The year 2008 marks the 150th anniversary of the birth of Japan’s modern steelmaking industry, which was established in Kamaishi City, Iwate Prefecture. In addition to looking back on the history of the steelmaking industry, Nippon Steel, as a member of the Japan Iron and Steel Federation, is widely developing events to commemorate the 150th anniversary of the birth of the modern steel industry to enable as many people as possible to come to know the form of the new steel industry in the 21st century that contributes to society.

150 years since the birth of modern steelmaking

Steel, harnessing people, harnessed by people

Steel scrap

NIPPO STEEL

Products

Materials (steel)

Plastic wastes

Materials (plastic)

GPN Sustainability Software
Nippon Steel’s global activities in the fields of steelmaking and resource recycling are supported by our stakeholders. The year 2008, which saw the 150th anniversary of the founding of the modern steel industry, was also a milestone year from the aspect of measures to protect the global environment as represented by the holding of the G8 summit and the commencement of the Kyoto Protocol commitment period. Against this background, Nippon Steel Corporation, which has the world’s highest level of energy efficiency, is hammering out long-term, radical environmental countermeasures through domestic and international transfer and development of technology.

**Editing policy**

In 1998, Nippon Steel published its first environmental report, the first environmental report ever published by a Japanese steelmaker, and the report is now in its eleventh year. This report is concerned primarily with Nippon Steel’s "Environmental Report" and "Social Report." Part of the report also covers the activities of our Japanese and overseas affiliates, which are set out below.

**[Applicable scope of report]**

Nippon Steel Corporation

**[Affiliates (Set out in order of the Japanese syllabary)]**

Medium-term Environmental and Disaster Prevention Management Plan and Management System

**[Applicable period of report]**

The numerical data applies to FY2007 (April 2007 – March 2008). However, the contents of some activities are applicable to the period between April and July 2008.

**Improvements in the 2008 Issue**

- In the Message from the President, mention is made of reviewing and improving the internal control system throughout the entire Group.
- In the Message from the President and the countermeasures against global warming, particular emphasis has been placed on international activities (global sectoral approach) related to transfer and development of technology and also the development of groundbreaking steelmaking process technology, which the steel industry, including Nippon Steel, is aiming at.
- Regarding global environmental measures, our activities carried out from the viewpoint of the "three ECOs," based on the world’s top level capability for technological development, are described in a readily understandable way.
- The description of environmental efforts made by business segments other than steelmaking-related business departments has been expanded.
- The "Social Report" contains negative information concerning compliance and also quality assurance and quality control.
- The amount of text has been reduced, photographs have been made larger and illustrations used, and also technical diagrams and graphs have been arranged as a collection of data at the end of the report in an attempt to make the report more accessible and easy to read.

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*The character illustration appearing in this report is "Shigen-kun" who is made from a steel can.

*You can see the environmental reports that we have published up to the present day in the "Environment" area of our website.

*The character illustration appearing in this report is "Shigen-kun" who is made from a steel can.

For more information, visit http://www.nsc.co.jp/en/index.html

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Financial Indicators

### Changes in consolidated net sales (Unit: Billion of yen)

<table>
<thead>
<tr>
<th>Year</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales</td>
<td>3,992</td>
<td>3,996</td>
<td>3,966</td>
<td>3,933</td>
<td>3,977</td>
</tr>
<tr>
<td>Changes</td>
<td>34.73</td>
<td>34.83</td>
<td>34.66</td>
<td>34.73</td>
<td>34.83</td>
</tr>
<tr>
<td>Percentage</td>
<td>84.6%</td>
<td>84.8%</td>
<td>84.6%</td>
<td>84.7%</td>
<td>84.8%</td>
</tr>
</tbody>
</table>

### Changes in consolidated ordinary profit (Unit: Billion of yen)

<table>
<thead>
<tr>
<th>Year</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
</tr>
</thead>
<tbody>
<tr>
<td>Profit</td>
<td>173.4</td>
<td>172.8</td>
<td>171.4</td>
<td>166.1</td>
<td>164.5</td>
</tr>
<tr>
<td>Changes</td>
<td>41.5</td>
<td>41.8</td>
<td>41.4</td>
<td>36.1</td>
<td>34.7</td>
</tr>
<tr>
<td>Percentage</td>
<td>24.3%</td>
<td>24.4%</td>
<td>24.2%</td>
<td>21.9%</td>
<td>21.7%</td>
</tr>
</tbody>
</table>

### Changes in consolidated net income (Unit: Billion of yen)

<table>
<thead>
<tr>
<th>Year</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
</tr>
</thead>
<tbody>
<tr>
<td>Income</td>
<td>215.9</td>
<td>211.4</td>
<td>207.4</td>
<td>200.6</td>
<td>199.0</td>
</tr>
<tr>
<td>Changes</td>
<td>34.7</td>
<td>34.8</td>
<td>34.6</td>
<td>34.7</td>
<td>34.8</td>
</tr>
<tr>
<td>Percentage</td>
<td>17.5%</td>
<td>17.4%</td>
<td>17.1%</td>
<td>17.2%</td>
<td>17.4%</td>
</tr>
</tbody>
</table>

### Consolidated net sales by region

- Japan: 417.2 Billion yen
- Asia: 226.3 Billion yen
- North America: 18 Billion yen
- Europe: 18 Billion yen
- Latin America: 18 Billion yen
- Middle East: 18 Billion yen
- Pacific: 18 Billion yen
- Africa: 18 Billion yen

### Percentage distribution of consolidated turnover in terms of business segments

<table>
<thead>
<tr>
<th>Segment</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
</tr>
</thead>
<tbody>
<tr>
<td>Steelmaking</td>
<td>73%</td>
<td>72%</td>
<td>72%</td>
<td>72%</td>
<td>72%</td>
</tr>
<tr>
<td>New materials</td>
<td>4%</td>
<td>4%</td>
<td>4%</td>
<td>4%</td>
<td>4%</td>
</tr>
<tr>
<td>Engineering</td>
<td>4%</td>
<td>4%</td>
<td>4%</td>
<td>4%</td>
<td>4%</td>
</tr>
<tr>
<td>Urban development</td>
<td>6%</td>
<td>6%</td>
<td>6%</td>
<td>6%</td>
<td>6%</td>
</tr>
<tr>
<td>Chemicals</td>
<td>4%</td>
<td>4%</td>
<td>4%</td>
<td>4%</td>
<td>4%</td>
</tr>
<tr>
<td>System solutions</td>
<td>3%</td>
<td>3%</td>
<td>3%</td>
<td>3%</td>
<td>3%</td>
</tr>
</tbody>
</table>

### Scopes of the annual report and the sustainability report

#### Annual report

The annual report is centered mainly on the economy. It provides a description of new products and technology developed by the Nippon Steel Group, a message from the president concerning sustainable growth resulting from improved corporate value, consolidated business highlights, a business outline, corporate governance, activities for communication with the stakeholders, affiliates, financial information, investment information, and so on.

#### Sustainability report

The sustainability report consists of a message from the president concerning the environment and society, an environmental report which covers global warming countermeasures, the construction of a recycling-oriented society, environmental risk management, and so on, and a social report concerning stakeholders including shareholders, investors, customers, suppliers, employees, the local community, primary, middle and high school students and university students, teachers, outside organizations and NGOs.

These booklets can be obtained from the following address: [http://www.nsc.co.jp](http://www.nsc.co.jp)
Message from the President

The Nippon Steel Group, as a “global player,” will contribute to the sustainable development of society.

Shoji Muneoka
Representative Director, President, and CEO

1. Introduction
—Our policy commitment to continuing efforts to deal with today’s global issues

Today, the world is troubled with serious problems about resources, energy, climate change, and many others. Some economies, mostly BRICs, have been growing amazingly fast, and major reorganizations have been taking place in industries in many parts of the world. All this is further accelerating the globalization process of many industries.

In this situation, the Nippon Steel Group, operating around the core business of making steel, continues to be dedicated to the manufacture and supply of products and services of excellent quality. Because, in this way, we can best contribute to the development of industry and also to the bettering of people’s lives. In future, we will take on more and more of the responsible role of a “global player” through efforts to steadily enhance our corporate strengths and value. We are also committed to contributing to the sustainable development of society by taking positive action to fight climate change and other issues of global implication.

The year 2008 marks the 150th anniversary of the founding of Japan’s modern steel industry in Kamaishi City, Iwate Prefecture where Nippon Steel’s oldest steelworks is located. My firm resolve is to build up the Nippon Steel Group on this groundwork, making sustained efforts “to serve society and people’s lives.” With the powerful twin engines of our “advanced technology” and “internal strengths,” our Group and I are dedicated with all our heart and mind to fulfilling this commitment.

2. Our Internal Control (Audit) System Reexamined and Improved
—Our basic principle of compliance reaffirmed in our internal control system

Compliance is a critical prerequisite for the survival of businesses. While pursuing efficiency in conducting business, we have operated our internal control system, designed to be both functional and effective in ensuring soundness and transparency.

Yet, as it turned out, there were a couple of instances of contravention of the Antimonopoly Law in the dealing of pipe piling and sheet piling, and one of our pipe-manufacturing subsidiaries was found to have neglected some of the mandatory tests under the standards and contracts. These incidents created a great deal of inconvenience and misgivings among our customers and all other people concerned.

We are taking steps to prevent the occurrence of such deplorable situations in the future. Employees are given compliance training in seminars and classroom learning in order to have a clear recognition of the vital need to go by the basic rules. For the Nippon Steel Group as a whole, we are now working out a more comprehensive system for internal audit. Our quality assurance system encompassing the whole Group is also being thoroughly reexamined and refined according to the guidelines newly formulated by the steel industry. Some of the improvements under this system include a third-party audit to be given each of the member companies of the Nippon Steel Group and the OEM-commissioned companies. We are determined to institute deep-delving improvements, one by one, in this system.

I offer my profound apologies for those incidents that tarnished the credibility of the Nippon Steel Group, and affirm our common resolve to restore the confidence of society.

3. A Roadmap for Our Progress in Addressing Environmental Issues
—Global challenges in the 21st century

Environmental issues, inextricably entwined with searches for more resources and sources of energy, are one of the most pressing tasks in the 21st century. In coping with them, we laid out the “Roadmap for Environmental Projects up to 2030” from short-term and medium- and long-term perspectives and have reviewed it yearly in terms of implementation.

Currently, our own CDM*1 project is under way. Its goal is to achieve, in FY2010, a 10% reduction (from the FY1990 level) in energy consumption. This voluntary action program, based on our technological strengths, proposes to achieve target energy savings and still keep up and increase our world’s highest energy-efficiency levels in the midst of growth of production.

In the medium and long term, we are going to put our world-ranking technological development ability to the test by undertaking the challenging task of fighting energy issues on a global scale.

*1 CDM (Clean Development Mechanism)

This is a mechanism by which industrially advanced countries provide technological and financial support for greenhouse gas reduction projects undertaken in developing countries and are issued credits (certificates) for the resulting gas reductions, enabling them, in turn, to offset such reductions in their own.
4. “Three Ecological Approaches” to Global Environmental Issues
—Three points of our environmental policy

With the world’s top-level technological development strengths, we make “Three Ecological Approaches” to global environmental problems.

First, we propose to reduce CO₂ emissions by the use of the ecologically designed “ECO-PROCESS” (production process) in May 2008, a new coke oven battery (No. 5 coke plant) was inaugurated at our Oita Works. It embodies the world’s first next-generation coke production process technology “SCOPE21” and various other innovative technologies. It is expected to substantially expand the use of low-grade coking coals and help conserve energy.

In addition, by producing and supplying environmentally friendly ECO-PRODUCTS® (iron and steel products), we are contributing to environmental load reduction and sustainable development of society as a whole. To mention some typical examples of those already developed and marketed by us: high-strength steels (Hi-TEN) indispensable for down-weighting of automobiles, specialty steel bars & wire rods, high-function electrical sheets for hybrid car motors, and steel sheets for fuel tanks (“ECOKOTE®,®-S”), which are lead free and chromate free and still have improved corrosion resistance and which also permit the use of biofuels.

Another example here is ECO-SOLUTION (solutions proposed for energy conservation and environmental problems), utilizing ECO-PRODUCT and ECO-PROCESS. In 2007, with the dual objective of efficient utilization and recycling of iron-making resources and obtaining the emission right by realizing CO₂ reductions, we decided to establish a joint venture with POSCO, Korea. Based on the environmental technologies of the Nippon Steel Group, the joint venture will build equipment for reduced iron production & dry dust recycling (RHF®) on the premises of a steelworks of POSCO. The total capabilities of the Nippon Steel Group are also being further demonstrated in the provision of CO₂ and other state-of-the-art energy-saving equipment, the provision of various materials for the electric machinery and electronics industries, and the construction of ecologically designed housing®. We are absolutely determined to combat environmental issues.

5. International Technology Transfer and Technological Development
—The steel industry’s global and sectoral approaches

Of the world’s total crude steel production of 1,240 million tons (FY2006), the total of the “Asia-Pacific Partnership on Clean Development and Climate” (APP®) amounts to 750 million tons (some 60% of the world). The countries where the member companies of the International Iron and Steel Institute (IISI) are located account for nearly 100% of the world.

Thus, with the objective of spreading the world-level energy-saving technology throughout the world to accelerate the development of technological innovations, the Japanese steel industry led by Nippon Steel has been working vigorously to expand, in both extent and depth, international cooperation through APP and IISI in pushing measures against climate change. These global sectoral approaches made in a cooperative spirit are beginning to spread in the power, cement, automobile, and other sectors, gaining attention as workable approaches toward fundamental solutions to climate issues. Incidentally, there is evidence that CO₂ reductions, realized by the transfer of the existing energy-saving technologies in the steel industries of the six original member countries of APP, have amounted to as much as nearly 130 million tons (equivalent to about 10% of the total amount emitted in Japan).

We are also actively involved in various national projects for CO₂ reduction, e.g., utilization of waste matter and “wood-based biomass” as fuels and development of clean and high-efficiency coal utilization technology. The Nippon Steel Group, as a whole, is also working on expanding applications of renewable energy sources, such as wind power generation and solar power generation.

6. Technological Innovations
—What we do to address environmental issues, pushing technological frontiers yet further

In the quest for long-range, fundamental solutions to CO₂ reduction worldwide, we have begun the development of an innovative iron-making process technology as a project of the Japan Iron and Steel Federation.

Called “Environmentally Compatible Iron-making Process Technology Development (COURSE50®),” this project is two-pronged: one is the development of a technology for reducing iron ore by the use of hydrogen and other reducing agents extracted from coke oven gas and other by-product gases; and the other is the development of a technology for CO₂ separation and recovery® from blast furnace gas (BFG) by the effective utilization of waste heat generated but unused in the steelworks.

We are also actively involved in various national projects for CO₂ reduction, e.g., utilization of waste matter and “wood-based biomass” as fuels and development of clean and high-efficiency coal utilization technology. The Nippon Steel Group, as a whole, is also working on expanding applications of renewable energy sources, such as wind power generation and solar power generation.
7. Environmental and Disaster Preventive Management toward Sustainable Society

—Our policies for recycling, environmental preservation, and environmental and disaster preventive management

Traditionally, we have made concentrated efforts to conserve energy and recycle resources, aiming at zero emission. The result is that, in our production processes, we have achieved 98% in the recycling of by-products and 60% in energy efficiency, representing the highest levels so far achieved in manufacturing in the world.

Iron manufacture, because of the very high temperatures and pressures involved, is a very appropriate process for the purpose of recycling and effective utilization of waste plastics, waste tires, and various other by-products occurring in society. In FY2007, of Japan’s total container wrapping plastics, about 30% or about 150,000 tons was recycled by our five steelworks located across the country. The cumulative total so recycled by Nippon Steel reached one million tons in May of this year. As a quantity recycled by a single business, this is the largest in the world. At our Hirohata Works, having the capacity to process about 10% of Japan’s total waste tires, has so far recycled about 87,000 tons.

Risk management in environment and disaster prevention is an area in which, we are proud to say, we have always been a pioneer in the industry since our establishment. As a business operating in communities and upholding the fundamental policy of compliance with laws and regulations, we have strenuously instituted “disaster preventive and precautionary measures” through equipment modifications and additions as well as procedural improvements to operating practices and maintenance activities.

Organizationally, we have a management system for environmental and disaster prevention measures. The environmental management committee, as the pivot, clearly defines policy actions and goals for the whole organization and determines revisions and improvements to the system. The committee, meeting regularly with the companies concerned, is now working out a comprehensive management system covering the entire Nippon Steel Group.

For the fire that occurred at the coke plant of our Yawata Works on July 29, 2008, I offer my deepest apologies to the neighboring communities, our customers, our shareholders, the local government, and parties in all quarters concerned. The cause of the fire is still being investigated under the guidance of the competent authorities, but we have started working to restore the plant at some early date, incorporating whatever disaster preventive measures needed at the moment (September 2008).

8. Conclusion

—Our goal is to be an environmentally minded business contributing to a sustainable society.

Nippon Steel, intent on global-scale contribution, also has a firm commitment to bringing benefits to neighboring communities.

In 1971, right after our establishment, we started massive-scale “afforestation projects” at all of our steelworks, planting seedlings of trees indigenous to their respective regions. Having grown to a height of 30 m now, the forests have merged into the regional scenery. The forests, while absorbing greenhouse gases, also serve to preserve a variety of living things, sheltering birds and many kinds of wildlife.

Our afforestation projects go farther to sea. Combinations of iron content of slag, a by-product of iron-making, with waste wood chips can artificially supply nutrients needed for the growth of marine plants. This restores life to a desertified sea, restoring a fertile sea abounding in kelp and marine life. Our “marine forest” projects being implemented in 12 locations across the country are beginning to produce tangible results. This marine afforestation is one example of what we can do to revitalize provinces, serving the communities in which we operate as a steel producer. This also promises to be a good measure against climate change.

Nippon Steel is thus undertaking the role of a global player in this “New Iron Age.” We will direct our environmental efforts aggressively to: energy conservation; CO₂ reduction as a mean of fighting climate change; the development of environmentally friendly products; and strict compliance with law so that the entire Nippon Steel Group enjoys the confidence of society. Through two-way communications with various stakeholders in society, the Nippon Steel Group would like to continue to offer corporate value, solidly based on our advanced technology in steelmaking, which is the core of our business.

We present this report hoping to put our corporate activities vis-à-vis “Environment” and “Society” in better focus.
Global Sectoral Approach
Commencement of the Kyoto Protocol commitment period, holding of the G8 Toyako Summit, and the creation of an international framework that is now required

Creative approach on a global scale that is both fair and effective

Under the terms of the Kyoto Protocol, which was adopted in 1997, Japan is obliged to reduce average greenhouse gas emissions such as CO₂ over a five-year period between 2008 and 2012, by 6% less than the level of 1990 emissions. The first commitment period of the Kyoto Protocol commences in 2008. However, the total CO₂ emissions of the countries that are signatories to the Kyoto Protocol is only about 30% of the world total, and the major emitting countries including the U.S., China, and India have no target under the Protocol, so the efficiency of the Protocol has been called into question. Indeed, it will be difficult for all major emitting countries to participate in emission reduction activities unless more flexible reduction targets are set and the base year (1990) is reconsidered, taking into account differences in economic conditions and technological trends between different countries into account.

Accordingly, when considering the fairness of the overall emissions target in each country, it is important to use a cumulative method for each industrial sector (steel, electricity, cement, automobiles, domestic appliances, etc.) that is based on energy efficiency in order to obtain the participation of as many countries as possible. This way of thinking is called a "sectoral approach." It is receiving attention as an approach that is fair and practical for creating a new international framework for the Kyoto Protocol.

Aiming at a radically reduction of emissions through sharing of innovative technology throughout the world

International collaboration based on a global sectoral approach in the industrial world is starting to produce results. In the APP, which started in earnest in 2006, a taskforce headed by Japan summarized the environmental preservation and energy conservation technology possessed by each participating country in a handbook to enable the information concerning technology to be shared among participating countries. It is also carrying out various other activities such as establishing a common method of conducting an international comparison of energy efficiency, and carrying out on-site diagnosis of equipment in China and India aiming at implementing a model project.

Also, within the IISI, an organization consisting of steelmakers in 60 countries around the world, a specialist group was established in 2007 for the purpose of studying a global sectoral approach, and has commenced concrete activities including sharing of existing technology and reality awareness among member countries, setting of numerical targets, and technology propagation activities for achieving the targets, and the development of ground-breaking technology. From 2008 the organization is planning to further strengthen collaboration concerning separation and recovery of CO₂ hydrogen manufacture and use, smelting reduction, and so forth.

For more effective international framework creation by Japan

The sectoral approach, which is being followed by Japanese industry, is a method in which a benchmark indicating that energy conservation technology is introduced using an energy basic unit, for example, as an index, the efficiency would rise to a certain point is created, and each country should strive to achieve this benchmark. It is important that Japan stresses to the world the efficacy of this method, and also clarifies the effect of implementing it, from the viewpoints of efficiency, balance, and feasibility. The Japanese steel industry has realized solid achievements through the APP and IISI, and is expected to act as a world leader playing a key role in the sectoral approach.

Environmental Report

Nippon Steel is a corporation whose business activities exert a large influence on the environment. This is borne out by the fact that we consume approximately 3% of the total energy used throughout Japan. For this reason, we see comprehensive "environmental management" throughout the group companies as our mission. We are aiming to carry out management that reduces the impact on the environment at all stages, from the purchase of raw materials and equipment, manufacturing, technological development, transportation of products, to their use, recycling and disposal.

Each and every concrete activity constitutes the first step to leaving behind a clean global environment in the future. This is Nippon Steel’s philosophy.

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Basic Environmental Policy Revised edition in FY2000

1. Contribution to the creation of a society committed to environmental preservation

Recognizing “environmental preservation” as one of the company’s basic business management principles and following on from achievements to date by companywide initiatives, Nippon Steel will aggressively challenge such issues as global warming, reduction and recycling of waste, to foster the creation of a recycling-oriented society, and carry out measures for new materials that have negative environmental impacts. In its operations, Nippon Steel will also take into consideration the need to maintain harmony with natural ecosystems, to preserve and improve human living environments, and to preserve the environment on a global scale, thus contributing to the establishment of a recycling-based society.

2. Reducing environmental impacts at every stage of operations

At every stage of operations, from procurement of raw materials and equipment to R&D, transportation, use and disposal of products, Nippon Steel will strive to reduce environmental impacts primarily through voluntary efforts, in cooperation with customers and other industries and also in communication with society at large.

While Nippon Steel makes every effort to reduce environmental risks through the production and engineering of products, individual employees of the company recognize the importance of environmental issues and become actively involved in environmental protection activities for communities and regions.

3. International contribution through involvement in environmental conservation initiatives on a global scale

Nippon Steel will make international contributions through the international transfer of technologies to environmental preservation, energy saving and conservation of resources in order to aid environmental preservation on a global scale, utilizing the company’s wealth of experience in technical cooperation in steelworks construction and other projects beyond Japan.
The Three ECOs that Nippon Steel Is Considering in Order to Create a Better Global Environment

Nippon Steel would like to contribute to global warming countermeasures and also the construction of a recycling-oriented society, through environmentally friendly eco-products (steel products) that are used by everyone, eco-processes (steelmaking processes) that take account of the environment in which these products are created, and eco-solutions (proposals for energy conservation and the solution of environmental issues) that utilize eco-products and eco-processes.

Eco-processes
Nippon Steel manufactures steel products with world-leading energy efficiency and is aiming at establishing eco-processes through even higher efficiency, and giving consideration to environmental aspects.

Eco-products®
We offer environmentally friendly eco-products®, produced using our world top level technological ability, thus conserving resources and energy and thereby contributing to reduced environmental impact and sustainable development in society.

Eco-solutions
We contribute to reduced environmental impact and environmental protection by offering various solutions for energy conservation and environmental issues. In addition, we are promoting technical transfer and development for preventing global warming and protecting the environment on a global scale.

Global warming countermeasures and ECO
Nippon Steel is developing global warming countermeasures and energy conservation from the viewpoints of the “three ECOs,” in the industrial, transportation and civilian sectors.

In the industrial sector, we use eco-processes to utilize all of the byproduct gas generated during the production of steel products, as an energy source, and also generate electricity by waste heat recovery. In addition, we offer eco-products to realize lightweight products, long life, and enhanced energy efficiency, thus contributing to global warming countermeasures. In the transportation sector, we are aiming to raise the ratio of sea transportation and increase the efficiency of logistics, and in the civilian sector as well we are increasing our activities aimed at the office and home.

In addition, we are promoting global warming countermeasures on a global scale by developing revolutionary technology such as CO₂ separation and recovery and hydrogen reduction steelmaking and transferring it to other countries around the world.

Biodiversity, environmental protection, and ECO
Biodiversity is an important theme ranking alongside global warming as a global scale issue related to the sustainable development of society. Nippon Steel is contributing to the protection of the ecology through its “local forest creation” and “sea forest creation” projects, and is also promoting atmospheric risk countermeasures, water quality risk countermeasures, and soil risk countermeasures as environmental protection activities, thereby contributing to biodiversity and environmental protection. In addition, we are developing and offering eco-products that do not use harmful substances.

Resource recycling, and ECO
We are promoting recycling of resources by using our steelworks throughout Japan as recycling centers, thus contributing to the realization of a recycling-oriented society. For example, we carry out complete recycling of container and packaging plastics generated by homes and other industries and also waste tires generated throughout Japan, and through such activities we are developing eco-solutions for environmental issues.
Energy and Resources: Their Interrelationship Based on Recycling and Its Impact on the Environment

Nippon Steel uses iron ore mined overseas, coal as an iron ore redundant, and scrap generated by society as its main raw materials for steel production.

Nippon Steel uses iron ore mined overseas and scrap generated by society as its main raw materials for steel production, together with coal as an iron ore redundant.

By-product gases, such as coke oven gas generated by dry distillation of coal in the coke manufacturing process and blast furnace gas generated from blast furnaces, are fully utilized as fuel gas for steel heat treatment furnaces or energy sources for power generation plants on the premises of the steel works. Electricity generated by recovered waste energy additionally contributes to maintaining the energy efficiency of the steel works at almost 60%.

As far as water resources are concerned, over 90% of water for cooling or washing products and production facilities is recycled and reused.

Production of one ton of iron also generates 600 kg of byproducts such as slag, dust, and sludge. These byproducts are used as raw material in the steel works or utilized by other industries for cement production or as roadbed material. The recycling rate of the byproducts is as high as 98% due to such recycling efforts.

Nippon Steel has also started recycling of various types of byproducts generated by society or other industries by utilizing steel making processes involving high temperatures and high pressures. In recent years, we have been actively recycling waste plastics, waste tires, and so on.

Nippon Steel has also started recycling of byproducts generated by society as its main raw materials for steel production.

Nippon Steel has also started recycling of byproducts generated by society as its main raw materials for steel production.
Medium-term Environmental and Disaster Prevention Management Plan and Management System

Since the inauguration of the company in 1970, Nippon Steel has considered environmental conservation as one of the most important of the themes that constitute the foundation of the company’s basic policies and has tackled it with all our company’s might. Nippon Steel established “Environmental Management Basic Policies” in FY1972 and has revised it as required since then. Also, under the Basic Environmental Policy which was revised in 2000, we have formulated a Medium-term Environmental and Disaster Prevention Management Plan (FY2006 – 2008) in order to contribute to the construction of an environmental protection society and global environmental protection.

In order to make the “Basic Environmental Policy” more concrete, and review the issues and results, Nippon Steel drew up a medium-term environmental and disaster prevention management plan for the period between FY2006 and FY2008, along with a review of the management plan.

We would like to contribute to the sustainability of society by means of “Environmental and disaster prevention management” based on the following six pillars.

- **Promotion of environmental relations**
- **Promotion of countermeasures to global warming**
- **Promotion of voluntary action plan by mix of energy conservation technology development, etc.**
- **Participation in the construction of a recycling-oriented society**
- **Promotion of environmental risk management**
- **Promotion of environmental and disaster prevention management**

Medium-term Environmental and Disaster Prevention Management Plan FY2006 to FY2008

In addition to the six countermeasures, we will promote the following measures to contribute to the construction of a recycling-oriented society.

- **Participate in the construction of the recycling-oriented society**
- **Offering environmental and energy solutions**
- **Promotion of environmental risk management system**
- **Promotion of environmental and disaster prevention management system**

Annual management cycle aimed at realizing the Medium-term Environmental and Disaster Prevention Management System

We have constructed a checking system centered on the twice-yearly Environmental Management Committee meeting, and also hold twice-yearly external audits, in order to promote the smooth execution of the Medium-term Environmental and Disaster Prevention Management Plan. In particular, in July 2006, we constructed a taskforce that is promoting studies concerning methods of reducing CO2 emissions as energy conservation measures and global warming countermeasures. In addition, we periodically hold top management seminars for each Group company as well as environmental conferences for affiliates. In this way, the entire Group implements environmental and disaster prevention management.

Medium-term Environmental and Disaster Prevention Management Plan and Management System

<table>
<thead>
<tr>
<th>Medium-term Environmental and Disaster Prevention Management Plan</th>
<th>Management System</th>
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<tbody>
<tr>
<td>Objective of a voluntary action plan based on the development of energy conservation technology etc.</td>
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Targets and Achievements for FY 2007

As a result of the increased production and increased ratio of medium-high grade steel due to steady demand, the effectiveness of our energy conservation and CO2 reduction activities as global warming countermeasures was reduced. Also, progress was made in the promotion of this business in China, construction of an international framework, and environmentally related businesses in each segment of the Group companies, but we experienced difficulties in collecting waste plastics, waste tires, and also recycled raw materials owing to the increase in the price of raw materials and fuel. As issues for the future, we would like to make efforts to reduce the final disposal quantity and recycle byproducts from the viewpoint of creating a recycling-oriented society, and also to carry out disaster prevention and chemical substance management from the viewpoint of environmental and disaster prevention management.
Promotion of Global Warming Countermeasures

Nippon Steel currently manufactures steel products with the world’s highest level of energy efficiency, and we are aiming for further improvement of efficiency. We are also engaged in reducing CO2 emissions and making our civil and transportation sectors more efficient through the supply of high function steel and collaboration with society. In addition, we are promoting CO2 reduction on a global scale through the transfer of energy conservation technology and technological development.

Activities for reducing CO2 and conserving energy during production

From the time of the first oil shock until around 1990, Nippon Steel intensively promoted continuity of process, recovery of waste energy, and so on, and as a result achieved an energy saving of more than 20%. Subsequently, Nippon Steel and other companies in Japan’s steel industry drew up a voluntary action plan under which it is intended to reduce energy consumption by 10% compared to the 1990 level by 2010, and are striving to achieve this aim.

Reduction of CO2 emissions

In FY 2007, the basic unit that indicates the capacity of the Nippon Steel Group (Nippon Steel Corporation, affiliated electric furnace companies, etc.) to emit CO2 (quantity of CO2 emissions divided by crude steel production) fell by 13.7% compared to the FY 1990 value. As a result, CO2 emissions in FY 2007 were about 69.5 million tons, which was a reduction of 7.1% despite a 7.6% increase in crude steel production and increased ratio of medium-high grade steel.

To enable us not only to carry out such energy conservation activities during production, but also to realize the voluntary action plan of Nippon Keidanren and the Japan Iron and Steel Federation, we intend to purchase approximately 2.2 million tons per year of emission credits converted into CO2 through the transfer of energy conservation technology and the supply of high function steel and collaboration with society. In addition, we are promoting countermeasures to energy conservation, it is striving to further increase energy efficiency by employing highly efficient facilities (for example, by replacing obsolete facilities that generate electricity and manufacture oxygen from recovered byproducts and gas waste with more efficient facilities) and also by utilizing waste plastic and waste tires. As a result of these efforts, the energy consumed by the Nippon Steel Group (Nippon Steel Corporation and affiliated electric furnace companies, etc.) in FY 2007 was 818 PJ. Amid the existence of energy increasing factors such as environmental countermeasures and the manufacture of high function steel, we achieved a 6.3% reduction (12.9% reduction in terms of the basic unit) compared to FY 1990.

Global warming countermeasures in Japan’s steel industry

Japan’s steel industry established a target of 10% reduction in energy consumption compared to FY 1990 to be achieved by FY 2010. Also, the industry is aiming to effectively utilize 1 million tons of waste plastics and so forth, based on the assumption of the establishment of a waste plastic collection system.

Regarding the FY 2006 results of CO2 reduction in Japan’s steel industry, global warming countermeasures were carried during the production process, resulting in a reduction of 10.4 million tons compared to the figure for FY 1990. When the reduction of 2.2 million tons due to non-energy sources is added to this, the total reduction becomes approximately 12.6 million tons. This CO2 reduction is equivalent to about 1% of Japan’s total CO2 emissions.

Also, outside the production process, an additional reduction of approximately 25.8 million tons was obtained through international cooperation as well as contributions due to products and byproducts. This CO2 is equivalent to about 2% of Japan’s total CO2 emissions.

Energy conservation measures

Because Nippon Steel roughly equates global warming countermeasures to energy conservation, it is striving to further increase energy efficiency by employing highly efficient facilities (for example, by replacing obsolete facilities that generate electricity and manufacture oxygen from recovered byproducts and gas waste with more efficient facilities) and also by utilizing waste plastic and waste tires. As a result of these efforts, the energy consumed by the Nippon Steel Group (Nippon Steel Corporation and affiliated electric furnace companies, etc.) in FY 2007 was 818 PJ. Amid the existence of energy increasing factors such as environmental countermeasures and the manufacture of high function steel, we achieved a 6.3% reduction (12.9% reduction in terms of the basic unit) compared to FY 1990.

Global warming countermeasures adopted by the Japanese steel industry, and the effect of CO2 reduction (FY 2006 results)

The chart shows the contribution due to products and byproducts.

- Civilian, transportation, etc.: CO2 reduction is about 12.4 million tons. This is equivalent to approximately 1% of the total CO2 reduction in Japan.
- High-functionality steel material: 7.9 million tons CO2
- Byproducts: 4.5 million tons CO2

Message from Stakeholders

Mr. Masaharu Uzawa
Head of Technology, Environment & Medium- and long-term technological development

Japan Iron and Steel Federation

“Global warming countermeasures implemented by Japan’s steel industry”

http://www.jisef.or.jp/
**Environmental Report**

**Transportation sector**

**Efforts made in logistics**

Among global warming countermeasures, reduction of CO₂ in the transportation sector in addition to reduction of CO₂ emissions in the industrial sector is an issue. Nippon Steel is striving to reduce CO₂ emissions during the manufacturing process and is also making efforts to reduce CO₂ in the transportation sector in the supply chain through more efficient logistics and weight reduction.

**Civilian sector**

**Efforts made in the office and home**

Under the plan to achieve the targets of the Kyoto Protocol, the industrial sector is reducing CO₂ emissions, but the reduction of CO₂ emissions in the transportation, office, and home sectors remains an issue. Nippon Steel is striving to continue to reduce CO₂ in the manufacturing process, and in addition, we are providing cooperation to reduce CO₂ in the civilian sector as far as possible. Specifically, we are striving to implement and popularize an environmental home ledger system.

**Overall activities**

In FY 2007, we imported a total of approximately 6.1 million tons per month of iron ore and metallurgical coal, and also delivered approximately 2.9 million tons of steel products to customers both in Japan and overseas. Transportation of semi-finished products and products necessary for these operations reached approximately 1 billion ton-km³ per month, and we are striving to raise the efficiency of our logistics (improve transportation efficiency, raise fuel economy, etc.), which we have fostered over many years.

Along with the amendment to the Act on the Rational Use of Energy in April 2006, which mandates the suppression of CO₂ generated in the transportation sector, the Group has been actively promoting further improvement activities. As a result, concerning the expansion of sea transportation, we achieved a modal shift rate*1, which is an index value based on the primary transportation amount over a distance of at least 500 km, of 96.5%, which is a 2.5% improvement over 2004.

Regarding the use of larger ships, we made efforts to accelerate the changeover from D-type ships to E-type ships (700-ton ships to 1,500-ton ships), and realized a transportation amount ratio of 79%, which is a 1% improvement over the previous fiscal year. Regarding the improvement of fuel economy of vehicles, we are striving to apply "hard" measures including the adoption of energy conservation tires and on the return journey to Japan, transport coal for Nippon Steel’s plants in Indonesia, China Steel Corporation, Taiwan (President: Y.C. Chen, hereafter China Steel) and Vietnam, among other regions. Despite this, we were able to put up with a certain amount of inconvenience such as making more effective use of the bath and shortening the period of use of the other regions. Despite this, we were able to put up with a certain amount of inconvenience such as making more effective use of the bath and shortening the period of use of other regions.

**Combinations and comparisons with other regions**

In July 2008 we changed our tabulation method from the previous method using monitors to a method involving the entire company. Under this new method, monthly energy consumption figures are input from PC screens in the company. The use of PCs enables tabulated results to be fed back immediately. The participants compare the amount of CO₂ emitted by each household, with the CO₂ emission figures for the entire company and also each works, thus enabling them to grasp the items that need to be improved in the home, and use this information to devise further countermeasures.

**Efforts made in logistics**

### Combination transport of coal with China Steel Corporation, Taiwan

Since April 2007, Nippon Steel Shipping Co., Ltd. has been implementing combination transport (cooperative vessel arrangement) of raw materials based on business collaboration between Nippon Steel and China Steel Corporation, Taiwan (President: Y.C. Chen, hereafter called CSEC), using its own ships. Under this arrangement, ships outbound from Japan to Taiwan transport limestone loaded at Shikoku for CSC, and on the return journey to Japan, transport coal for Nippon Steel’s plants in Indonesia, Vietnam, and other countries. This minimizes the number of empty ships and thus realizes efficient transportation. In FY 2007, we implemented combination transport for four voyages using a 70,000-ton (cargo tonnage) Panamax vessel.

**Efforts made in the office and home**

### Message from Stakeholders

"Improvement items aimed at reducing CO₂ emissions by the logistics sector" — PS6

**Message from Stakeholders**

**Average CO₂ emissions for entire company in FY2005 and comparison with the Hokkaido region**

The opinions of an “environmental home ledger monitor”

As a result of keeping an environmental home ledger, my family’s awareness of energy conservation has increased.

In 2009, the CO₂ emission from my home was 5,200 kg/year-person, but now, we have cut it by about 20%. In Hokkaido, a lot of kerosene is used for heating, and the usage of automobiles is also high because there is relatively little public transport. For these and other reasons, Hokkaido is handicapped in respect of energy consumption compared to other regions. Despite this, we were able to put up with a certain amount of inconvenience such as making more effective use of the bath and shortening the period of use of the heating system (by turning it off on sunny days even in winter, and also turning it off 30 minutes before retiring for the night), thus enabling us to conserve energy.

An environmental home ledger is no trouble to keep up to date because all you have to do is read the electricity and gas meters and fill in the table in the ledger and the CO₂ is calculated automatically. Using it makes me realize that the large theme of global warming is something that we can tackle in our everyday lives.
India, Australia, South Korea

Research and development of countermeasures for global warming

Nippon Steel is tackling reduction of CO₂ by means of various resource conservation and energy conservation technologies, and is also taking up the challenge of “innovative steelmaking processes” as future technologies, aiming at further improvement of our world-beating energy efficiency.

Coke oven incorporating next-generation coke manufacturing technology (“SCOPE21”)

In May 2008, the No. 5 coke oven was put into operation at the Oita Works, which is the first plant to incorporate to the maximum the results of the world’s first next-generation coke manufacturing technology “SCOPE21”. It is anticipated that the new oven will realize a reduction of approximately 100,000 kJ/year converted to crude oil or approximately 400,000 tons/year converted to CO₂, compared to the conventional coke oven.

“SCOPE21” is technology that was developed under a national project sponsored by the control of the Ministry of Economy, Trade and Industry, for the purpose of increasing the ability to overcome resource and energy issues. It incorporates various innovative technologies for reducing coke manufacturing time, improving the quality of coke, and so forth, and is expected to result in increased utilization of low-grade metallurgical coal and produce a significant saving of energy.

Nippon Steel considers that the adoption of a “SCOPE21”-type coke oven amid the supply and demand crunch and the price increase of raw material for making steel will further increase its ability to devise resource conservation measures, and thereby contribute to the solution of global warming issues.

Development of innovative steelmaking processes

In July 2008, the Japan Iron and Steel Federation including Nippon Steel commenced the “COURSE50 project”¹, which is aimed at developing radical CO₂ reduction technologies by returning to the basics of iron ore reduction.

One of these technologies is separation and recovery technology for CO₂ that is generated during the reduction of iron ore using carbon. We intend to tackle the development of technology for efficiently capturing and recovering CO₂ from blast furnace gas, through the development of a highly efficient CO₂ absorbent, the development of technology for utilizing unused waste heat, and so forth.

Another is a technology that utilizes hydrogen as a reducing agent instead of carbon. We are carrying out basic research on the mechanism of reduction by hydrogen and are also keeping our sights on technology for increasing the amount of hydrogen that can be obtained from byproduct gas, as a hydrogen source for the time being.

As the initial development target, we are aiming for CO₂ reduction of approximately 30%. Furthermore, when the results of development are ready to be put into practical application, we intend to promote collaboration with the government and other related organizations because of the absolute necessity of developing technology for monitoring the separated and recovered CO₂, and also of preparing a social infrastructure for supplying hydrogen and electricity with minimal generation of CO₂.

Promotion of CDM projects

Nippon Steel is actively engaged in CDM projects utilizing energy conservation equipment, which lead to reduced CO₂ in China and South Korea.

A CDM project utilizing CFC facilities in Hebei Province in China was formally approved by the CDM Executive Board of the U.N., and we intend to purchase 200,000 tons of emission credits each year. Also, concerning CCO₂, we are promoting three CDM projects. Prior to this, we had been jointly promoting a CDM project involving GFC dissociation with Mitsubishi Corporation in Shandong Province, and the plant went into operation in the spring of 2007. The overall reduction of emissions as a result of this project is approximately 10 million tons, which is a world-beating figure. Of this, we intend to purchase 2 million tons of emission credits.

In October 2007, we established a joint venture company with the South Korean company POSCO for recycling dust and supplying reduced iron, and are jointly promoting a CDM project utilizing their RH facilities.

Cooperation between the Japanese and Chinese steel industry concerning environmental conservation and energy conservation

The Japanese and Chinese steel industries including Nippon Steel held the first meeting of the “Japan-China Steel Industry Advanced Technology Exchange Meeting for Environmental Protection and Energy Saving” in 2005 in Beijing, and also held specialist exchange meetings in September 2006 in Beppu City, Oita Prefecture, and in September 2007 in Beijing. With the holding of each meeting, presentations and discussions concerning technology, activity situation, and other matters related to energy conservation, effective utilization of resources, and environmental conservation are becoming more in depth.

Activities through IISI (International Iron and Steel Institute)

The International Iron and Steel Institute announced a position paper concerning the sectoral approach in the steel industry entitled “Global sector approach to CO₂ emissions reduction for the steel industry” at a side event of the 13th Conference of the Parties (COP13) of the United Nations Framework Convention on Climate Change held in Bali, Indonesia in December 2007. The way of thinking set out in this paper is the fairest, most rational, and most effective framework from the viewpoint of realizing “participation of all of the major emitting countries, exceeding the requirements of the Kyoto Protocol, and bringing out a reduction of emissions throughout the world” as expounded in “Cool Earth 50” presented by the Japanese government.

Activities through the APP (Asia-Pacific Partnership)

Nippon Steel has participated in the main conferences from the ministerial summit held in Australia for the first time in January 2006, followed by the 1st Steel Task Force held in the U.S. in April 2006, the 2nd Steel Task Force held in South Korea in April 2008, and is promoting activities that can accelerate efforts aimed at preventing global warming, through energy conservation and environmental conservation technology in the steel sector in the seven main CO₂-emitting countries in the Asia Pacific region among the members of the APP.

*1 SCOPE21

This is an abbreviation for Super Coke Oven for Productivity and Environmental Enhancement project (the First Cycle).

*2 COURSE50 project

Energy Efficiency in an effort to reduce CO₂ emissions reduction through the initiative of the International Iron and Steel Institute (IISI) and the Asia Pacific Partnership (APP) of the G8. The target of this project is to develop “Green Steel” technologies that can contribute to emission reductions in the steel industry. This project was selected by the New Energy and Industrial Technology Development Organization.
Promotion of in-house zero emissions

In the manufacture of iron, the components of iron ore other than iron, ash from coal, and so on, dissolve, and are then separated from iron to become slag*1. More than 600 kilograms of byproducts consisting of soil and dust collected on a dust collector, sediment formed in water treatment facilities, and so on, are generated for manufacturing 1 ton of iron.

In FY 2007, Nippon Steel generated 20.75 million tons of byproducts excluding scrap. Also, the amount of final disposal of waste in FY 2007 was 350,000 tons as a result of increased recycling efforts. This was a decrease of 8% over the previous fiscal year (46% reduction compared to FY 1997).

If slag, which accounts for most of the byproducts, blast furnace slag is used as a raw material for making cement and so forth, and steelmaking slag is finding increasing use in civil engineering as a road base material and also in fertilizer. Both kinds of slag are more or less completely recycled as resources. Regarding dust as well, we are promoting recycling by employing dust recycling equipment and so forth, for use in-house as a raw material for making iron.

Examples of the promotion of zero emissions in-house

Example 1: Slag recycling

Slag, which is a byproduct of the production of steel, consists mainly of lime (CaO) and silica (SiO₂). From the viewpoint of resource and energy conservation, almost all of the slag is used for various applications such as raw material for cement, for soil improvement, and as a road base material. The greatest percentage of slag is blast furnace slag, about 300 kilograms of which are generated for each ton of pig iron produced. About 60% of blast furnace slag is used for cement, enabling the energy used in the cement manufacturing process to be reduced by about 40% (estimated value). Also, for each ton of molten steel produced, approximately 130 kilograms of steelmaking slag are generated. This is used as a road base material and material for civil engineering work.

Example 2: Blast furnace cement

Granulated blast furnace slag that has been pulverized and mixed with ordinary Portland cement*2 is called "blast furnace cement". CO₂ emissions resulting from the manufacture of this cement can be reduced by about 40% compared to ordinary cement. Blast furnace cement has excellent long-term strength and low hydration heat, so it is effective for preventing temperature cracking. In addition, it has excellent resistance to salt damage and alkali-aggregate reaction*3. Blast furnace cement is registered as an Eco Mark product, and also is specified as a "designated procurement item"*4 for public works based on the Green Purchasing Law. It is also used in "common specifications for construction work" under the supervision of the Ministry of Land, Infrastructure and Transport.

Example 3: Recycling dust and sludge

From 2000, we adopted rotary hearth furnaces (RHF facilities) at the Kimitsu Works, the Hirohata Works and the Hikari Works (currently under the control of Nippon Steel & Sumikin Stainless Steel Corporation), in order to promote further recycling of dust and sludge*5 generated in steelworks. In March 2008, a third furnace was installed at the Kimitsu Works, and a third furnace is also scheduled to be installed at the Hirohata Works around the end of 2008. This will enable us to establish a setup for completely recycling iron dust byproducts generated in steelworks in the future. In the RHF facilities, dust and sludge are formed into pellets, reduced in the furnace, and then reused as raw materials. Zinc contained in the pellets is gasified and recovered in the furnace, and sold to non-ferrous material-refining companies.

Table 2: Transition of amount of byproducts and recycling (FY 2007)

<table>
<thead>
<tr>
<th>Byproduct Type</th>
<th>Process of generation</th>
<th>Byproducts in FY 2006 (unit: million tons)</th>
<th>Recycling rate</th>
<th>Recycling rate (FY 2007)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blast furnace slag*1</td>
<td>Components other than iron isolated in blast furnace</td>
<td>9.45</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Blast furnace slag*1</td>
<td>Environments other than steel processed in the steel-making process</td>
<td>5.26</td>
<td>90%</td>
<td>90%</td>
</tr>
<tr>
<td>Blast furnace slag*1</td>
<td>Dust collected with a dust collector</td>
<td>2.03</td>
<td>80%</td>
<td>80%</td>
</tr>
<tr>
<td>Blast furnace slag*1</td>
<td>Sludge</td>
<td>1.45</td>
<td>80%</td>
<td>80%</td>
</tr>
<tr>
<td>Blast furnace slag*1</td>
<td>East side</td>
<td>0.30</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Blast furnace slag*1</td>
<td>Waste from waste water treatment facilities</td>
<td>0.97</td>
<td>80%</td>
<td>80%</td>
</tr>
<tr>
<td>Blast furnace slag*1</td>
<td>Other materials</td>
<td>1.63</td>
<td>80%</td>
<td>80%</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>10.54</td>
<td>80%</td>
<td>80%</td>
</tr>
</tbody>
</table>

*1 Slag in blast furnace
*2 Portland cement
*3 Alkali aggregate reaction
*4 Designated procurement item
*5 Sludge

Figure 2: Final disposal levels in the past and the target level
Efforts made through collaboration with society and other industries

- **Relationship with other industries**
  Nippon Steel actively utilizes byproducts generated in society and other industries as substitute raw materials and fuels for the steelmaking process, thus greatly contributing to the reduction of necessary natural resources and also waste materials in society as a whole. Specifically, we use iron grinding chips generated in other industries as raw material, and also paper sludge* generated in the papermaking industry and aluminum dross* generated in the aluminum industry as raw materials for making steel.

  In the future, we intend to increase the application range of recycled resources that substitutes existing raw materials and fuels, and thus contribute to the reduced use of natural resources in society as a whole.

- **Concept of an eco-complex (collaboration between industries)**
  We have the ability to effectively utilize resources using safe methods that have lower impact on the environment, by means of our technology (high temperature process technology, reduction and oxidation reaction technology, etc.) which can cope environmental and energy issues, our vast business space, our know-how for recycling byproducts generated outside the company, and so on. We are participating in a study of an “Eco-complex concept” for solving environmental issues in the 21st century from the viewpoints of quality and quantity, while giving full play to our potential. In Kitakyushu City, we established the “Kitakyushu Eco-complex Promotion Council” together with the Kitakyushu City Government, the Kyushu Bureau of Economy, Trade and Industry, 15 corporations, The University of Kitakyushu, and others. This council is currently studying collaboration between industries.

- **Eco-town project**
  In Kitakyushu Eco-town, we constructed complex core facilities (processing capacity 320 tons/day) consisting of a combination of gasification melting facilities and high efficiency industrial waste gasification melting facilities, in order to appropriately process industrial waste such as residue generated in Eco-town after recycling and automobile shredder dust (ASR)* which can cope environmental and energy issues, our vast business space, our know-how for recycling byproducts generated outside the company, and so on. We are participating in a study of an “Eco-complex concept” for solving environmental issues in the 21st century from the viewpoints of quality and quantity, while giving full play to our potential. In Kitakyushu City, we established the “Kitakyushu Eco-complex Promotion Council” together with the Kitakyushu City Government, the Kyushu Bureau of Economy, Trade and Industry, 15 corporations, The University of Kitakyushu, and others. This council is currently studying collaboration between industries.

Recycling waste tires

- **We established a setup that realizes a 100% recycling rate.**
  We used the scrap melting process (SMP), which is the steelmaking process, to construct a setup at the Kitakyushu Works that recycles about 60,000 tons/year of waste tires into raw materials and fuel. We also established the world’s first technology for recycling the steel cords* in tires into high-grade steel, which are used as a substitute for scrap iron, and also fully recycling oil, gas, and carbon residue into substitute fuel.

  The recycling process involves the use of gasification recycling facilities that enable approximately 60,000 tons of waste tires to be thermally decomposed each year. As a result, we have established a setup that can process at least 10% (120,000 tons/year) of all waste tires in Japan, and the CO₂ reduction effect is equivalent to approximately 250,000 tons. In FY 2007, it became difficult to obtain used tires owing to the increase in the price of raw materials and fuel, but despite this, we are more or less fully processing approximately 87,000 tons of the waste tires generated throughout Japan.
Recycling waste plastics

We fully recycle container and packaging plastics using our independent technology, which has been certified by the national government. Nippon Steel is endeavoring to make effective use of waste plastics utilizing the steelmaking process. We fully recycle container and packaging plastics that each municipality collects by separation from general household garbage, based on the Act on the Promotion of Sorted Collection and Recycling of Containers and Packaging. We recycle the container and packaging plastics by means of the “coké oven chemical materials process,” which is our independent technology certified by the national government as chemical recycling technology.

In FY 2007, we processed 150,000 tons of container and packaging plastics, which is equivalent to about 30% of container and packaging plastics collected by municipalities throughout Japan. Currently, we have a processing capacity of 250,000 tons at five steelworks in Japan, namely Muroran, Kimitsu, Nagoya, Yawata, and Oita, and we are preparing a setup that will enable us to accept between 300,000 and 400,000 tons by 2010 (1 million tons for the entire steel industry), based on the assumption that recovery of waste plastics will increase along with improved citizen awareness and increased participation by municipalities.

One million tons of waste plastics recycled

As of May 2008, the cumulative total of waste plastic that we recycled reached 1 million tons. This social contribution is equivalent to a reduction of 3.2 million tons of CO2, or a reduction of 4 million cubic meters of landfill. According to a government report*1 concerning the recycling of plastics in FY 2007, recycling of plastics avoids the generation of CO2 that occurs when plastics are incinerated by the local municipality, so it is highly evaluated as a non-use process, which is our independent technology certified by the Central Environmental Conservation Council, and which is called “chemical recycling.”

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Plastic recycling setup

In the coke oven chemical materials process, waste plastics are recycled in the following stages.

1. Plastic pre-processing stage

Plastics brought in from the municipality are processed to provide them with the required quality and shape for insertion into the coke oven. First, iron, aluminum metal, glass fragments, gravel and other foreign matter are removed, then the plastics are pulverized, PVC is removed, and then molding is carried out to reduce this volume.

2. Thermal decomposition processing stage (coké oven)

Plastics that are fed to the coké oven are heated to about 1,200°C in an oxygen-free condition in a sealed coke oven chamber to cause thermal decomposition. The plastics undergo thermal decomposition at a temperature of between 200 and 450°C, high-temperature gas is generated, and carbonization occurs almost completely at 500°C. The high-temperature gases obtained from thermal composition are refined to produce hydrocarbon oils and coke oven gases, and residues are recovered with coke for reuse in blast furnaces.

Breakdown of use by the coke oven chemical materials process

Generated hydrocarbon oils (light oils, tar) are used as chemical raw materials for container and packaging plastics, electronic materials, and paints, coke is used as a reducing material for iron ore, and coke oven gas is used as fuel gas or at a power station in a steel works. Here, 40% of processed waste plastics are reused as hydrocarbon oils, 20% as coke, and 40% as coke oven gas.
Promotion of Environmental Risk Management

Nippon Steel established a pollution prevention measure committee when the company was established in 1970, and since then has worked actively to reduce environmental risks. In addition to conforming to the relevant laws, such as the Air Pollution Control Law, we aim to continuously preserve the environment in various regions in consideration of the environmental risks, which differ depending upon the particular steel works, and are promoting environmental risk management. We are also engaged in effective environmental risk reduction throughout the Nippon Steel Group.

Tackling the reduction of environmental risks

Air pollution risk management

In order to reduce SOx (sulfur oxides), NOx (nitrogen oxides), soot, and dust, Nippon Steel analyzes the atmospheric risk based on scientific simulation and implements effective facility countermesures such as the use of low-sulfur fuel, facilities that reduce the emission of SOx and NOx, a burner that generates little NOx, and exhaust gas processing equipment. We also carry out periodic patrols and continuous monitoring to ensure there are no abnormal emissions into the atmosphere. We also installed dust prevention nets to prevent scattering of dust around the raw material yard, first at Kamaishi in 1989, then sequentially at Kitakyushu, Osaka, Nagoya, and Hiroshima, while verifying their effectiveness.

Water quality risk management

Nippon Steel uses 4 billion tons of freshwater each year in all the steel works. About 90% of this is circulated, and the amount of water discharged to the public water area is kept to the minimum. We are actively striving to improve water quality by maintaining the functions and improving the processing efficiency of wastewater treatment facilities and also performing detailed quality inspection and control of wastewater, and are also making efforts to prevent water pollution of public water areas in the vicinity of each workplace. In order to construct a better water environment, Nippon Steel, including the Group companies, is also promoting measures to cope with the strengthening of regulations such as wastewater regulations pertaining to the protection of aquatic life and the sixth total volume regulation.

Soil risk management

Nippon Steel and all of the Group companies are promoting stringent measures based on the Soil Contamination Countermeasures Act, various regional ordinances, oil pollution prevention guidelines, and so forth, aiming at protecting soil and underground water.

Risk communication

In addition to the above, we implement voluntary surveys and countermeasures, and are striving to hold dialogues with the local community, concerning noise and other environmental issues.

Overall emission control of chemical substances

Regarding the 354 substances covered by the PRTR Law, since 1999, which was prior to the enactment of this law, Nippon Steel has made efforts to reduce emissions and improve management in accordance with a manual prepared independently by the Japan Iron and Steel Federation. Within the same framework, concerning volatile organic compounds (VOC)*1, which were newly incorporated into the Air Pollution Control Act in 2004, the entire Japan Iron and Steel Federation prepared a manual and has started to take action voluntarily. Also, we have taken the initiative in promoting substitutes for as well as disposing of products containing asbestos starting with areas where this is possible, in accordance with safe handling standards.

Emission management based on the PRTR Law

The achievements of FY 2007 concerning which we made notification covered 35 substances. The total quantity of emissions released into the atmosphere was 365 tons, and that discharged into the public water system was 31 tons. The total quantity of pollutants that were taken outside our plants was 1,123 tons. Most of this consisted of chromium and trivalent chromium compounds, and also manganese and manganese compounds.

The departments that handle chemical substances periodically register data concerning chemical substances used, and totalize this data by the notification deadline at the end of June each year. The results are verified as appropriate by means of an internal audit. We also disclose information via our website.

*1 List of all substances for which Nippon Steel has made notification” ➞ PSB

Voluntary priority management of chemical substances

Benzene, tetrachloroethylene, dichloromethane

Regarding harmful air pollutants covered by the Air Pollution Control Act, apart from trichloroethylene, which is handled in small quantities, we have voluntarily drawn up and are implementing a reduction plan for steelworks where at least one ton per year of the above three substances are handled. As a result, we were able to more or less achieve the target for all three substances in FY 2003. Since then, we have continued to reduce the quantities of these substances used.

In particular, regarding benzene, because the Muroran district had been designated as a national voluntary management region, we adopted measures such as installing equipment that burns and decomposes exhaust gas and renewing coke oven lorry cars. Subsequently, in 2007 we commenced a large-scale overhaul of the coke oven proper.

Dioxins

Although we possess sintering facilities and incineration facilities that release dioxins into the atmosphere, the levels of dioxins are all below the emission standards. In addition, we have made efforts to further voluntarily reduce these levels in accordance with the guidelines of the Japan Iron and Steel Federation. As a result, we achieved our target of a 30% reduction in terms of absolute concentration by FY 2002, and also achieved a large reduction of 85% in FY 2007.
Message from the chairman of the Environmental Management Committee

Compliance, which includes safety, the environment, and disaster prevention, is a prerequisite for the existence of corporate management. As a corporate citizen that consists with the local community, it goes without saying that we observe the relevant laws and ordinances, and also we consider environmental risk management as a natural duty. We intend to further strengthen our preventive activities, implement effective measures for facilities, and also put efforts into "soft" aspects such as improving operation and strengthening the maintenance and management of facilities.

To this end, the Environmental Management Committee holds an overall inspection twice a year, and in addition, we intend to make every effort to ensure that ISO 9001 is carried out by the management system through the various sub-committees, liaison conferences, and so forth. In particular, in July 2008, we constructed a taskforce (TF) that is promoting studies concerning various issues (short term as well as medium and long term) related to the reduction of CO2 emissions as methods of coping with energy conservation issues and global warning issues, taking into consideration the high cost of raw materials and fuel. In addition, we hold environmental conferences twice a year for the Group companies in order to exchange information and take appropriate actions, aiming at reducing environmental and disaster risks in the overall Nippon Steel Group.

Hidetuki Sekizawa
Chairman of the Environmental Management Committee (Executive Vice President in charge of environmental affairs)

Environmental Management System

Since its establishment in 1970, Nippon Steel has systematically promoted environmental and disaster prevention management as a core part of its business. It constructed a management system by combining its affiliated company environmental conference with internal and external auditing, centered on the Environmental Management Committee and each sub-committee that it established in 1998, and is currently promoting activities predicting environmental and disaster prevention risks throughout the entire Group.

Environmental and disaster prevention management system

- Message from the chairman of the Environmental Management Committee

- Environmental Management System (Convened twice a year)
  - Chairman: Executive Vice President (Chairman) Number of committee members: 12
  - Committee members: Executive vice-presidents, managing directors, executive counselors, general managers

- Head Office (as of July 2008)
  - Chairman: Executive Vice President
  - Committee members: Executive vice-presidents, managing directors, executive counselors, general managers

- Resource recycling and new energy (energy conservation conference and eco-day event)

- Steel Works + Head Office
  - Steel Works liaison meeting (four times per year)

- Board of Directors (Reporting)

- Management Committee (Determination of important matters)

- Environmental Information Foundation (Utilization of IT technologies)

- Auditing for environmental and disaster prevention

- List of participants in the FY 2007 affiliated company environmental conference

- Environmental and disaster prevention audit

- Affiliated company environmental conference

Regarding the affiliates of the Nippon Steel Group, an environmental conference is held twice a year. We collaborate with the departments that are in charge of internal control and risk management, and every half year, carry out joint activities concerning the prevention of environmental standard violations and environmental disaster prevention.

In FY 2007, we carried out information exchange concerning the prevention of environmental pollution, prevention of global warming, earthquake countermeasures, activities for chemical substance management, and so forth.

- "Nippon Steel's ISO14001 registration situation" → PS8

- Promoting earthquake and disaster countermeasures

We are currently promoting earthquake countermeasures centered on the Head Office and steelworks located in regions where there is apprehension concerning the occurrence of a major earthquake. Based on the main viewpoints of securing safety of life and preventing secondary disasters, we have prepared "Company-wide Disaster Earthquake Countermeasure Guidelines," and are promoting a study of countermeasures throughout the entire Group and also aiming to share information including with partner companies and affiliates, while placing top priority on minimizing human injury.
Environmental accounting

- Philosophy of environmental accounting

Nippon Steel introduced environmental accounting in order to obtain a grasp of the cost and effects of environmental protection as a guideline of its corporate activities, and since FY 2000 has been publicizing environmental accounting. Our steel industry is an equipment industry, and we have installed environmental countermeasure facilities such as dust collectors and also raised the efficiency of the production facilities, thus realizing environmental protection and energy conservation.

We recognize these efforts as being the cost of investing in environmental countermeasure facilities and energy conservation facilities, and we also recognize the necessary outlay for environmental protection as being environmental protection cost.

- Environmental conservation cost

Costs that we incurred in order to maintain the environment in FY 2007 were 19.3 billion yen for environmental equipment investment, 6.6 billion yen for energy conservation facilities, 7.9 billion yen for environmental conservation activities, and 55.1 billion yen as the cost of maintaining the environmental. The capital invested in environmentally related facilities was approximately 8% of the total facilities investment. Of the costs incurred, the greatest part, comprising the cost of preventing atmospheric pollution, was 28.2 billion yen per year, and the cost of preventing water pollution was 10.3 billion yen. In addition, the cost of environmentally related development and research was 3.5 billion yen.

Concerning the environment, we upgraded wastewater treatment measures and also invested in dust prevention countermeasures. Regarding energy conservation equipment, we invested in coke C02 equipment, heating furnace fuel transformation, and various electric power conservation measures in order to improve the energy consumption situation.

Regarding the environment conservation cost, like the previous fiscal year, the cost of air pollution prevention was the largest, particularly as a result of taking steps to solve the issue of dust in the vicinity of the steelworks. The cost of processing byproducts and waste materials increased due to recycling of increased quantities of byproducts resulting from increased production of steel.

Environmental preservation costs

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Environmental Preservation Effects

- Effects of environmental protection

The effects of environmental protection are described in the relevant sections of this report. For example, the effects of measures aimed at the reduction of energy consumption are indicated in the section “Promotion of Global Warming Countermeasures,” and the effects of measures for reducing the use of water and various other resources used in the manufacturing process are shown in the sections “Water quality risk management” and “Energy and Resources: Their Interrelationship Based on Recycling and Its Impact on the Environment.” For environmentally harmful substances and waste matter generated by business activities, individual performance indicators are used to present actual data concerning SOx and NOx for air pollution, and CO2, nitrogen, and phosphorus for water and soil quality. The actual reductions achieved are indicated for harmful chemicals including dioxins and benzene, while for waste matter the final disposal amount is indicated.

We continue to carry out appropriate investment including that for renewing obsolete equipment used in the fields of energy conservation, protection of the atmospheric environment, maintenance of water quality, control of chemical substances, and recycling of resources. Most of the cost in FY 2006 consists of maintenance of various countermeasures implemented up to now.

We are continuing to strive for improved accuracy of environmental accounting, and by using accuracy as a management index we intend to make effective facility investments in order to realize further environmental protection and energy conservation.

Cumulative investments in support of recycling measures

Cumulative investments in energy-saving measures

Cumulative investments in environmental measures

*Each circled figure is an annual investment.
Offering Environmental and Energy Solutions

Nippon Steel produces and offers high function steel material that has excellent recyclability, realizing energy conservation, conservation of resources, the elimination of harmful substances, and so on. In this way, we contribute to the sustainable development of the whole society. We also strive to reduce the burden on the environment throughout the entire supply chain. We also promote environmental and energy solutions for the entire Group.

Manufacture of steel recycling and eco-products® in Japan

Steel recycling in Japan (FY 2006 example)
In Japan, some 1.26 billion tons of steel from automobiles, machines, buildings, bridges, and so on, accumulate in society. This steel is collected as scrap according to the service life of each product, such as steel cans that are recycled over a short period, and stainless steel products that have long life, and the entire amount is recycled. By complementing the converter process used for processing iron ore with the electric furnace method used for processing scrap, it is possible to recycle steel any number of times for the necessary applications. Steel that is thus limitless recycled contributes to a sustainable society that has minimum environmental impact.

Manufacture of eco-products® that take LCA into account (environmentally friendly products)
High function steel such as high tensile steel sheet and electrical steel sheet is indispensable for hybrid vehicles and low energy consumption equipment which support countermeasures against global warming. The construction of a recycling-oriented society necessitates long-life products with high recycling ability. Also, demand for products that do not contain harmful substances is rapidly increasing on a global scale. In order to meet these demands, Nippon Steel utilizes its world-leading technical development ability to offer eco-products® that have minimum environmental impact during the flow from mining the raw material → transporting it → producing steel → forming parts and materials for parts, and assembling parts → use of the product by the customer → recycling, based on the concept of LCA.

Contribution to global warming countermeasures by means of high-function steel
Nippon Steel offers high-strength steel sheets that satisfy both the requirements of lightness and safety for improving the fuel economy of automobiles, and also high-function steel such as steel pipes and red wire materials, which are used for engines, drive trains, and the parts of the suspension system, thus realizing weight reduction of vehicle bodies. As an unrivaled top manufacturer, we also supply highly efficient electrical steel sheet, which is indispensable for the motor of hybrid vehicles.

Development of Eco-Products® with due consideration of LCA

Development and offering steel that is free of harmful substances
Due to concerns about environmental pollution caused by lead in scrap automobiles, we have developed and are supplying lead-free plated steel sheet and lead-free free-cutting steel (steel bar) for fuel tanks and crankshafts. We were also among the first to develop and commence supplying chromate-free electro-galvanized steel sheet for automobiles, home appliances, and office automation equipment.

Energy conservation due to the Nittetsu Super Frame construction method
The Nittetsu Super Frame construction method is a steel house construction method to which our independent development has been added. It consists of a combination of a steel I-frame structure and an outside thermal insulation method, realizing excellent air tightness and thermal insulation, and also energy conservation during cooling and heating. This construction method uses recycled materials for environmental friendliness. It can be used for a wide range of low-rise buildings (three floors or less) such as stand-alone dwellings and apartment houses, dormitories, facilities for social welfare for the aged, shops, and so forth. We have a share of approximately 60% of the entire steel house market.

"Examples of eco-products® that address environmental issues from the LCA perspective" → PS9
Efforts by Each Business Segment
Each segment of the Nippon Steel Group contributes to the reduction of the environmental load in society and also environmental protection, through the company's business.

Engineering and Construction
(Nippon Steel Engineering Co., Ltd.)

Direct melting system for recycling
Nippon Steel Engineering Co., Ltd. offers a variety of total solutions in the fields of waste disposal and recycling that take account of the global environment.

The core of this is a direct melting system (shaft furnace-type gasification and melting furnace), which has been successfully operating for nearly 30 years since it was commissioned in 1979, and to date, orders for 35 systems have been received from both Japan and overseas. This system can process a wide range of waste, all together including burnable garbage, non-burnable garbage, sludge, and incineration ash, and all of the recovered slag and metal is turned into resources that are circulated through the market to be converted into asphalt aggregate, concrete secondary products, and so on. Also, we actively utilize energy generated during the treatment process to generate electricity, for example, and implement complete countermeasures for dioxins. In this way, we have continually realized minimization of the amount of final disposal waste and impact on the environment from a wide viewpoint. This know-how is being used in PFI*-type projects, which have been increasing in recent years and are contributing to the development of a better, self-sustainable society.

PCB (polychlorinated biphenyl) detoxification processing
PCB, production of which ceased in 1972 due to its adverse effects on the human body and the environment, has been stored for more than 30 years owing to the difficulty of detoxifying it. Based on the Law concerning Special Measures against PCB, which was enacted in order to overcome this problem, it is planned to detoxyfy all PCB waste matter and have been constructed at five locations throughout Japan. The first of these is the Kitakyushu PCB Waste Treatment Facilities (completed in December 2004), which were designed and constructed by Nippon Steel Engineering Co., Ltd. In 2005, Nippon Steel Engineering Co., Ltd. received an order to construct facilities in Muroran, Hokkaido Prefecture and in 2006, it received an order for the second stage of construction of the Kitakyushu PCB Waste Treatment Facilities. Our PCB waste treatment technology brings peace of mind to the next generation while remaining at the forefront of the era.

Bio-ethanol production
Nippon Steel Engineering Co., Ltd. was commissioned by the New Energy and Industrial Technology Development Organization (NEDO) to conduct a new resource-recycling system pilot project, which is currently being implemented in Kitakyushu Eco-Town in Fukuoka Prefecture. This project, which is called the “food waste ethanol production-recycling system pilot project,” is intended to create ethanol from carbohydrates contained in waste food. It uses bio-technology and will contribute to the realization of a new waste-recycling system.

Soil and underground water purification system
We have established a coherent solution setup under which surveys, purification measures, and monitoring activities are carried out. This system promptly meets the needs of compliance, CSR, and other customer needs.

Survey: Accurately meets a variety of needs (purchasing or selling of land, asset evaluation, ISO, etc.)

Purification measures: We make optimum proposals using our wealth of countermeasure technology for each polluting substance.

1. VOC and oil: Bio-remediation method using micro-organisms in the soil to decompose and detoxify benzene and oil; iron powder solution injection method that involves injecting and percolating of a collodion solution containing super-fine iron power; a heating method in which purification takes place by mixing and agitating an additive to a rotary-type pulverizing and mixing unit; and a pumping treatment system that pumps up and detoxifies contaminated underground water.

2. Heavy metals: Recycling to cement raw material; sea area landfill disposal at business partner’s site; encapsulation treatment employing the twisting method; and containment technology employing shielding materials such as steel sheet piles

Subterranean heat system that uses foundation piles (NS Ene-Pile)
“NS Ene-Pile” constitute a heat pump system using as the heat source subterranean heat from the ground or underground water, for example, in which the foundation piles of a building, such as “NS Ene-Pile®,” are utilized as a subterranean heat exchanger. In contrast to the air temperature, the underground temperature is stable and undergoes little change throughout the year, so this system permits more efficient energy conservation operation compared to an air heat source method.

Although a subterranean heat pump is highly efficient, the extremely high cost of soil excavation due to Japan’s peculiar soil structure constitutes a major impediment to its popularization. Because NS Ene-Pile does not require additional soil excavation costs or necessitate the burial of a subterranean heat exchanger, the initial cost can be reduced.

Based on this technology, Nippon Steel Engineering Co., Ltd. offers increased energy efficiency for the total building as well as a building that enables CO₂ emission to be reduced.

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**Environmental Report**

Offering Environmental and Energy Solutions

Efforts by Each Business Segment

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**Urban Development**

(Nippon Steel City Produce, Inc.)

- **Environmentally harmonious town creation**

  (Livio Higashida Ville Court)

  For many years, Nippon Steel City Produce, Inc. has been engaged in creating towns that are in harmony with nature and are friendly to people, from the viewpoint of environmental conservation.

  In the Hatake-Higashida district of Kitakyushu City, Fukuoka Prefecture, we are promoting the creation of an environmentally harmonious town on a huge site of approximately 120 ha in collaboration with the community and the local government. The electric power for the condominium “Livio Higashida Ville Court” is supplied from natural gas cogeneration facilities, which reduce CO₂ emission to about one third of that of a coal-fired thermal power plant, and a solar generating system that generates the equivalent of 170 kW of electricity has also been installed, resulting in CO₂ emission that is approximately 30% less than that of the next-generation energy conservation standard. This project has been selected first in Japan as a Ministry of the Environment “Community-wide CO₂ Reduction Project.”

- **Environmentally harmonious residential estate**

  “Sakuragaoka Isaac Hiyoshi”

  “Sakuragaoka Isaac Hiyoshi” is a residential estate consisting of a total of 345 stand-alone dwellings. This project is being promoted by Kawasaki City, Kanagawa Prefecture under the theme of “Environment, health, and peace of mind.” It makes use of a park of approximately 8,000 m² together with the existing zelkova and other trees to create a residential environment surrounded by some 7,000 trees. In 2003 at the commencement of development, the estate had already been certified as the first “environmentally harmonious residential estate” in Kanagawa Prefecture. In 2008, we newly proposed a hybrid environmental residence “TERA” in Sakuragaoka Isaac Hiyoshi with energy conservation facilities added to the environmental construction design. By making effective use of natural energy, the use of fossil fuel can be reduced, enabling CO₂ emission when the residence is occupied to be reduced by up to 60% compared to a general residence.

  Nippon Steel City Produce, Inc. will continue to promote towns that are friendly to the environment.

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**Chemicals**

(Nippon Steel Chemical Co., Ltd.)

- **Organic EL material that greatly reduces electricity consumption**

  Organic electroluminescence (EL), which is receiving attention as a next-generation light-emitting device owing to its features of low power consumption, low environmental impact, and ease of design, is finding increasing application in the displays of mobile products such as car audio systems, mobile phones, and portable music players, and is also being increasingly used for car navigation systems, digital cameras, small television sets, and so on. Furthermore, society is placing increasingly high expectations on the field of illumination, development for which is in rapid progress.

  Nippon Steel Chemical Co., Ltd. has been engaged in the development of organic EL materials for next-generation displays, based on its technology concerning aromatic chemistry that it has accumulated over a period of more than 10 years. As a result, our independently developed organic EL material (LumiAce®) was adopted along with the first full-fledged production of organic EL displays in the world.

  We also focused our attention on and commenced development of a phosphorescent light-emitting material, which is the ultimate light-emitting material, many years ago, and our material was employed in a red phosphorescent device industrialized first in the world. Subsequently, we also succeeded in developing a green phosphorescent material, and we are presently aiming to realize an all-color phosphorescent device along with the development of a blue phosphorescent material to be included in our lineup in the near future. These phosphorescent materials have the significant merit of reduced power consumption, and are thus expected to find application in various displays for energy conservation. However, they are expected to become most widely used in the field of illumination. In addition to their relatively low power consumption and large area due to their planar light emission, organic EL illumination devices are also environmentally friendly because they do not contain mercury. They are therefore expected to bring about great changes in the world of illumination.

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**System Solutions**

(NA Solutions Corporation)

- **Real IT solutions**

  NA Solutions Corporation recognizes protection of the global environment as one of the most important management issues. Also, as a real IT solution company that links the era with management and the worksite, it contributes to the realization of the sustainable development of society. The Head Office (Shirakawa Office) acquired ISO14001 certification in 2003, and registration was renewed in 2006. NA Solutions Corporation realizes overall optimization of the customer’s business through offering system life cycle total solutions and so on, which integrate and offer system planning, construction, operation, and maintenance.

  The company is helping the customer to make effective use of time and other resources by means of its strategic business support system and electronic application and electronic document storage system, in addition to supply chain management (SCM), which is aimed at optimization of production, logistics, and sales as well as operation and service management for energy and transportation based on the optimization plan.

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**URL**

http://www.nscc.co.jp/
New Materials
(Nippon Steel Materials Co., Ltd.)

Nippon Steel Materials Co., Ltd., as an incubator in the Nippon Steel Group, is engaged in the development and practical application of materials that have new functions, based on close collaboration with Nippon Steel’s Technical Development Bureau.

From the energy and environmental aspects, the company is contributing to the global environment through the use of high-performance materials such as lead-free solder microballs for semiconductors that conform to the European RoHS directives, lightweight and stiff carbon fibers and composite materials, and metal supports (honeycomb) that have excellent automobile exhaust gas cleaning performance. It is also promoting the following new businesses.

► Full-fledged manufacture of polycrystalline silicon for solar cells

In the development of electricity generation from sunlight, which is attracting attention as a clean energy source for preventing global warming, the stable supply of polycrystalline silicon, which is the main raw material involved, is an important theme. Nippon Steel Materials has been earnestly researching and developing technology for manufacturing polycrystalline silicon, based on collaboration with Nippon Steel’s Advanced Technology Research Laboratories. It established Nippon Steel Material Co., Ltd. and has commenced supplying polycrystalline silicon.

Feature

The purity of silicon can now be raised to 6N grade, which is suitable for making solar cells, as a result of metallurgical processing employing technology and know-how fostered through Nippon Steel’s steelmaking business.

► Development of a new type of catalyst for cleaning automobile exhaust gas

Expensive precious metals such as platinum, palladium, and rhodium are used for cleaning automobile exhaust gas. Nippon Steel Materials has developed a new catalyst material in collaboration with Nippon Steel’s Advanced Technology Research Laboratories, which contains a greatly reduced (approx. 70% reduction) amount of precious metals. Samples are being offered to various companies in the automobile industry, and the new material is receiving attention as a catalyst material that can cope with the increasingly severe emission regulations around the world.

Feature

In the development of the new catalyst, the crystalline structure was controlled at the nano level to establish a mechanism for obtaining high catalytic activity, and minute particles of nano-clusters of precious metals were reheated in an iron oxide support that had a nano-composite crystalline structure, enabling the amount of precious metals to be reduced by approximately 70% and stable cleaning performance to be realized over a wide range of temperature conditions.

Social Report

We treasure the partnership that we have established with all our stakeholders. We aim to make a full effort to promote two-way communication with our stakeholders and investors, disclose information to them in a timely manner and to become a company trusted by our customers and suppliers at all times. We will continue to carry out social contribution activities that have close ties with local communities and endeavor to improve our communication activities in order to fulfill our corporate social responsibility as a member of society.

Nippon Steel Group’s Guiding Principles

Corporate philosophy

Nippon Steel Group, focused on steel manufacturing, will contribute to industrial development and the enhancement of people’s lives through creating and supplying valuable and attractive products and ideas.

Management principles

1. To continue to be a trusted and responsible member of society
2. To continue to challenge ourselves to develop and improve world-leading technologies
3. To always try to change ourselves so that we can deal with the future and achieve further development
4. To realize a Group full of vitality by developing and empowering people

We are committed to fair and transparent business management based on these principles.

Action Guidelines for Nippon Steel Group Employees

Passion and creation

We will continue our challenge to become the world’s best manufacturing company. Genba-Genbutsu (shop floor and actual products)

We try to uncover the essence of things and continue our ceaseless quest for further improvements, with manufacturing as the core of all business activities.

Autonomy and self-discipline

We uphold vision and goals, think for ourselves, act promptly, and persevere until we reach our goals.

Fairness and trust

We value mutual trust through dialogue and honor promises and rules.
Nippon Steel’s Social Responsibility and Trust

At the Nippon Steel Group, we believe that co-existence with society through community service and enforcement of corporate ethics as well as legal compliance, and maintaining society’s trust must underscore every one of our business activities. In order to realize these objectives, we have set forth the Nippon Steel Group’s Guiding Principles and Employee Action Guidelines. In a parallel move, concrete measures such as establishment of internal control and risk management structures and training for legal compliance are carried out and refinements of such measures is being made on an ongoing basis.

Corporate governance and compliance

- Business management structure
In light of the improvements and reinforcements of the structure to promote consolidated businesses (transition to a holding company) outlined in the medium-term consolidated business plan, and in order to execute prompt and flexible decision-making in management that is responsive to the future change in the business environment and the appropriate oversight thereof, we have changed the composition of the Board of Directors to consist of a small number of directors, following the Ordinary General Shareholders’ Meeting in 2006. In addition, we have also adopted the Executive Management System for the purpose of taking all possible measures to ensure the execution of duties and of clarifying responsibilities.

Nippon Steel has also adopted the Corporate Auditor System, and by reinforcing the auditing functions including outside directors, is maintaining and fortifying the soundness of management. As a result, Nippon Steel now has eleven directors (number of outside directors: none) and seven corporate auditors (number of outside corporate auditors: four).

- Internal control and risk management structures
In order to ensure the effectiveness and efficiency of operations as well as the reliability of financial statements and compliance with related laws and regulations, we have put in place and operate internal control and risk management structures as shown in the below diagram:

Important matters related to Nippon Steel and its group management are deliberated at the Corporate Policy Committee, its principle convened weekly, which consists of the President, executive vice presidents and other officers, and then decided by the Board of Directors, held once or twice a month for implementation. In addition 17 company-wide committees, each established to achieve a particular purpose, serve as bodies of consultation prior to the Corporate Policy Committee and the Board of Directors.

Business matters decided at the Board of Directors and other meetings are carried out swiftly by the directors, executive officers and general managers in charge of divisions under the direction of the Representative Director & President. At the same time, in order to establish internal check functions, internal regulations clearly define powers and responsibilities as well as operational procedures with the aim of precluding violations of laws, ordinances and regulations.

![Diagram of Nippon Steel's Corporate Governance and Risk Management Structures](image)

- Initiatives to reinforce internal control and risk management
The Company, under the business management structure, is engaged in the following activities to reinforce internal control and risk management.

Nippon Steel and its Group companies continue to implement the above initiatives for internal control and ensure its effectiveness.

- Compliance information
Nippon Steel and its Group received punishment for violation of the Antimonopoly Act and the laws and regulations with regard to quality control as shown below. The Group seriously considers these incompliances to be a major problem. We will further ensure compliance with the Antimonopoly Act while planning to review and reinforce the quality control systems of both the Group and the processing outsourcees.

- Compliance education
Nippon Steel provides regular education on legal matters to its employees. Particularly in regard to the Antimonopoly Act, the Company is conducting seminars by legal professionals and e-learning programs for all its employees, as well as familiarizing the employees with the Act by preparing an Antimonopoly Act Compliance Manual, which lists specific action patterns considered to be violation thereof. Additionally, Nippon Steel has prepared compliance guidelines (“Booklet of Compliance Guidelines”) that deal with other illegal acts stemming from corporate activity in an easily understood format and has been instilling compliance in the employees of the Company and its Group companies through in-house seminars and other means.

- Environment and disaster-prevention education
Nippon Steel believes that making known to all employees its compliance, environmental and disaster-prevention policies, as well as its environmental and disaster-prevention management systems, is an important foundation for corporate management. The Company provides environmental and disaster-prevention education at each organizational level, including new employees and new managers, and at each site.

We also provide training and study sessions to employees who try to obtain qualifications for such positions as ISO14001 internal auditors, pollution prevention managers and energy managers. In addition, we are active in sending our personnel to outside seminars and other educational events.
Partnerships with Shareholders and Investors

Nippon Steel is actively engaged in IR activities (investor relations: PR activities intended for shareholders and investors) for its shareholders and investors. The company is making efforts to enrich the IR activities such as through IR presentations and discussions intended for institutional investors in Japan and overseas, presentations and steelworks visits intended for individual shareholders, and detailed transmission of information through its website, annual reports, and shareholders’ newsletters.

Implementation of presentations and steelworks visits intended for individual shareholders

In FY 2007, we conducted 11 rounds of presentations and steelworks visits in nine cities in six regions and around 2,500 individual investors participated. To reflect the results of questionnaire surveys conducted over the past three years and the wish of shareholders to visit steelworks, we started offering week-day visits to steelworks intended for our shareholders of one or more trading units from this fiscal year in addition to conventional presentations and steelworks visits. For the visit to the Kimitsu Works conducted in April 2008 as the first round, we received many applications and about 200 shareholders chosen by lottery came. We plan more week-day steelworks visit programs nationwide and will make notification in the semi-annual shareholders’ newsletter, “To Our Shareholders.”

Improvement of the “Investor Relations” section on the website

On July 1, we renewed the “Investor Relations” section on our website as part of full renewal. The pages were designed to ensure more visitors enter the section and they develop a deeper understanding of the Company.

A sub-section “To Individual Investors” has been newly created, to provide descriptions of prospects of the steel industry and the Company, our strategic and technological edges, financial results and our dividend policy, and other items. These are presented by theme for easy comprehension. Please visit the section as we continue to further improve its contents.

Enhancement of shareholder benefits

From July 2007, we began sending calendars to our individual shareholders with 7,000 or more shares, compared to those with 10,000 or more shares previously. We also expanded the number of target programs in our invitation for the concerts held in Kioi Hall, Tokyo, to our individual shareholders with 5,000 or more shares. Including these changes, we are making efforts to enhance the quality of shareholder benefits.

Sending letters of appreciation to new shareholders and shareholders with increased shares and conducting surveys on them

We began sending letters of appreciation to our new shareholders from 2007 and shareholders who added shares to their holdings from 2008 and, at the same time, conducting questionnaire surveys on them to use the results for better IR activities. More than 9,000 shareholders, the equivalent of 20% of the target, replied to the surveys. I would like to take this opportunity to thank you for your support and cooperation.

Partnerships with Customers and Suppliers

As a pioneer in the quality control movement in Japan, Nippon Steel has always striven to be a company worthy of the customer’s trust. Through dialogues with suppliers of raw materials and active promotion of programs including green purchasing and package-less shipping, we also ensure that environmental and social concerns are addressed at all levels of our supply chain (encompassing purchasing, production, and sales).

Quality assurance and quality control

Nippon Steel is making efforts that combine the quality assurance and quality control programs. The quality assurance program promotes improvements based on standardized structures for the manufacturing and management of products. The quality control program addresses the manufacturing, management, development, and improvement of individual products. These efforts have been appreciated by third parties and customers in the form of ISO9001 certifications and certifications for individual sectors.

In May 2008, it became clear that a steel pipe-manufacturing subsidiary of Nippon Steel had failed to conduct tests required by standards, contracts, etc. To our customers and the parties concerned, we deeply apologize for the trouble and anxiety caused. The Company takes this seriously as a major problem and plans to thoroughly review the quality control systems of both the Group and the processing outsourcing based on the new guideline made by the whole industry, improving the systems as necessary.

Supply chain management

Nippon Steel is engaged in initiatives to mitigate environmental impact throughout its supply chain, based on the life cycle assessment (LCA) approach. Moreover, amid growing demand for products that do not contain harmful substances, we have been developing a control structure for environmental burden substances contained in procured raw materials and in products, including packaging materials, in line with ISO9001 standards. We have been standardizing analysis methods for 14 harmful chemical substance groups, including cadmium, and specifying standards for the amount of these substances.

Nippon Steel has also internally prescribed rules on fair purchasing policies, as stipulated by relevant laws and the Nippon Keidanren Charter of Corporate Behavior, fully enforcing such rules as the basic policy for its purchasing transactions.

Exchanges with the supplier of raw materials (Australia)

To deepen the relationship between the iron ore “shipping” and “receiving” points, Nippon Steel Australia Pty. Ltd. (NSA) and the Oita Works have been supporting the school partnership between Akeno-Nishi Primary School, Oita City, and Wickham Primary School, Point Samson in Western Australia since 2006. In 2008, representative pupils from Wickham Primary School visited Oita City. In 2007, two representative pupils from Akeno-Nishi Primary School visited Wickham Primary School and then the iron ore shipping port.

Future policies

In order for our shareholders and investors to better understand our management policies and the status of our various initiatives, we are improving our disclosure and transmitting timely and useful information. In the meantime, we are also striving to create an environment that will ensure long-term and stable holding of our shares by shareholders while enhancing two-way communication with them.
Partnerships with Employees

Nippon Steel has set in place a variety of personnel programs based on fair and equitable personnel administration in order to allow employees to continue their service for the long term with a sense of security and enthusiasm. Moreover, the Employee Action Guidelines present values that all employees should share, as well as model actions and behavior, in an easily comprehensible manner.

Personnel policies and other personnel programs

- Respect for human rights
  Nippon Steel is in the business of creating and delivering valuable and attractive products and ideas, through showing respect for and utilizing diverse views and individualities. We pay full heed to the growing public awareness of corporate social responsibility (CSR) and human rights issues arising with the increasing globalization of the economy through strict observance of the ten principles of the Charter of Corporate Behavior established by the Nippon Kedainen, which have been incorporated into the Company’s internal regulations.

- Fostering of personnel and personnel policies
  Based on its belief that the development of excellent personnel is requisite for the production of excellent products, Nippon Steel is actively rolling out programs to strengthen the overall capabilities of each employee. Specifically, the identification of skills and capabilities required for specific departments and for specific career levels and the systematic administration of on-the-job training decided through dialogues between supervisors and subordinates are at the core of personnel development. In addition, training geared to specific career levels and off-the-job training that addresses specific department needs are conducted as support for core efforts.

  Furthermore, as part of workplace vitalization measures, skill triathlon games for the entire company and JK*1 Conventions for Boistingen Gemburyu (Onsite capabilities) in Product Making for the Nippon Steel Group are staged.

  In administering personnel policies, to promote this reinforcement of overall capabilities of employees, Nippon Steel tries to ensure fair treatment of all employees and makes sure that the drive and motivation of each individual are brought out to the fullest. So far, we have introduced a personnel structure that downsizes seniority factors in a shift to a performance-based system and a performance-linked bonus scheme, which passes on to the employees the proper share of overall capabilities of employees, Nippon Steel tries to ensure the proper functioning of the applicable range of the welfare leave system and encouraging employees to utilize these systems when necessary. As of April 2008, over 400 former employees have taken advantage of the reemployment scheme.

  Furthermore, in response to the revision of the Act concerning Full-time Employment of Older Persons, Nippon Steel introduced a senior employment program, a reemployment scheme for employees in compulsory pensionable age, in FY 2003, in response to the rise in pensionable age for the fund-amount parties in the employees' pension system.

  Additionally, in response to the revision of the Act concerning Full-time Employment of Older Personnel, in April 2000, we have been making changes to the scheme as necessary to ensure that each senior employee is working with high motivation.

  As of April 2016, over 400 former employees have taken advantage of the reemployment scheme.

  Other personnel programs
  Nippon Steel carries out a number of programs and measures to allow employees to work with a sense of security.

  Next-generation assistance
  In line with the full enactment of the Act for Measures to Support the Development of the Next Generation in April 2005, we have been promoting an environment where the employees will be able to balance work and child rearing while implementing specific measures including the review of work systems to support the balance. As a part of this initiative, we have been making a concerted effort to promote activities that encourage employees to take their annual holidays.

  Senior employment program
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  Non-discrimination assistance
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  As of April 2016, over 400 former employees have taken advantage of the reemployment scheme.

Occupational safety and health management systems

Nippon Steel has been committed to the establishment of a safe and secure workplace under the basic recognition that “safety management and accident prevention are our most important corporate philosophy and they are prioritized above all as a prerequisite for production.”

We are engaged in initiatives to further raise occupational safety and health levels by developing occupational safety and health management systems, stepping up efforts to eliminate danger and hazards through risk assessments, and repeating the process of check and action (based on internal evaluations). In 2007, we expanded the evaluations to business partners to also establish and promote their occupational safety and health management systems.

- Frequency of occupational injuries → P6:1

Safety and health management

Every three years since 1975, Nippon Steel formulates a three-year company-wide safety and health control plan that sets targets for systematically promoting safety and health, and strives to upgrade safety and health activities. As a result, the number of occupational accidents is declining and the frequency of occurrence remains at a low level over the long term, and Nippon Steel intends to continue promoting this program.

Nippon Steel is committed to keeping the workplace atmosphere open through continuous “dialogues and communications between various levels,” ranging from the management and office managers to workers in the field. In 2007, while continuing to promote “company-wide-zero-risk program” for eliminating hazardous and harmful factors that could lead to a material accident, we have implemented safety measures for the belt conveyer equipment in both physical and non-physical manners, such as through regular check operations and setting of safety barriers, systematically continuing efforts to eliminate factors causing a material accident.

Furthermore, from the viewpoint of nurturing employees and organizations that are familiar with safety measures, we pursue the improvement of the human resource development policy by, for example, providing site supervisors with unique education covering not only legal qualification but also knowledge required for steemaking.

In the area of health management, the Company renovated the internal health management system to improve healthcare counseling and data management. Meanwhile, in the area of mental health, activities to raise awareness and education programs are promoted in order to effect early detection and take appropriate action when necessary.

Asbestos measures

Nippon Steel has taken measures for health problems caused by asbestos in accordance with laws and regulations. Additionally, in February 2004, a request to conduct investigations on the status of the use of asbestos was made to the steel industry by the Ministry of Health, Labour and Welfare, to which Nippon Steel responded. While conducting an investigation on the effect of asbestos on human health from June 2014, the Company has been specifically engaged in the following three priority issues:

- Careful handling of products containing asbestos and promoting of awareness of asbestos at places where the asbestos may disperse
- Appropriate response to the effects of asbestos on health and to anxiety about asbestos in employees and for workers of the current and former employees
- Guidance and assistance to business partners and affiliates

In September 2015, considering the above priority issues, Nippon Steel formulated its policies for asbestos, including stopping new purchases of asbestos and reducing the scope of use.

- Systematic implementation of these policies while evaluating the status of the implementation on a regular basis continued in elimination of asbestos from buildings planned and an almost complete shift to alternatives in the parts used, save for those parts on the Positive List2. Moreover, we will continue to deal with asbestos issues in an appropriate manner, such as through the consultation services offered to our current and former employees to discuss health concerns.

Future policies

Nippon Steel intends to make further efforts to curb the occurrence of industrial accidents and promote various personnel measures including improvements in the status of annual paid holiday acquisition and dialogues with employees aiming to maintain an energetic workplace.
4 Partnerships with Local Communities

At Nippon Steel, we value partnerships with local communities. In addition to conducting environmental activities that reflect the characteristics of local communities, we actively seek and promote environmental relations with diverse stakeholders in the community. Nippon Steel is also very active in contributing to the local community by supporting cultural and athletic activities and other means.

Environmental preparation activities at the Kamaishi Works

During Environment Month that the Kamaishi Works holds in June, there are “environmental preparation activities in the vicinity of the Nakasendo district road,” which were started in 1957 as a means of cleaning the regional boundary. In the Nakasendo district, a city road for attracting industry was constructed on idle land of approximately 99,000 square meters that had previously been used mainly as a raw materials yard during the era when the blast furnace was operating. However, weeds had sprung up and the road had also become soiled with garbage discarded by passing motorists. As a result of the above activities carried out in collaboration with affiliates, the amount of garbage discarded is becoming smaller each year and the road is becoming a walking course for the local inhabitants.

In order to have our activities, which are aimed at the construction of a recycling-oriented society and the solution of global environmental issues, widely understood, we will actively develop environmental relations with various stakeholders in the locality, through inspection tours of the plant and so on. Also, we intend to engage in social contribution activities rooted in the locality and discharge our social responsibilities as a member of society.

5 Partnerships with Children and Students

Nippon Steel seeks active exchanges with children and university students, the inheritors of the future, as well as with their teachers, who are fostering future generations, to familiarize them with the importance of “product-making” and with environmental undertakings through a variety of activities and alliance programs. Nippon Steel is also actively offering internships.

Environmental conservation agreements with local communities

Each of Nippon Steel’s steelworks, which are located throughout the nation from Hokkaido to Kyushu, has concluded an environmental conservation agreement (anti-pollution agreement) and an agreement for the greening of plant sites with the local municipality. These agreements cover the entire scope of the environment including air and water quality, waste material, noise, vibration, and odor, as well as greening initiatives, reflecting the characteristics of the respective localities. Nippon Steel is working hard to fully comply with these agreements, which are based on partnerships with the local municipalities, and amends them as needed in order to ensure environmental conservation in the local communities.

Message from Stakeholders

Mr. Masanobu Omori
Manager of the General Administration Division Kamaishi Works

Future policies

In order to have our activities, which are aimed at the construction of a recycling-oriented society and the solution of global environmental issues, widely understood, we will actively develop environmental relations with various stakeholders in the locality, through inspection tours of the plant and so on. Also, we intend to engage in social contribution activities rooted in the locality and discharge our social responsibilities as a member of society.

Environmental education

In July 2007, the Oita Works started a system under which it sent science instructors to a total of seven primary and junior high schools around the steelworks to give lessons to foster an interest in science among the students. Nippon Steel is deepening exchange with the students through themes such as “the world of ~200°C” and “the wonder of soap bubbles” to give them stimulation that they cannot experience during normal school lessons.

Also, at the Energy Environment Seminar held at the Kawasaki Municipal Masugata Junior High School, Kanagawa Prefecture in December 2007, we had the students experience a theme called “Let’s run a fuel cell car by recycling plastic” by means of a video and an actual experiment.

Message from Stakeholders

Mr. Kazunori Nagata
(Tokyo Institute of Technology) Chief
NPO “Monodukuri Education Institute”

Future policies

Nippon Steel will continue to promote activities that deepen the understanding of the Company’s efforts aimed at dealing with global warming and building a recycling-oriented society among the younger generation, including primary, junior high, and high school students. We will also continue to actively accept students from across the nation in our internship programs.
Partnerships with External Organizations and NGOs

In order to respond appropriately to global environmental 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, positions, and national boundaries, and think and act with posterity in mind. Nippon Steel actively promotes environmental relations with the various organizations in the local and international communities.

- **GPN activities**
  Nippon Steel has participated in the Green Purchasing Network (GPN) since its formation in 1996 in order to promote green purchasing activities. It also participates in the International Green Purchasing Network (IGPN, chair: Professor Ryoichi Yamamoto of the University of Tokyo), which was established in 2005 for the purpose of developing and popularizing green purchasing activities and environmentally friendly products and services throughout the world. In March 2008, jointly displayed exhibits with IGPN at the “Fourth Eco-products International Fair” held in Vietnam, and are currently providing cooperation to promote green purchasing in Asia.

- **Participation in the tree-planting event to mark the 20th anniversary of “The Forest is the Sweetheart of the Sea”**
  In 1989, the “Forest is the Sweetheart of the Sea” movement was established by the “Friends of the Oyster-nurturing Forest” (representative: Mr. Shigenatsu Hatakeyama) to plant trees on Mount Murone in Iwate Prefecture located near the upper reaches of the Okawa River that flows into Kesennuma Bay in Miyagi Prefecture. Many people including primary, junior high, and high school students, university students, and adult members of society have participated in this movement. In June 2008, the group held a symposium and tree-planting event to commemorate the 20th anniversary of its activities. It was attended by four employees from Nippon Steel who acted as volunteers.

- **Acceptance of trainees selected by the Japan International Cooperation Agency (JICA)**
  Each year, the Muroran Works, in cooperation with Sapporo International Center of the Japan International Cooperation Agency, accepts trainees from various countries throughout the world who come to study regional environmental preservation technology. In October 2007, the company invited five trainees from national environmental ministries and research institutes in Brazil, Colombia, Iran, Jordan, and Tunisia to undergo training related to environmental conservation measures and the plastic-recycling business.

- **Programs for Educators to Experience Private-sector Companies**
  During July and August 2007, Nippon Steel held a program for educators to experience private-sector companies run by the Keizai Koho Center (Japan Institute for Social and Economic Affairs) for the purpose of “promoting communication between the corporate and educational worlds.” The Muroran, Kimitsu, and Nagoya Works welcomed 16 teachers and gave them the opportunity to experience the appeal of making things and familiarize themselves with activities related to our research and development activities and improvement of our manufacturing ability.

Future policies

Aiming at the realization of a more open enterprise, Nippon Steel will continue to actively pursue activities with the various external organizations and NGOs of the local and international communities to deepen their understanding of the energy-saving and environmental conservation activities, as well as participation in the creation of a recycling-oriented society.

Various Communication Activities

Environmental issues are worldwide issues that exceed the bounds of the era, and must be seen with a clear vision and from a long-term viewpoint. Nippon Steel is continually making proposals and carrying out corporate activities vis-à-vis society, through dialogues with all of its stakeholders, including its customers, shareholders, the local communities, and its employees.

- **Participation in Eco-Products 2007**
  Nippon Steel participated in the Eco-Products 2007 exhibition held at Tokyo Big Sight in December 2007, and set up a general exhibit that showed the environmental contributions made by the Group as a whole, using three times the previous exhibition space. During the three-day period, Eco-Products 2007 drew some 361,000 people, and under the concept of “Beyond the leading edge,” we made efforts to attract many of these visitors by presenting our activities contributing to global environmental issues in three categories: “Eco-process,” “Eco-products,” and “Eco-solutions.”

- **Publication of “New Story About Iron” Vol. 7**
  In April 2007, the 7th volume in the series New Story About Iron was planned, edited, and published jointly by Nippon Steel and Posco, a South Korean steelmaker with whom Nippon Steel has concluded a strategic collaboration agreement. This volume introduces the history of cultural exchanges between Japan and Korea using a fairy story, centered on how Japan’s steelmaking technology was obtained from the ancient Korean Peninsula and developed in Japan. This book, which was produced as a Japanese and Korean bilingual edition, was distributed free of charge to schools and other companies throughout Japan. It can also be obtained upon request through our website.

- **Holding of the “Hokkaido Nippon Steel Group Exhibition 2007”**
  In November 2007, we held the “Hokkaido Nippon Steel Group Exhibition 2007” in Sapporo City. On this occasion, an unprecedented 25 companies including the Hokkaido Sales Office and the Muroran Works participated in the exhibition, at which our products and technical ability were exhibited based on the theme of “the environment.” The exhibit was well-received as the “Tokyo Summit.” Some 1,000 people attended the exhibition. The lecture presentation was also well-received, and attendees made comments to the effect that the exhibition enabled them to readily understand the efforts that the Nippon Steel Group is making to protect the environment.
Awards and Commendations from External Organizations

In recognition of Nippon Steel’s research and development, environmental undertakings, participation in the development of a recycling-oriented society, contributions to the local communities and support for cultural and athletic activities, external organizations have conferred numerous awards on Nippon Steel.

Yawata Works receives the Second Monodzukuri Nippon Grand Award
In August 2007, at the Second Monodzukuri Nippon Grand Award, the Yawata Works received the Minister of Economy, Trade and Industry Award for “development of ground-breaking heavy haul rails that are highly resistant to wear and internal fatigue damage” in the product and technology development category, as well as the Ministry of Economy, Trade and Industry Award for “efforts made to promote tatara ironmaking by young people using iron sand and charcoal” in the juvenile support sector. This indicates that not only Nippon Steel’s unique technology, but also its social contribution activities are highly appraised.

Nippon Steel receives the "Invention Prize" at the National Commendation for Invention for developing equipment for forming steel pipes using liquid pressure
Nippon Steel received the FY 2008 Invention Prize at the National Commendation for Invention for “developing compact hydraulic-forming (forming of steel pipes by liquid pressure) equipment” jointly with Toyota Motor Corporation. This forming method involves filling a steel pipe with water, then pushing it into a mold while applying high water pressure to it so that it assumes the shape of the mold. The equipment was highly appraised due to its high degree of compactness, energy efficiency, and cost reduction, enabling it to realize an efficient production system.

Nippon Steel receives the Good Design Award (architecture and environment design category)
Nippon Steel received the “2007 Steel Design Award” in the architecture and environment design category for both “Ideal Court Tetsuryu,” which employs Nippon Steel’s independently developed “Deep Drawn Gate Method,” and “Court Decor Senzoku Lake Side” developed by Nippon Steel City Produce, Inc. Both townhouses were highly appraised for realizing high design performance while covering the aspect of environmental protection through low energy consumption and running costs.

Nippon Steel receives the “Okochi Memorial Production Award” at the 54th Okochi Award
In March 2008, Nippon Steel together with Mitsubishi Heavy Industries, Ltd. received the "Okochi Memorial Production Award" at the traditional and prestigious 54th Okochi Award, based on the theme of “the development of high-performance steel sheet for large container vessels and the design of a new hull construction.” This was due to the high appraisal of the fact that Nippon Steel’s thick steel sheet that has a yield stress of 47 kilograms and high toughness was used for the first time for the most important parts of large container vessels from the viewpoint of strength, thus realizing the construction of large container vessels that have high transport efficiency due to reduced weight as well as excellent safety.

Environmental and Social Data Collection

This section is a supplement to the main body of this report. It consists of various numerical data, a collection of plates that describe Nippon Steel’s efforts and social data related to its environmental countermeasures. Please use it in conjunction with the main body of the report as a collection of data to enable you to understand the efforts that we are making for the environment and society.

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• Improvement items aimed at reducing CO2 emissions by the logistics sector .... 56
• Overseas technical cooperation achievements .................................................. 57
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• Nippon Steel’s ISO14001 registration situation .................................................. 58
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Documentation bearing the mark is lined up together.
Environmental and Social Data Collection

1.00

Improvement items aimed at reducing CO₂ emissions by the logistics sector

- Recycling of waste plastics
- Improvement of dustblowers
- Promotion of eco-tires
- Use of parts that improve fuel economy
- Improvement of driving plan

Reduction of the environmental load

- Recovery of exhaust heat from coolers
- Improvement of NOx emissions from converters
- Reduction of the number of reheating furnace IDF revolutions
- Improvements on heat transfer patterns

Reduction of the number of transportation operations

- Rationalization of the transportation medium
- Improvement of the load factor
- Improving the fuel efficiency
- Switching off engines when the ship or vehicles stop

Improving fuel economy

<table>
<thead>
<tr>
<th>Improvement Item</th>
<th>Providing Department</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increasing the size of the transportation medium</td>
<td>Cargo owner</td>
</tr>
<tr>
<td>Improving the operation efficiency</td>
<td></td>
</tr>
<tr>
<td>Reducing the transportation distance</td>
<td></td>
</tr>
</tbody>
</table>

- Further larger ships and railway
- Improving the load factor
- Improving the actual load rate
- Reducing the cycle time

- Reducing emission factors
- Improving cooling efficiency
- Promoting economic operation (price, distance, etc.)

- Shift to larger fuel consumption ships and vehicles
- Shift to parts that improve fuel economy (pro, etc., etc.)
- Promoting economic occupation (price, distance, etc.)

Reduction of the number of transportation operations

<table>
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- Promoting economic occupation (price, distance, etc.)

- Shift to larger fuel consumption ships and vehicles
- Shift to parts that improve fuel economy (pro, etc., etc.)
- Promoting economic occupation (price, distance, etc.)

Transition of emissions concerning the atmosphere, water quality, and soil risks

<table>
<thead>
<tr>
<th>Trends in SOx emissions</th>
<th>(post. tons/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asia</td>
<td></td>
</tr>
<tr>
<td>Oceania</td>
<td></td>
</tr>
<tr>
<td>Europe and Middle East</td>
<td></td>
</tr>
<tr>
<td>Africa</td>
<td></td>
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<tr>
<td>South America</td>
<td></td>
</tr>
<tr>
<td>North America</td>
<td></td>
</tr>
</tbody>
</table>

- Tackling the reduction of environmental risks

- Reduction of SOx emissions
- Reduction of NOx emissions
- Reduction of CO₂ emissions
### Environmental and Social Data Collection

**Latest renewal date:**

- **2001.10.11**
- **2000.1.27**
- **1999.3.5**
- **1996.3.6**

**Substances:**

- 2-aminoethanol
- vanadium pentoxide
- cyclohexylamine
- di-n-octyl phthalate
- phthalic anhydride

**Notices:**

- Of the substances for which notification has been made, 16.
- 2-aminoethanol, 99.
- vanadium pentoxide, 114.
- cyclohexylamine, 269.
- di-n-octyl phthalate, and 312.
- phthalic anhydride are not

### Environmental and Energy Solutions

**Examples of eco-products**

- **P33**
  - **Tokyo Works**
  - **Hikari Pipe and Tube Division**
  - **Oita Works**
  - **Yawata Works**
  - **Hirohata Works**

**Promotion of environmental management against global warming**

- **Energy conservation and CO2 reduction**
  - **Lead-free galvanized steel sheets**
  - **Lead-free free-cutting steel for crank emission parts**
  - **Leaded Cr-V Viewkote®**
  - **GA-TRIP steel sheets**

**Promotion of environmental risk management**

- **Environmental conservation and control over chemical substances**
  - **Lead-free galvanized steel sheets**
  - **Lead-free free-cutting steel for crank emission parts**

**Action plan for the creation of a recycling-based society**

- **Life cycle and recyclability of products**
  - **Weight reduction through extended product lifespan**
  - **Materials free of substances causing environmental impact**
  - **Materials free of substances causing environmental impact**
  - **Lead-free galvanized steel sheets for fuel tanks**

**New products and technologies**

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<th>Business location</th>
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Environmental and Social Data Collection

Steelworks profile, data of FY2007

ISO9001 registration situation at our steelworks

P47 Partnerships with customers and suppliers

Examples of green purchasing
(Basic policy on purchasing transactions at the Kimitzu Works)

P47 Partnerships with customers and suppliers

Examples of relationships with external organizations

P48 Partnerships with employees

Frequency of occupational injuries

P49 Partnerships with employees

Examples of relationships with external organizations

Nippon Steel’s shareholder composition as of March 2008

*For figures in the breakdown, please consult the share register.

The contents of this page are subject to change without prior notice.

Nippon Steel & Sumikin Stainless Steel Corporation.
End Feature

Biodiversity and environmental protection

Local Forest Creation and Sea Forest Creation

The history of Japan’s factory greening movement began in 1971. The trees of hope are the source of disaster prevention, environmental protection, and biodiversity. The first tree of hope was planted in the steelworks of Nippon Steel.

During the 1970s, when Japan was making tremendous economic progress, while pollution and destruction of the environment became major issues, the first corporation to commence full-fledged forest creation around its factories was Nippon Steel. These activities started from the Oita Works in 1971 immediately after the company was founded. We carried out a survey of the vegetation on the land, carefully selected trees, and created a “local forest” that would blend in with the local scenery. Subsequently, we carried out similar projects at all steelworks from Hokkaido (Muroran) to Kyushu (Oita). These forests, which have a total area exceeding 700 hectares (150 times the area of Tokyo Dome stadium), have grown into bountiful disaster prevention and environmental preservation forests.

The “local forest” at each steelworks harbors wild birds such as brown-eared bulbuls and eagles, and a variety of animal life such as red foxes and deer can also be seen there. Each “local forest” performs the role of an absorber of CO₂ as a means of countering global warming, and also protects biodiversity. Nippon Steel’s forest creation project became the catalyst for greening projects carried out by various corporations throughout Japan. The method used spread to other countries and is at present being employed to regenerate tropical rain forests in Southeast Asia, the Amazon, and Africa.

From the aspects of biodiversity and environmental protection, Nippon Steel's greening know-how is not limited to land forests alone. We are also carrying out “sea forest creation” in order to curb the relatively new environmental issue of “rocky-shore denudation,” which is exerting a large impact on the coastal fishing industry. This project involves creating an underwater forest using iron and steel slag, in order to supply the sea with the iron necessary for growing kombu, wakame, and other seaweed and algae. In the sea, phytoplankton and marine algae undergo photosynthesis, and the amount of CO₂ absorbed in this process is at least one half of that absorbed by photosynthesis that takes place throughout the entire globe, so this project is also expected to greatly mitigate global warming.

“Iron” is a necessary nutrient for a variety of life forms on the earth. We believe that returning the advantages of iron in various forms to society is also our mission.
Opinions from readers concerning last fiscal year’s report (Sustainability Report 2007) and action taken

We received many valuable opinions and comments from readers concerning last fiscal year’s environmental and social report (Sustainability Report 2007). They were useful in the planning and editing of this year’s report, so we would like to express our deep appreciation to the readers concerned. Some of these opinions and remarks are set out below.

*Please note that because of limited space these opinions and remarks have been partially edited or abbreviated within the extent that their intent is not lost.

Q1: What did you think about Nippon Steel’s “Sustainability Report 2007”?*

<table>
<thead>
<tr>
<th>Overall</th>
<th>Understandability &amp; Readability</th>
<th>Completeness of contents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not very good: 1%</td>
<td>Not very good: 4%</td>
<td>Not very good: 1%</td>
</tr>
<tr>
<td>Good: 46%</td>
<td>Good: 46%</td>
<td>Good: 46%</td>
</tr>
<tr>
<td>Very good: 31%</td>
<td>Very good: 38%</td>
<td>Very good: 36%</td>
</tr>
</tbody>
</table>

Average: 12%

From opinions received

- The steelmaking industry is said to be a first-class student, and among steelmakers, Nippon Steel has leadership. You have implemented energy conservation and environmental measures through great technical development in the past, and I imagine that there is not much more that you can do. However, if you could tell us concisely what brilliant moves you have lined up, we expect our achievements in the target will be increased.
- You have taken a lot of trouble to enable us to acquire an understanding of your company but also of the steel industry. The overall description including explanation of technical items is helpful even for a beginner.
- From the viewpoint of facilitating a comparison with other companies in the same industry, I think that it would be better if you could calculate the CO2 emissions for each affiliated electric furnace company. (Although the environmental conservation effectiveness of environmental accounting has probably been supplemented by a quantity of materials, how about publishing the economic effectiveness of your company but also of the industry as a monetary amount (even partially)?)
- It would be nice if you could make a clear distinction as to whether the advancement from the environmental viewpoint depends upon the characteristics of the industry, or whether it is unique to Nippon Steel. For example, I think that it would be better if you could calculate the CO2 emissions for each affiliated electric furnace company.

Q2: Please inform us of your opinions and requests regarding our environmental and social activities.

From opinions received

- Articles that were particularly memorable (the 10-highest)

<table>
<thead>
<tr>
<th>Article</th>
<th>Topic</th>
</tr>
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<tbody>
<tr>
<td>No. 1: Energy and Resources: True Internatinality Based on Navigating and its Impact on the Environment (2)</td>
<td>Provision of Energy Conservation (1)</td>
</tr>
<tr>
<td>No. 2: Participation in the Creation of a Regenerating Society (3)</td>
<td>Management of the Environment (9)</td>
</tr>
<tr>
<td>No. 3: Nippon Steel’s Activities: ameliorated Relations to the Environment (1)</td>
<td>Environmental Data Collection (3)</td>
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<tr>
<td>No. 4: Nippon Steel’s Activities: ameliorated Relations to the Environment (1)</td>
<td>Environmental Awareness for the Community (2)</td>
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<tr>
<td>No. 5: Nippon Steel has leadership in terms of the three ECOs (1)</td>
<td>Management of the Environment (9)</td>
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<tr>
<td>No. 6: Provision of the Environmental and Climate Change Management System (1)</td>
<td>Environmental Data Collection (3)</td>
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<td>No. 7: Nippon Steel’s Activities: ameliorated Relations to the Environment (1)</td>
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<td>No. 8: Nippon Steel’s Activities: ameliorated Relations to the Environment (1)</td>
<td>Provision of Energy Conservation (1)</td>
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<td>No. 9: Nippon Steel’s Activities: ameliorated Relations to the Environment (1)</td>
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<td>No. 10: Nippon Steel’s Activities: ameliorated Relations to the Environment (1)</td>
<td>Provision of Energy Conservation (1)</td>
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- From the editorial desk

- The steelmaking industry is said to be a first-class student, and among steelmakers, Nippon Steel has leadership. You have implemented energy conservation and environmental measures through great technical development in the past, and I imagine that there is not much more that you can do. However, if you could tell us concisely what brilliant moves you have lined up, we expect our achievements in the target will be increased.

Q3: Please tell us what points you wish to be further substantiated, what points you wish to be improved, and what points you wish to understand in more detail.

In the remaining space: 589

This report that is related to economic aspects as a CSR report that covers the environment, society, and the economy.

We look forward to receiving your frank opinions and comments.

Mizue Unno
Representative Director, So-Tech Consulting, Inc.

Opinions concerning Sustainability Report 2008

The issue of global warming has become a major issue on the international political stage, and is exerting an increasingly large effect on the economy. The Nippon Steel Group, which is promoting globalization of management, has a large role to play as a world leader in environmental management as well as, and we expect it to show its presence from now on as well.

A clearer environmental and social initiative befitting a steelmaker

Environmental issues constitute the headline of the business of the steel industry, and have become the actual corporate strength of a steelmaker. In this report, Nippon Steel’s environmental and social activities are covered extensively, but it is also important to clearly divide these activities into management countermeasures and social contribution activities, and to indicate more clearly an environmental strategy befitting a steelmaker. A global sectoral approach, which has already been proposed as a global warming countermeasure that is leading Japan’s industrial sector, is a demonstrable strategy. The strategy will become easier to understand by highlighting it based on the fact that the approach is an effective environmental countermeasure. Nippon Steel has leadership in terms of the three ECOs as a steelmaker. Nippon Steel has leadership in terms of the three ECOs (1)

As a result of increasing production buoyed by rising demand as well as an increase in the proportion of medium and high grade steel, energy requirements are increasing. In the midst of this situation, we have reduced the energy (basic unit) required to produce one ton of steel. Please refer to the text on P16 and 19. (2) We intend to utilize the potential of the steelworks to deepen our collaboration with local communities and other industries, such as by using recycling waste plastics and waste tires, so that we can contribute to the creation of a recycling-oriented society. Please refer to the text on P29 to 29. (3) In May 2008, we completed construction of the 5th
cake oven at the Oita Works, which employed the SCOP21 next-generation coke technology for the first time in the world, and we intend to continue making efforts for energy conservation. Please refer to P16 to P19 and P22.

- As a shareholder, I do attend general meetings, explanatory meetings, or tours of inspection, so I would like to obtain various kinds of information. If possible, it would be nice if you could transact more information to mobile phones.

From the editorial desk

In addition to holding explanatory meetings and tours of inspection for individual shareholders, Nippon Steel also strives to issue more detailed and substantial information through its website, annual reports, and shareholders’ newsletters. In July 2008, we completely reviewed our website, and along with this, we completely changed the “Investor Relations” and added a page targeted for individual investors that explains in simple language, for each theme, the general state in the steel industry and Nippon Steel, as well as strategy, technical strength, business results, dividend policy, and so on. We recommend that you take a look at this page.

Third-party comment

Opinion concerning Sustainability Report 2008

Mizue Unno
Representative Director, So-Tech Consulting, Inc.

Graduated from Chiba University, then worked at a management consulting firm, and established So-Tech Consulting in 1998. Makes recommendations concerning how to transform management in the CSR field using her unique analytical style, based on the viewpoint of global management for Japanese corporations. Has also developed various management tools that she puts into practice, and supports the related work of corporate activities.

So-Tech Consulting, Inc.
http://www.so-tech.co.jp/
The year 2008 marks the 150th anniversary of the birth of Japan’s modern steelmaking industry, which was established in Kamaishi City, Iwate Prefecture. In addition to looking back on the history of the steelmaking industry, Nippon Steel, as a member of the Japan Iron and Steel Federation, is widely developing events to commemorate the 150th anniversary of the birth of the modern steel industry to enable as many people as possible to come to know the form of the new steel industry in the 21st century that contributes to society.