NSSMC’s Logotype

The central triangle in the logo represents a blast furnace and the people who create steel. It symbolizes steel, indispensable to the advancement of civilization, brightening all corners of the world. The center point can be viewed as a summit, reflecting our strong will to become the world’s leading steelmaker. It can also be viewed as depth, with the vanishing point representing the unlimited future potential of steel as a material. The cobalt blue and sky blue color palette represents innovation and reliability.
Committed to Challenges of Sustainable Social Development through Innovative Technological Development and the “Three Ecos”

Nippon Steel & Sumitomo Metal Corporation (NSSMC) manufactures high-grade steel products and achieves the world’s highest level in energy efficiency in steelmaking by doing. The “eco-products,” manufactured in the “eco-process” (manufacturing processes) developed by the company, are available to our customers worldwide. By using our steelmaking infrastructure, we are also developing eco-solutions ranging from the recycling of waste plastics and discarded tires to activities that promote harmonious coexistence with nature while supporting society and industry. These “three ecos” are based on our innovative technological development activities that are a part of our company’s corporate philosophy, “contributing to social development.”

Start of our environmental and energy programs toward the 2050 target.

Toward 2050

NIPPON STEEL & SUMITOMO METAL CORPORATION Sustainability Report 2013

CONTENTS

- A Message from Top Management
- Management System
- Corporate Governance
- Internal Controls and Compliance
- Environmental Report
  - Basic Environmental Policy
  - Targets and Achievements in FY2012
  - Energy and Material Balance
  - Promotion of Global Warming Countermeasures
  - Contribution to Create a Recycling-oriented Society
  - Promotion of Environmental Risk Management
  - Promotion of Environmental Management
  - Offering of Environmental and Energy Solutions
- Social Report
  - Nippon Steel & Sumitomo Metal Group and Its Stakeholders
  - Partnerships with Local Communities
  - Partnerships with Customers and Suppliers
  - Partnerships with Shareholders and Investors
  - Partnerships with Young People
  - Partnerships with Employees
  - Partnerships with External Organizations and NGOs
  - Various Communication Activities
  - Awards and Commendations from External Organizations
- Third-party Opinion
- Corporate Profile & Financial Indicators
- Environmental and Social Aspects of NSSMC and Its Group Companies
- Economic Aspects of NSSMC
- Scope of the Annual Report and the Sustainability Report
- Annual Report
- Sustainability Report

Editorial policy

With this is the first sustainability report issued by Nippon Steel & Sumitomo Metal Corporation (NSSMC), it is the 16th report since the former Nippon Steel Corporation issued the first sustainability report in 1998. This report mainly presents contents of NSSMC’s "Environmental Report", and "Social Report", with some reference made to activities conducted by NSSMC’s group companies in Japan and overseas.

Period covered

The period covered in the report is fiscal year 2012 (from April 2012 to March 2013). For some activities, the period from April 2013 to June 2015 is included.

Scope of report

- Environmental and social aspects: Activities of NSSMC and its group companies in Japan and overseas.
- Economic aspects: The Annual Report for 2013 (issued in July 2013) also covers the contents of the economic report.

Reference for guideline

- Global Reporting Initiative: Sustainability Reporting Guidelines Version 3.1
- "Environmental Reporting Guidelines," by the Ministry of the Environment

Scope of the Annual Report and the Sustainability Report

This report focuses mainly on “overall management,” which includes messages from the Chairman and the President on the corporate philosophy of “Contributing to social development” and sustainable growth, performance highlights, the Medium-term Management Plan, an outline of each business segment, the basic that supports growth, and financial information.

Sustainability Report

The sustainability report consists of a message from the Chairman and the President concerning the environmental and social aspects, an environmental report which covers global warming countermeasures, the building of a recycling-oriented society, environmental risk management, and so on, and a social report concerning stakeholders, including the local community, customers, suppliers, shareholders, investors, young people, teachers, employees, external organizations, and NGOs.
Developing Environmental and Energy Solutions, and Creating World-leading Technologies and Manufacturing Capabilities

With the integration of Nippon Steel Corporation and Sumitomo Metal Industries Ltd. in October 2012, we have made a fresh start as Nippon Steel & Sumitomo Metal Corporation. After adopting the Medium-Term Management Plan in March 2013, we are proceeding with company-wide efforts with the aim of becoming the “Best Steelmaker with World-Leading Capabilities” by enhancing advantages of scale, cost, technology, customer service, and making other accomplishments.

Progress was made on the issue of global warming at COP18 (the 18th Session of the Conference of the Parties to the United Nations Framework Convention on Climate Change) held in Qatar in December 2012. All of the major emitting countries agreed that discussions should be commenced on creating a new framework for 2020 onward. Aiming at world CO₂ emissions reduction, the first commitment period of the Kyoto Protocol that began during our fiscal year 2008 ended in our fiscal year 2012. During this period, we set for ourselves the formidable challenge of a 10% reduction in energy consumption (9% reduction of CO₂ emissions) on average in five years starting with fiscal year 1990 as the base year, and we have worked to reduce CO₂ emission. As a result, we have achieved an 11.2% reduction, which exceeds our initial target, by such means as investing in energy-saving equipment and facilities, and improving operations. We pledge to remain vigilant and strengthen our efforts at CO₂ reduction.

Meanwhile, power supply concerns based on most of Japan’s nuclear power plants being idle, combined with recent increases in electric power rates, have caused profound impact on industrial competitiveness and the general lifestyle of the people. Therefore, the national economy at present considerably depends upon achieving the best energy mix, by means such as the resumption of nuclear power plant operation and augmented use of renewable energy resources. Against this backdrop, we have recognized the idea that our social mission lies in contributing to solutions to environmental and energy issues through the maximum utilization of our world-leading technology and capability, as a manufacturer based in Japan, in order to balance economic growth and environmental preservation. To all our stakeholders, we promise that we will make full efforts in the interests of the environment, by achieving the following goals, with the aid of our integrated synergy effects.

We will contribute to solutions to global warming and energy issues with three “eco solutions.”

The first eco solution involves CO₂ emission reduction in production processes (eco process). While we already have at our production sites the world’s highest energy efficiency in steel production, we will work to further reduce CO₂ emissions by investing in energy-saving equipment and facilities, and by continuing to improve operations. The second eco solution is overall CO₂ emissions reduction, achievable in the stage of end-users through their use of our highly functional steel products for automobiles, home appliances, vessels, wheelchair sets for railroads, and high-efficiency power generation, etc. (eco products). We plan to further increase the ratio of eco products by stronger marketing of our high-strength high-tensile-strength steel (HI-TEN) and electrical sheet steel which have high energy-saving potential, our boiler tubes for high-efficiency thermal power generation, and our steel products for wind power generation and use of other renewable energy resources. The third eco solution is contribution to global CO₂ reduction by transferring and disseminating overseas our energy-saving technology and environmental management systems that we have accumulated over the years (eco solutions). In particular, our active efforts to promote energy-saving equipment will be directed at China, India, and Southeast Asian countries, where economies are booming and where CO₂ emissions are rapidly increasing.

We will further sophisticate our competitive edge and actively work on the development of innovative technologies.

To thoroughly develop the three “ecos” (eco process, eco products, and eco solutions), we must maintain and enhance our competitive edge, while accurately recognizing diverse social needs in the fields of the environment and energy. To date, our efforts have produced many environmentally efficient technological innovations. One such effort involves next-generation coke-oven plants capable of expanding the use of low-grade coking coal, significantly saving energy, and reducing the burden on the environment. Such coke plants were built for the first time in Japan at our Ueta Works and Nagoya Works. Our strength lies in the possession of a wholly integrated R&D system, from basic research to applied development and engineering. Based on one of the largest-scale, most-comprehensive R&D organizations in the global steel industry, we are intent on leading technological development for environmental conservation and energy saving by accelerating the development of new, highly functional steel products and innovative production processes.

We will further promote environment management to better coexist with local communities and nature through environmentally conscious production and by creating both homeland forests and marine forests.

It is our belief that, as part of the pursuit of corporate growth, we must make environmental efforts at every business activity stage. All of our steelworking facilities, therefore, maintain an environmentally friendly manufacturing site that can foster diverse plant and animal life through employees’ activities to carefully protect local or regional “homeland” forests, which have been created by employee forestation activities. We also intend to promote creation of marine forests—an activity designed to revive seaweed beds through the use of slag, which is a by-product generated in the process of iron and steel manufacturing—in cooperation with local fisheries, government organizations, and environmental NGOs. Iron and steel slag is effective in the reforming of sediment, deposited by the tsunami in the Great East Japan Earthquake, into good hard soil, as well as in the desalinization of farmland damaged by the tsunami. In this manner, we will participate in support for the restoration and rehabilitation of the stricken areas with full consideration regarding environmental implications.

Conclusion

By developing bilateral communication with all stakeholders, i.e., shareholders, investors, customers, local communities, government organizations, researchers, and environmental NGOs, we intend to refine the environmental endeavors that are an integral part of our business administration. In keeping with the corporate philosophy of contributing to social development through the pursuit of world-leading technologies and manufacturing capabilities, and through the provision of excellent products and services, we will engage in environmental conservation activities and fulfill our corporate social responsibility (CSR) while observing laws and regulations, so that we can maintain the trust of all stakeholders.

Sustainability Report 2013 is our first publication as Nippon Steel & Sumitomo Metal Corporation. Please take a look at it; we are ready to learn from your candid opinions regarding our environmental and CSR activities.
Management System

In accordance with its corporate philosophy, Nippon Steel & Sumitomo Metal (NSSMC) aims at building a dynamic NSSMC Group. To achieve this, we have a corporate governance structure and internal control system, and mechanisms for cooperation for auditing. Through this, we seek to ensure the efficiency, soundness, and transparency of management, and enhance our corporate governance with the ultimate aim of achieving sustainable improvement in corporate value and earning the trust of society.

1 Corporate Governance

Corporate Governance Structure and Internal Control System

NSSMC’s Articles of Incorporation stipulate that, as a statutory institution, the Company shall have not more than 20 directors, a Board of Directors, not more than seven Audit & Supervisory Board Members, an Audit & Supervisory Board, and accounting auditors. The Board of Directors makes decisions on and supervises the execution of business in a proper and prompt manner and seeks to improve the quality of management. The Auditors hold strong auditing authority and maintain integrity, objectivity, and independence when monitoring and overseeing the execution of duties by directors. NSSMC believes that these two boards are effective and appropriate for ensuring sound corporate governance, which ultimately helps raise corporate values of the company.

In addition, to make clear the responsibilities for the results of each business segment, we have adopted an Executive Management System to support directors in their efforts to ensure the proper execution of business activities.

1 Directors & Corporate Auditors

Currently, NSSMC has 12 directors (with a term of office of one year) and seven corporate auditors including four outside corporate auditors (with a term of office of four years).

1 Board of Directors

Important matters related to NSSMC and its group management are deliberated at the Corporate Policy Committee, which consists of the Chairman, President, vice presidents and other officers, and which in principle meets weekly. Subsequent decisions are made by the Board of Directors that meets once or twice a month. In addition, 16 company-wide committees, each established to achieve a particular purpose, serve as consultative bodies to the Corporate Policy Committee and the Board of Directors.

1 Audit and Supervisory Board

The Audit & Supervisory Board has four outside members who have vast experience and deep understanding of regulations and soundness, and transparency of management, and enhance our corporate governance with the ultimate aim of achieving sustainable improvement in corporate value and earning the trust of society.

Internal Controls & Risk Management System

NSSMC has adopted the Basic Policy Concerning Internal Control Systems at its Board of Directors’ meeting and Basic Rules for Internal Control, as the basis of a system for internal controls and risk management.

- Annual plans for internal control and risk management are formulated and carried out.
- The state of progress in implementing annual plans, and matters concerning internal controls and risk management, are regularly reported at the Risk Management Committee, chaired by an executive vice president.
- One person in charge of risk management and one person responsible for risk management are appointed in each NSSMC division and group company. Information on internal controls and risk management is shared by all the organizations through meetings held on a regular basis.
- An inspection and audit system for internal controls and risk management is used to confirm the state of internal controls of the entire NSSMC Group on a regular basis.
- As a part of the internal report systems, there are a Compliance Consulting Room and a Compliance Hotline as well as the corporate legal counsel to provide guidance to and accept reports from Group employees and business counterparts with the aim of assisting the prevention of accidents and violation of laws and regulations as well as the improvement of business activities.

Compliance Education

As an important part of its management philosophy, the NSSMC Group is determined to remain a corporation that values credibility and trust. Through education sessions on legal subjects for employees, and other means, the top executives deliver messages to that effect personally and urge all the employees to comply with laws and regulations.

In particular, in regard to the Anti-Monopoly Act, of which we were found in violation in the past, we make every December “Anti-Monopoly Act Compliance Month” and hold seminars for all sales personnel while the President personally issues a clear and strong message requiring all persons to prevent the recurrence of similar violations. At the same time, efforts are made to have Guidelines on Prohibition of Contact with Competitors, our internal rules on compliance with the Anti-Monopoly Act, thoroughly understood by the employees. The state of compliance with the guidelines is audited every year to confirm proper application.

Further, we have prepared textbooks to help ensure fair conduct of business by employees, and efforts are being made to have them completely understood the importance of this, through educational sessions designed for various levels of employees and e-learning programs. The textbooks include Unacceptable Acts: 30 No’s, Compliance Guidelines Regarding Illegal Corporate Activities, Toward Prevention of Sexual and Power Harassment in the Office, Guidelines for Prevention of Harassment and Maintenance of A Good Working Environments, and Handbook of Fair Transactions, guidelines for proper operation concerning financial reporting and tax matters.
Environmental Report

Nippon Steel & Sumitomo Metal (NSSMC) is a corporation whose business activities exert a large influence on the environment. This is borne out by the fact that we consume approximately 5% of the total energy used throughout Japan. For this reason, we see comprehensive "environmental management" throughout the group companies as an integral part of our mission. We are dedicated to managing the company so as to reduce and minimize impact on the environment at all stages, from technological development work to the purchase of raw materials and equipment, manufacturing processes, transportation of products, and onward to their use, recycling and disposal.

Environmental Report

1 Basic Environmental Policy

Basic Environmental Policy (Established in October 2012)

Under the principle of "Ecological Management," NSSMC is committed to contributing to the creation of an environmental-preservation oriented society with lower environmental impact. For this purpose, the company will conduct business activities based on the viewpoint of environmental preservation in local communities, which includes the maintenance and improvement of good living environments and the promotion of reduction and recycling of waste. The company will also address challenges on a global scale including response to issues of global warming as well as the maintenance and improvement of biological diversity.

1. Reducing environmental impacts at every stage of operations (eco process)
   As one of the major iron and steel companies, including production processes and transport of products, NSSMC will, besides complying with environmental laws and regulations, promote activities to reduce environmental impacts primarily through voluntary efforts, in cooperation with customers and other industries, with the aim of further improving environmental preservation and the efficiency of resources and energy, and of promoting reduction and recycling of waste inside and outside the company.

2. Offering of environment-oriented products (eco products)
   With the aim of reducing environmental impacts at every stage of the life cycle of our products offered to domestic and overseas markets, NSSMC will make efforts, making good use of its innovative technologies, to develop and offer products that contribute to environmental preservation, resource conservation and energy conservation.

3. Proposing environmental preservation solutions from a global perspective (eco solution)
   NSSMC will further improve its long-accumulated technologies and environmental management system that are related to environmental preservation, resource conservation, and energy conservation technologies. We offer them in Japan and abroad to contribute to, in addition to the reduction of environmental impacts, the development of infrastructure for disaster prevention with due consideration given to nature and society as well as to solving environmental issues outside Japan through technology transfer.

Medium-Term Environmental Management Plan for FY2014

*Please refer to NSSMC’s website for details.

Further enhancement and promotion of environmental management

Promotion of adequate actions to prevent environment and energy accidents

Promotion of business related to environment and energy solutions

Contribution to create a recycling-oriented society

Promotion of environmental relations activities

Medium-Term Environmental Management Plan (from FY2010)

Energy-related CO2 emissions were reduced by 6% during the period from 2008 to 2012, in comparison with the 1990 level.

With regard to the reduction of CO2 emissions from the 1990 level during the five-year period from FY2010, NSSMC achieved an 11.2% reduction (on a provisional basis), which was above the target, through reduction in production volume in addition to the energy conservation activities, despite increased use of energy due to environmental measures and the production of high-end steel.

With the aim of creating a recycling-oriented society, we made efforts to reduce the volume of final disposal through increased recycling of by-products. In regard to our efforts to attain an average of 9% reduction of CO2 emissions from the level of FY1990 during the five year period, NSSMC achieved an 11.2% reduction (on a provisional basis), which was above the target.
Energy and Material in the Business Activity: Their Interrelationship Based on Recycling and Its Impact on the Environment

NSSMC uses iron ore mined overseas, coal as an iron ore reducer, and scrap generated by society as its main raw materials for steel production. By-product gases, such as coke oven gas generated by dry distillation of coal in the steel manufacturing process and blast furnace gas generated from blast furnaces, are fully utilized as fuel gas for steel heating furnaces or energy sources for power generation plants on the premises of steelworks.

Electricity generation by recovering waste heat helps raise the heat efficiency of the whole steelworks to around 70%. In addition, more than 90% of water for cooling or washing products and production facilities is recycled and reused. When one ton of iron is produced, the amount of by-products generated exceeds 600 kg, but the steel slag, dust, and sludge are reused in-house as raw materials, or are used by society or other corporations as raw materials for cement, construction materials, and so forth.

These efforts have resulted in the achievement of a very high recycling rate of approximately 99%.

We are also engaged in the recycling of various types of by-products generated by society or other industries by utilizing our steelmaking processes that are carried out at high temperature and high pressure. In recent years, we have been actively recycling waste plastics, waste tires, and other waste materials.
Promotion of Global Warming Countermeasures

NSSMC promotes energy conservation and CO2 emissions reduction throughout the entire supply chain: manufacturing, transportation, and final use of products. We also actively work on innovative technology development and transfer of established technology to our overseas operations, helping them to contribute to CO2 reduction over the medium- and long-term.

Manufacturing sector

Activities for reducing CO2 and conserving energy during production

From the time the first oil crisis until around 1990, Nippon Steel intensively promoted continuous processing, exhaust heat recovery, and other measures, that enabled significant energy conservation. The Japan Iron and Steel Federation (JSIF) members including former Nippon Steel and former Sumitomo Metals adopted voluntary action plans with a goal of 10% reduction in energy consumption (CO2 emissions reduction of 9%) for FY2008–2012 over FY1990 and made efforts to achieve this goal. The average energy consumption of the former Nippon Steel Group from FY2008 up to September 2012 and subsequently of the NSSMC Group through FY2012 was less than that of FY1990 by 11.2% (CO2 emissions reduction of 11.2%), exceeding the JSIF goal. From FY2013 on, NSSMC will continue energy conservation efforts to achieve the FY2020 goal of JSIF’s action plans for a low carbon society (CO2 reduction of 5 million tons from expected CO2 emissions under certain production assumptions, through the maximum use of cutting-edge technologies).

Energy conservation and CO2 emissions reduction

The most effective measure against global warming is energy conservation, and thus, NSSMC is striving to improve energy efficiency by efficiently using energy generated in steelmaking processes, including power generation through by-product gas, or exhaust heat recovery, or by reusing waste plastics and discarded tires. As a result of these efforts, the NSSMC Group (NSSMC and affiliated electric furnace companies) consumed 1,086 PJ energy in FY2012, achieving a 9.0% reduction over the FY1990 level, while implementing new environmental measures and meeting the demand for higher-grade steel.

The NSSMC Group’s CO2 emissions were 93.5 million tons in FY2012, an 8.7% reduction from the FY1990 level. 2

Japan Iron and Steel Federation’s action plans for a low carbon society

In the ongoing voluntary action plans, the Japanese steel industry promotes three “ecos”: energy conservation in own manufacturing process (eco process); and CO2 reduction on energy conservation in own manufacturing process (eco products); CO2 reduction in final products containing high-performance steel materials (eco products); and CO2 reduction on energy conservation in own manufacturing process (eco process); CO2 reduction in final products containing high-performance steel materials (eco products).

LOGISTICS

Promotion of Global Warming Countermeasures

NSSMC transports approximately 1 billion ton-kilometer of steel products and semi-finished products every month. Historically, we have made joint efforts for logistics efficiency with the logistics companies within the NSSMC Group, such as the improvement of transportation efficiency and fuel economy.

Efforts to improve the transportation efficiency include shortening ships’ time at berth for loading and unloading by improving cargo handling efficiency or using larger vessels (changing from 700 tons to 1,500 tons vessels), in addition to maintaining and improving high-modal shift rates.

To improve fuel economy, in land transportation for example, we have installed digital tachometers for fuel-efficient driving and introduced efficient energy efficient tires and lightweight vehicles. In marine transport, fuel economy improvement measures have also been implemented and expanded the range of application. In addition to conventional measures, the usage of packing materials has been reduced by creating shipping systems for sheet products that do not require packing. For transporting large quantities of steel products in one shipment, a system has been introduced that combines the ship and land vehicle scheduling knowing how accumulated over many years and the latest automatic distribution optimization methods. We are also working on adopting a new optimal ship and land vehicle distribution system. We will further strive to significantly reduce CO2 emissions through early realization of synergy effects of the merger of former Nippon Steel and former Sumitomo Metals by improving logistics efficiency through an optimal production system and transportation efficiency by reviewing the logistics system.

Transportation sector

CO2 reduction efforts in logistics

NSSMC has implemented a policy of lights-out during lunch breaks, a business-casual dress code during summer, eco(no)-working days, etc. in offices, as part of the energy-saving activities.

In order to encourage our employees make energy-saving efforts at home and actually reduce emissions, we have promoted “ECO-Kakeibo” (household bookkeeping) on a company-wide scale. Our “ECO-Kakeibo” system is used by over 10,000 employees’ families. They keep records of usage of electricity, gas, kerosene, gasoline, etc. and to thereby know the actual amount of household CO2 emitted. Doing so contributes to reducing CO2 emission at home by visual representation of data, such as CO2 emissions per family member and comparison of the average usage data of families of each business division.

Promotive sector

Efforts made in office and at home

In addition to concerted efforts to reduce CO2 emissions in the manufacturing process, NSSMC has implemented a policy of lights-out during lunch breaks, a business-casual dress code during summer, eco(no)-working days, etc. in offices, as part of the energy-saving activities.

In order to encourage our employees make energy-saving efforts at home and actually reduce emissions, we have promoted “ECO-Kakeibo” (household bookkeeping) on a company-wide scale. Our “ECO-Kakeibo” system is used by over 10,000 employees’ families. They keep records of usage of electricity, gas, kerosene, gasoline, etc. and to thereby know the actual amount of household CO2 emitted. Doing so contributes to reducing CO2 emission at home by visual representation of data, such as CO2 emissions per family member and comparison of the average usage data of families of each business division.

* Provisional data for 2012

Fig. 1 Japan Iron and Steel Federation’s Action Plans for a Low Carbon Society

Eco process

Achieving improved energy efficiency in the steelmaking process, which is currently the most efficient in the world (CO2 reduction of 5 million tons from the amount of CO2 emissions expected under certain production assumptions).

Eco products

By promoting high-performance steel materials, which are essential to build a low carbon society, contribute to emissions reduction when they are used in final products. (Typical high-performance steel materials are estimated to help reduce approximately 3.3 million tons of CO2 emissions in 2020.)

Eco solution

By transferring to and promoting the world’s best energy-saving technologies cultivated through the eco process mainly in developing countries, contribute to a global reduction in energy use. (This is estimated to contribute to a reduction of approximately 70 million tons CO2.)

Fig. 2 Development of innovative steelmaking process “COURSE 50”

The level of CO2 emissions is reduced by approximately 30% in the steelmaking process, through iron ore reduction with hydrogen and separation of recovery of CO2 from blast furnace gas. The project’s goal is to commercialize the first unit by around 2030* and adopt the technology elsewhere by around 2050, depending on the timing of replacing blast furnace equipment.

* Based on the assumption that CO2 saving infrastructure and communication are economically rationalized.
CO₂ Ultimate Reduction in Steelmaking Process by Innovative Technology for Cool Earth 50 (COURSE 50) Project

Since FY2008, four blast furnace steelmakers including us, and Nippon Steel & Sumikin Engineering, have been working on the “CO₂ Ultimate Reduction in Steelmaking Process by Innovative Technology for Cool Earth 50 (COURSE 50) Project” aimed at developing dramatically new CO₂ reduction technologies. Its goal is to reduce CO₂ emissions in the steelmaking process by 30% through technology that reduces iron ore using hydrogen amplified coke oven gas to curb CO₂ emissions from blast furnaces as well as technology that separates and recovers CO₂ from blast furnace gas using unused exhaust heat in steelworks.

By FY2012, NSSMC conducted verification tests of CO₂ separation and recovery from blast furnace gas and hydrogen amplification of coke oven gas at Kimitsu Works. At Kamaishi Works, we conducted low-temperature exhaust heat recovery verification tests, among others. These tests played a large part in obtaining desired research results for Phase 1. We will also play a core role in Phase 2 (from FY2013 to FY2017), which is based on mini blast furnace development tests, in preparation for commercialization in 2030.

New coke furnace at Nagoya Works using the next-generation coke-making technology (“SCOPE 21”)

In May 2008, the first commercial model that fully embodies the world’s first next-generation coke-making technology “SCOPE 21” was installed at the No. 5 coke oven of our Oita Works. It has been operating smoothly. Based on this experience, the No. 5 coke oven of our Nagoya Works began operation in June 2013, as the second commercial model. “SCOPE 21” is the technology developed under a national project of the Ministry of Economy, Trade and Industry to better address resource and energy problems. It shortens coke-making time, improves coke quality, and incorporates various other innovative technologies. It is expected to allow wider use of low-grade raw coal and bring about significant CO₂ reduction.

According to the assumptions of the JISF’s action plans for a low carbon society, released by the Japanese steel industry, and others. In March 2013, ISO 14404, “Calculation method of carbon dioxide emission intensity from iron and steel production” was issued. This allows companies to calculate their CO₂ emissions using universal methods. We have been selected as a Climate Action member.

Regarding the multi-national efforts, the Task Force of APP1, which comprises seven countries of Japan, the U.S., Canada, China, South Korea, India, and Australia, started in 2006 for transferring and promoting energy-saving and environmental technologies, but was dissolved and succeeded by a steel section WG (Working Group) of the GSEP (with Japan as the chair) in FY2011. In March 2012, the first conference was held in Tokyo. The new partnership aims at regional collaboration with more countries including the EU in promoting energy-saving and environmental technologies. NSSMC also participates in the Climate Action Program of the World Steel Association, which calculates and reports on the CO₂ emitted by steelworks using universal methods. We have been selected as a Climate Action member. Recently, quite a few customers have sought information that their steelmakers are Climate Action members. Efforts to standardize these calculation methods as ISOs have been made by the Japanese steel industry, and others. In March 2013, ISO 14404, “Calculation method of carbon dioxide emission intensity from iron and steel production” was issued. This allows steelworks not participating in the World Steel Association to calculate CO₂ intensity using universal methods. This marked the first step forward in greatly facilitating the global sectoral approach sought by the steel industry.

Technical cooperation and transfer promoted on a worldwide scale

With the understanding that the transfer of Japan’s advanced energy-saving technologies overseas can be one of the most effective ways to globally reduce CO₂ emissions, NSSMC is participating in many energy-saving and environmental initiatives in Japan and overseas. For example, we work with the World Steel Association, the GSEP², or directly with countries such as China, South Korea, and India. In 2007, we participated in the FY2011 launch of the “Public and private collaborative meeting between the Japanese steel industry and steel industries” and have since then been discussing matters with Indian steel industry participants. Through such discussions, we were able to suggest energy-saving technologies that were understood by India’s needs. I have come to realize the importance of clear communication between all parties concerned.

Proposing energy-saving technologies to the Indian steel industry

NSSMC is focusing on the remarkably developing Indian steel industry and is making Japan’s world-class energy-saving technology available to them. Starting with the energy conservation analysis of the plants in steelworks in FY2007, we participated in the FY2011 launch of the “Public and private collaborative meeting between the Japanese and Indian iron and steel industries”, and have since then been discussing matters with Indian steel industry participants. Through such discussions, we were able to propose energy-saving technologies that were understood by India needs. I have come to realize the importance of clear communication between all parties concerned.
**Environmental Report**

**5 Contribution to Create a Recycling-oriented Society**

NSSMC not only works on the realization of zero emissions with low environmental impacts and recycling of in-house waste, but also is actively engaged in recycling of by-products generated by society or other industries, by utilizing its iron-making process as a means of doing so.

Promotion of in-house zero emissions

By-products generated and their final disposal amount

In the iron-making process, over 600 kg of by-products are generated for every ton of iron produced. These by-products include steel slag, dust, sludge, and used refractories. In FY2012, NSSMC produced 43.55 million tons of crude steel and generated 25.11 million tons of by-products. The majority of these by-products were recycled inside and outside the company. Approximately 310,000 tons were ultimately disposed, which is below the FY2015 target of 330,000 tons.

Recycling of steel slag

Steel slag, which accounts for a majority of by-products, is almost entirely utilized. Approximately 70% of blast furnace slag is used for cement. Steelmaking slag is used for materials for road base, civil engineering work, soil improvement, fertilizer, etc. Recently, it has been used to restore seaweed beds and the marine environment. Calcium modified soil, a mixture of steelmaking slag and dredged soil, has the beneficial effects of improving the strength and inhibiting the generation of phosphorus, hydrogen sulfide, etc. in dredged soil. In Kamaishi City, as post-disaster restoration, work was conducted to transform tsunami sediments mixed with rubble washed ashore in the wake of the Great East Japan Earthquake into high-quality soil for use as a construction material, using the CALSPIN method. Blast furnace cement, a mixture of pulverized blast furnace slag and ordinary portland cement, contributes to a 40% reduction of CO₂ emissions during manufacturing, since the cement-making process can be omitted. Blast furnace cement exhibits superior long-term strength and resists salt damage or alkaline aggregate reaction. It is registered as an Eco Mark product, designated as a “designated procurement item” under the Green Purchasing Act, and used in the “common specification for civil engineering work” compiled by the Ministry of Land, Infrastructure, Transport and Tourism.

Recycling of dust and sludge

To recycle the dust and sludge generated in the iron manufacturing process to be used as raw materials, NSSMC has a dust reduction kiln (RCR: Resource circulating oven) at Kamaishi Works and a rotary hearth reduction furnace (RHF: Refer to note 2, page 9) at Kimitsu Works, Hironaka Works, and Hikari Works. This enables us to recycle all internally-generated dust. In March 2009, we obtained special approval for RHF under the Waste Disposal Act to carry out recycling of externally-generated dust as well.

Promotion of the adoption of an electronic manifest

In outsourcing industrial waste disposal, NSSMC is promoting use of an electronic manifest to enhance manifest control. In FY2012, 82% of manifests issued at all of our steelworks and factories were digitized. As a new project, we are also working on digitizing industrial waste outsourcing contracts, while ensuring full compliance.

Efforts made through collaboration with society and other industries

Recycling of waste plastics and waste tires

NSSMC recycles 100% of plastic containers and packaging collected from general households by a chemical recycling process using a coke oven. To date, we have established an acceptance structure at six of our steelworks to cover all municipalities throughout Japan. They dispose of approximately 200,000 tons a year or 30% of what is collected nationwide. This amounts to an accumulated total disposal of approximately 1.9 million tons (from FY2000 through FY2012), which is equivalent to 5.9 million tons of CO₂ reduction. Recently, chemical textiles and food trays are also being recycled by the same process for reuse as petrochemical products. Moreover, all discarded tires are recycled. At Hishinaka Works, they are processed by a scrap melting method, which is a steelmaking process, and used as a fuel. They are also thermally decomposed in gasification recycling equipment for 100% reuse. The disposal capability is 120,000 tons a year. Approximately 10% of discarded tires in Japan are recycled.

Message from Innovators

Development of “iron” supply unit to prevent ocean desertification

NSSMC promotes the “creation of marine forest” to maintain the “tidal-shore demodulation,” which has been a nation-wide environmental concern in recent years.

One of the causes of the “rocky-shore” phenomenon is the decrease in supply of iron—which is necessary for tidal flats and seaweed growth. Through research as a result of deforestation and upstream development, NSSMC has been carrying out research on utilizing its iron-making process to cope with this problem. In 2004, we developed an iron supply unit containing humic substances made of steel slag and seaweed ash. Since then, we have been working on creating a seaweed bed (marine forest).

NSSMC also opened a “Iwa Laboratory” (marine environment simulator) at the Technical Development Bureau in Futtsu City, Chiba Prefecture. We are working to scientifically clarify the usefulness and safety of using steel slag to create marine forest.

Chiwa Kosugi
Chief researcher
Environmental Institute for Sustainable Society
Technical Development Bureau
SSMC is promoting management of environmental risk with the aim of continually enhancing preservation of the environment in various regions, with due consideration of environmental risks, which differ by each steelworks and factory, and with due consideration to compliance with Japan's Air Pollution Control Act and other regulations. We also are engaged in reducing environmental risk throughout the Group.

Activities for reducing environmental risks

Atmospheric risk management

In order to reduce emissions of sulfur oxides (SOx) and nitrogen oxides (NOx), NSSMC is taking measures such as to use low-sulfur fuel, and to install effective equipment, including equipment that reduces SOx and NOx emissions, low NOx generating burners, and exhaust gas treatment units. To curb emissions of soot and dust, we try to choose equipment based on air pollution risk analysis through scientific simulation. We also conduct constant monitoring and regular patrols to ensure that no abnormal emissions are released into the environment.

Water quality risk management

NSSMC uses approximately 6 billion m³ of freshwater a year at all of our steelworks and factories combined. Approximately 90% of this is re-circulated or reused. We try not to waste precious water resources, and to limit wastewater discharge to a minimum. To achieve this, we make daily efforts to maintain and improve the performance of wastewater treatment equipment, and inspection and control of wastewater quality.

In consideration of the importance of preventing water pollution, we have installed devices such as detectors, shutoff valves, and emergency pits; established work procedures to use them effectively; provided periodical training; and try to improve our procedures, so that in the event of operational problems, dangerous or potentially dangerous wastewater will not be discharged outside our steelworks and factories.

In addition, to prevent abnormal water leakage from movements and quay walls, we have established procedures, periodically inspect equipment, and take proper measures for the equipment.

Soil risk management

With respect to environmental preservation specifically for soil and underground water, we are taking appropriate measures in compliance with the Soil Contamination Countermeasures Act, local government ordinances and guidelines, and so on. Based on the amended Soil Contamination Countermeasures Act, which took effect in April 2010, we report to the local government when performing landform modification work such as an excavation of 3,000 m². Additionally, we conduct pollution surveys when needed.

If soil contamination is detected, we take appropriate action in accordance with guidelines issued by the Ministry of the Environment.

Chemical substances discharge control

Comprehensive control of discharge

NSSMC appropriately manages and tries to improve the production, handling, and discharge or disposal of chemical substances in accordance with the PRTR Act¹, Chemical Substance Control Law², and other laws concerning the management of chemical substances as well as following requirements of relevant management procedures. Under the PRTR Act, we ensure thorough control by checking the material balance including the amount of chemical substances concerned, the amount discharged to the environment, and disposal volume. In a similar manner, we control volatile organic compounds (VOC), which cause photochemical oxidants or airborne particulate matter. Under the Chemical Substance Control Law, we report the amounts of chemical substances manufactured and sold.

NSSMC also took the lead to promote use of alternatives to steelmaking materials and equipment that contain hazardous materials such as asbestos and polychlorinated biphenyl (PCB). We have been replacing or disposing of possibly risky parts and materials, according to safe handling standards.

Discharge control under the PRTR Act

In 1999, before the law took effect, NSSMC started research according to the voluntary control manual prepared by the Japan Iron and Steel Federation (JISF). At present, we monitor 462 substances in accordance with the PRTR Act in an effort to regulate discharges and improve control. The results in FY2012 are as follows: 51 substances were reported; 490 tons were emitted to the atmosphere; and 38 tons were discharged to public water bodies. A total of 7,265 tons of substances were transferred (disposed) outside of the steelworks and factories. The majority of substances were metals such as manganese or chrome and their compounds.

Data are collected at each facility every year. Effective reduction measures are applied at other facilities. Collected data are disclosed on the company’s website.

Similar efforts have been made to reduce VOC. The FY2010 goal of 30% reduction (over FY2000 results) was achieved in FY2009, and the reduction trend continues.

Voluntary prioritized control of chemical substances

- Benzene, tetrachloroethylene, dichloromethane
- NSSMC voluntarily set a hazardous air pollutant reduction plan, with the exception of trichloroethylene, that was used only in small quantities. By implementing the plan, we reached the goals for all three substances and are currently maintaining the reduction levels.
- Dioxins
- NSSMC has invested in alternative incinerators that release dioxins into the atmosphere. All of our equipment meets emission concentration standards.

¹: PRTR Act
²: An abbreviation of the Law Concerning the Examination and Regulation of Manufacture of Chemical Substances.
7 Promotion of Environmental Management

NSSMC has built an environmental management system that includes not only its own steelworks and factories, but also its group companies in Japan and abroad. Activities to reduce environmental risks are promoted by combining internal and external audits and rotating the plan-do-check-act (PDCA) cycle.

Environmental management

Management system

NSSMC effectively rotates the management cycle of PDCA centered on the environmental management committee, which convenes semiannually to promote improvement. As part of governance enhancement efforts, it also regularly holds meetings for the general managers of the environment departments and meetings for the environment group leaders for all the steelworks and factories. In particular, with respect to falling dust, drainage, and waste that pose critical environmental risks, specialists in each field hold meetings to devise measures for risk prevention and reduction.

Environmental audits

In accordance with the international standard ISO 14001, NSSMC has built an environmental management system, with each steelwork or facility general manager serving as the responsible person. Each year, a management review is conducted by the Head Office Environment Department. Environment officers of other steelworks and facilities also participate in these audits to cross-check. In addition, periodical review is conducted by the ISO certification agency.

For the group companies including those overseas, a direct interview is conducted by a member of the Head Office Environment Department to improve management levels. This is part of the corporate governance conducted by the Head Office Internal Control Audit Department.

Environmental accounting

NSSMC regards environmental management as an important basis for our business and continuously provides environmental education to each rank of new employees, mid-level engineers, and managers on the subject of basic environmental policies, medium-term environmental management plans, environmental compliance, etc. In addition, a seminar on the environment is given by the general manager of the Head Office Environment Department at all steelworks and facilities. We encourage our employees to acquire national qualifications, such as those of pollution prevention managers and energy managers, as well as to take ISO 14001 internal auditor training.

Environmental meeting for affiliate companies

From the group companies in Japan, NSSMC has identified companies (71 companies) with certain environmental burdens and holds semi-annual environmental meetings for those companies. In the meetings, the latest trends of environmental laws and regulations are studied, cases of environmental initiatives are reported, and other information is shared to reduce environmental risks.

Environmental accounting

Philosophy of environmental accounting

NSSMC has adopted environmental accounting to be used as guidelines for corporate activities, and to accurately track the environmental costs and effects. The iron and steel industry is an equipment-intensive industry. We have achieved environmental preservation and energy conservation by installing environmental-friendly equipment such as dust collectors and improving the efficiency of production equipment. Costs of environmental preservation are quantified by adding the costs of capital investment associated with environmental measures, energy-saving measures, and recycling measures to expenses incurred to preserve the environment.

Environmental preservation costs

Our environmental preservation costs for FY2012 include 15.7 billion yen for investment in equipment for environmental measures, 9.2 billion yen for investment in energy-saving equipment, and 9.16 billion yen for expenses incurred to preserve the environment. The sum of equipment investment costs for environmental, energy-saving, and recycling measures accounted for approximately 7% of the total costs of equipment investment. On the expenses side, atmospheric prevention costs amounted to 43.3 billion yen and water contamination prevention costs, 10.8 billion yen. In addition, 10.3 billion yen was spent as environmental research and development costs.

As environmental measures, we invested in visual chimney-smoke prevention measures and water leakage prevention measures at the revetments and quay walls of steelworks and facilities. For saving of energy, measures were taken to improve the efficiency at power generation stations as well as overall energy-saving measures in each manufacturing process. Among the environmental preservation costs, atmospheric prevention costs including measures to prevent dust generated at steelworks accounted for the largest share. We also vigorously worked on energy-saving measures and spent almost the same amount in equipment investment and expenses as in the previous year.
Effects of environmental preservation

It would be difficult to quantify environmental preservation effects in monetary terms, since such calculation would require many assumptions. Therefore, this report shows environmental preservation performance as effects vs. costs of taking environmental measures.

For example, reduction in energy consumption is shown under “promotion of measures against global warming.” Reductions in water consumption and various resources spent are shown under “water quality risk management” and “energy material balance,” respectively.

For the atmospheric pollution area, SOx and NOx emissions are shown; for water quality and soil, individual performance indicators are used; for hazardous chemical substances, actual reduction volume of substances such as dioxins, benzene, and VOC’s are stated and for waste products, reduction in final disposal volume is stated.

NSSMC will continue efforts to improve accuracy in environmental accounting and use it as a management benchmark to effectively invest in equipment and attempt to further preserve the environment and conserve energy.

### Table 1: Environmental Preservation Costs

<table>
<thead>
<tr>
<th>Item</th>
<th>Definition</th>
<th>FY2012</th>
<th>FY2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pollution Prevention Costs</td>
<td>Countermeasures against air pollution (excluding equipment running costs, maintenance costs, etc.) and destruction treatment of raw materials and dust: preventive measures costs, etc.</td>
<td>145.1</td>
<td>453.0</td>
</tr>
<tr>
<td>Global Warming Prevention Costs</td>
<td>Energy-saving measures: Running costs and maintenance costs of energy-saving facilities</td>
<td>12.0</td>
<td>10.8</td>
</tr>
<tr>
<td>Other Environmental Costs</td>
<td>Costs of Recycling Resources</td>
<td>92.2</td>
<td>37.4</td>
</tr>
<tr>
<td>Environmental Management Activities Cost</td>
<td>Environmental preservation effects</td>
<td>36.0</td>
<td></td>
</tr>
<tr>
<td>Research and Development Cost</td>
<td>Development of eco-products (including personnel costs) for environment-friendly steel products</td>
<td>58.9</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>Total</td>
<td>249.3</td>
<td></td>
</tr>
</tbody>
</table>

### Table 2: Environmental Preservation Effects

<table>
<thead>
<tr>
<th>Type of effect</th>
<th>Index variation</th>
<th>Related information to the Sustainability Report</th>
<th>FY2012</th>
<th>FY2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Effects related to measures used for operations</td>
<td>Reduction in energy consumption</td>
<td>Promotion of anti-global warming measures</td>
<td>10.0</td>
<td>14.0</td>
</tr>
<tr>
<td>Effects related to energy saving and consumption</td>
<td>Reduction in water consumption and utilization</td>
<td>Risk management for water quality</td>
<td>16.0</td>
<td>16.0</td>
</tr>
<tr>
<td>Effects related to the amount of resource used</td>
<td>Reduction in the amount of resource used</td>
<td>Energy and material balance</td>
<td>8.9</td>
<td>15.2</td>
</tr>
<tr>
<td>Effects related to environmental impact and waste generation</td>
<td>Release into the air</td>
<td>Reduction in the discharged amount of environmental impact substances</td>
<td>16.0</td>
<td>16.0</td>
</tr>
<tr>
<td>Effects related to soil, etc.</td>
<td>Release into soil</td>
<td>Reduction in the discharged amount of environmental impact substances</td>
<td>16.0</td>
<td>16.0</td>
</tr>
<tr>
<td>Effects related to environmental protection</td>
<td>Release of waste</td>
<td>Reduction in the total amount of released waste</td>
<td>14.0</td>
<td>14.5</td>
</tr>
<tr>
<td>Chemical emissions</td>
<td>Chemical emissions</td>
<td>Reduction in the amount of released hazardous waste</td>
<td>16.0</td>
<td>15.7</td>
</tr>
<tr>
<td>Other environmental preservation effects</td>
<td>Transportation, etc.</td>
<td>Reduction in transportation volume and reduction in environmental impact in connection with transportation</td>
<td>11.0</td>
<td>11.0</td>
</tr>
</tbody>
</table>

### Offerings of Environmental and Energy Solutions

NSSMC and its group companies manufacture and provide steel products with excellent functions, and thereby contributing to reducing the environmental burden throughout their entire supply chain. Specific activities include energy conservation, resource saving, and the removal of harmful substances.

**Japan’s steel recycling (example from FY2011)**

Steel stock manufactured by steelmakers is supplied to society in the form of iron and steel products. After being used and collected, they are recycled as scrap, together in good balance with raw material scrap generated by steelmakers and process scrap generated during the process of steel stock. The blast furnace method that uses iron ore as the main raw material and the electric furnance method that uses scrap as the main raw material complement each other to transform iron into necessary applications. Thus, iron is a material that contributes to the sustainable development of society.

**Manufacture of eco products (environmentally friendly products) that take into account LCA**

Various highly functional steel, such as high-tensile steel sheets and magnetic steel sheets, are indispensable for hybrid vehicles, energy conservation equipment, and power generation facilities, including wind power, solar power, and atomic power, which support the mitigation of global warming. In order to realize a recycling-oriented society, it is necessary to use products that have a long life and that are highly recyclable. In order to meet these needs of society, NSSMC offers eco products that reduce the burden on the environment to the maximum extent, within the flow of “mining raw materials → transportation → manufacturing of steel materials → forming and assembly of parts and members → use of the product by the customer → recycling,” by means of its technical development strength – one of the best in the world – and based on the philosophy of LCA.1

1. LCA (Life Cycle Assessment)

A system of assessing the environmental impact of a product, based on an integrated life cycle approach encompassing the mining and transportation of raw materials, production of raw materials, production of iron and steel materials, and manufacturing and assembly of parts, as well as the use, recycling, and disposal of the product.
Social Report

The NSSMC Group treasures its partnership with all its stakeholders and aims to improve its corporate value by enhancing its relationships with them through better communication.

1 Nippon Steel & Sumitomo Metal Group and its Stakeholders

At NSSMC, we aim to become a company trusted by all stakeholders including our customers, suppliers, and local communities at all times, and endeavor both to offer our shareholders and investors sufficient opportunities for communication and to ensure timely disclosure of information. We also strive to create workplaces in which employees can work with pride and enthusiasm.

NSSMC will continue to make social contribution activities that are closely tied to local communities, and fulfill our corporate social responsibilities as a member of society. We are also actively promoting environmental activities with various organizations in local and international communities.

In particular, we find it important to make young people and their teachers, who are fostering future generations, understand and appreciate the importance of “monodzukuri (product manufacturing)” and our various initiatives on environmental issues.

We carry out environmental protection activities which match the needs and characteristics of local communities, and engage in environmental activities with various stakeholders in our local communities.

We pursue various personnel policies, based on fair treatment of personnel, to ensure that our employees work consistently with pride, motivation and vitality.

In our Investor Relations (IR) activities, we strive for timely disclosure of information, to improve our IR briefing, dialogues, and other opportunities to interact with our shareholders and investors.

We carry out environmental protection activities which match the needs and characteristics of local communities, and engage in environmental activities with various stakeholders in our local communities.

We participate in person-to-person exchanges and collaborate with young people and their teachers with regard to our “product manufacturing” and environmental initiatives.
Partnerships with Shareholders and Investors

NSSMC is actively engaged in IR activities (investor relations) for its shareholders and investors. The company is making diverse efforts to enhance IR activities by holding IR briefings and meetings for institutional investors in Japan and overseas; inviting shareholders to presentations and plant tours; and disclosing corporate information via its website, annual reports, shareholders’ newsletters, and other means.

Plant tours and IR briefings

NSSMC invites shareholders on tours of its steelworks or mills twice a year, in spring and autumn. The tours have been well received by the participants who appear to enjoy to look at our world’s state-of-the-art and dynamic manufacturing processes and to better understand our operations. In addition, we hold IR briefings in Tokyo, Osaka, and other major cities in Japan where we explain our business policies and general business performance to participants. Opinions and feedback from those participants are used for our future IR activities.

Improvement in conveying information

Following the merger of Nippon Steel and Sumitomo Metal Industries, the Investor Relations site on our website has been renewed. Documents and presentations used in IR briefings, stock and corporate bond information, and other information are available on our site. We intend to further improve our corporate information disclosure on our website, both in Japanese and English.

We also send an informational newsletter to all our shareholders holding one or more trading units. We intend to make it easy to understand and replete with various information, including a message from top management and business topics of the NSSMC Group. The electronic version of the newsletters is also available on our website.

Announcement of the Mid-term Management Plan

On March 13, 2013, we released our mid-term Management Plan. In order to be the “Best Steelmaker with World-Leading Capabilities” at an early stage, the plan is aimed at building an organization with world-leading competitive strength by 2015—when newly emerging steel mills in East Asia are expected to go into full-scale operation—through the early realization of maximum synergies made available uniquely to NSSMC by the business integration. While aiming to strengthen our competitive position and make our overseas business more competitive and show growth in profit earned, we are committed to grow cash flows and profitability, with the mid- and long-term minimum target in return on sales (ROS) of 5%. Our further goal is to establish an organization capable of achieving an ROS of 10%. (Further details of the plan are available on our website, including streaming video.)

Support of community-based education

NSSMC has been engaged in unique community-based environmental education support programs and educational activities on “monozukuri (product-manufacturing).” In 2012, for example, we organized a scientific stand at Kimitsu Works, where our younger employees introduced the fascinating properties of iron and the mechanism of electricity generation to primary and secondary school children. Our employees at Oita Works also gave a “travelling scientific lecture” to local primary and secondary schools. NSSMC’s Head Office staff took part in an Energy and Environmental Workshop held by Masugata Junior High School in Kanagawa Prefecture, showing an example of waste plastics at NSSMC to demonstrate the steelmaking industry’s environmental initiatives.

Internship programs

For many years, NSSMC has been offering internship opportunities to students at steelworks and research centers to help them learn our business and gain some work experience. In FY2012, a total of 200 students from universities and technical colleges participated in the two-week programs at our steelworks throughout Japan, and the program was favorably received.

"Training Programs for Educators at Private Companies” for enhancing teacher understanding of the steelmaking industry

Every summer we support the “Training Programs for Educators at Private Companies” sponsored by the Japan Institute for Social and Economic Affairs, so that teachers can better understand how the steel industry is contributing to society and can better appreciate the fascination of product-manufacturing. In 2012, we hosted some primary, secondary, and junior high school teachers at our Muroran, Kashima, and Nagoya Works for the tours of our facilities and our human development activities.
Partnerships with Employees

NSSMC’s is promoting various personnel programs based on the concept of fair personnel management so that our employees can do their jobs with a long-term commitment and with a sense of security and enthusiasm. Moreover, we are promoting various health and safety measures so that our employees, business partners, and group companies can work in safe and secure workplaces.

Respect for human rights

NSSMC is in the business of creating and delivering valuable and attractive products and ideas, by respecting our employees’ diverse views and individualities and utilizing them. The NSSMC Group set the NSSMC Group Conduct Code. By adhering to its nine principles, NSSMC conducts business ethically while paying full heed to human rights issues arising with the increasing globalization of the economy.

Corporate philosophy and Employee Action Guidelines

Following the merger, the NSSMC Group Corporate Principles were adopted. It consists of the “basic principles,” which articulate the meaning of the existence of the NSSMC Group and represent our most important values, and “management principles,” which shows our management’s important stance and policies in realizing such values. Moreover, in order to realize our corporate philosophy, Employee Action Guidelines were established to serve as the basis of individual employee’s attitude, stance, and judgment.

Fostering personnel and personnel policies

Based on the belief that the development of excellent personnel is a prerequisite for the production of excellent products, NSSMC is actively rolling out programs to strengthen the overall capabilities of each employee. Specifically, the identification of skills and capabilities required for certain worksites are being identified and corresponding on-the-job training is being planned and executed through dialogue between a supervisor and his/her subordinate. In addition, training geared to specific career levels and various types of off-the-job training sessions are conducted to complement the basic plan. Moreover, a booklet Iron-man Will is distributed to all employees to help them understand our corporate philosophy and Employee Action Guidelines as well as our human development programs.

NSSMC’s administering of personnel policies aim at encouraging our employees to grow and develop their overall capabilities. We also find it important to ensure fair treatment of all employees. Furthermore, we have various measures that support our employees’ childcare. In April 2013, we started a "work at home" system to give employees time for child care, and a rehiring program for employees who previously left the company for child or elderly care and other reasons.

Other programs

As part of the workplace utilization measures, 1) Convention, skill triathlon games, and the Electric Instrumentation Section skills competition for the whole NSSMC Group are held for our employees and our business partners.

1. It is an acronym for jishu kanri (voluntary management). Small groups are formed on a voluntary basis to achieve self-actualization and pass skills and expertise on to future generations.

Efforts toward safety and health management

In keeping with the corporate philosophy that “safety and health are the most valuable factors that take precedence over all other things and they are the basis that supports business development,” NSSMC has been improving its occupational safety and health management system (OSHMS) and making a safe and secure workplace by taking the following measures:

- Creation of a workplace which is disciplined but has a comfortable and friendly atmosphere with NSSMC, business partners, and group companies working with a sense of unity.
- We strive to create a disciplined but comfortable and friendly workplace atmosphere through open communications, enhanced education programs on safety and health, and support for the safety activities of group companies and our business partners.
- Reducing disaster risks to zero: Specific measures taken are to identify more risk factors, seek for more safety of equipment even when essentially safe, and take more countermeasures against human error.
- Group-wide sharing of effective measures: We are sharing effective examples of accident-preventive measures and those based on analysis of actual accidents. We are also in the process of standardizing and unifying safety rules and signals, which could be different depending on the steelworks.
- Making work and workplace environments more comfortable and improving the physical and mental health of our employees: Regarding health management, besides improving healthcare counseling for employees, we make efforts for early detection and appropriate actions in the area of mental health. As to measures against asbestos, NSSMC has taken steps in accordance with laws and regulations, and completed (by the end of FY2009) the shift from asbestos to alternatives, except for those areas without the risk of exposure. Moreover, we offer consultation services to our current and former employees to discuss their health concerns and will continue to deal with asbestos issues in an appropriate manner.

Partnerships with External Organizations and NGOs

In order to respond appropriately to environmental and energy issues and to build a recycling-oriented society, it is necessary that businesses, governments, academia, and citizens go beyond the limits of their respective domains, and think and act for the best of our future generations. NSSMC is cooperating with various organizations in local and international communities on behalf of environmental activities.

GPN activities

We have participated in the Green Purchasing Network (GPN) since 1996, when the network was founded. In order to promote green purchasing activities, jointly with businesses, governments, academia, local governments, and NGOs, we have taken the initiative in developing a framework to prioritize the purchasing of products and services that represent less environmental load.

Collaboration with an NGO, "Mori wa Umi no Koibito"

In 1989, Mr. Shigatsu Hatakeyama, a fisherman cultivating oysters and scallops in Kesennuma City, Miyagi Prefecture, and the leader of the NGO, Mori wai Umi no Koibito (The forest is longing for the sea, the sea is longing for the forest), along with his fellow fishermen, commenced the forests are Lovers of the Sea campaign to plant trees at Munome Mountain in Iwate Prefecture, located in the upper reaches of the Oka River, which flows into Kesennuma Bay. Mr. Hatakeyama was awarded the 2012 United Nations Forest Hero. This activity was based on the theory that the chain of forests, villages, and the sea nurtures the blessings of the sea. We have been supporting this activity. In June 2013, approximately 1,400 people, including school children, college students, and our employees, joined their tree-planting festival.
Participation in Eco-Products 2012

In December 2012, NSSMC exhibited various products and technologies at Eco-Products 2012, the largest ecological exhibition in Japan, which was held at Tokyo Big Sight. Our exhibition theme of this year was “Nippon Steel & Sumitomo Metal Group Supporting Life & Lifestyle with Environment and Energy Solutions, and Taking A Step Forward.” We presented our initiatives of the three “eos” of eco process, eco products, and eco solutions. We also introduced to visitors how we help rebuilding of the disaster-stricken areas in the Tohoku region. It is estimated that around 10,000 people, including primary school children, visited our booth.

Publishing the illustrated book series “Understanding Iron and Steel”

The “Understanding Iron and Steel” book (Nippon Itosu Publishing, full color), which was compiled from the series of articles “Origin of Product Manufacturing—The World of Science” in a magazine we publish for general readers, has become an exceptional bestseller among scientific publications, with over 50,000 copies in print since it was first issued in 2004. The books “Showing the Future of Iron” and “Understanding Thick and Thin Iron Plates” from the same series are also very popular and have been reprinted many times. This series of books not only introduces steelmaking processes and major iron and steel products through the use of illustrations, but also explains, in an easy-to-understand and friendly manner the scientific technology of steelmaking under such various subjects as “Battling Rust,” “Advanced Analytic Technology,” and “Iron and Steel Materials.”

Support for the arts

The Nippon Steel & Sumitomo Metal Arts Foundation operates the Kioi Hall (in Chiyoda-ku, Tokyo), holds classical concerts by Kioi Sinfonietta Tokyo (KST, the resident orchestra of the hall). The foundation makes the hall available for traditional Japanese music performances; there are few hall available for traditional Japanese music performances; there are few

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In December 2012, NSSMC exhibited various products and technologies at Eco-Products 2012, the largest ecological exhibition in Japan, which was held at Tokyo Big Sight. Our exhibition theme of this year was “Nippon Steel & Sumitomo Metal Group Supporting Life & Lifestyle with Environment and Energy Solutions, and Taking A Step Forward.” We presented our initiatives of the three “eos” of eco process, eco products, and eco solutions. We also introduced to visitors how we help rebuilding of the disaster-stricken areas in the Tohoku region. It is estimated that around 10,000 people, including primary school children, visited our booth.

Publishing the illustrated book series “Understanding Iron and Steel”

The “Understanding Iron and Steel” book (Nippon Itosu Publishing, full color), which was compiled from the series of articles “Origin of Product Manufacturing—The World of Science” in a magazine we publish for general readers, has become an exceptional bestseller among scientific publications, with over 50,000 copies in print since it was first issued in 2004. The books “Showing the Future of Iron” and “Understanding Thick and Thin Iron Plates” from the same series are also very popular and have been reprinted many times. This series of books not only introduces steelmaking processes and major iron and steel products through the use of illustrations, but also explains, in an easy-to-understand and friendly manner the scientific technology of steelmaking under such various subjects as “Battling Rust,” “Advanced Analytic Technology,” and “Iron and Steel Materials.”

Support for the arts

The Nippon Steel & Sumitomo Metal Arts Foundation operates the Kioi Hall (in Chiyoda-ku, Tokyo), holds classical concerts by Kioi Sinfonietta Tokyo (KST, the resident orchestra of the hall). The foundation makes the hall available for traditional Japanese music performances; there are few hall available for traditional Japanese music performances; there are few

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I always keep two things in mind when reading environmental reports and CSR reports. The first is what corporate philosophy underpins the company’s daily business operations, and the second point is how the company presents what it has achieved and has not achieved, based on its philosophy. These are what I kept in mind when I read this report.

Reading through the text of this report, I found that Nippon Steel & Sumitomo Metal Corporation (NSSMC) has taken its first step forward as a new company with its distinct corporate philosophy for its environmental and social contribution and is striving to realize it. Looking at the environmental aspects, for example, I could learn that NSSMC is operating its business with priority given to the “three ecos” of eco process, eco products, and eco solutions. This is not an abstract idea. This is the corporate philosophy that the company has been realizing in its daily business activities.

In my view, what is important is whether the business is organically linked to environmental and social contributions, and whether the synergy effects can be evident to society. When companies behave well, society in turn is enhanced.

As to synergy effects, more people are paying attention to the synergy effects produced from the merging of the two companies, Nippon Steel and Sumitomo Metal Industries. As a matter of course, the increased economic power due to the business integration should be used to enhance environmental and social contributions at the same time. One of the areas attracting a great deal of interest is the synergy effect in the railway wheel sets (wheels and axles) and rail production. The railway is a typical example of transportation with low environmental impact, and wheel sets and rails are basic elements that support the transport function. Reduction of the weight of wheel sets and longer service life of rails will significantly reduce CO₂ emissions. I do not think I am the only one who looks for such synergy effect to spread to other business sectors.

In fact, another point struck me when reading this report. It is its negative content. It is important to announce legal violations and other negative factors without hiding them. This is not only required from the viewpoint of accountability, but is an indispensable action to take new steps forward in making environmental and social contributions. The company must recognize its negative or inconvenient results and that all employees can set higher goals. I believe that this report will contribute to these processes.

The new company NSSMC is receiving a lot of attention and interests in Japan and abroad. People must be watching NSSMC with the hope that the company will contribute to creating a sustainable society. I firmly believe that this report proves that NSSMC has entered a new stage.