(47,244)
Interest-bearing debt	1,454,214	1,383,794	1,337,851
Interest expenses	15,839	17,999	15,609
Capital expenditure	305,738	329,356	287,236
Depreciation	273,744	284,092	291,587
No. of consolidated subsidiaries	251	255	270
No. of equity-method affiliates	73	73	74
Number of employees	50,077	52,205	59,183

Net sales by business segment

Steelmaking and steel fabrication	4,038,685	2,823,193	3,473,495
Engineering and construction	386,643	331,905	254,941
Urban development	70,152	80,073	86,556
Chemicals	212,172	179,412	193,896
New materials	59,907	58,799	60,888
System solutions	161,541	152,234	159,708
Total	4,929,103	3,625,619	4,229,485
Elimination of intersegment transactions	(159,281)	(137,904)	(119,711)
Consolidated total	4,769,821	3,487,714	4,109,774

Ordinary profit (loss) or Operating profit (loss) by business segment

Steelmaking and steel fabrication	307,047	(20,589)	181,968
Engineering and construction	24,674	31,655	14,883
Urban development	3,929	2,937	9,273
Chemicals	894	10,431	13,244
New materials	(2,397)	444	2,111
System solutions	11,479	10,732	11,332
Total	345,627	35,613	232,814
Elimination of intersegment transactions	(2,696)	(3,607)	(6,478)
Consolidated total	342,930	32,005	226,335

Dividends per share *2

	¥6.0	¥1.5	¥3.0
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(¥ million)

2011	2012	2013	2014	2015	2016	2017
32.44	39.50	48.16	47.32	44.53	45.17	46.82
4,090,936	4,389,922	5,516,180	5,610,030	4,907,429	4,632,890	5,668,663
79,364	20,110	298,390	349,510	167,731	114,202	182,382
143,006	76,931	361,097	451,747	200,929	174,531	297,541
58,471	(124,567)	242,753	214,293	145,419	130,946	195,061
2,347,343	2,938,283	3,237,995	3,547,059	3,009,075	3,291,015	3,515,501
4,924,711	7,089,498	7,082,288	7,157,929	6,425,043	7,261,923	7,592,413
¥2,907.79	¥2,638.19	¥2,941.09	¥3,263.03	¥3,074.28	¥3,340.21	¥3,563.80
¥92.96	(¥162.30)	¥266.71	¥234.82	¥158.71	¥147.96	¥221.00
—	—	—	—	—	—	—
1,828,902	2,394,069	2,683,659	2,978,697	2,773,822	2,948,232	3,145,450
37.1	33.8	37.9	41.6	43.2	40.6	41.4
3.2	(5.9)	9.6	7.6	5.1	4.6	6.4
26.9	—	18.7	23.4	28.4	30.4	31.7
237,414	313,317	574,767	710,998	562,956	484,288	458,846
(226,096)	(327,336)	(196,856)	(263,667)	(242,204)	(343,738)	(353,419)
(31,785)	33,332	(367,115)	(451,843)	(337,555)	(135,054)	(89,190)
1,334,512	2,543,062	2,296,326	1,976,591	2,008,263	2,104,842	2,068,996
14,533	19,670	20,781	14,630	14,409	12,352	14,960
281,748	355,873	257,019	304,389	304,643	351,038	411,930
280,940	288,770	331,801	320,046	308,276	304,751	340,719
286	370	377	356	339	366	377
76	107	109	105	103	113	114
60,508	83,187	84,361	84,447	84,837	92,309	93,557
3,476,855	3,790,450	4,877,909	4,939,239	4,283,923	4,052,261	5,017,245
248,934	303,002	314,174	348,699	315,727	267,545	294,268
80,419	—	—	—	—	—	—
197,669	195,719	230,130	212,777	181,823	174,227	200,767
54,245	42,211	37,241	36,449	36,280	34,519	37,050
161,582	171,980	179,856	206,032	218,941	232,512	244,200
4,219,706	4,503,364	5,639,312	5,743,199	5,036,697	4,761,065	5,793,531
(128,769)	(113,442)	(123,132)	(133,168)	(129,267)	(128,175)	(124,868)
4,090,936	4,389,922	5,516,180	5,610,030	4,907,429	4,632,890	5,668,663
98,846	41,522	321,287	401,987	160,088	138,017	245,708
12,775	18,189	17,702	18,758	12,163	6,838	9,110
9,371	—	—	—	—	—	—
13,598	9,778	10,057	6,898	1,093	4,518	15,480
607	984	1,391	2,482	3,073	1,786	1,919
11,215	11,673	12,760	16,565	19,493	22,113	23,292
146,415	82,148	363,199	446,693	195,912	173,274	295,510
(3,408)	(5,217)	(2,101)	5,053	5,017	1,256	2,030
143,006	76,931	361,097	451,747	200,929	174,531	297,541
¥2.5	¥1.0	¥5.0	¥5.5	¥18.0	¥45	¥70

Notes: The figures between fiscal 2008 to the fiscal 2011 are those of Nippon Steel.

The figures of fiscal 2012 are the aggregate of the first half period of Nippon Steel and the second half period of Nippon Steel & Sumitomo Metal.

- *1 On October 1, 2015, NSSMC performed a 1-for-10 share consolidation. Consequently, NSSMC estimates the net assets per share, net income per share and net income per share after dilution assuming that the share consolidation occurred at the start of fiscal 2008.
- *2 On October 1, 2015, NSSMC performed a 1-for-10 share consolidation. The dividend per share noted for fiscal 2015 is the sum of the interim dividend of 3.0 yen and the year-end dividend of 15.0 yen. Converting this amount based on the share consolidation, the interim dividend would be 30.0yen, so adding the year-end dividend of 15.0 yen, the annual dividend works out to 45.0 yen per share.

Sumitomo Metals Group (consolidated)

Fiscal year	2008	2009	2010
Crude steel (million tons) ^{*1}	12.87	11.65	12.90
Net sales	1,844,422	1,285,845	1,402,454
Operating profit (loss)	226,052	(928)	56,301
Ordinary profit (loss)	225,736	(36,634)	34,049
Net income (loss)	97,327	(49,772)	(7,144)
Net assets	904,371	879,209	818,080
Total assets	2,452,535	2,403,670	2,440,761
Net assets per share	¥184.92	¥178.87	¥165.41
Net income (loss) per share	¥20.98	(¥10.74)	(¥1.54)
Net income per share after dilution	—	—	—
Shareholders' equity	857,697	829,219	766,777
Ratio of shareholders' equity to total assets (%)	35.0	34.5	31.4
Ratio of net income (loss) to shareholders' equity (%)	11.1	(5.9)	(0.9)
Net cash provided by operating activities	190,582	67,002	202,340
Net cash used in investing activities	(214,977)	(172,933)	(144,009)
Net cash provided by (used in) financing activities	52,623	87,843	(1,325)
Interest-bearing debt ^{*2}	990,010	1,138,353	1,173,382
Capital expenditure (Property, plant and equipment)	159,118	136,643	109,934
Depreciation (Property, plant and equipment)	109,854	120,853	126,267
No. of consolidated subsidiaries	73	72	68
No. of equity-method affiliates	35	36	37
Number of employees	24,245	23,674	22,597
Dividends per share	¥10.0	¥5.0	¥3.5

Notes:

- 1) Amounts of money are rounded down.
Other figures are rounded to the nearest unit.
- 2) Figures for crude steel include, in addition to the Company's, production of its subsidiaries: of Nisshin Steel Co., Ltd., Nippon Steel & Sumikin Koutetsu Wakayama Corporation, Osaka Steel Co., Ltd., Nippon Steel & Sumikin Stainless Steel Corporation, Shin-Hokkai Steel Co., Ltd., Nippon Steel & Sumikin Shapes Corporation, Tokai Special Steel Co., Ltd., Oji Steel Co., Ltd., and Tokyo Kohtetsu Co., Ltd. Production of Nisshin Steel Co., Ltd. has been included since fiscal 2017. Production of Tokyo Kohtetsu Co., Ltd. has been included since fiscal 2016. Production of Nippon Steel & Sumikin Koutetsu Wakayama Corporation and Nippon Steel & Sumikin Shapes Corporation is included since the second half of fiscal 2012. Production of Shin-Hokkai Steel Co., Ltd. had been included until fiscal 2013.
- 3) Beginning with fiscal 2010, "Accounting Standard for Disclosures about Segments of an Enterprise and Related Information" (ASBJ Statement No. 17) and the "Guidance on the Accounting Standard for Disclosures about Segments of an Enterprise and Related Information" (ASBJ Guidance No. 20) have been applied. As a result of this, ordinary profit (loss) by segment is presented from fiscal 2010 and operating profit (loss) by segment is presented up to fiscal 2009.
- 4) Following the business integration of Nippon Steel City Produce, Inc. and Kowa Real Estate Co., Ltd. on October 1, 2012, the results for the Urban development segment have been excluded from the reporting segments and are presented within the Elimination of intersegment transactions amount.

(¥ million, unless specified)

2011	2012
12.72	6.44
1,473,367	693,601
76,801	15,759
60,803	10,815
(53,799)	(133,849)
761,484	552,741
2,386,158	2,218,959
¥153.02	¥119.53
(¥11.61)	(¥29.35)
—	—
709,315	500,102
29.7	22.5
(7.3)	(22.1)
88,065	—
(120,110)	—
(32,714)	—
1,172,120	1,263,938
115,797	65,605
122,937	49,279
72	71
38	37
23,007	—
¥2.0	—

Notes: Amounts of money disregard fractions.

Other figures are rounded to the nearest unit.

- *1 Figures for crude steel include, in addition to Sumitomo Metals, production of its subsidiaries: Sumitomo Metals (Kokura), Ltd., Sumitomo Metals (Naoetsu), Ltd. and Sumikin Iron & Steel Corporation.
- *2 Figures for "Interest-bearing debt" up to fiscal 2011 are amounts of debt.
- *3 Figures for fiscal 2012 are the first-half results of Sumitomo Metals.

Capital Procurement from Capital Markets

Company	Bonds and notes	Date of issue	Total amount (¥ million)	Annual interest rate	Due date
NSSMC	Euro mid-term note yen bonds	Feb. 15, '99	700	3.00%	Feb. 15, '19
	58th straight bonds	Sep. 2, '08	30,000	1.714%	Jun. 20, '18
	59th straight bonds	Sep. 2, '08	10,000	2.491%	Jun. 20, '28
	61st straight bonds	Dec. 2, '08	15,000	1.891%	Sep. 20, '18
	63rd straight bonds	Jun. 9, '09	20,000	1.942%	Jun. 20, '19
	64th straight bonds	Apr. 20, '10	20,000	1.53%	Mar. 19, '20
	65th straight bonds	Aug. 31, '10	15,000	1.076%	Jun. 19, '20
	67th straight bonds	May 24, '11	30,000	1.293%	Mar. 19, '21
	65th straight bonds	May 31, '11	10,000	0.846%	May 31, '18
	68th straight bonds	Oct. 20, '11	15,000	1.109%	Sep. 17, '21
	68th straight bonds	Oct. 20, '11	10,000	0.70%	Oct. 19, '18
	70th straight bonds	Apr. 20, '12	10,000	0.697%	Apr. 19, '19
	69th straight bonds	Jul. 20, '12	10,000	0.556%	Jun. 20, '19
	70th straight bonds	Jul. 20, '12	20,000	0.951%	Jun. 20, '22
	1st straight bonds	Sep. 26, '16	10,000	0.28%	Sep. 18, '26
	2nd straight bonds	Sep. 26, '16	10,000	0.64%	Sep. 19, '31
	3rd straight bonds	May 25, '17	10,000	0.22%	May 20, '24
4th straight bonds	May 25, '17	10,000	0.375%	May 20, '27	
5th straight bonds	Dec. 8, '17	10,000	0.23%	Dec. 20, '24	
6th straight bonds	Dec. 8, '17	10,000	0.35%	Dec. 20, '27	
Nisshin Steel Co.,Ltd.	19th straight bonds	Jun. 2, '08	10,000	2.20%	Jun. 1, '18
	23rd straight bonds	Mar. 10, '14	10,000	0.64%	Mar. 8, '19
Total			295,700		

Equipment Investment by Nippon Steel & Sumitomo Metal (Nippon Steel)

(¥billion)

Fiscal year	Nippon Steel & Sumitomo Metal (Nippon Steel)				Sumitomo Metals	
	Consolidated		Non-consolidated		Consolidated	
	Capital Expenditure	Depreciation	Capital Expenditure	Depreciation	Capital Expenditure	Depreciation
2000	157.3	207.0	135.0	150.9	77.0	132.2
2001	195.8	197.3	175.0	144.4	74.6	121.1
2002	163.3	196.7	85.0	148.1	50.9	91.7
2003	149.6	183.5	120.0	134.3	67.1	78.3
2004	195.2	180.6	140.0	129.9	60.3	79.2
2005	204.0	183.4	165.0	130.6	82.6	75.2
2006	273.4	192.5	200.0	134.2	135.8	72.2
2007	309.0	244.0	230.0	174.9	178.8	102.5
2008	305.7	273.7	220.0	197.2	159.1	109.8
2009	329.4	284.1	270.0	214.3	136.6	120.8
2010	287.2	291.6	210.0	220.9	109.9	126.2
2011	281.7	280.9	180.0	212.3	115.7	122.9
2012	355.8	288.7	260.0	214.7	65.6	49.2
2013	257.0	331.8	161.9	246.8		
2014	304.3	320.0	214.0	230.2		
2015	304.6	308.2	205.7	221.6		
2016	351.0	304.7	232.8	219.9		
2017	411.9	340.7	252.6	219.8		

Notes:

- 1) Capital Expenditure is construction-based.
- 2) Amounts for Sumitomo Metals are only for tangible fixed assets.
- 3) Figures of NSSMC for fiscal 2012 consists of those of the first half of NSC and the second half of NSSMC.
Figures of Sumitomo Metals for fiscal 2012 consists of the first half of Sumitomo Metals.

Major New Installations at Nippon Steel and Sumitomo Metal Major Equipment Investment Completed

Steelworks	Investment work	Completion	Capacity
Nagoya	Construction of No.5 Coke oven (No.3 Coke oven: ceased operation*)	Mar. 2013	approx. 1,000,000 tons/y
Yawata	Relining of No.4 blast furnace	Apr. 2014	5,000 m ³
Kashima	Construction of No.1 F coke oven	Aug. 2016	approx. 340,000 tons/y
Kimitsu	Relining of No.4 coke oven	Jan. 2017	approx. 900,000 tons/y
Kashima	Construction of No.2 E coke oven	May 2018	approx. 580,000 tons/y

* Aug. 2013

Major Equipment Investment in Progress or Planned

Steelworks	Investment work	Completion	Capacity
Wakayama	Switch from No.5 BF to No.2 BF which has been on standby	around the end of FY2018	No. 2 BF 3,700 m ³
Kimitsu	Relining of No.5 coke oven	Second half of fiscal 2018*	approx. 900,000 tons/y
Yawata	Construction of No.3 CC in the Tobata Area Kokura No.2 blast furnace: ceased operation Steelmaking plant (refining furnaces and CC) in the Kokura Area: ceased operation No.2 CC 4 strand in the Tobata Area: ceased operation	End of fiscal 2018* End of fiscal 2020*	approx. 1,680,000 tons/y
Muroran	Relining of No.5 West coke oven	First half of fiscal 2019*	approx. 280,000 tons/y
Kimitsu	Construction of No.6 CGL	First half of fiscal 2020*	approx. 33,000 tons/m

* Scheduled to be completed.

Steelmaking Operations

Production

History of Crude Steel Production by the Japanese Steel Industry and Nippon Steel & Sumitomo Metal (Nippon Steel)

(1,000 tons, %)

Fiscal year	Japan total	Nippon Steel & Sumitomo Metal (Nippon Steel*)		Sumitomo Metals**	
			% of total		% of total
2000	106,901	27,838	26.0	11,661	10.9
2001	102,064	26,140	25.6	11,035	10.8
2002	109,786	29,902	27.2	12,184	11.1
2003	110,998	30,147	27.2	12,776	11.5
2004	112,897	29,879	26.5	12,867	11.4
2005	112,718	31,200	27.7	13,305	11.8
2006	117,745	31,596	26.8	13,377	11.4
2007	121,511	33,112	27.3	13,619	11.2
2008	105,500	28,611	27.1	12,872	12.2
2009	96,448	27,503	28.5	11,650	12.1
2010	110,793	32,465	29.3	12,901	11.6
2011	106,462	30,200	28.4	12,718	11.9
2012	107,305	43,547	40.6		
2013	111,523	45,665	41.0		
2014	109,844	44,959	40.9		
2015	104,229	42,174	40.5		
2016	105,166	42,620	40.5		
2017	104,838	40,669	38.8		

Source: The Japan Iron and Steel Federation

* Excluding production by NSSC

** Including production by Sumitomo Metals (Kokura), Sumitomo Metals (Naoetsu) and Sumikin Iron & Steel Co.

Iron and Steel Statistics

Japan's Consumption of Ordinary Steel Products by Market

(1,000 tons, %)

Market	Fiscal year	2012	2013	2014	2015		2016		2017	
						(% of total)		(% of total)		(% of total)
Construction		20,825	23,005	22,360	21,145	43.7	21,570	44.0	21,798	43.8
Building construction		14,743	16,263	15,343	14,557	30.1	14,720	30.0	14,994	30.2
Civil engineering		6,082	6,742	7,017	6,588	13.6	6,850	14.0	6,804	13.7
Shipbuilding		4,357	4,162	4,336	4,324	8.9	4,329	8.8	4,070	8.2
Automobiles		11,143	11,479	11,145	10,762	22.2	10,954	22.4	11,208	22.5
Industrial machinery		4,698	5,036	5,182	4,609	9.5	4,592	9.4	5,013	10.1
Electrical machinery		3,018	3,112	3,069	2,917	6.0	2,968	6.1	3,098	6.2
Secondary processing		2,354	2,429	2,345	2,260	4.7	2,239	4.6	2,244	4.5
Others		2,568	2,585	2,487	2,415	5.0	2,357	4.8	2,299	4.6
Total		48,963	51,808	50,924	48,432	100.0	49,009	100.0	49,730	100.0

Note: Figures for fiscal 2017 are estimates by NSSMC.

Source: The Japan Iron and Steel Federation

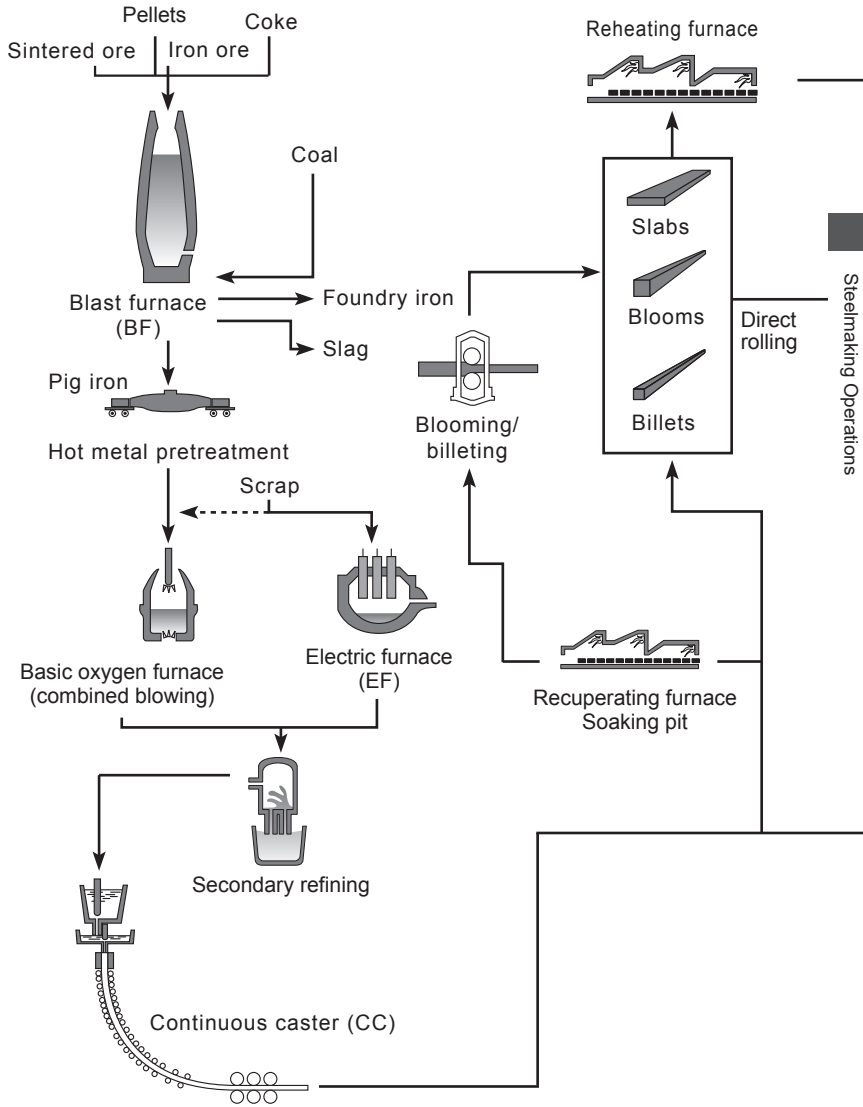
Japan's Order Receipts for Ordinary and Specialty Steel Products by Type of Product

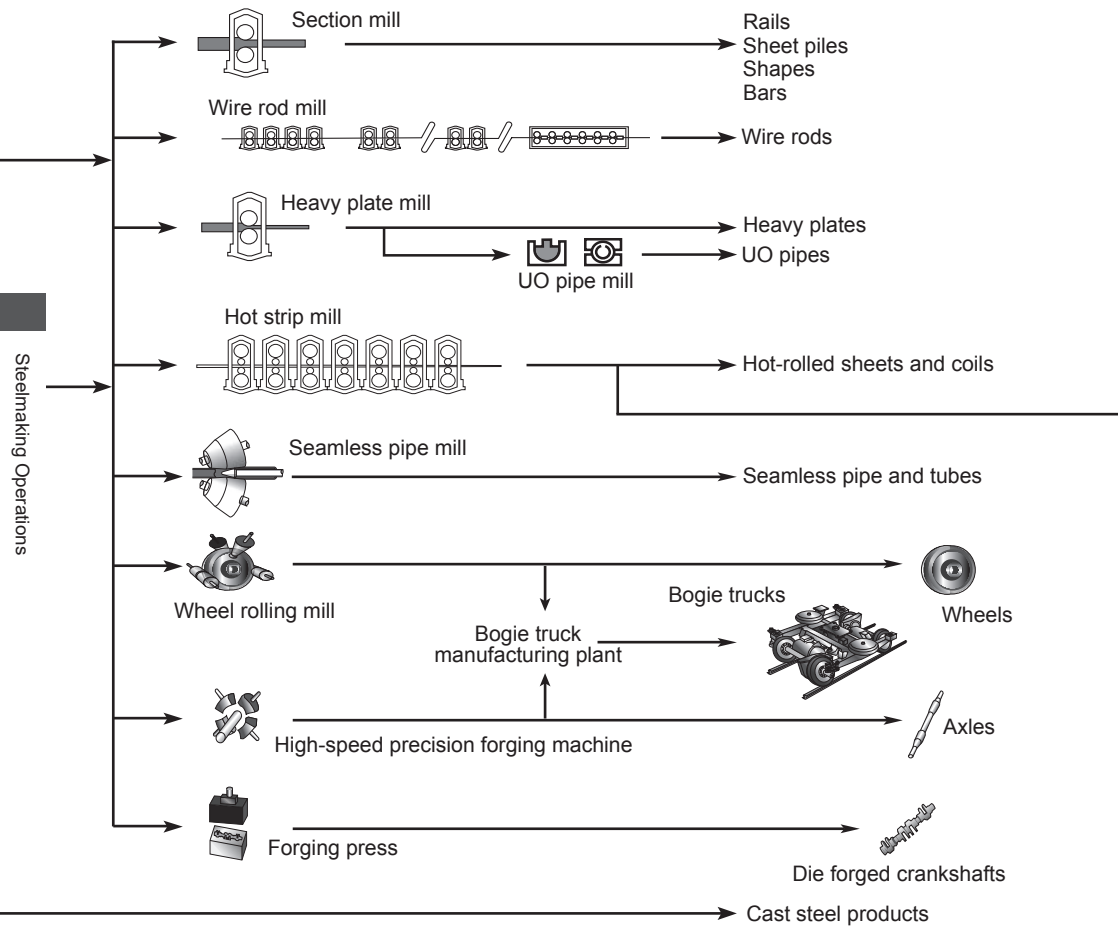
(1,000 tons)

Type of product	Fiscal year		2000	2005	2010	2012	2013	2014	2015	2016
Ordinary steel products			56,535	54,976	44,259	43,648	46,106	44,501	42,461	43,655
Rails			216	213	218	204	186	190	199	188
Sheet piles			734	646	354	597	674	610	439	507
H beams			4,720	3,924	2,666	3,010	3,562	3,273	3,283	3,433
Shapes			3,136	2,659	1,906	1,902	1,926	1,923	1,787	1,825
Bars			11,070	10,061	7,511	8,294	8,249	7,821	7,333	7,427
Wire rods			3,013	2,337	1,643	1,486	1,665	1,471	1,447	1,555
Plates			7,250	9,246	8,983	7,563	7,914	7,791	7,489	7,634
Hot-rolled sheets and coils			6,844	6,798	5,794	5,736	6,146	5,734	5,560	5,763
Cold-rolled sheets and coils			3,996	4,089	3,231	2,913	3,066	2,903	2,730	2,775
Electrical sheets			617	588	514	490	544	524	493	502
Tinplate			1,441	1,084	982	865	836	739	687	696
Galvanized sheets			1,052	607	389	427	404	475	417	381
Other coated sheets			8,169	8,828	7,359	7,412	8,026	8,054	7,783	8,066
Pipe and tubes			4,277	3,896	2,710	2,747	2,908	2,991	2,815	2,902
Specialty steel products			9,949	13,257	12,308	11,186	11,908	12,122	11,663	12,013
Structural steel			4,733	7,044	6,558	5,951	6,249	6,581	6,340	6,540
Stainless steel			1,548	1,555	1,527	1,419	1,534	1,438	1,449	1,562
Free-cutting steel			760	857	576	508	506	467	405	452
High-strength steel			1,063	1,630	1,714	1,694	1,891	1,904	1,819	1,833
Others			1,845	2,171	1,932	1,614	1,728	1,731	1,649	1,626
Total			66,484	68,233	56,566	54,834	58,015	56,623	54,124	55,668

Source: The Japan Iron and Steel Federation

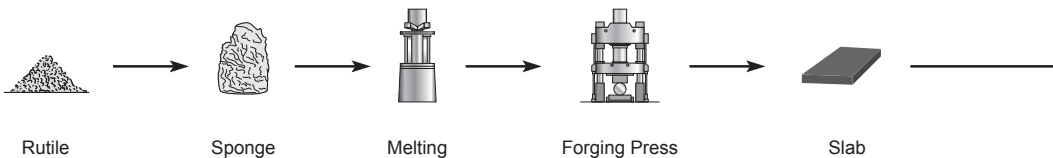
Steel Manufacturing Process

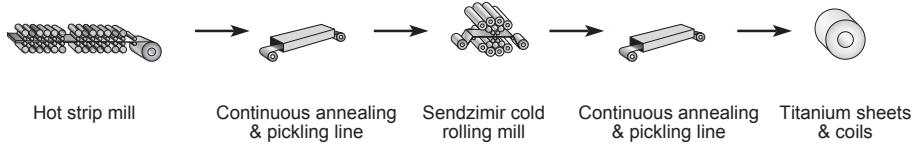
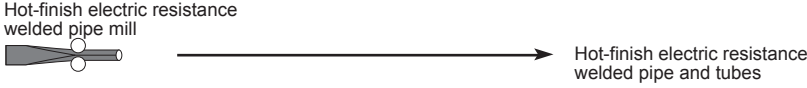
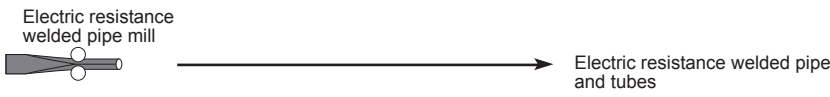
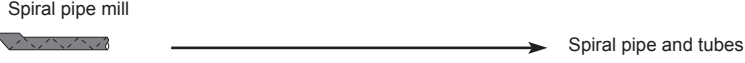
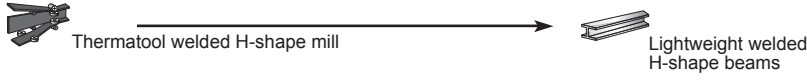
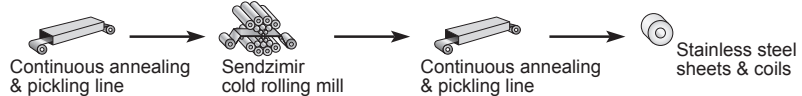
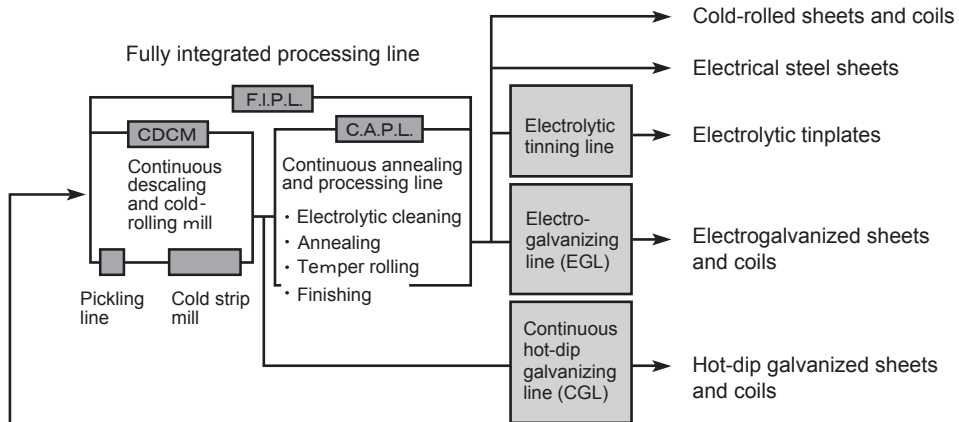




Titanium Manufacturing Process

(including processes handled by other companies)





Outline of the Manufacturing Base

Works	Kashima Works	Kimitsu Works		Nagoya Works
		[Kimitsu Area]	[Tokyo Area]	
Founding	1968	1965	1935	1958
General Superintendent	N. Satoh	S. Onoyama		T. Imai
Employees ^{*1}	2,963	3,437		3,076
Site (1,000m ²) ^{*2}	8,885	12,164	110	6,490
Crude steel production (1,000 tons) ^{*3}	6,333	7,903	—	6,214
Major production equipment				
Blast furnaces (Inner volume, m ³) <Relining operation>	No.1 BF (5,370m ³) <Sep. 2004> No.3 BF (5,370m ³) <May 2007> 2 BF's	No.2 BF (4,500m ³) <May 2012> No.4 BF (5,555m ³) <May 2003> 2 BF's		No.1 BF (5,443m ³) <Apr. 2007> No.3 BF (4,300m ³) <Apr. 2000> 2 BF's
Basic-oxygen furnaces	No.1 steelmaking plant: 250 t/ch × 3 No.2 steelmaking plant: 345 t/ch × 2	No.1 steelmaking plant: 220 t/ch × 2 No.2 steelmaking plant: 300 t/ch × 3		No.1 steelmaking plant: 160 t/ch × 3 No.2 steelmaking plant: 270 t/ch × 3
Electric furnaces				
Continuous casters	No.1 steelmaking plant: 2 casters No.2 Steelmaking plant: 2 casters	No.1 steelmaking plant: 2 casters No.2 steelmaking plant: 3 casters		3 casters
Slabbing mills	Slabbing mill × 1	Blooming mill × 1		Slabbing mill × 1
Section mills	Shape mill × 1	Shape mill × 1		
Bar and wire rod mills				
Pipe and tube mills	Hot-finish ERW mill × 1 UO mill × 1	Spiral mill × 2 ERW mill × 1 UO mill × 1	Seamless mill × 1	Medium-diameter ERW mill × 1
Plate and sheet mills				
Plate and sheet mills	Plate mill × 1 Hot-rolling mill × 1 Cold-rolling mill × 1	Plate mill × 1 Hot-rolling mill × 1 Cold-rolling mill × 2		Plate mill × 1 Hot-rolling mill × 1 Cold-rolling mill × 2
Coating lines				
Coating lines	Hot-dip galvanizing line × 2	Hot-dip galvanizing line × 4 Electro galvanizing line × 1 Coil-coating line × 1		Tinning line × 1 Tin-free steel line × 1 Hot-dip galvanizing line × 3 Film-laminating line × 2
Wheel/Outer wheel mills				
Forging mills				
Welded H-shape mills				
Welded H-shape mills	Thermatool welded H-shape mill × 1			

*1: Excluding those seconded to subsidiaries and other organizations (as of March 31, 2018)

*2: Including the site used for employee welfare facilities *3: For fiscal 2017 ended March 31, 2018

(As of July 1, 2018)

Wakayama Works *1		Hirohata Works	Yawata Works	
[Wakayama·Kainan Area] 1942	[Sakai Area] 1961		[Tobata·Yawata Area] 1901	[Kokura Area] 1918
Y. Yamadera 1,984		K. Fukuda 1,275	J. Tani 3,563	
5,361	1,223	6,198	14,780	1,269
4,567	—	701	3,632	1,202
No.1 BF (3,700m ³) <Jul. 2009> No.5 BF (2,700m ³) <Feb. 1988> 2 BF's		(Cold ferrous materials melting furnace)	Tobata No.4 BF (5,000m ³) <Apr. 2014> 1BF	No.2 BF (2,150m ³) <Apr. 2002> 1BF
Steelmaking plant: 260 t/ch × 3		Melting furnace: 200 t/ch × 1 Decarburization furnace:100 t/ch × 1 Melting/decarbur- ization furnace: 120 t/ch × 1	No.1 steelmaking plant: 170 t/ch × 2 No.3 steelmaking plant: 350 t/ch × 2	Steelmaking plant: 70 t/ch × 4
80 t/ch × 1 (stainless)				
Steelmaking plant: 5 casters Stainless plant: 1 caster		2 caster	No.3 steelmaking plant: 4 casters	2 casters
Blooming mill × 1				Blooming mill × 1
	Shape mill × 1		Shape mill × 1	
				Wire rod mill × 1 Barmill × 1
Medium-diameter seamless mill × 1 Small-diameter seamless mill × 2 Cold-rolling mill × 1			Spiral mill × 1	
		Hot-rolling mill × 1 Cold-rolling mill × 2 Electrical sheet mill × 2	Hot-rolling mill × 1 Cold-rolling mill × 3 Electrical sheet mill × 2	
		Tinning line × 2 Hot-dip galvanizing line × 2 Electrogalvanizing line × 1	Tinning line × 2 Tin-free steel line × 1 Hot-dip galvanizing line × 1 Hot-dip aluminizing line × 1 Terne-coating line × 1	

*1: Nippon Steel & Sumikin Koutetsu Wakayama Corporation was merged with NSSMC in April, 2018

Works	Oita Works		Muroran Works
	[Oita Area]	[Hikari Area]	
Founding	1971	1955	1909
General Superintendent	H. Ueno		K. Yonezawa
Employees ^{*1}	1,962		969
Site (1,000m ²) ^{*2}	7,078	821	7,724
Crude steel production (1,000 tons) ^{*3}	8,652	—	1,428
Major production equipment			
Blast furnaces (Inner volume, m ³) <Relining operation>	No.1 BF (5,775m ³) <Aug. 2009> No.2 BF (5,775m ³) <May 2004> 2 BFs		No.2 BF (2,902m ³) <Nov. 2001> 1 BF
Basic-oxygen furnaces	Steelmaking plant: 410 t/ch × 3		No.1 steelmaking plant: 270 t/ch × 2
Electric furnaces			100 t/ch × 1
Continuous casters	3 casters		1 caster
Slabbing mills	Slabbing mill × 1		Blooming mill × 1
Section mills		Hot extrusion mill × 1 (shapes and pipe/tubes)	
Bar and wire rod mills			Wire rod mill × 1 Barmill × 1
Pipe and tube mills		Medium-diameter ERW mill × 1 Small-diameter ERW mill × 1	
Plate and sheet mills	Plate mill × 1 Hot-rolling mill × 1	Cold-rolling mill × 1	
Coating lines			
Wheel/Outer wheel mills			
Forging mills			
Welded H-shape mills			

*1: Excluding those seconded to subsidiaries and other organizations (as of March 31, 2018)

*2: Including the site used for employee welfare facilities *3: For fiscal 2017 ended March 31, 2018

(As of July 1, 2018)

	Kamaishi Works	Amagasaki Works	Osaka Steel Works	Naoetsu Works
	1886	1919	1901	1934
	H. Yoneda	H. Kinugasa	S. Koizumi	K. Okutani
	234	708	1,157	188
	3,354	518	527	303
	—	—	41	—
			40 t/ch × 1	
				Shape mill × 1
	Wire rod mill × 1			
		Seamless mill × 2		
				Cold-rolling mill × 4
			Wheel mill × 1	
			Outer wheel mill × 1	
		Super forging press × 1	Die forging press × 4	
			Axle forging machine × 1	
			Free forging press × 2	

Domestic Distribution Route of Iron and Steel Products

Sales Method

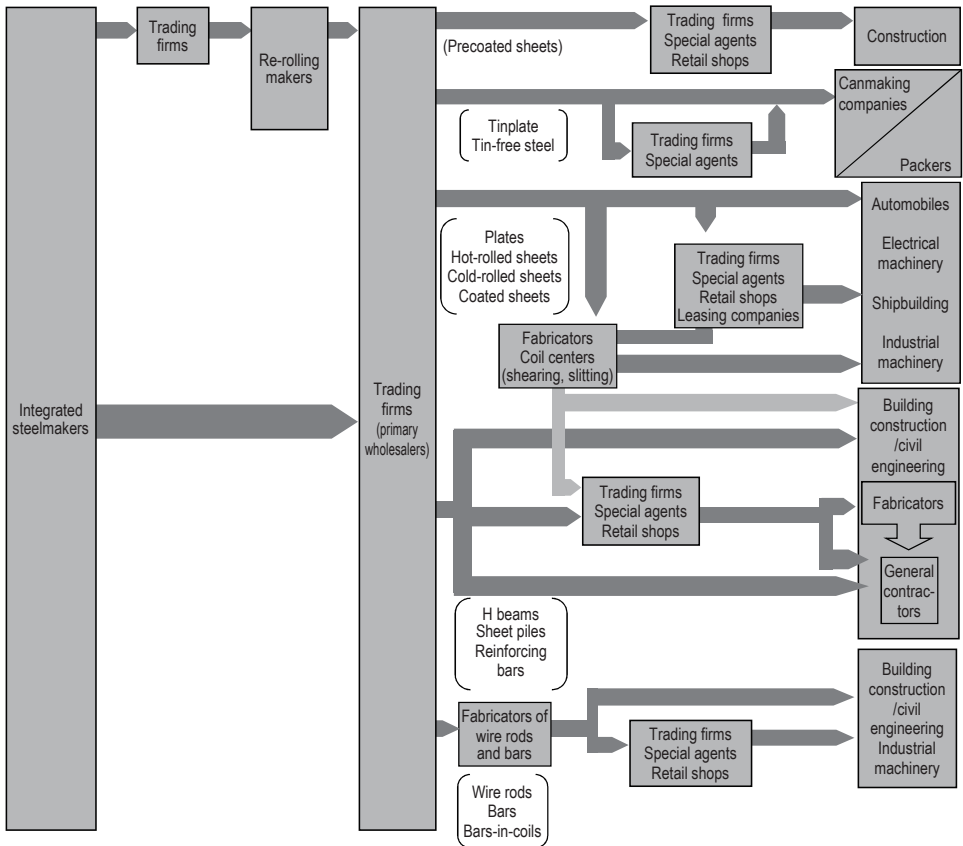
- Tied sale

Customers's order contents (price, volume, specifications, etc.) are informed to steelmakers, and those steel products conforming to the order content are produced for the specified customers. Contracts are made between steelmakers and trading firms and between trading firms and customers in this sales form.

- Retail sale

Steelmakers sell steel products to retailers and trading firms without end users being specified, and the retailers and trading firms stockpile the steel products which are purchased at their responsibility and risk and then sell the products with their own sales efforts, taking into account the market and other conditions.

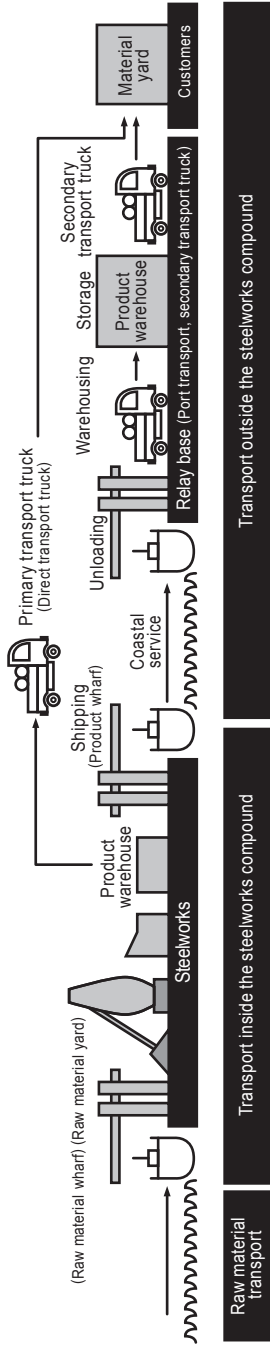
Distribution Route



Steelmaking Operations

Transport Mode of Steel Products for Domestic Customers

Sixty percent of domestic transport of steel products is by coastal shipping and forty percent by truck.



Raw Materials and Fuel

Imports of Iron Ore and Coking Coal by Major Supply Source: Japanese Steel Industry and Nippon Steel & Sumitomo Metal Corporation

(Upper rows: tonnage in million tons; % of the total in parentheses)

Fiscal year	2011	2012	2013	2014	2015	2016	2017
■ Iron ore							
Australia	79.76 (62.2)	81.83 (62.0)	83.58 (61.2)	83.56 (61.1)	78.37 (60.5)	76.53 (59.6)	74.21 (58.5)
Brazil	37.05 (28.9)	37.28 (28.2)	37.11 (27.2)	36.23 (26.5)	36.54 (28.2)	34.75 (27.1)	33.63 (26.5)
India	2.73 (2.1)	2.43 (1.8)	1.87 (1.4)	1.94 (1.4)	0.75 (0.6)	2.53 (2.0)	2.86 (2.3)
Others	8.70 (6.8)	10.43 (7.9)	13.99 (10.2)	15.08 (11.0)	13.81 (10.7)	14.62 (11.4)	16.12 (12.7)
Total	128.24 (100.0)	131.97 (100.0)	136.56 (100.0)	136.80 (100.0)	129.48 (100.0)	128.43 (100.0)	126.82 (100.0)
Total imports for Nippon Steel & Sumitomo Metal	—	65.74 (49.8)	68.32 (50.0)	68.18 (49.8)	63.13 (48.8)	62.55 (48.7)	59.42 (46.9)
Total imports for Nippon Steel	50.45 (39.3)	—	—	—	—	—	—
Total imports for Sumitomo Metals	18.00 (14.0)	—	—	—	—	—	—
■ Coking coal							
Australia	37.35 (54.9)	36.80 (51.3)	40.65 (51.7)	35.68 (49.3)	36.71 (50.2)	35.70 (49.3)	33.57 (47.6)
U.S.A.	5.80 (8.5)	5.11 (7.1)	4.74 (6.0)	4.26 (5.9)	4.25 (5.8)	4.95 (6.8)	6.25 (8.9)
Canada	6.74 (9.9)	7.37 (10.3)	8.00 (10.2)	7.27 (10.0)	6.27 (8.6)	6.19 (8.5)	6.51 (9.2)
China	0.65 (1.0)	0.58 (0.8)	0.57 (0.7)	0.20 (0.3)	0.09 (0.1)	0.27 (0.4)	0.65 (0.9)
Others	17.47 (25.7)	21.91 (30.5)	24.67 (31.4)	24.94 (34.5)	25.76 (35.3)	25.36 (35.0)	23.61 (33.4)
Total	68.01 (100.0)	71.77 (100.0)	78.64 (100.0)	72.35 (100.0)	73.07 (100.0)	72.46 (100.0)	70.60 (100.0)
Total imports for Nippon Steel & Sumitomo Metal	—	31.78 (44.3)	30.60 (38.9)	29.10 (40.2)	28.61 (39.2)	29.37 (40.5)	26.54 (37.6)
Total imports for Nippon Steel	20.85 (30.7)	—	—	—	—	—	—
Total imports for Sumitomo Metals	9.67 (14.2)	—	—	—	—	—	—

Note: Import volumes of iron ore and coking coal for NSSMC in fiscal 2012 include those of Sumitomo Metals in the first half of the year.

Source: Customs Clearance Statistics, Ministry of Finance; Statistics of NSSMC, Nippon Steel, and Sumitomo Metals

Import Prices of Iron Ore and Coking Coal: Japanese Steel Industry

(¥/ton CIF)

Fiscal year	2011	2012	2013	2014	2015	2016	2017
■ Iron ore							
Average	13,658	13,042	13,017	11,574	7,455	6,372	8,655
Australian ore	12,707	12,030	12,424	10,688	6,976	5,877	7,634
Brazilian ore	15,336	14,770	13,786	12,757	8,483	6,768	9,621

■ Coking coal							
Average	18,680	14,319	13,495	11,856	10,553	12,032	16,246
Australian coal	20,235	15,006	14,100	12,468	11,024	12,861	17,847
U.S. coal	22,024	18,776	16,905	14,507	13,287	13,043	16,926
Canadian coal	22,928	18,285	16,774	13,734	12,456	16,278	21,200
Chinese coal	18,073	15,551	13,336	14,024	9,410	18,630	24,957

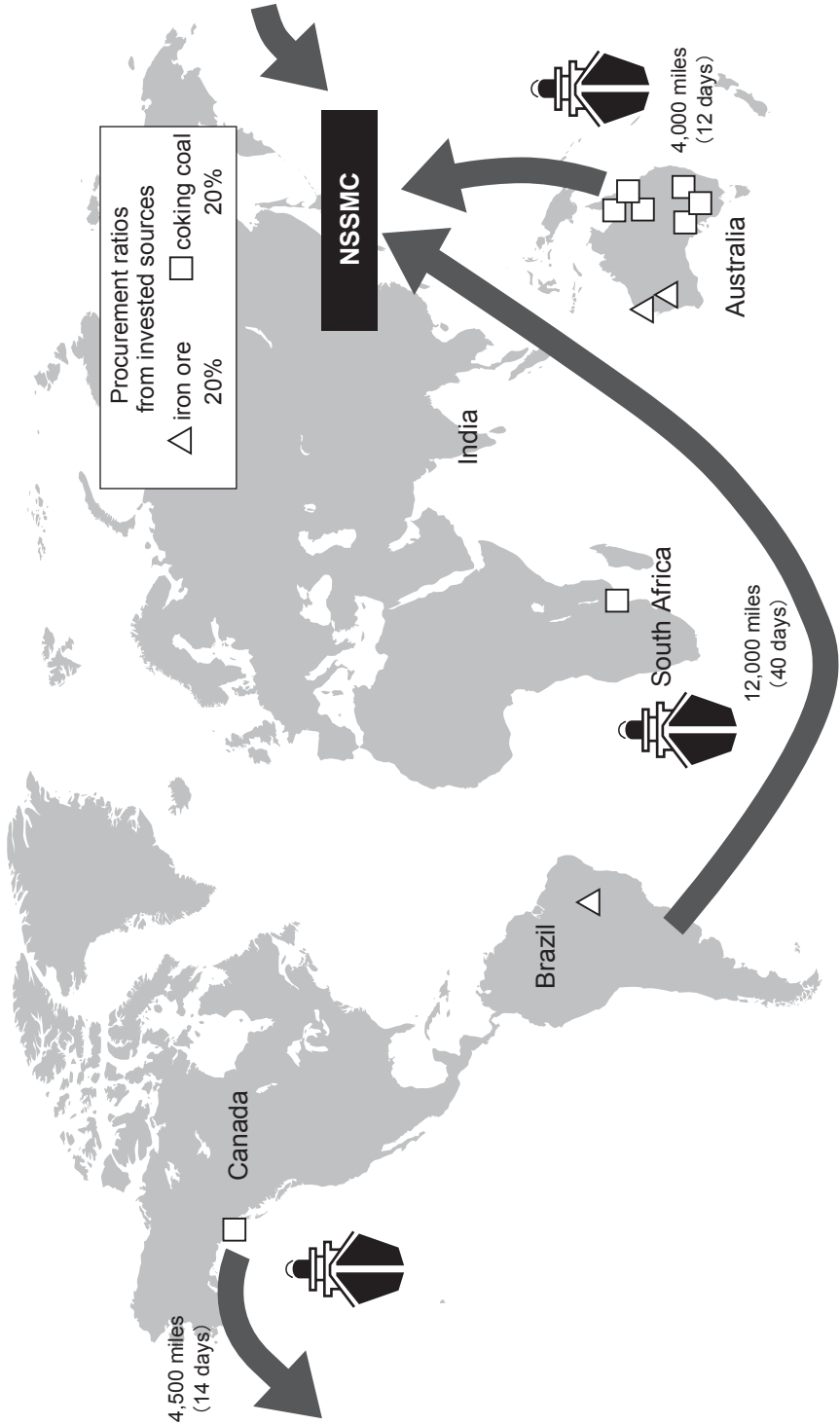
Source: Customs Clearance Statistics, Ministry of Finance

Overseas Raw Material Investment of Nippon Steel & Sumitomo Metal

	Country	Shareholders		Capacity (Million tons/y)
■ Iron Ore				
Robe River	Australia	Rio Tinto	53.0%	70
		NSSMC	14.0%	
		Other Japanese	33.0%	
Beasley River (details pending)	Australia	Rio Tinto	53.0%	to be developed
		NSSMC	37.6%	
		Other Japanese	9.4%	
NIBRASCO	Brazil	VALE	51.0%	10
		NSSMC	31.4%	
		Other Japanese	17.6%	
■ Coking Coal				
Warkworth	Australia	Yancoal	84.5%	8
		NSSMC	9.5%	
		Other Japanese	6.0%	
Bulga	Australia	Glencore	68.3%	10
		NSSMC	12.5%	
		Other Japanese	19.2%	
Hail Creek	Australia	Glencore	82.0%	10
		NSSMC	8.0%	
		Other Japanese	10.0%	
Moranbah North	Australia	Anglo American	88.0%	6
		NSSMC	5.0%	
		Other Japanese	7.0%	
Foxleigh	Australia	Middlemount South	70.0%	3
		NSSMC	10.0%	
		POSCO	20.0%	
Boggabri	Australia	Idemitsu Kosan	80.0%	7
		NSSMC	10.0%	
		Other Japanese	10.0%	
Elkview	Canada	Teck Coal Partnership	95.0%	7
		NSSMC	2.5%	
		POSCO	2.5%	
Revuboe	Mozambique	Talbot Group	58.9%	to be developed
		NSSMC	23.3%	
		NSSB	10.0%	
		POSCO	7.8%	
■ Ferroalloy				
CBMM	Brazil	Moreira Salles Group	70.0%	90 ktons/y
		NSSMC	2.5%	
		POSCO	2.5%	
		Other Japanese	7.5%	
		Other Korean	2.5%	
		Other Chinese	15.0%	

Stable Raw Materials Procurement

Acquisition of blue-chip mining interests and expansion of supply sources



Energy

Energy Consumption by the Japanese Steel Industry

(%)

Fiscal year	1990	2000	2008	2009	2010	2011	2012	2013	2014	2015
Percentage share by energy source										
Coal based energy	82.1	84.5	84.2	85.3	84.6	84.3	84.8	84.6	84.4	84.3
Purchased electricity	12.4	10.0	10.0	9.1	10.0	10.3	10.1	10.3	10.4	10.1
Oil-based energy	5.5	5.6	5.8	5.6	5.4	5.4	5.1	5.1	5.2	5.6
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Consumption in PJ	2,469	2,260	2,183	2,039	2,299	2,239	2,253	2,295	2,264	2,178
Energy consumption per ton of crude steel produced (GJ/t-s)	22.61	23.83	21.16	21.54	21.16	21.53	21.43	20.76	20.87	21.11

* Some data from 1990 to 2006 have been retroactively adjusted when the data for 2007 were reported.

Source: Handbook for Iron and Steel Statistics
(The Japan Iron and Steel Federation)

Reduction Material Rate by the Japanese Steel Industry

(kg/ton of pig iron tapped)

Fiscal year	1973	1980	1985	1990	1995	2012	2013	2014	2015	2016
Reduction material rate	498	476	501	504	522	510	519	513	514	515
Coke rate	440	458	484	440	408	342	344	344	340	339
PCI rate	0	0	15	60	111	168	175	169	174	176
Tar rate	5	6	2	1	2	0	0	0	0	0
Heavy oil rate	53	12	0	3	1	0	0	0	0	0

Notes:

Source: Handbook for Iron and Steel Statistics
(The Japan Iron and Steel Federation)

1) PCI: Pulverized coal injection

2) 1990 and before: BF fuel rate

Oil-based Fuel Consumption by the Japanese Steel Industry and Nippon Steel & Sumitomo Metal Corporation

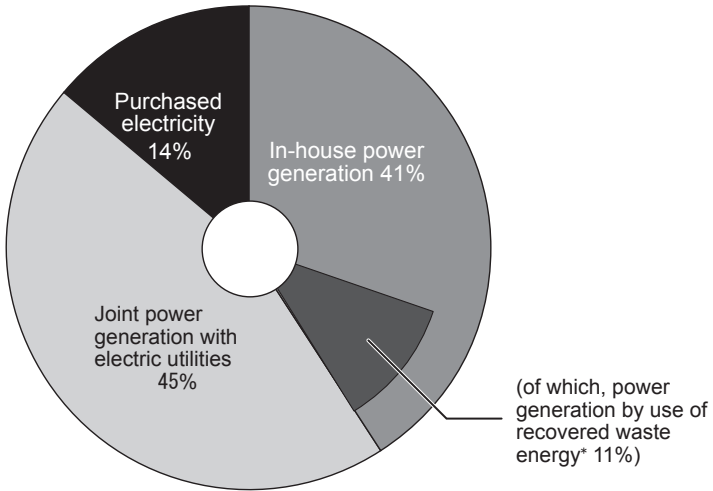
(1,000 kiloliters)

Fiscal year	1973*1	1980	1985	1990	1995	2013	2014	2015	2016
Japanese steel industry*2									
Heavy oil	13,463	4,120	1,878	2,274	1,925	601	504	503	483
Kerosene and light oil	1,003	686	364	423	354	111	112	114	113
LNG and LPG (1,000 tons)	825	884	792	1,129	1,103	726	712	709	715
Nippon Steel & Sumitomo Metal Corporation									
Heavy oil	4,522	1,044	118	199	118	143	91	93	70
•For BF injection	2,498	607	0	73	8	0	0	0	0
•For reheating/power generation	2,024	437	118	126	110	143	91	93	70
Kerosene and light oil	309	43	22	43	32	14	15	14	14
LNG and LPG (1,000 tons)	150	377	281	370	511	617	681	709	657

*1 Highest (since 1970)

*2 Source: Handbook for Iron and Steel Statistics
(The Japan Iron and Steel Federation)

Power Supply at Nippon Steel & Sumitomo Metal Corporation, FY 2017



* Blast furnace top-pressure recovery turbines, waste heat recovery from coke-dry quenching equipment, others

Recycling of Steel Cans

NSSMC encourages improvement of the recycling ratio of used steel cans with the Japan Steel Can Recycling Association.

Japan Steel Can Recycling Association (<http://www.steelcan.jp/>)

- Chairman: Shinichi Nakamura (Representative Director and Executive Vice President, NSSMC)
- 1973 The Japan Used Can Treatment Association was established by the following companies:
 - 4 tinsplate makers (Nippon Steel (present NSSMC), NKK (present JFE), Kawasaki Steel (present JFE) and Toyo Kohan)
 - 3 can-making companies (Toyo Seikan, Daiwa Can and Hokkai Can)
 - 8 trading companies

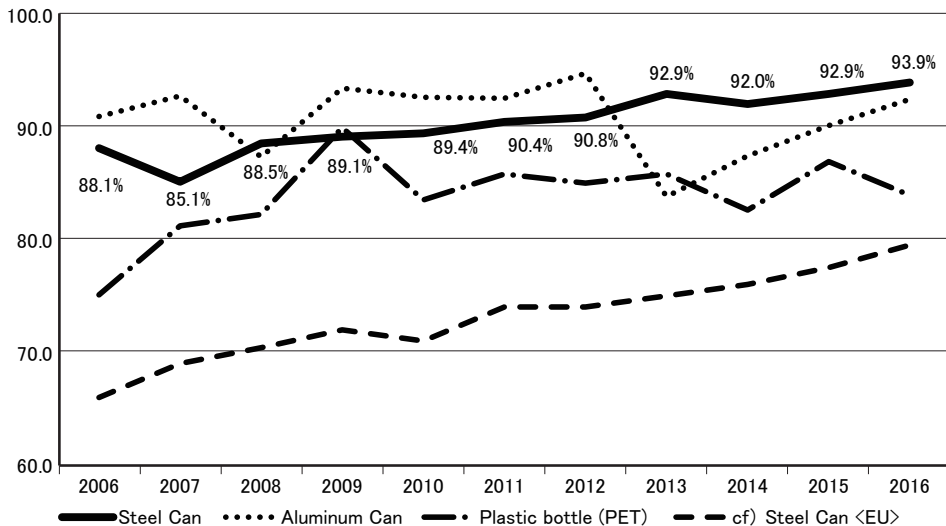
April 2001 Renamed as the Japan Steel Can Recycling Association

Activities

- Promotional activities for prevention of littering with empty cans and for recycling of used steel cans (investigation, PR campaigns, production and distribution of annual reports, holding of symposiums, seminars, and press release)
- Support for group collection of used steel cans as recyclable materials (conferring the award for elementary schools, junior high schools, and citizens' groups)
- Promotion of ecology education on steel can recycling (guidance for pupil in visiting steelworks)
- Joint campaigns for beautification at 359 places (502 times) for 44 years since 1973

Rate of Recycling in Beverage Containers

(%)



Note:

The guidelines prepared by the Industrial Council of the Ministry of Economy, Trade and Industry target Steel Can's attainment of more than 90% after fiscal 2014.

Source: Ministry of Economy, Trade and Industry "Towards a 3R-Oriented, Sustainable Society: Legislation and Trends 2017"

Japan Steel Can Recycling Association "Annual Report on Steel Can Recycling 2017"

EU-APEAL

Liaison Committee of Associations Promoting 3R "2016 Follow-up Report"

Japan's Imports of Steel-related Products

Imports by Type of Product

(1,000 tons)

Fiscal year	1995	2000	2005	2013	2014	2015	2016	2017
Pig iron	2,468	638	787	275	236	95	113	120
Ferro-alloys	1,787	1,680	1,828	1,750	1,832	1,600	1,599	1,706
Ingots and semi-finished products	476	17	147	204	178	176	186	257
Ordinary steel products	5,721	4,573	4,092	4,595	4,627	4,328	4,417	4,587
Wire rods	408	79	302	130	99	111	77	118
Plates	1,192	919	272	551	629	569	607	668
Hot-rolled sheets	2,337	1,946	1,619	1,699	1,635	1,679	1,726	1,536
Cold-rolled sheets	952	965	1,042	1,022	970	802	866	923
Galvanized sheets	400	333	371	611	777	760	670	866
Pipe and tubes	244	143	104	209	216	175	176	151
Others	188	188	382	374	302	232	295	325
Specialty steel products	184	175	268	844	982	1,050	1,020	835
Secondary products and others	272	413	662	916	878	818	833	868
Total	10,908	7,496	7,784	8,584	8,732	8,066	8,167	8,372

Source : The Japan Iron and Steel Federation

Imports by Major Supply Source

(1,000 tons)

Fiscal year	1995	2000	2005	2013	2014	2015	2016	2017
South Korea	2,811	2,638	2,352	3,141	3,046	2,917	3,118	3,179
Taiwan	587	1,114	861	1,030	973	964	982	932
China	698	404	722	368	543	407	277	393
India	125	52	1	2	1	1	1	1
Russia	161	77	11	0	0	0	0	0
Romania	36	—	0	0	0	0	0	0
Turkey	114	—	0	0	0	0	0	0
Brazil	248	50	9	0	0	0	0	0
Australia	171	56	3	2	3	2	3	2
New Zealand	103	40	33	5	1	—	0	—
Others	668	142	100	47	60	36	37	79
Total	5,721	4,573	4,092	4,595	4,627	4,328	4,417	4,587

Source : The Japan Iron and Steel Federation

Japan's Exports of Steel Products

Export Shipments

Fiscal year	1976	1985	1990	1995	2014	2015	2016	2017
Tonnage (1,000 tons)	36,518	32,076	17,264	22,621	42,280	41,642	40,680	37,723
Monetary values (\$ million)	11,148	13,684	13,636	18,911	39,477	32,792	29,736	32,667
(¥ billion)	3,311	3,257	1,928	1,812	4,303	3,964	3,224	3,626
Per-ton price (\$)	305	427	790	835	934	787	731	866
(¥1,000)	90	101	112	80	102	95	79	96
Exchange rate (US\$1=¥)	297	238	141	96	109	121	108	111

Source: The Japan Iron and Steel Federation

Export Shipments by Destination

(1,000 tons)

Fiscal year	1976	1985	1990	1995	2014	2015	2016	2017
Asia	10,472	18,423	10,839	17,776	32,533	31,644	31,373	29,981
China	3,072	10,133	1,784	3,525	5,720	5,362	5,616	5,593
South Korea	1,484	1,998	1,767	3,432	7,157	6,633	6,761	5,800
Taiwan	1,317	1,132	1,632	2,447	3,538	2,896	2,614	2,941
Singapore	778	670	867	1,064	623	607	470	403
Indonesia	720	750	742	963	2,005	1,866	2,075	2,211
Thailand	753	786	1,770	2,641	5,518	5,211	5,825	5,594
Middle East	4,866	3,324	924	556	1,918	1,864	1,294	1,044
Iran	1,757	763	397	83	0	4	4	6
Saudi Arabia	1,081	1,163	246	290	834	825	610	495
Europe	8,008	2,810	951	667	867	842	815	661
EU-28*1	1,635	518	353	289	329	334	401	295
Former USSR*2	3,044	2,172	364	110	160	91	42	87
North America	8,117	5,234	3,421	2,285	2,793	2,712	2,258	1,940
USA	7,619	4,875	3,213	2,158	2,527	2,437	2,086	1,784
Canada	497	359	208	127	266	275	172	156
Central & South America	3,008	992	455	615	2,699	3,070	3,484	3,012
Africa	1,257	546	358	311	1,177	1,278	1,190	868
Oceania	790	755	316	416	293	232	264	217
Total	36,518	32,076	17,264	22,621	42,280	41,642	40,680	37,723

Source: The Japan Iron and Steel Federation

Export Shipments by Type of Product

(1,000 tons)

Fiscal year	1976	1985	1990	1995	2014	2015	2016	2017
Ordinary steel products	32,340	27,365	13,612	16,751	27,026	27,868	26,752	24,213
Plates	4,145	2,845	877	1,408	2,908	3,104	2,660	2,289
Hot-rolled sheets	5,522	3,076	1,628	2,254	11,669	13,065	12,926	11,456
Cold-rolled sheets	5,756	4,784	3,188	4,230	2,799	2,713	2,693	2,488
Electrical sheets	380	309	316	543	796	735	706	700
Tinplate	872	771	755	790	586	633	621	604
Coated sheets	2,533	2,877	2,761	3,501	4,070	3,591	3,496	3,257
Pipe and tubes	4,705	6,138	2,675	1,919	1,329	895	806	944
Sections	8,463	5,316	1,412	2,107	2,870	3,131	2,845	2,475
Specialty steel products	1,757	2,142	2,986	3,842	8,744	7,717	8,545	8,136
Secondary products	1,366	961	526	495	689	667	684	694
Others	1,054	1,608	140	1,534	5,820	5,390	4,699	4,679
Total	36,518	32,076	17,264	22,621	42,280	41,642	40,680	37,723

Source: The Japan Iron and Steel Federation

*1 The number of member countries of the EU (former EC) has expanded: from 9 in 1973 to 10 in 1981, 12 in 1986, 15 in 1995, 25 in 2004, 27 in 2007, and 28 in 2013.

*2 CIS in and after 2006

Steel Trading

1. Topics related to recent steel trading (as of May 2018)

(1) Overview

Trade conflict related to steel products has been increasing since 2008. In 2017, 16 Anti-Dumping ("AD") investigations were initiated throughout the world (in 2016, 28 cases). Major target countries are China (8 out of 16 cases above) and Korea (5 cases). As for Japan, one case was initiated since 2017.

Moreover, the U.S. has taken actions to adjust the imports of steel articles based on an investigation under Section 232 of the Trade Expansion Act of 1962 and European Union as well as Turkey has initiated a safeguard investigation for comprehensive steel products, which has affected export of certain Japanese steel products.

Also, mainly in the Asian region, protectionist measures regarding steel products, such as mandatory standards (Imported products to be required to conform to the standards by importing countries for the protection of the health and safety or for the preservation of their environment) and pre-shipment inspection requirements, have become prevalent.

(2) AD measures against Japan in the iron and steel industry around the world

Plaintiff country	Target product type and progress ("SSR" stands for "Sunset Review.")
U.S.	Stainless steel bars: A measure was started in February 1995. The SSR has been initiated since July 2017.
	Clad steel: A measure was started in July 1996. The SSR has been initiated since January 2018.
	Stainless steel wire rods: A measure was started in September 1998.
	Stainless steel sheets: A measure was started in July 1999.
	Seamless steel pipes (large diameter): A measure was started in June 2000.
	Seamless steel pipes (small diameter): A measure was started in June 2000.
	Tinplates/tin-free steel: A measure was started in August 2000. The SSR has been initiated since May 2017.
	Large-diameter welded line pipes: A measure was started in December 2001.
	Nickel-plated steel sheets: A measure was started in May 2014.
	Non grain oriented electrical steel: A measure was started in November 2014.
	Cold-rolled steel sheets: A measure was started in June 2016.
	Hot-rolled steel sheets: A measure was started in September 2016.
	Plates: A measure was started in May 2017.
Concrete reinforcing bars: A measure was started in June 2017.	
Canada	Plates: A measure was started in May 2014.
	Certain large diameter line pipe: A measure was started in October 2016.
	Concrete reinforcing bars: A measure was started in May 2017.
Mexico	Seamless steel pipes: A measure was started in November 2000.
	Plates: An investigation has been initiated since November 2017.
EU	Grain oriented electrical steel: A measure was started in October 2015.
China	Grain oriented electrical steel: A measure was started in July 2016.
Korea	Stainless steel plates: A measure was started in April 2011.
	Stainless steel bars: A measure was started in July 2004.
Thailand	Stainless steel cold-rolled sheets: A measure was started in March 2003.
	Hot-rolled steel sheet & plates: A measure was started in May 2003.

Indonesia	Cold-rolled steel sheets: A measure was started in March 2013. The SSR has been initiated since September 2015.
India	Hot-rolled steel sheet & plates: A measure was started in May 2017.
	Cold-rolled steel sheets: A measure was started in May 2017.
Australia	Plates: A measure was started in December 2013.
	Shaped steel: A measure was started in November 2014.
	Plates (Quenched and tempered) : A measure was started in November 2014.

(3) Negotiations on economic partnership agreements (items related to the reduction of tariffs on steel products in the partner country)

April 2005	The Japan/Mexico Economic Partnership Agreement came into effect. - Immediate tariff removal rate of steel products: 80% (The user specific duty free scheme was introduced.) Tariff removal rate within 10 years: 100% - In February 2011, review the negotiation five years later has been agreed. The rules of origin for stainless steel sheet was improved.
July 2006	The Japan/Malaysia Economic Partnership Agreement came into effect. - Immediate tariff removal rate of steel products: 100% (The current domestic tariff exemption systems for each application was maintained.) Tariff on steel products excluding hot rolled steel sheet will be abolished within 10 years.
November 2007	The Japan/Thailand Economic Partnership Agreement came into effect. - Immediate tariff removal rate of steel products: 60% (An import quota for no tariffs was set up.) Tariff removal rate within 10 years: 100% - The governments discuss the import quota for no tariffs every year. The Steel Cooperation Program is implemented.
July 2008	The Japan/Indonesia Economic Partnership Agreement came into effect. - Immediate tariff removal rate of steel products: 80% (The user specific duty free scheme was introduced.) Tariff removal rate within 10 years: 85%
December 2008	The Japan/Philippines Economic Partnership Agreement came into effect. - Immediate tariff removal rate of steel products: 60% (An import quota for no tariffs was set up.) Tariff removal rate within 10 years: 90%
October 2009	The Japan/Vietnam Economic Partnership Agreement came into effect. - Immediate tariff removal rate of steel products: 10%; tariff removal rate within 10 years: 80%
August 2011	The Japan/India Economic Partnership Agreement came into effect. - The tariffs on steel sheet/bars will be abolished in five years, while tariffs on steel pipes will be abolished in 10 years.
January 2015	The Japan/Australia Economic Partnership Agreement came into effect. - Tariff removal rate within 5 years: 100%

(4) Steel dialogues

March 2016	The 12th Japan/EU Steel Dialogue was held (in Tokyo).
May 2017	The 7th Japan/Indonesia Steel Dialogue was held (in Indonesia).
July 2017	The 17th Japan/Taiwan Steel Dialogue was held (in Taipei).
September 2017	The 23th Japan/China Steel Dialogue was held (in Beijing).
November 2017	The 18th Japan/Korea Steel Dialogue was held (in Seoul).
November 2017	The 15th Japan/Thailand Steel Dialogue was held (in Bangkok).

2. The Japan/U.S. steel trade Issue

- January 1969 1st Voluntary Export Restraint (ending in Dec. 1971)
Japan's ceiling: 5.75 million tons for 1969, with annual increase of 5% for 1970 and 1971.
- January 1972 2nd Voluntary Export Restraint (ending in Dec. 1974)
Japan's ceiling: 6.5 million tons for 1972, with annual increase of 2.5% for 1973 and 1974.
- February 1977 AD petition by Gilmore Steel on steel plates (finally affirmative).
- September 1977 AD petition by United States Steel on 6 items (beams, steel plates, hot-rolled steel sheets, cold-rolled steel sheets, galvanized sheets and welded pipes, withdrawn in 1978).
- January 1978 1st Trigger Price Mechanism (TPM) (ending in Mar. 1980)
The Department of Treasury (the present Department of Commerce-The U.S. DOC) became able to initiate an AD investigation of imports entering below the applicable trigger prices.
- October 1980 2nd TPM (ending in Jan. 1982)
The "Surge Mechanism" was introduced to prevent a surge in imports (import penetration exceeding 12.5% of apparent U.S. consumption, and the capacity utilization rate of the U.S. steel industry of less than 87%).
- December 1982 Import penetration peaked at the highest level ever of 21.8%. Consultations were held concerning the petitions filed under Section 301 of the Trade Act (elimination of unfair trade practices and retaliatory measures) and also under Section 201 (investigation of injury) of the Trade Act.
- October 1984 1st Voluntary Restraint Arrangement (VRA)
Period: Oct. 1, 1984 to Sep. 30, 1989
Subjects: Japan, Korea, Brazil and eleven other countries and the EC
- October 1989 2nd VRA
Period: Oct. 1, 1989 to Mar. 31, 1992
Subjects: Japan, Korea, Brazil and ten other countries and the EC
- October 1990 Initiation of negotiations for International Consensus (IC) during the GATT Uruguay Round, leading to negotiations for the Multilateral Steel Agreement (MSA).
- March 1992 Lapse of VRA
- June 1992 AD petition filed by twelve U.S. steel mills on 4 items (steel sheets) of Japanese steel products.
- February 1993 "Position Paper on Steel Trade Issues" prepared by the Japan Iron and Steel Federation.
- December 1993 Accord of the GATT Uruguay Round
- April 1994 Resumption of MSA negotiations, but no agreement reached among the major countries and no specific progress made.
- January 1995 Inauguration of the World Trade Organization (WTO).
- March 1996 No agreement reached in the U.S.-European government-level negotiations on the Multilateral Specialty Steel Agreement (MSSA), despite reaching industry level agreement on fundamental provisions for MSSA.
- September 1998 AD petition by eleven U.S. steel mills on hot-rolled steel sheets and, at about the same time, AD petition also filed on 7 items against Japan. At that time, steel-trade friction between Japan and the U.S. developed into a political issue.
- June 2001 The United States Trade Representative (USTR) requested to initiate the global SG investigation of steel products (33 items), under Section 201 of the Trade Act.

July 2001	WTO granted, on the overall truth of the assertions of the Japanese government in its appeal concerning the AD investigation of hot-rolled steel sheets, and the WTO recommended an AD-margin recalculation, etc. to the U.S.
March 2002	The U.S. President decided to invoke the SG measures under Section 201 of the Trade Act (concerning 14 items, chiefly steel sheets, for three years).
December 2003	On the appeal (filed by the Japanese government in 2002) concerning the coated steel AD sunset review, the WTO issued a final judgment that the U.S. was not in violation of the WTO rules. On the appeal (filed by Japan, the EU, Korea, China, etc. in 2002) concerning the SG measures of the U.S. concerning steel products, the WTO issued a final judgment that the U.S. was in violation of the WTO rules. Previously, the Japanese government announced the contents of balance recovery measures amounting to a total of ¥10.7 billion. Subsequently, the U.S. government lifted the SG measures across the board.
March 2006	Determination to revoke the AD measures on structural beams and GOES (for structural beams: revocation retroactively to June 2005 when the U.S. ITC made a negative determination in sunset review, and for GOES: non-participation by U.S. steel mills in sunset review).
December 2006	Determination to revoke the AD measures on coated steel (revocation retroactively to December 2005 when the U.S. ITC made a negative determination in sunset review).
May 2007	Determination to revoke the AD measures on OCTG (revocation retroactively to July 2006 when the U.S. ITC made a negative determination in sunset review).
May 2011	The AD measure on hot-rolled steel sheet was revoked (the U.S. ITC made a negative determination in sunset review). The revocation is effective retroactively to May 2010.
December 2011	The AD measure on steel plates was revoked (the U.S. ITC made a negative determination in sunset review). The revocation is effective retroactively to Dec. 2010.
March 2013	AD petition by one mill in the U.S. for nickel-plated steel sheets. (This was the first suit for AD against Japan in the steel industry in about 12 years. : affirmative determination)
September 2013	AD petition by two mills in the U.S. for Grain oriented electrical steel. (against seven countries including Japan, negative determination)
September 2013	AD petition by one mill in the U.S. for Non grain oriented electrical steel. (against six countries and area including Japan, affirmative determination)
July 2015	AD petition by five mills in the U.S. for Cold-rolled steel sheets. (against eight countries including Japan, affirmative determination)
August 2015	AD petition by six mills in the U.S. for Hot-rolled steel sheets. (against seven countries including Japan, affirmative determination)
April 2016	AD petition by three mills in the U.S. for Plates. (against twelve countries and area including Japan, affirmative determination)
September 2016	AD petition by six mills in the U.S. for Concrete reinforcing bars. (against three countries and area including Japan, affirmative determination)
April 2017	The U.S. DOC initiated an investigation under Section 232 of the Trade Expansion Act of 1962.
March 2018	Based on the investigation under Section 232 of the Trade Expansion Act of 1962, the U.S. President decided to impose a tariff on all steel imports from all over the world except countries determined by the President.

Power Supply

Japan's electricity wholesale supply system was established in 1995. This allowed independent power producers (IPPs) to participate in power supply, which until then had been the exclusive domain of electricity utility companies. Under the new system, NSSMC has entered the electricity wholesale supply business.

Following the revision of the Electricity Utilities Industry Law in March 2000, retail supply of electricity to major users was deregulated. In this regard, Nippon Steel notified the government agency concerned in January 2001 that it had become a "Power Producer and Supplier (PPS)" and started operations in the electricity retail supply business.

Business Development in the Wholesale Supply

- Utilization of power-generation technologies fostered in steelworks in-plant power generation
 - Nearly 86% of total electricity consumption by in-plant power generation equipment (refer to page 102 for the power supply)
- Utilization of steelworks infrastructure such as land, ports/harbors and raw materials yards
- Low-cost, stable supply of electricity

IPP*1 Power Supply Contracts

- Successful bidding for four supply projects (about 500,000 kW in total) in fiscal 1996, the first year of the electricity business, and two projects (300,000 kW and 475,000 kW) in fiscal 1997 and fiscal 1999.
- Power shortages are being met by increasing rates of operation of generating facilities, as needed, according to the power supply-demand situation monitored.

Works	Customer	Amount (kW)	Fuel	Start of supply
FY1996				
Yawata	Kyushu Electric Power	137,000	Coal	Apr. 1999*2
Kamaishi	Tohoku Electric Power	136,000	Coal and bio-mass	Jul. 2000*3
Hirohata	Kansai Electric Power	133,000	Coal	Apr. 1999*4
Muroran	Hokkaido Electric Power	100,000	By-product gas and coal	Oct. 2001*5
FY1997				
Oita	Kyushu Electric Power	300,000	By-product gas, coal and bio-mass	Apr. 2002*6
FY1999				
Kashima	Tokyo Electric Power	475,000	Coal and bio-mass	Jun. 2007

*1 Independent Power Producer *2 In Apr. 2014, consumed within the works and other

*3 In Jul. 2015, wholesaled or consumed within the works *4 In Apr. 2014, renewed contract

*5 In Oct. 2016, wholesaled or consumed within the works *6 In Apr. 2017, wholesaled

Retail Supply Business (Nippon Steel & Sumikin Engineering Co., Ltd.)

- Retail supply of electricity, mainly to office buildings in the Tokyo metropolitan, Kansai and Kyushu areas
- Sources of electricity from affiliated and non-affiliated companies.

Electric power plant (Affiliated company)	Approximate capacity	Start of operation
Frontier Energy Niigata Co.,Ltd. (Niigata)	65,000 kW	Jul. 2005
Asahi Kasei NS Energy Co.,Ltd. (Miyazaki)	30,000 kW	Jul. 2006
Electric power plant (Non-affiliated company)	Approximate capacity	Start of receiving
Inpex Corporation (Niigata)	50,000 kW	May 2007

Wind Power Generation (Nippon Steel & Sumikin Engineering Co., Ltd.)

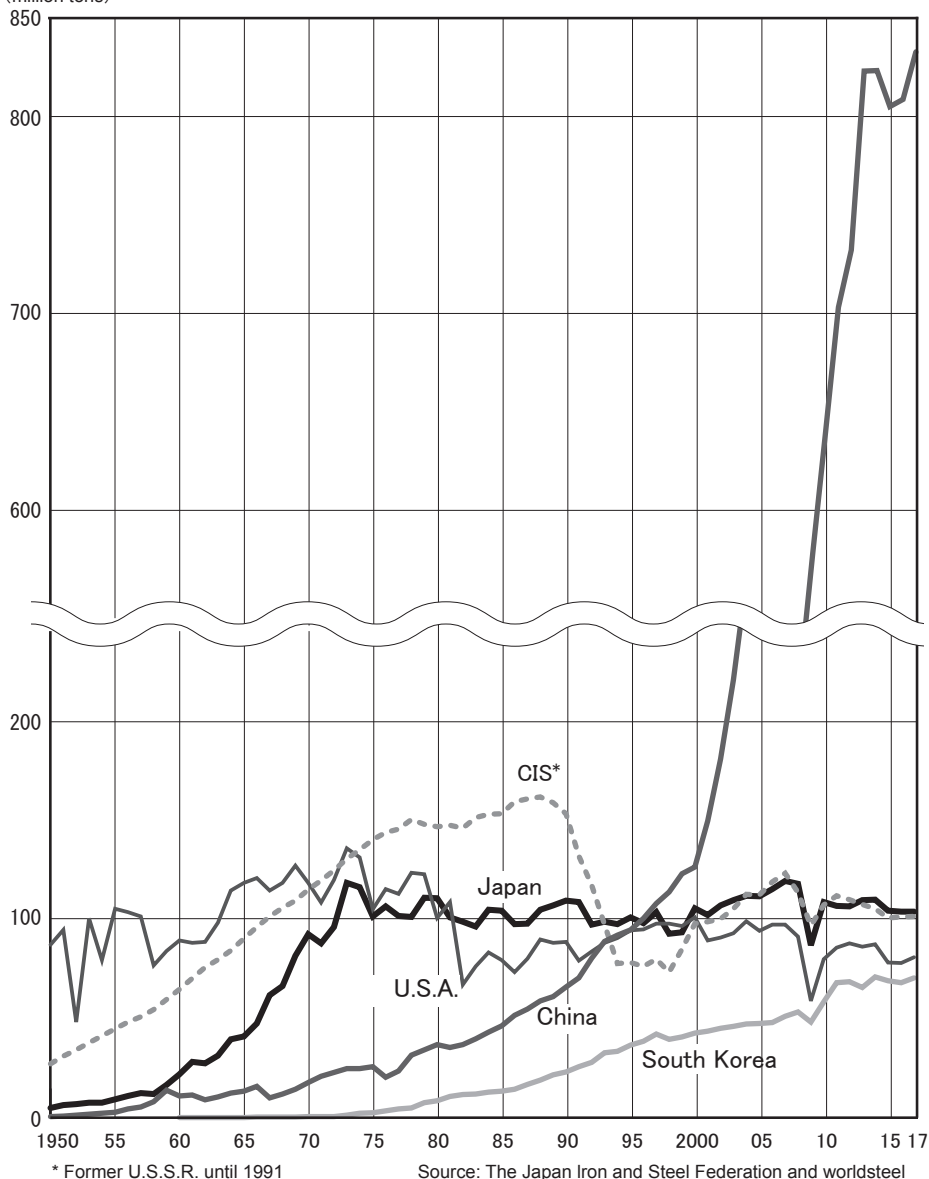
- Start of wind power generation in Hibikinada, Kitakyushu in March 2003

Operating company	Customer	Capacity	Supply term
NS Wind Power Hibiki Co., Ltd.	Kyushu Electric Power	1,500 kW × 10 units (15,000 kW)	15 years from Mar. 2003

World Steel Industry

Crude Steel Production in Major Steelmaking Countries

(million tons)



World Total Crude Steel Production

(million tons)

CY	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Production	1,348.1	1,343.4	1,238.8	1,433.4	1,538.0	1,560.1	1,650.4	1,669.5	1,620.0	1,627.0	1,690.5

Source: worldsteel

Crude Steel Production

(million tons, %)

Region and Country	2014	2015	2016	2017	Growth rate 2017/2016
Asia	1,139.2	1,112.9	1,123.9	1,162.9	3.5
Japan	110.7	105.1	104.8	104.7	-0.1
South Korea	71.5	69.7	68.6	71.0	3.6
Taiwan	23.1	21.4	21.8	22.4	3.2
China	822.3	803.8	807.6	831.7	3.0
India	87.3	89.0	95.5	101.4	6.2
EU-28	169.3	166.1	162.0	168.1	3.8
Bulgaria	0.6	0.5	0.5	0.7	23.7
Czech	5.4	5.3	5.3	4.6	-14.2
Poland	8.6	9.2	9.0	10.3	14.8
Romania	3.2	3.4	3.3	3.4	2.6
Slovakia	4.7	4.6	4.8	5.0	3.5
EU-15	145.0	140.8	137.2	141.7	3.3
Germany	42.9	42.7	42.1	43.3	2.8
France	16.1	15.0	14.4	15.5	7.6
Italy	23.7	22.0	23.4	24.1	3.0
Belgium	7.3	7.3	7.7	7.7	0.2
U.K.	12.1	10.9	7.6	7.5	-1.9
Luxembourg	2.2	2.1	2.2	2.2	-0.2
The Netherlands	7.0	7.0	6.9	6.8	-2.0
Spain	14.2	14.8	13.6	14.5	6.2
Austria	7.9	7.7	7.4	8.1	9.4
Sweden	4.5	4.4	4.6	4.7	2.1
Other Western Europe	38.4	35.8	37.7	42.3	12.4
Turkey	34.0	31.5	33.2	37.5	13.1
C.I.S.	106.1	101.6	102.1	102.1	0.0
Kazakhstan	3.7	3.9	4.3	4.5	3.8
Russia	71.5	70.9	70.5	71.3	1.3
Ukraine	27.2	23.0	24.2	22.7	-6.4
North America	121.1	110.9	110.6	115.8	4.6
U.S.A.	88.2	78.8	78.5	81.6	4.0
Canada	12.7	12.5	12.6	13.6	7.7
Mexico	18.9	18.2	18.8	19.9	5.8
South America	45.0	43.9	40.2	43.7	8.6
Argentina	5.5	5.0	4.1	4.6	12.1
Brazil	33.9	33.3	31.3	34.4	9.9
Venezuela	1.5	1.3	0.6	0.4	-19.7
Oceania	5.5	5.7	5.8	6.0	2.5
Australia	4.6	4.9	5.3	5.3	1.3
Africa	14.9	13.7	13.1	15.1	14.9
South Africa	6.4	6.4	6.1	6.3	2.6
Middle East	30.0	29.4	31.5	34.5	9.5
Total	1,669.5	1,620.0	1,627.0	1,690.5	3.9

Source: worldsteel, March 2018

Apparent Consumption of Finished Steel Products

(million tons, %)

Region and Country	2015	2016	2017	2018 (Estimate)	Growth rate 2018/2017 (E)
Asia	976.5	998.0	1,053.6	1,065.1	1.1
Japan	63.0	62.2	64.4	64.5	0.1
China	672.3	680.3	736.8	736.8	0.0
South Korea	55.8	57.1	56.4	57.0	1.0
Taiwan	17.5	18.3	17.7	-	-
India	80.2	83.6	87.2	92.0	5.5
EU-28	153.9	158.4	162.3	165.6	2.0
Other Western Europe	39.9	40.6	42.3	44.2	4.5
C.I.S.	50.9	49.7	52.8	54.0	2.3
North America	134.3	132.3	140.7	145.0	3.0
U.S.A.	96.1	91.9	97.7	100.3	2.7
Canada	13.3	15.0	16.6	17.3	4.4
Mexico	24.8	25.4	26.4	27.3	3.5
Central & South America	45.6	39.4	40.9	43.5	6.2
Argentina	5.3	4.2	4.9	-	-
Brazil	21.3	18.2	19.2	20.4	6.3
Africa	38.7	37.6	35.1	36.6	4.5
Middle East	53.8	53.1	53.3	55.7	4.6
Total	1,500.7	1,516.0	1,587.4	1,616.1	1.8
(cf. Apparent crude steel consumption)	1,617.1	1,634.8	1,722.7	-	-

Source: worldsteel April 2018

Note: Apparent consumption is total shipments minus exports plus imports.

Continuous Casting Ratio

(%)

Country	2011	2012	2013	2014	2015	2016	2017
Japan	98.1	98.3	98.5	98.4	98.4	98.5	98.5
Taiwan	96.2	99.6	99.6	99.6	99.6	99.6	99.6
South Korea	98.1	98.3	98.4	98.4	98.6	98.7	98.7
China	98.4	98.5	98.3	98.5	98.6	98.7	98.7
India	77.4	80.2	81.5	82.8	84.2	85.9	85.8
Germany	96.3	96.7	96.9	96.8	97.0	95.3	95.3
Italy	95.2	95.4	95.0	94.2	94.3	94.8	94.4
Russia	80.7	80.6	81.2	81.9	81.8	81.9	81.9
U.S.A.	97.8	98.6	98.8	98.5	99.0	99.4	99.6
Brazil	96.7	97.3	97.9	98.5	99.0	98.7	97.9
World	95.1	95.5	95.7	96.0	96.1	96.2	96.2

Source: worldsteel

Crude Steel Production - Top 30 Steelmakers

(million tons, %)

	Company	Country	2017	2016	Growth rate 2017/2016
1	ArcelorMittal	Luxembourg	97.0	95.5	1.7
2	China Baowu Group	China	65.4	63.8	2.5
3	Nippon Steel and Sumitomo Metal Corporation	Japan	47.4	44.6	6.1
4	HBIS Group	China	45.6	46.2	-1.3
5	POSCO	South Korea	42.2	41.8	0.9
6	Shagang Group	China	38.3	33.3	15.3
7	Ansteel Group	China	35.8	33.2	7.7
8	JFE Steel	Japan	30.1	30.3	-0.5
9	Shougang Group	China	27.6	26.8	3.1
10	Tata Steel	India	25.1	24.5	2.6
11	Nucor	U.S.A.	24.4	22.0	11.1
12	Shandong Steel Group	China	21.7	23.0	-5.8
13	HYUNDAI Steel	South Korea	21.2	19.9	6.9
14	Jianlong Group	China	20.3	16.5	23.1
15	Valin Group	China	20.1	15.5	30.1
16	Maanshan Steel	China	19.7	18.6	5.8
17	NLMK	Russia	17.1	16.6	2.6
18	Gerdau	Brazil	16.5	16.0	3.4
19	JSW Steel	India	16.1	14.9	7.7
20	Benxi Steel	China	15.8	14.4	9.5
21	IMIDRO	Iran	15.6	14.0	11.3
22	China Steel Corporation	Taiwan	15.3	15.5	-1.2
23	Fangda Steel	China	15.1	13.7	10.5
24	Rizhao Steel	China	15.0	13.9	8.1
25	SAIL	India	14.8	14.4	3.0
26	U.S. Steel	U.S.A.	14.4	14.2	1.5
27	Baotou Steel	China	14.2	12.3	15.4
28	EVRAZ	Russia	14.0	13.5	3.7
29	thyssenkrupp	Germany	13.2	17.2	-23.3
30	MMK	Russia	12.9	12.5	2.5

Source: worldsteel

Notes on company ownership and tonnage calculations:

For Chinese companies, the official CISA tonnage publication was used.

In cases of more than 50% ownership, 100% of the subsidiary's tonnage is included.

In cases of 30% to 50% ownership, pro-rata tonnage is included.

Less than 30% ownership is considered a minority interest and therefore not included.

World Steel Association (worldsteel)

(formerly: International Iron and Steel Institute (IISI))

(<http://www.worldsteel.org>)

Profile

- Non-profit research organization
- World forum on various aspects of the international steel industry
- Founded in 1967 as IISI (International Iron and Steel Institute)
- First international association dealing solely with one industry
- The organization changed its name to World Steel Association (commonly known as "worldsteel") in 2008.

Organization

■ Annual General Meeting

■ Board of Directors

■ Executive Committee

Comprised of 16 members at maximum, including the Chairman and up to three Vice Chairmen, and worldsteel's Director General.

■ Audit Committee

■ Nominating Committee

■ Key Committees

- Economics
- Technology
- Environment
- Safety and Health
- Education and Training
- Communications
- Raw Materials
- Product Sustainability

Members Represented in worldsteel

- 69 regular members
- 37 associate members
- 54 affiliated members

Headquarters

- Avenue de Tervueren 270-1150 Brussels, Belgium
- Phone: 32-2-702-89-00
- Telefax: 32-2-702-88-99
- E-mail: steel@worldsteel.org

Officials (as of April 2018)

- Chairman
Kosei Shindo (Representative Director & President, NSSMC, Japan)
- Vice Chairmen
John J. Ferriola (Chairman, CEO & President, Nucor, USA)
Ohjoon Kwon (CEO, POSCO, Korea)

worldsteel General Assembly

- 2018 Tokyo (Japan)

■ Engineering and Construction

Nippon Steel & Sumikin Engineering Co., Ltd. was originally set up as an engineering division of Nippon Steel Corporation (NSC) in 1974. In July 2006, it was demerged from Nippon Steel and renamed Nippon Steel Engineering Co., Ltd. Then in October 2012, in association with the merger of Nippon Steel and Sumitomo Metals, the company changed its name to Nippon Steel & Sumikin Engineering.

Outline of NIPPON STEEL & SUMIKIN ENGINEERING CO., LTD.

Head office:	1-5-1, Osaki, Shinagawa-ku, Tokyo, Japan
Phone:	81-3-6665-2000
Capital:	¥15 billion
Annual sales:	¥294.2 billion (FY2017; consolidated)
Employees:	4,602 (as of March 31, 2018)

Operating Policies

The company works on a large number of projects in Japan and abroad, using its multidisciplinary engineering technologies in diverse fields, including the construction and operation of plants related to iron manufacturing, the environment and energy, and the construction of huge steel structures, skyscrapers, and pipelines.

Business Areas

Steel Plants

■ Steel Plants

Ironmaking and steelmaking plants (blast furnaces, basic-oxygen furnaces, etc.), Direct reduction plants (shaft furnace type), processing & treatment lines (C.A.P.L.™, CGL, ETL, CCL, etc.), environmental & energy saving systems (rotary hearth furnace [RHF], coke dry quenching [CDQ], coal moisture control [CMC], gas treatment, Dry DeSOx DeNOx System [DDDS], energy saving CO₂ absorption process [ESCAP™]), electric arc furnaces, continuous casters, reheating furnaces, rolling mills, nonferrous metal processing line

Waste to Energy

■ Environmental Plants, Resources Recycling, Environment Restoration

Waste to energy facilities (gasification and melting technology, and grate incineration technology), recycling plazas, marine sediment and sludge incineration facilities, PCB waste treatment facilities, waste plastic treatment facilities, waste tyre pyrolysis plant, freon decomposers, soil / groundwater contamination remediation

Energy Solutions

■ Energy Solutions

Electricity retail supply, on-site energy supply, power generation engineering, wind power generation, geothermal steam production equipment

■ Energy Facilities

Natural gas liquefaction systems, LNG/LPG/oil receiving and delivery systems (LNG/LPG receiving terminals, LNG satellite stations, LNG lorry shipment equipment, etc.), storage equipment (low-temperature liquefied gas tanks, city gas holders, etc.), piping and facilities of iron works

■ Hydrogen Refueling Station (HRS)

Marine Engineering and Construction

■ Oil and Gas Development Projects, Offshore Steel Structure / Coastal Development

Oil/natural gas offshore pipelines, offshore platform (decks, modules and jackets), breakwaters, wave dissipation banks, bulkheads, immersed steel tube tunnels, steel shell composite caissons, large-scale floating structures, steel/reinforced concrete structures, steel reefs, piling work, pipeline inspection, pipe in pipe, construction of offshore wind power

Building Construction and Steel Structures

■ Comprehensive Building Construction

Construction of industrial, distribution center, office buildings, condominiums and plant buildings, construction of public facilities by PFI

■ Standardized Building

STAN-package™, NS STANLOGI

■ High-Tech Steel Structures

High-technology steel structures (large-span spatial structure, exposed steel structure, tubular steel structure)

Spatial structure systems (NS Truss, W-Truss, NS Tension System, timber-steel hybrid system)

■ Pre-Engineered Products

Vibration-control and base-isolation devices (Unbonded Brace™, U-Shaped Steel Damper™, NS-SSB™ (Spherical Sliding Bearing), etc.)

Bridge products (grating, KAKUTABASHI™, H-Beam Bridge™, Panel-bridge™, NS-cover Plate, etc.)

Pipelines

■ Energy Pipelines

On-land pipelines (natural gas, oil, etc.), city gas piping, decompress systems of high-pressure gas, simplified circular pipeline propulsive methods, fully automated welding machine methods of on-land pipeline-construction, "ANHT" type hot tapping method, buried pipe coating flaw inspection

■ Waterworks

Water pipelines, aqueduct water, tank for urgent use, renewal and reuse methods for superannuated conduits (steel tunneling, pipe-in-pipe and Insituform™ methods), submarine water pipelines, thermal and nuclear power plant circulation water piping, improvement methods for existing distribution reservoirs

Chemicals

Nippon Steel & Sumikin Chemical Co., Ltd. has combined coal chemicals and petrochemicals by using aromatic chemistry. It has developed a wide variety of original products, including various aromatic products and needle coke, in which it commands a high share in the coal-based type. In recent years, the group has developed and marketed a wide range of display materials, PWB & package materials, and epoxy resins mainly for electronic materials. It is also working on capturing demand for organic electroluminescence (OEL) materials and other new functional products. By developing new businesses such as new materials for Fuel Cell Vehicle, the group strives to achieve both stability and growth in its business.

Outline of NIPPON STEEL & SUMIKIN CHEMICAL CO.,LTD.

* Nippon Steel & Sumikin Chemical Co., Ltd. and Nippon Steel & Sumikin Materials Co., Ltd. will be integrated to Nippon Steel Chemical & Material Co., Ltd. in October 2018.

Head office:	4-14-1 Sotokanda, Chiyoda-ku, Tokyo, Japan
Phone:	81-3-5207-7600
Capital:	¥5 billion
Annual sales:	¥200.7 billion (FY2017; consolidated)
Employees:	1,685 (as of March 31, 2018)

Operating Policies

Nippon Steel & Sumikin Chemical aims to become a chemical company that contributes to society based on its proprietary materials technology. With coal tar chemicals, chemicals, functional materials and epoxy businesses serving as core business drivers, the company strives to globalize by means of developing new businesses and expanding core businesses to overseas, thereby achieving sustainable growth.

Business Areas

Carbon Materials

pitch coke, pitch, base oil of carbon black, carbon black, industrial gases (hydrogen, argon, oxygen, nitrogen)

Functional Materials

PWB materials, liquid crystal display material, organic EL materials

Resin Materials

styrene resin, high surface hardness transparent plastic materials, UV / thermosetting resin materials, epoxy resins

Chemical products and others

styrene monomer, benzene, toluene, xylene, methanol, divinylbenzene, cyclohexane, bisphenolA, o-cresol, 95% naphthalene, phthalic anhydride, special solvent, ammonium, lubricants oil

New Materials

In 1984 Nippon Steel created the New Materials Projects Bureau and commenced business undertaking in the field of new materials other than traditional steel-related new materials through utilization of wide-ranging technologies accumulated in steelmaking and introduction of technologies from other companies. In order to expand the new material business, especially in the market for electrical components, Nippon Steel Materials Co., Ltd. was founded in July 2006. Then in October 2012, in conjunction with the merger of Nippon Steel and Sumitomo Metals, the company changed its name to Nippon Steel & Sumikin Materials Co., Ltd.

Outline of NIPPON STEEL & SUMIKIN MATERIALS CO., LTD.

- * Nippon Steel & Sumikin Chemical Co., Ltd. and Nippon Steel & Sumikin Materials Co., Ltd. will be integrated to Nippon Steel Chemical & Material Co., Ltd. in October 2018.

Head office:	7-16-3, Ginza, Chuo-ku, Tokyo, Japan
Phone:	81-3-6853-6260
Capital:	¥3 billion
Annual sales:	¥37.0 billion (FY2017, consolidated)
Employee:	1,466 (incl. overseas subsidiaries) (as of March 31, 2018)

Operating Policies

Since its inauguration as the New Materials Division, NIPPON STEEL & SUMIKIN MATERIALS has promoted improvement and expansion of its business base, in close collaboration with related departments of the company's R&D sections and steelworks. Efforts took into account future market development, supplied not only materials, but also processing services, components and finished products, and has been expanding manufacturing bases overseas.

Business Areas

Semiconductor and electronics industrial materials and components

Materials for semiconductors

General-purpose semiconductors are encapsulated entirely or partly with sealing materials (resin and inorganic filler composite materials) after conducting silicon chips, on which electronic circuits are made up by the use of bonding wire with the lead-frame etc. Nippon Steel & Sumikin Materials provides the following products and services, by applying technologies cultivated through steelmaking, such as analysis, simulation, structure control, welding & joining, and other advanced technologies, thus meeting the needs of the semiconductor market where demand is high and quality requirements are strict.

- Gold bonding wire, copper bonding wire and micro solder balls (electrode connecting materials)

Nippon Micrometal Corporation
Nippon Micrometal Corporation Philippines
Hangzhou New Material Chroma Co., Ltd.
Nippon Micrometal Malaysia Sdn. Bhd.

- Spherical filler powders (sealing materials) Micron Company
Harimic Malaysia Sdn. Bhd.

■ Materials for electronic devices

Stainless steel foil coils and sheets marketed by Nippon Steel & Sumikin Materials offer such characteristics as extra-thinness, high thickness precision, high strength and high spring performance. Due to these characteristics, the coils and sheets are used as material for hard disk drive suspensions and springs for mobile terminal keyboards, meeting customer needs for lighter gauges, downsizing and improved performance of electronic components. Moreover, through development of a variety of coated stainless steel foil, materials that have functions such as insulation, vibration damping, and adhesion with other materials are provided. Since 2013 the plastic film-laminated stainless foil and the stainless foil collectors for the secondary batteries have been provided.

- Stainless steel foil coils and sheets Metal Foil Company

■ Materials and components for semiconductor manufacturing equipment

Nippon Steel & Sumikin Materials supports the semiconductor and electronics sectors with the supply of materials and components for the equipment.

The company supplies dense, homogeneous, and no-internal-defect materials such as metals and ceramics, new metal composite, and high-quality and fine-grained sputtering target, through the hot isostatic pressing.

In addition, applying heat treatment and joining technologies, pad conditioners for the pre-treatment process in the semiconductor and for the CMP (Chemical Mechanical Polishing) process in the hard disk drive substrate manufacturing are supplied.

- HIP processed products HIP Unit
- CMP pad conditioners CMP Pad Conditioner Unit

Basic Industrial Materials and Components

■ Carbon fibers and composites

Carbon fibers possess not only high strength and elastic modulus but also light weight, high heat resistance, high conductivity, and high abrasion resistance, compared to conventional materials. Nippon Steel & Sumikin Materials supplies the following carbon-fiber products to a wide range of fields such as sporting goods, aerospace, industrial machines, construction and engineering, making the maximum use of the company's material technology and structural design technology.

- Carbon fibers, prepreg Nippon Graphite Fiber Corporation
- Carbon-fiber composite materials, Composites Company
- Thermoplastic prepreg Nippon Steel & Sumikin Materials (Thailand) Co., Ltd.

Earthquake-resistant reinforcing sheets and plates (TOWSHEET™, TOWPLATE™, STRANDSHEET™)

Concrete members reinforced with carbon fibers (NOMST™ members)

CFRP (carbon-fiber reinforced plastics) rolls

CFRP structural members for industrial machinery (robot hands, ultra-precision device parts, etc.)

Environmental and Energy-related Materials and Components

Metal substrates for catalytic converter manufactured using stainless steel foil offer high performance in heat resistance, vibration resistance, and design flexibility, as automotive emission purification parts. The substrates solve the incompatibility between high engine output and emission purification, thus contributing toward eco-friendly automobile manufacturing. The originally developed stainless steel foil that shows excellent oxidation-resistance in high temperature is also provided as material.

- Metal substrates for catalytic converters

Metal Substrate Company
Nippon Steel & Sumikin Materials Hangzhou
Co., Ltd.
PT. NIPPON STEEL & SUMIKIN MATERIALS
INDONESIA
NIPPON STEEL & SUMIKIN MATERIALS
INDIA PVT. LTD.
NIPPON STEEL & SUMIKIN MATERIALS USA

- Stainless steel foil coils and sheets for metal substrates for catalytic converters

Metal Foil Company

System Solutions

Nippon Steel Corporation launched this business in 1986, building on the system technologies it had accumulated through many years of operation in the steelmaking business, in which the company boasts the world's top-class technological capability. Since then, the company has reinforced the infrastructure for this business. In April 2001, Nippon Steel Corporation undertook a business merger between its Electronics and Information Systems (EI) Division and Nippon Steel Information & Communication Systems Inc. (ENICOM) and established a new company, NS Solutions Corporation. NS Solutions was successfully listed on the First Section of the Tokyo Stock Exchange in October 2002.

Outline of NS Solutions Corporation

Head office:	2-20-15 Shinkawa, Chuo-ku, Tokyo, Japan
Phone:	81-3-5117-4111
Capital:	¥12.95 billion
Annual sales:	¥244.2 billion (FY2017; consolidated)
Employees:	6,303 (as of March 31, 2018)

Operating Policies

Applying the extensive experience and advanced IT capabilities acquired in the steel manufacturing industry, NS Solutions (NSSOL) provides customer-oriented solutions to support a wide range of clients' global business activities and help their competitive edge with our overseas branches in six countries, including the U.S., the U.K., China, Singapore, Thailand and Indonesia.

The company entered the cloud computing market early, and in April 2015 established a service center, in the city of Kitakyushu, enabling the company to service clients in both eastern and western Japan. NSSOL also established the "NSFITOS Center", which offers a range of optimal platforms, secure operations and state-of-the-art DC and cloud computing services. NSSOL established "IoT Solution Business Promotion Department" in April 2016, "AI Research Development Center" in October 2017. NSSOL aim to realize IT innovations in Production and Logistics area by applying IoT and big data. (IoT™ is the solution which has concepts of both IoT (Internet of Things) and IoH (Internet of Humans).)

Business Areas

Manufacturing and Consumer Products Sectors

As a solution provider that comes from the manufacturing industry and is therefore most familiar with customers' operations, NS Solutions helps its customers with their management strategies and on-site practices by providing optimal solutions in consideration of the changing times.

- Business applications: Provision of solutions such as ERP, SCM, MES and PLM
- Infrastructure: Provision of BPM solutions, which commonly and cooperatively apply to various operations

Retail and Service Business Sectors

Based on the practical knowledge obtained through field operations, NS Solutions supports its customers with its ability to build a comprehensive range of systems, from mission-critical systems based on state-of-the-art technologies to information systems (such as the analysis system for marketing data).

- Internet media services: CRM, designing and building multi-site/multi-channel compatible EC sites, etc.
- Consumer packaged goods (CPG): Design and build Sales management system, SCM and Manufacturing Prescription Execution system, etc.
- Medicines and healthcare: Research information management system, systems for managing clinical trial data and managing manufacturing performance data, etc.
- Retailing: Purchase, Production, Sales planning performance management, Integrated logistics systems, etc.

Telecommunications Sector

NS Solutions provides new technologies which realize new business models required by telecommunications carrier from users' points of view, mainly in the following areas:

- Core network
- Service platform
- Operation support system (OSS)
- Business support system (BSS)

Financial Sector

By integrating the company's many years of experience in finance-related operations with its IT capabilities, the company provides practical solutions that are ready for financial business in the new era. Also, following clients' globalization and digitization trend, NSSOL established "Financial Solution Division for Asia Pacific" in Singapore local subsidiary in January 2016. In addition to this, NSSOL established "FinTech Center" in Business units in April 2016

- Solutions for financial markets: TSSummit, an integrated package for supporting trading operations, front-, middle-, and back-end systems for dealing, etc.
- Business management solutions: ALM, revenue and risk management, BancMeasure™ for integrated revenue management, solutions for complying with Basel III and IFRS, etc.
- Databases: Large-scale DWH, database, etc.

Social and Public Sectors

NS Solutions provides total IT solutions to government agencies, incorporated administrative agencies, public utilities and research institutions such as Universities.

- Government Agencies: Network platform such as LAN and WAN, total security and statistical systems, etc.
- Aerospace Defence: Satellite data processing and mission critical platform system
- Education and Science: Education system for Universities and research institutions. e-learning and campus network platform and varietal analysis system for research institutions.

IT Infrastructure Solutions

In our role as an organization specializing in IT infrastructure, NSSOL offers optimal system platforms based on our know-how of a broad range of industries and business processes. In recent years NSSOL has actively developed IT outsourcing service "NSFITOS™". We support our clients to realize proactive IT with combination of following 4 services, such as high spec facility "NSFITOS Center", Hybrid cloud infrastructure which centers "absonne", next generation operation service "emerald™". and engineering /re-engineering.

[Delivering infrastructure outsourcing services based on secure operation, DC and system platforms]

- "NSFITOS"

[Providing secure systems for mission critical environments in the form of cloud or on-premise systems]

- Private cloud development support service "absonne Enterprise Cloud Framework™"
- Managed cloud service "absonne Enterprise Cloud Service™"

[Providing working environments equivalent to that of an office anytime, anywhere, for whatever kind of work and using any device]

- Desktop virtualization service "M³ DaaS™@absonne"

[Dramatically reduce contract costs with electronic contracts]

- Electronic contract service "CONTRACTHUB@absonne™"

[Information platforms to "standardize security and compliance policy" across Group companies]

- "NSCOCOON"

[Realizing BCP in Tokyo and Kitakyushu]

- Data center services "5DC, 5DC South, Kitakyushu DC"

[Document management for financial institutions and construction plan management]

- Plan/document ASP/BPO service

[One-stop comprehensive security solution service which supports from pre-verification to SOC operation]

- "NSSSEINT"

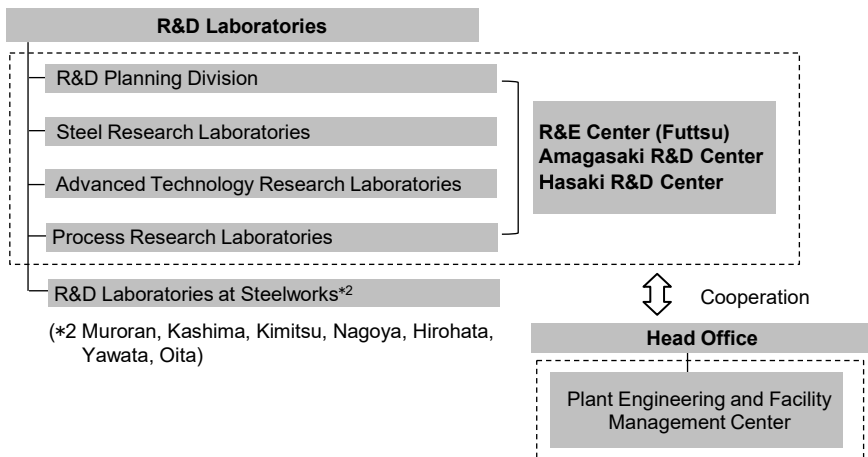
Research and Development

R&D Organization

In the true spirit of research and engineering, Nippon Steel & Sumitomo Metals' three principal R&D bases, namely the R&E (Research & Engineering) Center (Futtsu), the Amagasaki R&D Center, and the Hasaki R&D Center, are working closely with the R&D laboratories at steelworks across the country and are promoting integrated R&D activities that range from basic and fundamental research to applied development and plant engineering.

In order to accelerate R&D for advanced IT application, "Intelligent algorithm research center (IA³ *1 center)" which clusters the professionals among NSSMC group was established in April 2018.

*1 Intelligent Algorithm, Intelligence Artificielle, Intelligent Automation



(*2 Muroran, Kashima, Kimitsu, Nagoya, Hirohata, Yawata, Oita)

	Location	Establishment	Site
R&E Center (Futtsu)	20-1 Shintomi, Futtsu City, Chiba Prefecture, Japan	Sep. 1991	700,000m ²
Amagasaki R&D Center	1-8 Fuso-cho, Amagasaki City, Hyogo Prefecture, Japan	Aug. 1960	54,000m ²
Hasaki R&D Center	16-1 Sunayama, Kamisu City, Ibaraki Prefecture, Japan	Apr. 1974	159,000m ²

R&D Expenditures

(¥ billion)

Fiscal year		2010	2011	2012	2013	2014	2015	2016	2017
Consolidated	NSSMC			60.0	64.4	62.9	68.4	69.1	73.0
	NSC	46.6	48.1	-	-	-	-	-	-
	SMI	22.7	22.8	-	-	-	-	-	-

Note: The amount for fiscal 2012 is based on the Securities Report ("Yukashoken Hokokusho") and excludes the amount of Sumitomo Metals for the first half of 2012.

Number of Patent Publications

CY	2011	2012	2013	2014	2015	2016	2017
NSSMC	1,368	1,176	1,273	873	869	914	1,708

* The number of patents published prior to the corporate integration (October 2012) are the aggregate numbers of NSSMC

Major R&D Achievements

Year	Major Achievements
2008	<ul style="list-style-type: none"> • Quench-hardenable steel sheet for hot stamping "SUMIQUENCH SCSQ30B" • Chrome-free electrogalvanizing steel sheet for motor case "NEO COAT T2" • Walking control technology in hot strip finishing mill • Innovative structural materials to realize safe and reliable constructions, derived by the national project concerning nano-technology (NTPT) • Ultra high-strength steel plates for building structures "SSS1000" (jointly developed with Osaka University, Kyoto Institute of Technology, NIKKEN SEKKEI Ltd., and KATAYAMA STRATECH Corp.) • NSF method: To realize safe and comfortable housing by environmentally-friendly method • SM-composite pile method™ with concrete-filled steel pipe • Steam generator tubes to be used in advanced nuclear power plants • High-strength wire rod by direct in-line patenting process for suspension bridge • Advanced bogie truck with a rail-interaction-force monitoring system • SCOPE21, innovative coke-oven introduced the next generation coke-making process technology • Measurement of inside of blast furnace using cosmic ray muons • Frontier-Stone™, Eco-Gaia-Stone™, etc., environmentally-friendly materials made of steelmaking slag • Evaluation technique for local strength in spot weld of steel sheet using small specimen • Silicon carbide epitaxial wafers for power electronics devices (Nikkei BP Technology Award) • Solution growth method to grow silicon carbide • Single crystal highly-active visible light responsive photocatalyst (jointly developed with Osaka Titanium Technologies)
2009	<ul style="list-style-type: none"> • Hot-dip galvanized high hole expansion ratio type steel • ZINKOTE™ BLACK, black painted chrome-free electrogalvanized steel sheet • NS-Ship-Safety235, high deformability steel for the bulbous bow of a ship • Extra-heavy wall, small diameter ERW tubes for weight reduction of automotive parts • "CLEANWELL™DRY", an environmentally-friendly premium connection, which does not contain heavy metals • "VAM™21", a premium connection with good performance, used in connecting oil country tubular goods (jointly developed with Vallourec S.A.) • Non-heat treated nitrocarburized high-strength crankshaft steel (jointly developed with Honda R&D) • Recycling technology for refractories (Prize by Director-General, Industrial Science and Technology Policy and Environment Bureau, the Ministry of International Trade and Industry in Japan) • Anti-entrapment mold flux with properties of high viscosity and high surface-tension that crystallizes into melilite as a main phase • RS Plus™ Method, low-noise low-vibration method for construction of high load-bearing foundations for port engineering utilizing steel pipe piles • Composite concrete packed steel segment • Three-dimensional hot bending quench (3DQ) mass processing technology that enables steel components with a hollow tubular structure to acquire ultra high-tensile strength

- New analytic technology for automobile collision simulation (jointly developed with Mazda Motor and Corus, the British and Dutch steel company)
- Optimization design simulation technology for the exterior unit of an air conditioner
- Cold forging method of one piece stainless steel fuel union for high grade vehicle engines
- Fine grain stainless steel sheet for the long fatigue life diaphragm of a hydrogen compressor
- New temperature measurement and control technologies for manufacturing of high-tensile strength hot strip

2010

- 6% Ni steel for LNG storage tanks
- Highly deformable UOE line pipe
- SBHS, steel sheet for bridge high performance structure
- Manufacturing process innovation in high carbon and chromium steel wire for needle bearings
- "NAR™-DP-28W", high-chrome duplex stainless steel in a urea plant, with superior weldability (jointly developed with Toyo Engineering)
- Technology that serves to reduce radiation exposure of workers at nuclear plants through the manufacture of material that reduces the content of cobalt and a film processing technology to reduce the release of metal ion from tubes
- Resource-saving, high-strength electromagnetic steel "SXRC" (National Commendation for Invention; 21st Century Invention Prize)
- Heat resistant stainless steel sheet "NAR™-AH-7" for advanced high-temperature heat exchangers
- "High-precision drop weight impact test machine" that is used to accumulate data and develop technology aimed at further enhancing automobile safety
- New molten pig iron dephosphorization technology with powder top blowing for realization of high efficiency production of low phosphor steel with low environmental load
- Development of "VAM™21", the world highest-performance threaded connection (jointly developed with Vallourec S.A.)
- TN-X™, high-tension steel pipe pile & high bearing capacity foot protection steel pipe pile construction method
- Further reduction in welded light-weight H-beams that are used for housing construction
- Heat release steel sheet as heat sink material for ultra-thin LCD TVs
- Dual-wall exhaust manifold by press forming
- Carbon blocks with high thermal conductivity and high corrosion resistance for blast furnace hearth
- Optimum scheduling system for integrated raw material logistics
- EX1, multi-coated Cu bonding wire for LSI packaging (Ichimura Award; Main Prize, jointly developed with Nippon Micrometal)

2011

- 1.2GPa high tensile cold rolled steel sheet with high formability
- Extremely thick HT80 plate of 210mm for rack
- Development of corrosion-resistant steel with tin added high-tensile steel plates with high salt resistance
- Development and commercialization of thick steel plate with excellent weldability for use in developing marine resources and energy
- CORQ™, corrosion resistant castings
- UIT (Ultrasonic Impact Treatment) method for increasing fatigue strength
- Straight web-type sheet piling cell construction method

	<ul style="list-style-type: none"> • Development of “SM-HSJ (H-column Simple Joint) construction method” that uses an improved method of connecting H-beams and columns for steel frame buildings • Development of low-carbon non-lead free cutting steel “Smigreen CS” • Development of fine-precipitate dispersed stainless steel sheet “NAR™-301L HSX” • Development of Sumi Quench 1800, the steel sheet for hot pressing with the world highest-tensile strength of 1,800 MPa (jointly developed with Mazda Motor, Aisin Takaoka, and Futaba Kogyo) • Development of high-strength and high-corrosion resistant alloy “Super 17Cr OCTG” for ultra deep well application • Development of upper drafting counter flow type deep bed sinter cooler (jointly developed with Mitsubishi-Hitachi Metals Machinery, Inc.) • Development of three-dimensional hot bending quench (3DQ) mass processing technology • Invention of steel plate that extends the fatigue-life of welded steel structure • Full launch of the biomass mixed power generation fired by coffee grounds mixed with coal • Development of steel used as common rail for diesel engines (jointly developed with Denso) • 6-inch SiC single-crystal wafers
2012	<ul style="list-style-type: none"> • SBHS500 high performance steel was used to construct the fully-welded large truss box composite bridge of the Tokyo Gate Bridge. • For the first time in the world, 590MPa class high-tension steel (cold-rolled steel sheet) was used for the side panels, and 780 Mpa class high-tension steel (hot-rolled steel sheet) was used for the suspension arms. • 980MPa class high-tension steel was used for the first time in the world for parts of light automobiles that are difficult to form. • SuperDyma™ highly corrosion-resistant steel sheet was used for the first time in automobile body panels. • SuperDyma™ highly corrosion resistant plated steel sheet products which conform to JIS standards • VE/NSYP™345B hyper beam consisting of 490N rolled steel sheet for building construction whose design reference strength (F value) has been increased to 345N was used for the first time. • The SMartBEAM™ method was used for the first time in 3-story wooden buildings. • A hat-shaped steel sheet pile + H-steel method was used for the first time in harbor construction work. • The support strength properties of steel sheet piles intended for foundation construction were favorably evaluated by the Railway Technical Research Institute. • SBHS400W high yield point steel sheet for bridges was modified to conform to JIS, and then adopted for the first time. • Active suspension for railway rolling stock was used by the Kinki Nippon Railway Company on all of its "Shimakaze" tourist limited express trains. • Recycling technology for general waste plastic based on the coke oven chemical raw material recycling method (Okochi Commemorative Award)
2013	<ul style="list-style-type: none"> • New melting furnace (EB furnace: Electron Beam Refining Furnace) • Hot-dip galvanized high-tensile-strength steel with a strength class of 1.2 GPa • Hot-press product using a direct water-cooling method (jointly with Unipres) • 7% nickel steel plates for LNG tanks • Method for refining tsunami-deposited soil (CAL-SPIN™ method) certified by the Council for Construction Technology Review and Certification) (jointly with Nippon Steel & Sumikin Engineering)

2014

- "SUS304 H-SR3" stainless steel plates with ultrafine crystal grain
- Combination wall of hat-shaped steel sheet pile and steel pipe pile by gyro press method (jointly with Giken Ltd.)
- Welded lightweight H-shaped steel (SMartBEAM™) was utilized as construction louver material
- Active suspension for railroad cars was adopted by the Kyushu Railway Company for the Cruise Train Seven Stars (Nanatsuboshi) in Kyushu
- Sintering NOx reduction technology through the improvement of lime coating coke (LCC)
- Multi-refining converter process (MURC) (61st Okochi Award; Okochi Memorial Production Award)
- 7% nickel steel plates for LNG tanks (used for the LNG storage tanks for shale gas in Canada; 2013 Nikkei Superior Products and Services Award)
- "NSGP™-2" highly corrosion-resistant steel plates for crude oil tankers (first approval worldwide for ClassNK certification for tank ceilings)
- NSafe™-Hull steel plates for ship construction, excellent for collision safety (first practical use in the world)
- Super-high-tensile-strength steel for building structures of 1000N class, with the highest strength in the world (adopted by the Technical Research Institute of Obayashi Corporation)
- Fatigue strength improvement technology at welds-UIT method (selected for the recommended technology of the New Technology Information System [NETIS] by the Ministry of Land, Infrastructure, Transport and Tourism in 2014)
- Eco-friendly type steel wire for ultra-high-tensile-strength bridge cables (PWS steel wire rods) (Ichimura Award; Main Prize)
- Eco-friendly, high-performance, low-carbon, unleaded, free-cut steel (Commendation by the Minister of Education, Culture, Sports, Science and Technology)
- HYDREXEL™ stainless steel for use with high-pressure hydrogen
- Active suspension for railway vehicles (adopted by the Granclass car of the Hokuriku Shinkansen)
- Development of a tooth flank correction shape that achieves lower noise generation in gear systems for railway vehicles
- Hot-rolled steel sheet shape measurement, using LED projection

2015

- Introduction of equipment for adding plastics of containers and packaging into all the works is complete.
- Multi-refining converter process (MURC) (Commendation by the Minister of Education, Culture, Sports, Science and Technology in the FY2016 Science and Technology Award: Development Category)
- Thick steel plates for mega container ships, covered by BCA and CTOD warranties (first approval worldwide for ship's class)
- "NSGP™-3" highly corrosion-resistant steel plates (first applied to actual bulk carriers)
- "ABREX™" series, Abrasion-resistance steel plate (manufacturable thickness range greatly expanded)
- "CORSPACE™" corrosion resistance steel for painting cycle extension (registered in the New Technology Information System [NETIS] of the Ministry of Land, Infrastructure, Transport and Tourism)
- "SBHS500W" high-yield-point steel plate for bridges with weather-resistant specification was first adopted

- 7% nickel steel plates for LNG tanks (FY2014 Japan Institute of Energy, Achievement Award [category of technologies]; jointly awarded with Osaka Gas Co., Ltd.)
- Development and expanded application of 590-/780MPa-class hot-rolled high-strength steel sheets and GA780MPa-class hot-rolled high-strength steel sheets that are excellent in fatigue characteristics and workability
- Received the gold prize of the ECO/VC-Activity Award of Panasonic Corporation for six consecutive years
- “Tough Guard™ Mild” rough-surface highly corrosion-resistant weld wire
- “Thin wire rods” with a diameter of 5.0 mm or less (expanded lineup of products)
- Development of “SMartBEAM™” lightweight welded H-beam using “SuperDyma™” highly corrosion-resistant plated steel sheet
- Temporary retaining wall of hat-shaped steel sheet pile + H-steel method was first adopted
- “NS SuperFrame™ method” for construction of four-story steel houses (acquired a “structure rating” of the Building Center of Japan [BCJ] for high-ceilinged single-floor structures)
- Mechanical Joint “Gachi-cam Joint™” for steel pipe piles and steel pipe sheet piles
- Received the Global Partner Award from Royal Dutch Shell plc (jointly with Sumitomo Corporation)
- “HYDREXEL™” stainless steel for use with high-pressure hydrogen (The jointless welding method was first adopted for the hydrogen station of Tokyo Gas Co., Ltd.)
- Development and application of ferritic heat-resisting steel with high creep strength (jointly awarded the Yamazaki-Teiichi Prize of the Foundation for Promotion of Material Science and Technology of Japan with Kyushu Institute of Technology)
- Titanium cover-type petrolatum lining method for steel sheet piles and steel pipe sheet piles (large-scale adoption)
- “Super-TiX™ 51AF” alloyed titanium (won the “Technical Development Award” of Yamaha Motor Co., Ltd. and was used for connecting rods and engine parts of motorcycles, and also won the Honda Frontier Prize of the Honda Memorial Foundation)
- Development of the method of manufacturing specially rolled titanium foil (used for the fuel battery component of the fuel battery vehicle “MIRAI” of Toyota Motor Corporation)

2016

- “Approach to expand biomass mixed combustion in pulverized-coal-fired thermal power generation” (New Energy Foundation “New Energy Award” (Minister of Economy, Trade and Industry Award))
- High corrosion-resistant steel sheets for oil tanker “NSGP™-1” and “NSGP™-2” (Simultaneous adoption for the first time in the world after revision of the SOLAS treaty)
- Shipbuilding steel sheet “NSafe™-Hull” excellent in collision safety (Received the Class Notation of Nippon Kaiji Kyokai (ClassNK) for the first time in the world for bulk carriers)
- Received the “Best Supplier Award 2016” from Pioneer Electronics AsiaCentre Pte. Ltd. (Nippon EGalv Steel Sdn. Bhd. (Malaysia))
- Received the ECO-VC Gold Award for 7 consecutive years from Panasonic Corporation
- “Environment impact reducing type super-high strength PWS steel material” (Received the “Nippon Keidanren Chairman’s Innovation Prize” at the National Commendation for Invention)
- High corrosion-resistant coated steel wire “Toughguard™Hard” (Jointly developed with J-WITEX Corporation)

- “Gyro-Press Method™” Large pipe diameter 2,000 mm (first adoption)
- HAT-type Steel Sheet Piles (Adopted for infrastructure construction in Singapore and Australia)
- Stainless steel “HYDREXEL™” for hydrogen station (Received the Nikkei Superiority Award for Excellent Products and Services)
- Developed the automobile body frame parts of 3D hot bending square steel pipe
- The Japan Steel Works, Ltd. adopted the seamless steel pipe for hydrogen station TYPE I steel accumulator
- Received “2015 Excellence in Value” from American Honda Motor Co., Inc. (International Crankshaft Inc. (U.S.))
- Received the “Excellent Supplier 2015” award from TTX Company (U.S.)
- Received the “Excellent Quality Award” from General Motors (Huizhou Sumikin Forging Co., Ltd. (China), SMI Amtek Crankshaft Pvt. Ltd. (India))
- Permanent magnet type compact lightweight retarder (received the Fiscal 2017 Commendation for Science and Technology by the Minister of Education, Culture, Sports, Science and Technology, Prize for Science and Technology (Development Category))
- “Development of high performance stainless steel spring plate for exhaust gasket” (Received the “Engineering Award” from the Japan Society of Spring Engineers together with Honda R & D Co., Ltd.)
- Verified the performance of the discoloration resistant titanium building material with the structure for which 15 years have passed since construction.
- Titanium sheet (Adopted for the fuel tank of Honda’s (Honda Motor Co., Ltd.) motocross Bike)
- Titanium alloy (Adopted for the sports car muffler of Nissan Motor Co., Ltd.)
- Titanium cover/petrolatum covering method (Adopted for the first time for signs of the Japan Coast Guard)

2017

- Designing titanium “TranTixxii™”
- Titanium sheet (Adopted for the fuel tank of Honda’s (Honda Motor Co., Ltd.) sports motorbikes)
- Received the “Excellent Supplier 2016” award from TTX Company in the U.S.
- Fuji Zerox Co., Ltd. granted the qualification of “Premium Partner” for 6 consecutive years
- Increasing application of “NS SuperFrame™ method” for steel house construction
- Increasing application of Designing titanium “TranTixxii™”
- First adoption of calcia modified soil for reclamation
- “Development of Environmentally-conscious Stainless Steel Making Process Combining Resource Saving and Productivity Enhancement” (FY 2017 Awards for Resources Recirculation Technologies and Systems the METI Minister’s Award)
- First adoption of Titanium foil sheet for earthquake-resistant construction for important cultural property in Zenkoji temple
- Received the “ECO-VC Gold Award” from Panasonic Corporation for 8 consecutive years
- “Development of permanent magnet type compact lightweight retarder” (The Seventh Monodzukuri Nippon Grand Award; Special Prize)
- “CORSPACE™” corrosion resistance steel for painting cycle extension(adopted in Okinawa district with heavy salt damage for the first time)
- “Development of advanced high tensile strength steel sheet for automobile and solution technology” (adopted for the first time for Honda’s (Honda Motor Co., Ltd.) new N-BOX)

- "Development of Environmentally-conscious Stainless Steel Making Process Combining Resource Saving and Productivity Enhancement" (The 64th Okochi Award; Okochi Memorial Grand Production Award)
- Received the "Diamond Supplier Award" from Navistar in the U.S. (Nippon Steel & Sumikin Crankshaft LLC in the U.S.)
- Truck & bus aluminum wheel excellent in strength/light weight "ToughBright™"

Award-winning Technologies

■ Okochi Award

(sponsored by Okochi Memorial Foundation)

The award is presented every year to individuals and organizations that have attained excellent achievements in research and development of production engineering and production technologies, and in practical applications of advanced production systems.

FY	Award names	Achievements
1990	Grand Production	High-efficiency universal rolling technology for wide-flange beam (jointly with Kawasaki Steel)
1991	Production	High-grade ERW pipe and tube of non-quenched/tempered type for use as OCTGs
1992	Production	Development of high strength and corrosion resistant Ni base alloy OCTGs
1994	Production	Development of high speed and high performance bogie trucks for railway vehicles
1995	Production	Development of high reliability heat exchanger tube for nuclear power plants
	Grand Production	Low-cost, low-environmental burden metallurgical coke production technology
1996	Production	Roll pair cross rolling method for high accuracy and productivity in steel rolling process of flat products (jointly with Mitsubishi Heavy Industries)
1997	Production	High-speed tool steel hot-strip mill roll by continuous pouring process for cladding (jointly with Hitachi Metals)
1998	Grand Production	Environmentally-friendly sintering technology for difficult-to-process iron ore
	Technology	Development of stainless steel pipe for supply of ultra-high-purity gas (jointly with Sumikin Stainless Steel Pipe Co., Ltd. and Tohoku University)
1999	Production	Die-forged crankshaft performance enhancement and development of high production total system
	Production	Automotive high-strength steel sheet (TRIP) with excellent crash energy absorption capacity
2000	Production	World's first endless hot rolling process and new product (jointly developed with Kawasaki Steel, Mitsubishi Heavy Industries, and IHI Corporation)
2003	Production	New-generation technologies for the production of medium-size seamless pipes and tubes
2006	Grand Production	Development of new-generation technologies for the high-quality, high-efficiency and environmentally-friendly steelmaking process
2007	Production	YP 47kgf/mm ² class higher strength steel plate and new hull structure design for large container ships (jointly with Mitsubishi Heavy Industries)

2008	Grand Production	Development of advanced stainless boiler tube for ultra-supercritical (USC) coal-fired thermal power plants
	Production	Diagnose and repair technologies used in enormously harsh space for realization of coke-oven restoring (DOC)
2009	Production	Process for recycling dust emitted in steel mills
2010	Production	Development of technologies that extend the campaign life of blast furnaces
2011	Production	Municipal waste plastics recycling technology by producing chemical raw materials
2012	Production	Development of high-alloy seamless OCTG and their manufacturing technologies that increase production of natural gas
	Production	Innovative new cokemaking technology for expanding raw coal resources and saving energy (SCOPE21) (jointly with Kobe Steel, JFE Steel, Nisshin Steel and Mitsubishi Chemical)
2014	Production	Development of a steelmaking process using the multi-functional integrated converter furnace method
2017	Grand Production	Development of Environmentally-conscious Stainless Steel Making Process Combining Resource Saving and Productivity Enhancement

■ Ichimura Award

(sponsored by the New Technology Development Foundation)

The award is presented every year to executives and researchers who have rendered distinguished services in nurturing excellent domestically-developed technologies, aiming at contributing to the dissemination of scientific technologies and the improvement of scientific technological level.

FY	Award names	Achievements
1990	Contribution	In-line heat treatment for high-strength DHH (deep head hardened) rail
1991	Distinguished Service	Development of high performance ferritic stainless steel with Nb and Cu (jointly with Nippon Stainless Steel Co., Ltd.)
	Contribution	Corrosion diagnosis for steel structures using electrochemical technology
1993	Contribution	Development of wide aluminum/stainless steel clad coil
1995	Distinguished Service	Ultra-high-strength steel wire for bridge cables
1996	Contribution	Heat-proof domain refining method for grain-oriented electrical steel sheet
1997	Distinguished Service	Development of powder top blowing process under reduced pressure
1998	Contribution	Hot-rolled titanium-clad steel coil
1999	Contribution	Weathering steel for use in coastal regions
2001	Contribution	Development of high performance 60-kg high tensile strength steel plate with strikingly improved welding capabilities
2003	Contribution	Super high HAZ toughness technology with fine microstructure imparted by fine particles (HTUFF™)
2004	Contribution	Innovative antiseismic technology using unbonded brace and advanced steel
	Contribution	Development of processing technology to promote the generation of protective rust for weatherproof steel
2006	Distinguished Service	Sulfuric acid and hydrochloric acid dew-point corrosion resistant steel (New S-TEN™1)

	Contribution	Development of non-oriented electrical steel sheet for high-efficiency motors
2008	Contribution	Superior corrosion resistant and environmentally-friendly steel sheet for automotive fuel tanks (ECOKOTE™-S)
	Contribution	Development of steel plate for improving the fatigue strength in welded joints
2010	Contribution	Corrosion resistant steel for cargo oil tank (NSGP™-1)
2011	Main Prize	Multi-coated Cu bonding wire for LSI packaging (EX1) (jointly with Nippon Micrometal)
2013	Contribution	Vibration controller for railroad cars (active suspension)
2014	Main Prize	Eco-friendly type steel wire for super-high-tensile-strength bridge cables

■ National Commendation for Invention (sponsored by Japan Institute of Invention and Innovation)

The Imperial Invention Award, from the Imperial Bounty, is presented every year to those who have made particularly significant inventions. The invention and other awards are also given every year to those who have made excellent inventions, devices and designs, and those who have put into practical use these achievements and made significant contributions pertaining to encouraging inventions.

FY	Award names	Achievements
1993	Keidanren Chairman's Prize	Ultra-low core loss grain-oriented electrical steel sheet treated by laser irradiation
1995	Japan Patent Attorneys Association President's Prize	Web-height flexible control method for H-beam rolling by skew roll mill
1997	Invention Prize	Ultra-low-carbon steel sheet with combined addition of Nb and Ti, having formability and good adherence of galvanized coating
1998	Invention Prize	High crack-arrestability endowed steel plate having surface layer with ultra-fine-grain microstructure
2001	Invention Prize	Rail with high wear resistance and internal fatigue damage resistance for heavy-haul railway use
2003	Invention Prize	Recycling method of chlorine-containing waste plastics in coke ovens (jointly with the University of Kitakyushu)
	Invention Prize	Protective rust-layer accelerant technology for weather-resistant steel (jointly with Himeji Institute of Technology Graduate School)
2005	Invention Prize	High formability zinc coated steel sheets for automobiles
	Economy, Trade and Industry Minister's Prize	New-generation technologies for the production of medium-size seamless pipes and tubes
2007	Invention Prize	Development of mold flux for high-speed continuous casting
2008	Imperial Invention Prize	Development of super-high strength low-alloy steel oil country tubular goods (OCTG) for sour service
	Invention Prize	Compact type hydroforming equipment (jointly with Toyota Motor)
2009	Invention Prize	Invention of strengthened low-alloy steel for economical boilers (jointly with Mitsubishi Heavy Industries and Kyushu Institute of Technology)
2010	Education, Culture, Sports, Science and Technology Minister's Prize	Measurement and evaluation technology for hot repair of coke-oven chamber walls

2011	Chairman's Prize	Development of advanced stainless boiler tube for Ultra-Supercritical (USC) coal-fired thermal power plants
2012	Keidanren Chairman's Prize	Development of the functional steel plate with high enhancement to fatigue life for welded structures
	Invention Prize	Excellent corrosion-resistant hot-dip alloy coated sheet (SuperDyma™)
2013	21st Century Invention Prize	Invention of high-strength non-oriented electrical steel of resource-saving design
	Patent Office Commissioner's Prize	Invention of new type high performance copper bonding wire for LSI (jointly with Nippon Steel & Sumikin Materials, Nippon Micrometal)
2015	Invention Prize	Invention of steering bogie for railway vehicle (Jointly with Tokyo Metro)
2016	Keidanren Chairman's Prize	Invention of eco-friendly-type steel wire for ultra-high-tensile-strength PWS

■ **MONODZUKURI Nippon Grand Award**
(Ministry of Economy, Trade and Industry (METI) and other Ministries)
(held biannually)

FY	Award names	Achievements
2007	Prime Minister's Prize (Manufacturing and Production Process Category)	Invention of manufacturing method of high quality steel plates using nano-size particles
	Economy, Trade and Industry Minister's Prize (Product and Technology Development Category)	Abrasion-resistant, internal fatigue damage-resistant heavy load-bearing rails for railways
2009	Prime Minister's Prize (Product and Technology Development Category)	Development of ECOKOTE™-S, environmentally sensitive steel sheet for fuel tanks with outstanding corrosion-resistant properties
	Special Prize (Product and Technology Development Category)	Development of high-strength Pb-free non-heat-treated steel for the application of fracture splitting connecting rods (jointly with Honda Motor)
	Excellence Prize (Manufacturing and Production Process Category)	Blast furnace operation/maintenance technology that has enabled Japan's longest operating days of the furnace
	Excellence Prize (Manufacturing and Production Process Category)	Development of an innovative production method allowing the production of flat hot-rolled high-tensile steel plates
	Excellence Prize (Product and Technology Development Category)	Development of ultra-strength, formable steel sheet delivering improved fuel economy and protection for passengers
	Excellence Prize (Product and Technology Development Category)	Uncoated, highly weather-resistant nickel-steel alloy for use in bridge construction and the anti-corrosion technology that supports this product Practical implementation of a technical system (jointly with the Public Works Research Center)
	Excellence Prize (Product and Technology Development Category)	Development of high strength, highly tough thick steel plate for use on large container vessels (47 kg/mm ²); contributions to the structural design of new vessels (jointly with Mitsubishi Heavy Industries)

	Excellence Prize (Product and Technology Development Category)	Development of environmentally-friendly lead-free, low-carbon free-cutting advanced steel materials
2011	Prime Minister's Prize (Manufacturing and Production Process Category)	Development of an approach to use inferior quality ferrite dust as a raw material as part of a recycling process to manufacture steel
	Prime Minister's Prize (Product and Technology Development Category)	Development of a groundbreaking next-generation approach for the manufacture of stainless steel that radically reduces the amount of rare metals required (jointly with Nippon Steel & Sumikin Stainless Steel)
	Economy, Trade and Industry Minister's Prize (Manufacturing and Production Process Category)	Development of new continuous casting technologies for very thick plate (PCCS)
	Special Prize (Product and Technology Development Category)	Development and practical application of a highly corrosion-resistant steel sheet NSGP™-1 for use on crude oil tankers
	Excellence Prize (Manufacturing and Production Process Category)	Development of the world's first hot rolling steel sheet thermometer with high precision even during a cooling process and the high-tensile steel sheet manufacturing technology by using this thermometer
2013	Special Prize (Manufacturing and Production Process Category)	Development of a new steelmaking process that achieves high efficiency, high quality, and low environmental load, simultaneously
	Excellence Prize (Product and Technology Development Category)	Development of lightweight and highly corrosion-resistant IP gold titanium through ultrafine-pattern grinding technology and advanced vacuum technology (jointly with Toyo Stainless Polish Industry and Nihon Teppan)
2017	Special Prize (Development Category)	Development of permanent magnet type compact lightweight retarder

**■ Commendation for Science and Technology by the Minister of Education, Culture, Sports, Science and Technology
(Ministry of Education, Culture, Sports, Science and Technology)**

FY	Award names	Details
1998	Distinguished Service in Science and Technology	Development and promotion of steel tube and pipe for oil refining and petrochemistry
	Meritorious Services in Research	Research of analysis model on solidification and segregation of steel
	Meritorious Services in Research	Fracture mechanics research for the thick steel-materials application technology to large-sized structures, such as a LNG reservoir
1999	Distinguished Service in Science and Technology	Development and promotion of high efficiency dimensionally stable electrode and high quality electrolytic galvanized steel sheets technology
	Distinguished Service in Science and Technology	Development of a chrome-plated thin steel sheet that can be welded
	Innovator Award	Development of a process and related machinery for melting and continuous casting of steel
2000	Distinguished Service in Science and Technology	Development of laser technology to join steel sheets during the manufacturing process
	Meritorious Services in Research	Research into processing methods for steel rods and wire; optimizing the selection of raw materials
2001	Distinguished Service in Science and Technology	Development of a system to estimate the residual corrosion lifespan of steel materials used as structural materials in construction
	Meritorious Services in Research	Research of environmentally friendly free-cutting steel
	Meritorious Services in Research	Theoretical analysis of migration speeds for coagulation phenomena and continuous casting; research into the applications thereof
2002	Meritorious Services in Research	Research into the fault rates, causes and control in continuously cast steel slabs
2003	Distinguished Service in Science and Technology	Development of a system to identify and prevent the causes of weld cracking
2004	Meritorious Services in Research	Research into creative technologies and predictive controls for organizations, systems and materials for thin steel sheet
2005	Science and Technology Award: Development Category	Development of high quality and high speed round billet casting technology
2007	Science and Technology Award: Development Category	Development of a thin-walled, heat resistant integrated stove for a large-scale blast furnace
2008	Science and Technology Award: Development Category	Development of non-oriented electromagnetic steel sheet for high efficiency motors
2009	Science and Technology Award: Development Category	Development of crash-box that improves fuel efficiency and crash safety (jointly with Toyoda Iron Works)

2010	Science and Technology Award: Development Category	Development and commercial application of new functional steel material with an extended fatigue-life
	Science and Technology Award: Development Category	Development of high fatigue strength stainless steel for cylinder head gasket (jointly with Honda R&D Americas)
	Science and Technology Award: Research Category	Research into the highly functional properties of ferrite heat-resistant steel tempered at high temperatures over a long period of time (jointly with the National Institute for Materials Science and Mitsubishi Heavy Industries)
2011	Science and Technology Award: Development Category	Development of abrasion-resistant, internal fatigue damage-resistant heavy load-bearing rails for railways
2012	Science and Technology Award: Development Category	Development of a high environmentally sensitive Sn-Zn plated steel sheet for use in automobile fuel tanks
2013	Science and Technology Award: Development Category	Development of SuperDyma™ - a highly corrosion-resistant Zn-Al-Mg-Si plated steel sheet for use as a construction material
	Science and Technology Award: Development Category	Development of highly accurate cooling control technology through the use of a thermometer applied to cooling steel sheets at the hot rolling mill
2014	Science and Technology Award: Development Category	Development of a new, highly functional Cu bonding wire for LSI (jointly with Nippon Micrometal)
	Science and Technology Award: Development Category	Development of waste plastic recycling technology using a coke oven (jointly with Tetsugen, Nippon Coke & Engineering, Nippon Steel & Sumikin Texeng, and Nippon Steel & Sumikin Engineering)
2015	Science and Technology Award: Development Category	Development of eco-friendly, high-performance, low-carbon, unleaded, free-cut steel
2016	Science and Technology Award: Development Category	Development of the multi-functional integrated converter furnace method that achieves production of a large amount of eco-products
2017	Science and Technology Award: Development Category	Development of permanent magnet type compact lightweight retarder

■ Social Contributions

Support of Music Culture through the Nippon Steel & Sumitomo Metal Arts Foundation at Kioi Hall

Ever since its foundation, Nippon Steel & Sumitomo Metal Corporation has made a major contribution not only to the development of Japan's economy but also to the progress of art and culture mainly in music for 60 years continuously, presenting the well-known weekly radio program "Nippon Steel Concerts" broadcasted between 1955 and 2005, "Nippon Steel & Sumitomo Metal Music Awards" (former Nippon Steel Music Awards).

NSSMC is active in contribution to music through the supports to Nippon Steel & Sumitomo Metal Arts Foundation at Kioi Hall.

Kioi Hall

To commemorate the 20th anniversary of the founding of the former Nippon Steel in 1990, Kioi Hall was planned to construct and opened in 1995 as a part of Nippon Steel's philanthropic activities. The Kioi Hall contains two halls; Kioi Hall that is suitable for classical chamber music and Kioi Small Hall that is furnished for Japanese traditional music. As both halls are carefully designed and have the highest quality, those are garnered a high reputation among the musicians and the audience at home and abroad.

Outline

Location:	6-5, Kioi-cho, Chiyoda-ku, Tokyo, Japan 102-0094 phone:+81-3-5276-4500
Building:	Site: 3,120m ² Total floor area: 12,626m ² 7 stories and 2 basements
Accommodation:	Kioi Hall (1st & 2nd floors) a 800-seat concert hall equipped for classical music Kioi Small Hall (5th floor) a 250-seat auditorium furnished for Japanese traditional music
Ticket Center:	phone: +81-3-3237-0061
Website:	http://www.kioi-hall.or.jp

Kioi Hall Chamber Orchestra Tokyo

With the opening of Kioi Hall in 1995, the Kioi Sinfonietta Tokyo was founded as the orchestra in residence. It is renowned for its world-class soloists, chamber musicians, as well as its visiting principal musicians from leading orchestras both in Japan and abroad.

The orchestra is unique in that rehearsals are conducted in the Hall itself, thereby enabling the full potential of the orchestra to be continually developed and refined. As a result, the resident orchestra has developed its own highly distinctive sound.

Kioi Hall Chamber Orchestra Tokyo runs 5 programs every year for its subscription series, with 2 performances for each program. The orchestra has also performed internationally, and has been acclaimed for its concerts in Europe (2000, 2005), South Korea (2009, 2010) and United States (2012).

Recently the orchestra was invited to perform in prestigious music festivals in Japan, notably the Music Festival Argerich's Meeting Point in Beppu in 2015 and 2016, the Spring Festival in Tokyo in 2016 as well as the Spring Green Music Festival 2018 in Kanazawa.

From April 2017, the orchestra's name changed to "Kioi Hall Chamber Orchestra Tokyo" to clarify embodiment of the orchestra and Kioi Hall,

The orchestra will continue to strive for excellent harmony under the direction of its Principal Conductor Rainer Honeck.

Nippon Steel & Sumitomo Metal Arts Foundation

Nippon Steel Arts Foundation was established as an operating organization for the Kioi Hall. The foundation has been authorized as a public interest incorporated foundation in October 2010. It was renamed the Nippon Steel & Sumitomo Metal Arts Foundation in October 2012.

Objectives and Activities

1. Fostering talented musicians
Season members in Kioi Hall Chamber Orchestra Tokyo, conductor trainees
2. Sponsoring concerts and other musical events
Presenting high-quality recitals and concerts in classical music as well as Japanese traditional music
3. Supporting distinguished musical activities
Kioi Up & Coming Artists introducing and supporting young talents, grants for performances
4. Administration and building operations of concert halls in the Kioi Hall
Maintenances and hall rentals
5. Other activities deemed necessary to achieve the purpose of the foundation

Nippon Steel & Sumitomo Metal Music Awards (former Nippon Steel Music Awards)

Nippon Steel & Sumitomo Music Awards, established in 1990, are presented once a year to promising young classical music performers and to those who have made contributions to the development of classical music.

Number & Year	Promising New Artist Prize (¥3 million)		Special Prize (¥1 million)	
1st 1990	Akiko Suwanai	Violin	Miwako Matsumoto	Soprano
2nd 1991	Yoko Hasegawa	Cello	Takao Miyazaki	Stage manager
3rd 1992	Joji Hattori	Violin	Kiyoko Tanaka	Piano
4th 1993	Kyoko Tabe	Piano	Kaoru Chiba	Horn
5th 1994	Tetsuji Honna	Conductor	Eiko Morishima	Piano, Korrepetitor (opera singer's rehearsal pianist)
6th 1995	Emiko Suga	Soprano	Naoyuki Miura	Representative, Music from Japan
7th 1996	Yoshiko Kawamoto	Viola	Akihiro Tsuruta	Piano tuner
8th 1997	Daishin Kashimoto	Violin	Takashi Ogawa	Research on music materials and documents
9th 1998	Yukio Yokoyama	Piano	Saneyuki Yoshii	Secretary-General, Sendai Philharmonic Orchestra
10th 1999	Mieko Sato	Soprano	Jun Taki	Arts Manager
11th 2000	Dai Kimura	Guitar	Minoru Nagata	Acoustic designer
12th 2001	Ayako Takagi	Flute	Kyoko Ito	Producer of music festival Argerich's Meeting Point in Beppu
13th 2002	Yu Kosuge	Piano	Norikazu Sugi	Representative, New Opera Production
14th 2003	Akie Amo	Soprano	Hiroshi Isaka	Music Producer
15th 2004	Riyo Uemura	Violin	Masayoshi Kuriyama	Director
16th 2005	Mihoko Kinoshita	Soprano	Juro Aoki	Cello
17th 2006	Tatsuya Shimono	Conductor	Teruhisa Murakami	Piano tuner
18th 2007	Ayako Uehara	Piano	Akira Kinoshita	Photographer
19th 2008	Quartet Excelsior	Quartet	Shigeto Kanayama	Executive Adviser, Tokyo Symphony Orchestra
20th 2009	Hisako Kawamura	Piano	Kenji Aoki	President, Miyazaki Prefectural Arts Center
21st 2010	Kota Nagahara	Violin	Koji Toyoda	Violin, Artistic Director of Talent Education Research Institute Corp.
22nd 2011	Mami Hagiwara	Piano	Mayako Muroi	Piano
23rd 2012	Lina Matsuda	Violin	Takako Kurimoto	Soprano
24th 2013	Mariko Fukushi	Bassoon	Shuku Iwasaki	Piano
25th 2014	Yuya Okamoto	Cello	Madoka Hino	Author
26th 2015	Yurie Miura	Piano	Masayuki Yamada	Chief Producer, La Folle Journée de Kanazawa
27th 2016	Mone Hattori	Violin	Tetsuya Oguri	Producer, Stage Director, Technical Director
28th 2017	Rino Kageyama	Harp	(None)	

Social Contribution through Kashima Antlers (Football)

NSSMC promotes social contributions by supporting athletic teams. Its contribution to the Kashima Antlers Football Club, which began as a football team of the former Sumitomo Metal Industries and has become one of the top Japan Professional Football League (J League) teams, is one of those examples.

Back in 1991, Kashima Antlers were selected as one of the participants in the J League, by representing the neighboring areas of NSSMC's Kashima Works, namely, Kashima Town (now Kashima City), Hasaki Town (now Kamisu City), Kamisu Town (now Kamisu City), and other places. Since then, the locally-based Kashima Antlers club has strived to be a team that grows together with the community, contributing locally and being well-loved in its hometown area.

After becoming a professional team, Kashima Antlers reinforced their winning potential with actions such as the acquisition of former Brazil captain and global star player Zico. From the formation of the J League in 1993 until 2016, Antlers won the league championship eight times, the J League Levain Cup (formerly known as Yamazaki Nabisco Cup) six times, and the Emperor's Cup five times.

Achieving a total of 19 titles, they have become one of the J League's formidable teams and they took second place in the FIFA Club World Cup 2016. Recently, Antlers visited Vietnam to play in a friendly match, celebrating the Japan-Vietnam Friendship Year. The team has expanded its areas of activities overseas.

Kashima Antlers' Management Philosophy

- (1) Be a locally-supported brand via thorough local strategy
- (2) Be a club that fosters talent with a local foundation
- (3) Have a world-class stadium as a base
- (4) Continue to be a strong club that challenges the world
- (5) Continue to share our dream with the Antlers Family

Kashima Antlers' Major Achievements

1993	J League 1st stage inaugural champions
1996	J League first annual winner
2000	Treble winners of J League, Yamazaki Nabisco Cup, and Emperor's Cup
2007-2009	League winners for three consecutive years
2007-2012	Japan's three major titles winners for six consecutive years
2015	Winner of Yamazaki Nabisco Cup
2016	Two winners of J League and Emperor's Cup, Second place of FIFA Club World Cup

In addition, the Kashima Antlers has participated in international competitions such the ACL (six times), the Asian Club Championship (two times), Asian Cup Winners' Cup (once) and FIFA Club World Cup (once). It became the first team to win the SURUGA Bank Championship for two consecutive years, in 2012 and 2013.

Kashima Antlers: A Club that Fosters Talent with Close Local Ties

Kashima Antlers comprise the Top Team (professional), a Youth Team (high school-age), three Junior Youth Teams (junior high school-age), and two Junior Teams (for elementary school-age players who have passed selection). These seven teams in total wear the Antlers uniform to play in official matches. In addition, there are 17 so-called "school" (for elementary school and preschool children): 16 in Ibaraki Prefecture and one in Chiba Prefecture. Through such activities, Antlers strives every day to foster player talent and further popularize football. The efforts to development players have led to some achievement in recent years, as one each of the Youth, Junior Youth, and Junior teams won a national championship.

Unique Hometown Activities via Administrative Coordination

The “Antlers Hometown Committee”, which consists of Kashima Antlers, its five hometown cities (Kashima, Itako, Kamisu, Namegata and Hokota) and Ibaraki Prefecture as members, was established in 2007. The Committee is now the nucleus of hometown activities, with the aim of achieving social contributions united with the regional society (J League One Hundred Year Vision) and regional revitalization through sports. Specifically, “Kids’ Passes” (free passes for children) have been distributed to all elementary schools in the hometown area; Antlers players have visited all elementary schools in the hometown area, as “Hometown Elementary School Visits” events; and the players have also visited the same schools to tell elementary school children about know-how on eating and exercising, as a “Shokuiiku (dietary education) caravan.”

In addition, the Committee promotes activities that boost links with local specialty products and sponsoring bodies.

■ The origin of the name “Kashima Antlers”

“Antler” means a typically branched horn of the deer, having to do with the gods associated with the local Kashima Shrine of national fame, and they were worshipped and revered by swordsmen, historically. Branched horns also conjure up an image of thornbushes after the name of the prefecture. The naming was made to signify the apple of this region like the shrine deer and the brave warrior locking antlers and fighting for victory. The team color is termed “Antlers Red,” which symbolizes the burning spirit of soccer and is also associated with the color of roses, the prefectural flower of Ibaraki.



■ About Ibaraki Prefectural Kashima Soccer Stadium

Construction of Ibaraki Prefectural Kashima Soccer Stadium, the home stadium of Kashima Antlers, was completed in 1993, the J League’s inaugural year. Japan’s first soccer-specific stadium with a roof was a major driving factor in the Kashima Antlers joining the J League — which was initially said to be almost impossible for the club to achieve. In 2001, the stadium was renovated to become even more spectator-friendly in preparation for the hosting of the following year’s FIFA World Cup: capacity was expanded from 15,000 to 40,000; the number of seats for persons with disabilities was increased; large video display equipment was displayed; and smooth entry and exit was ensured via a continuous concourse.

The Kashima Antlers, as designated administrator of the stadium, has been striving to make the stadium a symbolic core facility, in terms of software and hardware, for the development of the region. It has a fitness club that is available for use for residents, while flea markets, a beer garden, or other events are held from time to time. In 2015, ANTLERS SPORTS CLINIC opened within the stadium as a contribution to community medical services.

Educational Programs in Manufacturing and Environment

NSSMC, with the purpose of fostering general understanding of the significance of Monodzukuri (an art of manufacturing) chiefly in the next generation, has been offering educational and training programs and special classroom lectures in cooperation with schools and science museums.

(Programs in FY2017)

- **“Tatara Furnace Operation” demonstration**

NSSMC has been offering a traditional Japanese steel making demonstration, "Tatara Furnace Operation," at its steelworks and science museums.

- **Lectures at schools**

NSSMC has been supporting social studies in schools by giving lectures on Monodzukuri (an art of manufacturing) or energy-saving and environmental preservation.

Support of Sports

NSSMC, in the regions of its steelworks, in cooperation with other neighboring companies, local governments and communities, has been supporting “community-oriented sports clubs” through organization of teams, training of players and junior teams as well as active participation in various local events and activities.

- **Sakai Blazers (Volleyball)**

Incorporated as the Blazers Sports Club in 2000
Tel: 81-72-233-2264

- **Kamaishi Seawaves (Rugby)**

Became a club team as Kamaishi Seawaves RFC in 2001
Tel: 81-193-22-1173

- **Nippon Steel & Sumitomo Metal Kazusa Magic (Baseball)**

Became a broad-area multi-corporate team as Kazusa’s citizens baseball club Magic in 2003
Tel: 81-439-53-0226

- **Nippon Steel & Sumitomo Metal Tokai REX (Baseball)**

Became a broad-area multi-corporate team as citizens baseball club Tokai REX in 2003
Tel: 81-52-603-0701

- **Kashima Blue Wings (Baseball)**

Founded as a baseball club in Kashima Works in 1975
Tel: 81-299-84-2410

- **Judo club**

Founded in 1949
Tel: 81-79-236-1126

Philanthropic Activities

■ Overseas Offices

New York Office of Nippon Steel & Sumitomo Metal U.S.A., Inc.

- Support of programs which address fundamental needs and problems in NYC public schools
- Support of organizations dedicated to helping the disadvantaged
- Support of the Metropolitan Museum of Art, Metropolitan Opera, New York Public Library and other organizations of arts and culture
- Support of children education via Japanese organizations and school
- USA-Japan friendship exchange and participation in regional support via Japanese organizations (Japan Society and Japanese Chamber of Commerce)

Chicago Office of Nippon Steel & Sumitomo Metal U.S.A., Inc.

- Contributions to local and Japanese communities via the Japanese Chamber of Commerce and Industry in Chicago, and other organizations

Nippon Steel & Sumitomo Metal Empreedimentos Siderúrgicos Ltda. (São Paulo·Belo Horizonte)

- Participation in regional support and cultural/sports activities via Japanese organizations and Ipatinga's local organizations
- Support to Japanese cultural activities (ex. Japan Festival)
- Practice judo by NSSMC's staff for Brazilians

European Office of Nippon Steel & Sumitomo Metal Corporation (Düsseldorf)

- Participation in social contribution activities and support to sports and cultural activities via Japanese organizations in Düsseldorf, e.g. the Japanese Chamber of Commerce and Industry, Japan Club, the Japanese School, etc.

Sydney Office of Nippon Steel & Sumitomo Metal Australia Pty. Limited

- Participation in regional support and cultural/sports activities, and support of operations of Japanese schools via Japanese organizations (Chamber of Commerce and Industry, Japanese Association)

Beijing Office of Nippon Steel & Sumitomo Metal Consulting (Beijing) Co., Ltd.

- Contribution for tree-planting projects, school construction in poverty areas and disaster reconstruction via Japanese associations
- Promotion of China-Japan friendship exchange activities
- Support of operations of Japanese schools
- Participation in social contribution activities (ex. Chinese university students' Japan visit project including the homestay in our employee house and the acceptance of the visit in the steelworks) and making donations for flood, snow disaster, and tremendous earthquake via the Japanese Chamber of Commerce and Industry in China

Shanghai Office of Nippon Steel & Sumitomo Metal Consulting (Beijing) Co., Ltd.

- Participation in social contribution activities, support of China-Japan friendship via Shanghai Japanese Commerce & Industry Club
(ex. Promotion of China-Japan friendship exchange activities, donations for flood, snow disaster, tremendous earthquake, and so on, support of operations of Japanese schools, and contributions to Japanese communities)

Guangzhou Office of Nippon Steel & Sumitomo Metal Consulting (Beijing) Co., Ltd.

- Participation in social contribution activities and community service via the Guangzhou Japanese Chamber of Commerce & Industry
(ex. Series of lectures on Japanese culture in several Guangzhou universities, with students studying Japanese)

PT. Nippon Steel and Sumitomo Metal Indonesia (Jakarta)

- Participation in social contribution and cultural/sports activities via Jakarta Japan Club (Chamber of Commerce and Industry, Japanese Association).
 - Support for operations of Jakarta Japan School (JJS)
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Nippon Steel & Sumitomo Metal VIETNAM Co.,Ltd.

- Scholarship awarding to Vietnam Japan University Students who has excellent grades and financial difficulties.
- Participation in social contribution activities via The Japanese Chamber of Commerce and Industry in Ho Chi Minh City (JCCH) and The Japanese Chamber of Commerce and Industry in Vietnam (JCCI) (Ex. Support to Charity bazaar, Scholarship awarding and Japanese speech contest etc.)

Nippon Steel & Sumitomo Metal Southeast Asia Pte. Ltd. (Singapore)

- Aid to scholarship granting for studying in Japan, and activities involved in education, arts, sports and welfare via the Japanese Chamber of Commerce and Industry Singapore and the Japanese Association Singapore

Nippon Steel & Sumitomo Metal (Thailand) Co., Ltd.

- Participation in social activities via The Japanese Chamber & Commerce, Bangkok(JCC) and Japanese Association in Thailand (Ex. Scholarship activities of JCC)

Nippon Steel & Sumitomo Metal India Pvt. Ltd.

- Participation in social contribution activities via Japanese associations in New Delhi (Japan Chamber of Commerce and Industry in India, Japanese Association Delhi)

Middle East Office of Nippon Steel & Sumitomo Metal Corporation

- Participation in social contribution activities via Japanese associations in Dubai (Japanese Business Council, Japan Club, and a Japanese school)
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■ Head Office and Steelworks

	Contribution to local communities	
Head Office	<ul style="list-style-type: none"> • Open use of education and training facilities • Aid to disaster stricken areas 	
Kashima Works	<ul style="list-style-type: none"> • Cleaning of beach in Kashima City • Cleaning of roads surrounding Kashima Works • Removal of illegally posted advertisements • Promotion of landscaping Stadium Boulevard (planting and maintenance) • Participation in the Kashima Festival • Sakura Garden (herb garden, opened in August 2006 = part of yard opening of steelworks) 	<ul style="list-style-type: none"> • Ouka Garden (part of yard opening of steelworks) • Invite welfare institution residents to watching games of Antlers • Receiving of school teachers for training • Cleaning of roads in steelworks vicinity by new employees • Participates in the illumination project • Plant visits by 21,707 people in 805 groups (fiscal 2017)
Kimitsu Works	<ul style="list-style-type: none"> • Joint holding of Kimitsu Citizen's Festival with Kimitsu City • Support of Kisarazu Port Festival • Receiving of high-school teachers for training • Receiving of trainees from local high schools (internship) • Participation in fund-raising, cleaning, afforestation and traffic safety campaigns 	<ul style="list-style-type: none"> • Cleaning of roads in steelworks vicinity • Blood donation • Charity bazaars • Science experiment classroom/stand for school children • Plant visits by 34,711 people in 2,591 groups (fiscal 2017)
Nagoya Works	<ul style="list-style-type: none"> • Support of Tokai Flower Show • Support of a display of fireworks of Tokai Festival • Joint holding of Tokai Autumn Festival with Tokai City • Cooperation for "A manufacturing classroom" by Tokai City • Support of Anniversary project by Tokai City • Support of Yokosuka・Ota festival • Support of fund-raising and local activities 	<ul style="list-style-type: none"> • Cleaning of major roads • Cleaning of surrounding area by new employees • Blood donation • Receiving of school teachers for training • Plant visits by 26,354 people in 1,073 groups (fiscal 2017) • Support of an illumination project • Contribution to shrine festival activities • Lecture at a local university
Wakayama Works	<ul style="list-style-type: none"> • Participation in cleaning along Kinokawa River • Participation in cleaning in the city sponsored by Wakayama • Cleaning of Isonoura beach, participated by about 200 people • Participation in Kainan's hometown festival • Participation in Kainan's lacquer ware festival • Participation in Kainan's Geta market • Participation in Wakayama's Kishu dance • Support of a walking event at Kasei green tract of land 	<ul style="list-style-type: none"> • Cooperation for Sakai Festival and Citizen's Olympics • Cooperation for youth activities at Sakai City • Joint holding of local cleaning activities with local authorities • Help handicapped-person sports events held by Sakai City • Promotion of blood donation • Plant visits by about 10,000 people (fiscal 2017)
Hirohata Works	<ul style="list-style-type: none"> • Manpower and financial support of Green Town Building Club • Support of Hirohata Tenmangu Shrine Autumn Festival • Manpower and financial cooperation to Hirohata Economic Organization • Receiving of trainees from local junior high schools • Receiving of school teachers for training 	<ul style="list-style-type: none"> • Participation in cleaning campaigns for Himeji City streets • Cleaning of roads in steelworks vicinity • Blood donation • Fund-raising activities • Plant visits by 5,400 people in 292 groups (fiscal 2017)

Support of cultural and sports activities

- Establishment and management of Nippon Steel & Sumitomo Metal Arts Foundation
 - Construction and management of Kioi Hall
 - Nippon Steel & Sumitomo Metal Music Awards
 - Educational programs in Monodzukuri (an art of manufacturing) and environment
 - Contribution to universities, research institutes, and cultural/welfare organizations at home and abroad
 - Acceptance of school teachers for training at private enterprises (Keizai Koho Center)
 - Acceptance of trainees from government agencies, organizations/institutions, and universities at home and abroad
 - Publication and free distribution of picture book series, "New Monodzukuri"
 - Planning and holding the Nippon Steel & Sumitomo Metal Cup sports competition (baseball, girls volleyball, table tennis, mini basketball)
 - Hosting baseball classes
 - Science experiment classroom
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- Awarding of Clover Prize — a social contribution prize of Kimitsu Works
 - Kimitsu Works Chrysanthemum Festival
 - Cooperation to Kazusa citizen's supporters (Baseball lessons for students)
 - Holding of Kimitsu Works-sponsored sports events
 - Holding of sports events and giving guidance by the Kimitsu Works club teams
-
- Support of classical concerts held by Tokai City
 - Holding of periodic performances by Nagoya brass band
 - Holding of periodic performances by Nagoya Works
 - Holding of Christmas charity concerts by Nagoya Works brass band and choir
 - Contribution to cultural promotion business owned by Tokai City
 - Open use of sports facilities
 - Sports guidance at primary and junior high schools
 - Support of "Tokai REX" baseball club
 - Support of Tokai City Marathon
 - Support of an area sports promotion business owned by Tokai City
 - Holding the Nippon Steel & Sumitomo Metal Cup sports competition (Seven kinds of competitions of Junior High Schools in Tokai City)
 - Holding the Tokai REX Cup (Baseball Cup of Junior High Schools in Tokai City)
-
- Enforcement of a sketch event for local primary school children, participated by about 120 fifth graders
 - Implementation of the following activities through a regional volleyball team Blazers Sports Club
 - Dispatch of volleyball technical instructors
 - Holding of Blazers Cup sports events
 - Holding of volleyball events in Sakai City (V-League home games, international friendship games and others)
 - Promotion of Sakai Jr. Blazers, Blazers Kids, and Blazers Judo Club
 - Join up Festival held in Sakai City
 - Volleyball workshop for students in Osaka held by Sakai Blazers
-
- Coaching children in sports (judo, baseball, kendo)
 - Manpower and financial support of Yumesakikawa River Festival
 - Holding of Green town sports events
 - Rental of sports facilities
 - Support of HIMEJI CASTLE MARATHON

	Contribution to local communities	
Yawata Works	<ul style="list-style-type: none"> • Donation of basic-oxygen furnace and torpede car to Kitakyushu City in response to the improvement of the surrounding area of "1901 Blast Furnace Monument" • Donation of Megane Bridge at Kawachi Reservoir to Kitakyushu City • Free lending of Sayagatani track and field stadium and Otani baseball field to Kitakyushu City • Participation and support of the Yawata Festival implementation committee • Cleaning of roads in steelworks vicinity 	<ul style="list-style-type: none"> • Participation in "Cleaning campaigns" for Kitakyushu City • Heartfelt Steel Meeting of Nippon Steel & Sumitomo Metal's Yawata Works — Christmas party for children and others • Participation in "Kokura Gion Festival" • Support of "Kokura illumination" and "Wasshoi Summer Festival" • Plant visits by 24,472 people in 1,139 groups (fiscal 2017)
Oita Works	<ul style="list-style-type: none"> • Support of Joto Spring Festival • Support of local primary and junior high school events • Open use of welfare facilities • Visiting schools to give lectures • Cooperation for Hikari Festival • Cleaning of roads in steelworks vicinity (13 times/year) 	<ul style="list-style-type: none"> • Traffic safety campaigns — Fund-raising for orphaned children — Participation in traffic safety campaigns • Blood donation • Participation in fund-raising, afforestation, cleaning, traffic safety campaigns • Plant visits by 10,578 people in 637 groups (fiscal 2017)
Muroran Works	<ul style="list-style-type: none"> • Support of Muroran Port Festival • Support of Wanishi Shrine • Open use of welfare facilities • Joint disaster-relief training with local fire stations 	<ul style="list-style-type: none"> • Cooperation for and participation in afforestation and cleaning campaigns • Plant visits by 4,384 people in 123 groups (fiscal 2017)
Kamaishi Works	<ul style="list-style-type: none"> • Donation of sports facilities to Kamaishi City • Lending of sports ground to Kamaishi City • Participation in Kamaishi Festivals • Open use of welfare facilities • Lending of company-owned land and facilities • Provision of company owned land for reconstruction assistance 	<ul style="list-style-type: none"> • Cleaning of roads in steelworks vicinity • Participation in traffic accident-prevention campaigns • Participation in environment preservation activities • Promotion of blood donation • Participation in "Meet up Kamaishi" in Kamaishi City • Plant visits by 464 people in 33 groups (fiscal 2017)
Amagasaki Works	<ul style="list-style-type: none"> • Cleaning of roads in steelworks vicinity • Regular cleaning with neighborhood communities • Cherry blossom festival (inviting residents in neighborhood communities and local authorities) • Participation in "The Amagasaki 21st Century Forest Project" • Participation in "Eco Kids Messe" • Participation in "Twilight Clean Campaign" in Amagasaki City 	<ul style="list-style-type: none"> • Participation in "Watering streets" • Participation in "Working Experience Seminar" and "Open Factory IN Amagasaki" • Blood donation • Support of Amagasaki City Residents Festival • Support of summer festival of Kifune Shrine and the grand shrine at Hatsushima • Plant visits by 500 people in 20 groups (fiscal 2017)
Osaka Steel Works	<ul style="list-style-type: none"> • Cleaning of commuting roads • Cooperation for Japan Handicapped Table Tennis Championship • Cooperation for a Ubusuna Shrine summer festival float with a drum inside • Support of Konohana Ward residents festival • Receiving of a work place experience from local junior highschool 	<ul style="list-style-type: none"> • Cooperation for Konohana Physically Handicapped Person Organization — Participation in family sports event — Participation in mandarin picking event • Support of local council of social welfare • Blood donation • Plant visits by 3,787 people in 349 groups (fiscal 2017)
Naoetsu Works	<ul style="list-style-type: none"> • Naoetsu beach cleanup volunteers (About 200 participants, once a year) • Joetsu summer festival participation (About 120 participants for the dance) • Support of local elementary school athletic events 	<ul style="list-style-type: none"> • Plant visits by about 400 people (fiscal 2017)
R&D Laboratories	<ul style="list-style-type: none"> • Clean-up in Hasaki Industrial Park (twice a year) • Kamisu beach cleanup volunteers (once a year) • Cooperation for Futttsu City Festival • Support of the Futttsu Citizens fireworks festival • Blood donation 	<ul style="list-style-type: none"> • Contribution to various charity programs • Agreement with Amagasaki City, Futttsu City and Kamisu City to make available certain facilities as safe shelter in case of tsunami alert issued as a result of a major earthquake
All steelworks	<ul style="list-style-type: none"> • Acceptance of group steelworks visits 	

Support of cultural and sports activities

- | | |
|---|---|
| <ul style="list-style-type: none"> • Children's sketch event in steelworks and ports | <ul style="list-style-type: none"> • Open use of sports facilities. • Support of "V Premier League Kitakyushu Convention Charity Event" |
| <ul style="list-style-type: none"> • Holding of periodic performances by Oita Works drum band "Tesshin Taiko" • Holding of periodic performances by Oita Works brass band | <ul style="list-style-type: none"> • Sports guidance at primary and junior high schools <ul style="list-style-type: none"> — field and track, volleyball, baseball, table tennis, Japanese fencing, judo, etc. • Support of sports events sponsored by Hikari City Sports Association |
| <ul style="list-style-type: none"> • Support of Muroran Music Culture Society • Support of Muroran Techno-Center | <ul style="list-style-type: none"> • Support of "Muroran Sharks" baseball team • Skating workshop for primary school students held by Ice hockey team |
| <ul style="list-style-type: none"> • Lending of materials and documents to Iron and Steel History Museum • Support of "Iron History's Week" events | <ul style="list-style-type: none"> • Guidance of boys' sports teams • Open use of sports facilities • Support of Rugby Festival • Support of "Kamaishi Seawaves RFC" • Dispatch of Kamaishi Works rugby men as lecturers and technical instructors and to the lessons to promote international understanding |
| | <ul style="list-style-type: none"> • Open use of the sports ground by an American football team and flag football teams (of school children) for their training from April 2001 |
| | <ul style="list-style-type: none"> • Support of local children rubber-ball baseball league |
| | <ul style="list-style-type: none"> • Hosting the NSSMC Boys Baseball Cup (Participation by about 260 elementary school boys making up 15 teams) |

Investor Relations

NSSMC is engaged in activities which enable its shareholders and investors to better understand its business strategies, philosophies, and performance. The extensive IR programs are offered, including timely disclosure of useful information and interactive communication with shareholders and investors.

IR Programs

■ For institutional investors and analysts

- Results briefings (Every three months)
- Visits to large institutional investors overseas (regular basis)
- Individual meetings for domestic and overseas institutional investors (on demand)
- Plant tours of steelworks, laboratories and other facilities

■ For shareholders

- Business briefings and plant tours of steelworks

<Events hosted in FY2017>

- Business briefings
4 briefings at 4 different cities (Tokyo, Osaka, Nagoya, Sendai)
Approximately 1,550 visitors participated
- Plant tours
12 tours at 8 different steelworks (Kashima, Kimitsu, Wakayama, Hirohata, Amagasaki, Osaka, Nagoya, Yawata)
Approximately 1,960 visitors participated

<Events hosted since the establishment of NSSMC>

	Business briefings		Plant tours	
	Briefings hosted	Number of participants	Tours hosted	Number of participants
October 2012- March 2018	20 briefings	Approx. 7,300	49 tours	Approx. 6,400

■ Booklets to shareholders

- Distribution of the booklets "To Our Shareholders"

■ IR information on Website

Visit the Investor Relations section of the company's website at <http://www.nssmc.com/en/ir/>

■ Individual shareholder benefits

Benefits	Description	Period of implementation	Applicable shareholders
Company calendar	NSSMC's calendar is distributed to shareholders	Once a year (Late November to early December)	Shareholders who own 500 or more shares as of the end of September
Invitation to plant tours (by lottery)	Shareholders are invited to plant tours	Twice a year (March-April and October-November)	Shareholders who own 1,000 or more shares as of the end of March or September
Invitation to business briefings (by lottery)	Shareholders are invited to business briefings conducted in Tokyo, Osaka, and other locations	Twice a year (February-March and July-September)	
Invitation to football games of Kashima Antlers (by lottery)	Shareholders are invited to J1-League football games (home and away)	Twice a year (April-August and August-December)	Shareholders who own 5,000 or more shares as of the end of March or September
Invitation to concerts at Kioi Hall (by lottery)	Shareholders are invited to periodic Kioi Hall Chamber Orchestra Tokyo concerts and other concerts	Twice a year (April-July and September- February)	

Public Relations

	Head Office	Steelworks and research laboratories	Domestic and overseas offices
Corporate PR activities	Public Relations Center, General Administration Division <ul style="list-style-type: none"> • PR activities directed to mass communications • CSR • Corporate advertisement • PR publications • Website 	General administration Division <ul style="list-style-type: none"> • Publication of in-house magazines • Plant tours • PR activities directed to local mass media 	Coordination Department <ul style="list-style-type: none"> • PR activities directed to local mass media
Sales promotion PR activities	Marketing Administration Department, Marketing Administration & Planning Division <ul style="list-style-type: none"> • Marketing of iron and steel products 	—	—

• **Website** <http://www.nssmc.com/en/>
<http://global.nssmc.com>

- Press releases
- Products information
- Research and development information
- Company outline
- Investor and shareholder information
- CSR Information
- E-mail information service
for subscription: <http://www.nssmc.com/en/company/mail/>
- Publications in PDF format

• **Publication of Picture Books**

Intended mainly for primary school students, the picture books introduce NSSMC's activity in view of "social contribution" and "environment protection."

The books are distributed to steelworks and science museum visitors and used as PR tools at various exhibitions (Japanese version only).

"A New Story About Earth Friendliness"	Jul. 2001 (rev. Mar. 2014) by PR Center
"A New Story About Iron & Steel"	Oct. 2003 by PR Center
"A New Story About the Future of Iron"	Nov. 2004 by PR Center
"A New Story About a Town of Dreams"	Oct. 2005 by PR Center
"A New Story About a Town of Excitement"	Sep. 2006 by PR Center
"A New Story About Oni (Ogres)"	Apr. 2007 by PR Center & POSCO
"A New Story About Blue Planet"	Dec. 2008 by PR Center
"A New Story About Steel and Life"	Sep. 2009 by PR Center
"A New Story About Steel and Civilization"	Oct. 2009 by PR Center
"A New Story About Steel & Bonds of Friendship"	Mar. 2014 by PR Center
"A New Story About Steel Products Everywhere"	Mar. 2017 by PR center

•Publications

Japanese-language publications				
<i>NSSMC Report</i>	Business reports	Annual	6,500 copies	Public Relations Center, General Admin. Div.
<i>NSSMC Sustainability Report</i>	Report concerning environment and social responsibility	Annual	10,000	Environment Div.
<i>NSSMC Quarterly</i>	NSSMC PR magazine providing the latest information about the wide-ranging operations of NSSMC	Quarterly	35,000	Public Relations Center, General Admin. Div.
<i>Basic Facts About Nippon Steel & Sumitomo Metal</i>	Data book about Nippon Steel & Sumitomo Metal	Annual	4,600	Public Relations Center, General Admin. Div.
<i>NSSMC E-mail information service</i>	E-mail information service providing NSSMC press releases and activities	As required		Public Relations Center, General Admin. Div.
<i>NSSMC Technical Report</i>	Collection of technical papers introducing latest R&D achievements	3 times/y	3,000	Technical Research & Development Div.
English-language publications				
<i>NSSMC Report</i>	Business reports	Annual	2,500 copies	Public Relations Center, General Admin. Div.
<i>NSSMC Sustainability Report</i>	Report concerning environment and social responsibility	Annual	1,200	Environment Div.
<i>Basic Facts About Nippon Steel & Sumitomo Metal</i>	Data book about Nippon Steel & Sumitomo Metal	Annual	2,800	Public Relations Center, General Admin. Div.
<i>NSSMC E-mail information service</i>	E-mail information service providing NSSMC press releases and activities	As required		Public Relations Center, General Admin. Div.
<i>NSSMC Technical Report</i>	Collection of technical papers introducing latest R&D achievements	3 (Website version)		Technical Planning Dept., Technical Research & Development Div.
Special-feature publications (Japanese version)				
<i>Easy to Understand Guide to Current and Future Advances in Iron & Steel Making</i>	This re-edited version of the multipart article "The Genesis of Product Making," published in NSSMC PR magazine, introduces NSSMC's advanced technological capabilities, the wellspring of the company's competitiveness. (full-color print, soft cover) I Published in Nov. 2004 II Published in Jan. 2007 III Published in Sep. 2009		¥1,800 (tax not included)	Edited by NSSMC Published by Nippon Jitsugyo Publishing Co., Ltd.
<i>Picture Books "A New Story"</i>			Free distribution	Public Relations Center, General Admin. Div.

•In-house Magazines

Distribution	Magazine			Outline	
Company-wide	<i>Tetsu-no-Kizuna</i>	A4 magazine-type 28-32 pages	10 times/y	50,000 copies	Public Relations Center, General Admin. Div.
Company-wide	<i>NSSMC Newsletter</i>	A4 PDF 10pages	6 times/y	PDF	Public Relations Center, General Admin. Div.
Kashima Works	<i>Kashima</i>	Tabloid 4-8 pages	4 times/y	4,500	Personnel & General Admin. Dept., General Admin. Div.
Kimitsu Works	<i>Kimitsu</i>	Tabloid 8 pages	10 times/y	10,000	Personnel & General Admin. Dept., General Admin. Div.
Nagoya Works	<i>Tokai</i>	A4 magazine-type 12-16 pages	6 times/y	7,500	Personnel & General Admin. Dept., General Admin. Div.
Wakayama Works	<i>Wakayama</i>	Tabloid 4 pages	2 times/y	5,000	Personnel & General Admin. Dept., General Admin. Div.
Hirohata Works	<i>Tetsu-no-Hibiki</i>	B5 magazine-type 16 pages	4 times/y	4,600	Personnel & General Admin. Dept., General Admin. Div.
Yawata Works	<i>Shinsei-Kurogane</i>	A4 magazine-type 16 pages	4 times/y	8,500	Personnel & General Admin. Dept., General Admin Div.
Oita Works	<i>Oita</i>	Tabloid 8 pages	4 times/y	5,000	General Admin. Dept., Personnel & General Admin. Div.
Muroran Works	<i>Shirakaba</i>	Tabloid 4-12 pages	6 times/y	4,000	General Admin. Dept., Personnel & General Admin. Div.
Kamaishi Works	<i>Kamaishi</i>	Tabloid 6 pages	4 times/y	3,000	General Admin. Dept., General Admin. Div.
Osaka Steel Works	<i>Seikousho</i>	Tabloid 6 pages	3 times/y	1,600	General Admin. Dept., General Admin. Div.
Naoetsu Works	<i>Naoetsu</i>	A4 6-8 pages	4 times/y	1,000	General Admin. Dept., General Admin. Div.
R&D Laboratories	<i>Kiwami</i>	A4 magazine-type 8-10 pages	4 times/y	3,500	General Admin. Dept., R&D Planning Div.

• Videograms

Title	Contents	Outline			
Steel-Making in the 21st Century Kashima Works Accepts the Challenge	Production processes and products (Kashima Works)	Oct. 2013	15 min	Japanese English Chinese Korean	Kashima Works
Continuously Challenging with New Spirit	Iron-and steelmaking (Kimitsu Works)	Mar. 2014	11	Japanese English Chinese Korean Portuguese Spanish	Kimitsu Works
Onward with our customers, with our community	History of Nagoya Works Iron- and steelmaking (Nagoya Works)	May 2013	10	Japanese English	Nagoya Works
Power of Steel	Iron- and steelmaking	Sep. 2014	17	Japanese English Chinese	Wakayama Works
No.1 Steel made by No.1 Staff & Tech	Production processes and products (3 books)	Nov. 2017	30	Japanese English	Hirohata Works
Technology that forge the future	History and production processes (Yawata Works)	Dec. 2016	11	Japanese English Chinese Korean	Yawata Works
Steelworks of Water, Green, and Sunlight	Iron- and steelmaking (Oita Works)	Oct. 2012	17	Japanese English Chinese Korean	Oita Works
Eco-friendly Steelworks In Concert with the Community	Environmental Measurements (Oita Works)	Oct. 2012	14	Japanese English Chinese Korean	Oita Works

Title	Contents	Outline			
Developing the future with special steel	Iron- and steelmaking (Muroran Works)	Oct. 2012	8 min 21	Japanese English Chinese Korean Japanese	Muroran Works
Creating Tomorrow As a Top Supplier of High Grade Seamless Steel Pipes and Tubes	Production processes and products	Nov. 2015	13	Japanese English Chinese Korean	Amagasaki Works
METAL EXPRESS Supporting Transportation and Industry in the 21st Century	History of Osaka Steel Works Production processes and products (Osaka Steel Works)	Apr. 2015	13	Japanese English Chinese	Osaka Steel Works

Subsidiaries and Affiliates

Outlines by Business Segment (As of March 31, 2018)

Business segment	Number of companies*		Sales to customers (¥ million)	Number of employees
	Consolidated subsidiaries	Affiliates accounted for by the equity method		
Steelmaking and steel fabrication	300	100	4,983,335	79,501
Engineering and construction	34	3	260,908	4,602
Chemicals	11	8	197,057	1,685
New Materials	12	0	37,050	1,466
System solutions	20	2	190,310	6,303
(Group employees/Adjustments)	0	1	-	
(Semi-Total)	377	114		
Total		491	5,668,663	93,557

Notes:

* Not including NSSMC

1) For the year ended March 31, 2018

2) The figures do not include those seconded to other organizations and part-time workers.

Outlines of Subsidiaries and Affiliates

Major subsidiaries and affiliates (As of March 31, 2018)

Company	Address
● Steelmaking (Subsidiaries)	
Nisshin Steel Co., Ltd.	Shin Kokusai Bldg. 4-1, Marunouchi 3 chome, Chiyoda-ku, Tokyo, Japan
Nippon Steel & Sumikin Coated Sheet Corporation	1-5-6, Nihonbashihonchou, Chuo-ku, Tokyo, Japan
Osaka Steel Co., Ltd.	3-6-1, Dosho-machi, Chuo-ku, Osaka, Japan (Keihanshin-Midosuji Building 11F)
Nippon Steel & Sumikin Metal Products Co., Ltd.	SA Bldg., 2-17-12, Kiba, Koto-ku, Tokyo, Japan
Nippon Steel & Sumikin Pipe Co., Ltd.	1-1-3, Yurakucho, Chiyoda-ku, Tokyo, Japan
Nippon Steel & Sumikin Texeng Co., Ltd.	2-5-2, Marunouchi, Chiyoda-ku, Tokyo, Japan
Nippon Steel & Sumikin Stainless Steel Corporation	1-8-2, Marunouchi, Chiyoda-ku, Tokyo, Japan
Nippon Steel & Sumikin Logistics Co., Ltd.	I. S. Riverside Bldg., 1-23-4, Shinkawa, Chuo-ku, Tokyo, Japan
Nippon Steel & Sumikin SG Wire Co., Ltd.	1-9-1, Marunouchi, Chiyoda-ku, Tokyo, Japan
Geostr Corporation	Koishikawa Sakura Bldg., 1-28-1, Koishikawa, Bunkyo-ku, Tokyo, Japan
Nippon Steel & Sumikin Welding Co., Ltd.	Shingu Bldg., 2-4-2, Toyo, Koto-ku, Tokyo, Japan
Nippon Steel & Sumikin Drum Co., Ltd.	1-5-7, Kameido, Koto-ku, Tokyo, Japan
Nippon Steel & Sumikin Blast Furnace Slag Cement Co., Ltd.	16, Nishi Minatomachi, Kokura Kita-ku, Kitakyushu City, Fukuoka Pref., Japan
Nippon Steel & Sumikin Cement Co., Ltd.	64, Nakamachi, Muroran City, Hokkaido, Japan
Nihon Teppan Co., Ltd.	1-2-5, Nihonbashi, Chuo-ku, Tokyo, Japan
Nippon Steel & Sumikin Finance Co., Ltd.	2-6-1, Marunouchi, Chiyoda-ku, Tokyo, Japan
Nippon Steel & Sumikin Stainless Steel Pipe Co., Ltd.	3-2 Okasato, Koga City, Ibaraki Pref., Japan

(¥ million, unless stated otherwise)

Phone	Established	Paid-in capital	Ratio of voting rights	Sales
81-3-3216-6300	Jul. 1908	30,000	51.3%	614,196
81-3-6848-3900	Feb. 1950	12,588	100.0%	84,865
81-6-6204-0300	May 1978	8,769	66.3%	81,100
81-3-3630-3200	Apr. 1973	5,912	100.0%	117,000
81-3-6758-0275	Sep. 1911	5,831	100.0%	125,837
81-3-6860-6600	Oct. 1946	5,468	100.0%	305,715
81-3-6841-4800	Oct. 2003	5,000	100.0%	258,805
81-3-3553-1331	Apr. 2006	4,000	100.0%	223,547
81-3-3214-4131	May 1938	3,634	100.0%	62,354
81-3-5844-1200	Mar. 1970	3,352	42.3%	33,640
81-3-6388-9000	Jul. 2002	2,100	100.0%	23,027
81-3-5627-2311	Oct. 1934	1,654	100.0%	21,503
81-93-563-5100	Feb. 1999	1,500	100.0%	13,164
81-143-44-1693	Jun. 1954	1,500	85.0%	14,431
81-3-3272-5112	May 1955	1,300	100.0%	132,981
81-3-6867-2911	Jul. 1986	1,000	100.0%	353
81-280-98-2468	Oct. 1950	916	100.0%	14,823

Company	Address
Nippon Steel & Sumikin Steel Wire Co., Ltd.	7 Nozomigaoka, Seki City, Gifu Pref., Japan
Nippon Steel & Sumikin Eco-Tech Corporation	1-18-1, Kyobashi, Chuo-ku, Tokyo, Japan
Nippon Steel & Sumikin Bolten Corporation	1-4-16, Midorigi, Suminoe-ku, Osaka, Japan
Nippon Steel & Sumikin Shapes Corporation	1850 Minato, Wakayama City, Wakayama Pref., Japan
Nippon Steel & Sumikin Koutetsu Wakayama Corporation	1850 Minato, Wakayama City, Wakayama Pref., Japan
NIPPON STEEL AND SUMIKIN TUBOS DO BRASIL LTDA.	Rua Humaita, 275, 10 andar, parte 2, Rio de Janeiro, RJ, Brasil, CEP 22261-005
NS-Siam United Steel Co., Ltd.	12, Soi G2, Pakorn Songkrohraj Rd., Maptaphut, Muang Rayong, Rayong 21150, Thailand
National Pipe Company Limited	P.O.Box 1099 Al-Khobar 31952, Saudi Arabia
Standard Steel, LLC	500 N Walnut Street, Burnham, PA 17009, U.S.A.
NIPPON STEEL & SUMITOMO METAL U.S.A., INC.	1251 Avenue of the Americas, Suite 2320, New York, NY 10020, U.S.A.
PT. PELAT TIMAH NUSANTARA TBK.	Krakatau Steel Bldg. 3rd Floor, Jl. Jendral Gatot Subroto Kav. 54, Jakarta 12950, Indonesia
NIPPON STEEL & SUMITOMO METAL (Thailand) Co., Ltd.	909, Ample Tower, 14th Floor, Bangna-Trad Road, Khwang Bangna, Khet Bangna, Bangkok, Thailand
NIPPON STEEL & SUMITOMO METAL Australia Pty. Limited	Level 5 20 Hunter Street SYDNEY NSW 2000 Australia
NIPPON STEEL & SUMIKIN Steel Processing (Thailand) Co., Ltd.	64/5 Moo 4 Eastern Seaboard Industrial Estate, Tambol Pluakdaeng, Amphur Pluakdaeng, Rayong 21140, Thailand

(¥ million, unless stated otherwise)

Phone	Established	Paid-in capital	Ratio of voting rights	Sales
81-575-25-6511	Jun. 2006	697	51.0%	12,514
81-3-6862-8700	Sep. 1970	500	85.1%	25,802
81-6-6682-3261	Sep. 1964	498	85.0%	10,318
81-73-454-1131	Jul. 1991	400	100.0%	17,065
81-73-451-2355	Nov. 2003	100	100.0%	289,519
55-21-3550-1581	Dec. 2010	BRL 2,002mln	100.0%	BRL 19mln
66-3868-5144	Jun. 2011	THB 13,007mln	80.2%	THB 34,941mln
966-13-882-5266	Aug. 1978	SR 200mln	51.0%	SR 407mln
1-717-248-4911	1795	USD 47mln	100.0%	USD 229mln
1-212-486-7150	Nov. 1972	USD 40mln	100.0%	USD 202mln
62-21-520-9883	Oct. 1982	USD 26mln	35.0%	USD 152mln
66-2-744-1480	Apr. 2011	THB 718mln	100.0%	THB 137mln
61-2-8036-6600	Mar. 1977	AUD 21mln	100.0%	AUD 667mln
66-38-954-435	Jan. 2013	THB 571mln	66.5%	THB 4,506mln

Company	Address
●Steelmaking (Affiliates)	
Godou Steel, Ltd.	8th Floor, Toyobo Bldg., 2-2-8, Dojimahama, Kita-ku, Osaka, Japan
Topy Industries, Limited	1-2-2, Osaki, Shinagawa-ku, Tokyo, Japan
Sanyo Special Steel Co., Ltd.	3007, Nakashima, Shikama-ku, Himeji City, Hyogo Pref., Japan
Kyoei Steel Ltd.	1-4-16, Dojimahama, Kita-ku, Osaka, Japan
Nippon Steel & Sumikin Bussan Corporation	8-5-27, Akasaka, Minato-ku, Tokyo, Japan
Nippon Denko Co., Ltd.	1-4-16, Yaesu, Chuo-ku, Tokyo, Japan
Nichia Steel Works, Ltd.	19, Nakahama-cho, Amagasaki City, Hyogo Pref., Japan
NS United Kaiun Kaisha, Ltd.	Otemachi First Square West Tower, 1-5-1, Otemachi, Chiyoda-ku, Tokyo, Japan
Unipres Corporation	1-19-20 Shin-Yokohama, Kohoku-ku, Yokohama City, Kanagawa Pref., Japan
Osaka Titanium Technologies Co., Ltd.	1 Higashihama-cho, Amagasaki City, Hyogo Pref., Japan
Nippon Coke & Engineering Co., Ltd.	3-3-3, Toyosu, Koto-ku, Tokyo, Japan
Japan Casting & Forging Corporation	46-59, Sakinohama, Nakabaru, Tobata-ku, Kitakyushu City, Fukuoka Pref., Japan
Krosaki Harima Corporation	1-1, Higashi Hamamachi, Yahata Nishi-ku, Kitakyushu City, Fukuoka Pref., Japan
Sanko Metal Industrial Co., Ltd.	4-13-23, Shibaura, Minato-ku, Tokyo, Japan
Sanyu Co., Ltd.	3-1-1, Kasuga Kitamachi, Hirakata City, Osaka, Japan
Usinas Siderúrgicas de Minas Gerais S.A.- USIMINAS	Rua Prof. Jose Vieira de Mendonca, 3.011-Engenho Nogueira, 31310-260-Belo Horizonte, Minas Gerais, Brasil
Vallourec Soluções Tubulares do Brasil S.A.	Rua Industrial, s/n, Distrito Industrial, Jeceaba, MG, CEP 35498-000, Brasil
Baosteel-NSC Automotive Steel Sheets Co., Ltd.	Cold Rolling Comprehensive Building, Wei Wu Road, Baosteel, Baoshan District, Shanghai 201900, P.R. China
WISCO-NIPPON STEEL Tinplate Co., LTD.	Changqian, Qingshan District, Wuhan City, Hubei Province, China
UNIGAL Ltda.	Av. Pedro Linhares Gomes, 5431-A, Bairro Usiminas, Ipatinga, MG, CEP 35160-900, Brasil
Companhia Nipo-Brasileira de Pelotizacao	Tubarao-Vitoria, Espirito Santo, Brasil
Guangzhou Pacific Tinplate Co., Ltd.	No. 102, Youyi Road, Guangzhou Economic & Technological Development, Guangzhou City, P.R. China

(¥ million, unless stated otherwise)

Phone	Established	Paid-in capital	Ratio of voting rights	Sales
81-6-6343-7600	Dec. 1937	34,896	17.8%	129,779
81-3-3493-0777	Oct. 1921	20,983	20.6%	230,462
81-79-235-6003	Jan. 1935	20,182	15.3%	157,485
81-6-6346-5221	Aug. 1947	18,515	26.7%	191,254
81-3-5412-5001	Aug. 1977	12,335	36.8%	2,062,316
81-3-6860-6800	Jan. 1935	11,026	21.0%	71,346
81-6-6416-1021	Jun. 1952	10,720	24.2%	28,281
81-3-6895-6400	Apr. 1950	10,300	33.4%	139,000
81-45-470-8250	Mar. 1945	10,080	16.4%	330,890
81-6-6413-9911	May 1997	8,739	23.9%	43,431
81-3-5560-1311	Jan. 1889	7,000	23.8%	110,155
81-93-884-0011	Jun. 1979	6,000	42.0%	17,358
81-93-622-7224	Oct. 1918	5,537	47.0%	123,977
81-3-5446-5600	Jun. 1949	1,980	39.8%	35,019
81-72-858-1251	Jan. 1957	1,513	34.8%	17,220
55-31-3499-8000	Jan. 1958	BRL 13,200mln	31.4%	BRL 10,734mln
55-31-2141-5124	Jul. 2007	BRL 8,688mln	15.0%	BRL 3,302mln
86-21-2664-3526	Jul. 2004	RMB 3.0bln	50.0%	RMB 14.9bln
86-27-8621-9283	Oct. 2011	RMB 2.3bln	50.0%	RMB 2.4bln
55-31-3829-4578	Jun. 1999	BRL 584mln	30.0%	BRL 361mln
55-27-3333-5179	Mar. 1974	BRL 432mln	33.0%	BRL 880mln
86-20-8221-3620	Dec. 1994	USD 36mln	27.3%	USD 141mln

Company	Address
●Engineering & Construction (Subsidiary)	
Nippon Steel & Sumikin Engineering Co., Ltd.	1-5-1, Osaki, Shinagawa-ku, Tokyo, Japan
●Chemical (Subsidiary)	
Nippon Steel & Sumikin Chemical Co., Ltd.	4-14-1, Sotokanda, Chiyoda-ku, Tokyo, Japan
●New Materials (Subsidiary)	
Nippon Steel & Sumikin Materials Co., Ltd.	7-16-3, Ginza, Chuo-ku, Tokyo, Japan
●System Solutions (Subsidiary)	
NS Solutions Corporation	2-20-15, Shinkawa, Chuo-ku, Tokyo, Japan

(¥ million, unless stated otherwise)

Phone	Established	Paid-in capital	Ratio of voting rights	Sales
81-3-6665-2000	Feb. 2006	15,000	100.0%	294,269
81-3-5207-7600	Oct. 1956	5,000	100.0%	200,767
81-3-6853-6260	May 2006	3,000	100.0%	37,051
81-3-5117-4111	Oct. 1980	12,952	61.3%	244,216

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• Akita Marketing Site

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• Kitakami Marketing Site

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Fax: 81-143-47-2701

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