

# Sustainability Report 2010

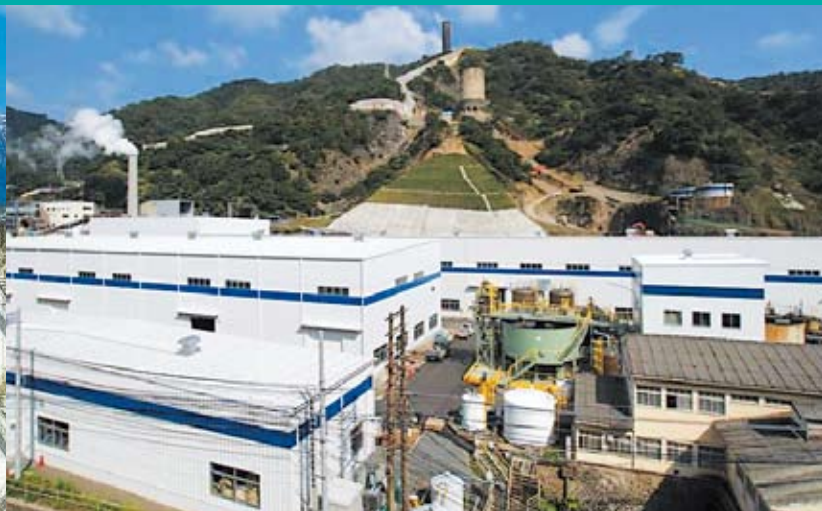
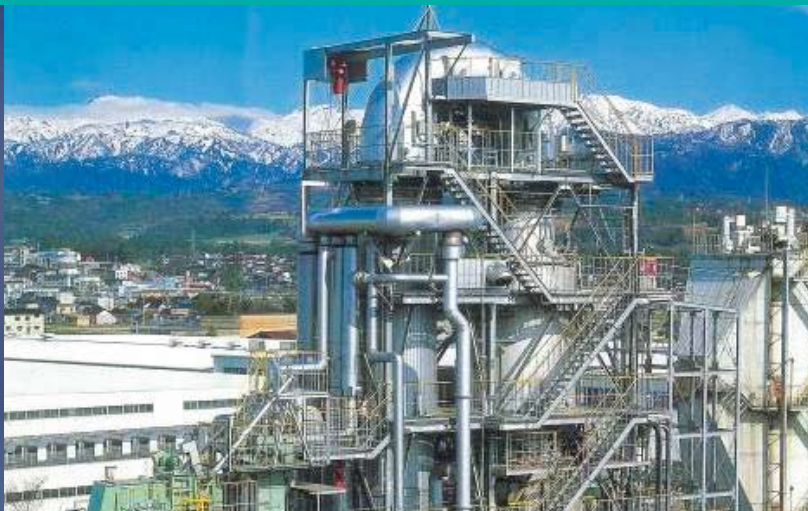
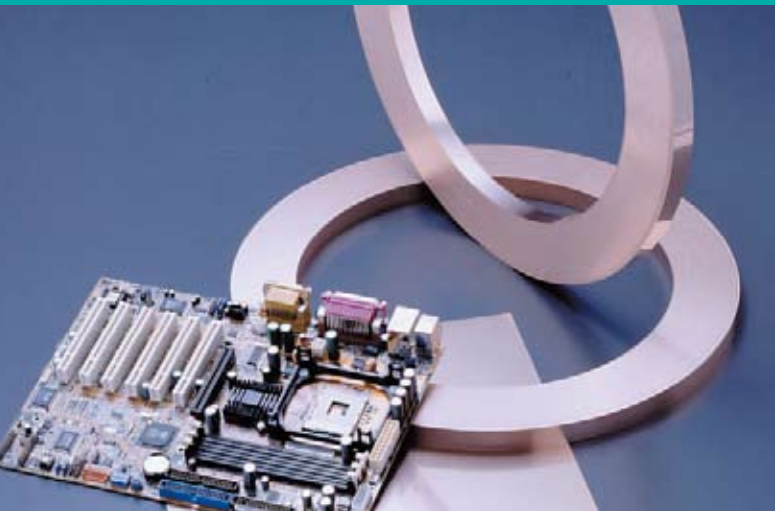






In promoting innovation in the productivity of resources and materials, we are committed to

assisting the sustainable development of society.



## To Our Readers

### Editorial Policy

The JX Nippon Mining & Metals Group (“the Group”) is committed to fulfilling its corporate social responsibility (CSR). In every facet of our business activities, we are therefore dedicated to assisting the sustainable development of society.

We issue a sustainability report each year in order to disclose appropriate corporate information to a broad range of our stakeholders including customers, suppliers, shareholders and investors, industry-government-academia groups, local communities, employees, and other interested parties. As an important communication tool, this report is designed to enhance stakeholders’ understanding of our CSR activities.

Sustainability Report 2010 (“this Report”) has been prepared in accordance with the Sustainability Reporting Guidelines 2006 of the Global Reporting Initiative (GRI), the GRI Mining and Metals Sector Supplement, and the 10 sustainable development principles of the International Council on Mining and Metals (ICMM), as required by the ICMM’s Assurance Procedures. Taking into consideration our code of conduct, this Report details our CSR activities from the perspectives of management as well as economic, environmental, and social pursuits. This Report, which represents a comprehensive discussion of the Group’s CSR activities, is posted in full on the website of JX Nippon Mining & Metals Corporation (“the Company”).

### Boundary of the Report

This Report covers JX Nippon Mining & Metals Corporation as well as its 38 major domestic and overseas subsidiaries and affiliated companies as of April 1, 2010.

Boundaries of the Report	Domestic	Overseas	Total
Economic Data	19 <sup>*1</sup>	14	33
Environmental Data	21 <sup>*2</sup>	4 <sup>*3</sup>	25
Social Data	23	15	38 <sup>*4</sup>

Notes:

- Economic data is presented on a consolidated basis. (Non-consolidated subsidiary information has been omitted.)
- Included are the companies that engage in production activities and exert relatively substantial environmental impacts, specifically the companies that operate factories classified as a Type 1 Designated Energy Management Factory in Japan.
- The four companies included are Changzhou Jinyuan Copper Co., Ltd., Nippon Mining & Metals (Suzhou) Co., Ltd., Nikko Metals Philippines, Inc., and Gould Electronics GmbH.
- This represents the number of reporting companies covered in the “Involvement with Our Employees” section of the Company’s Social Activities Report.

### Reporting Period

In principle, this Report covers our business activities for the period from April 2009 to March 2010 (fiscal 2009). In order to ensure comprehensive disclosure, however, certain information regarding important events that occurred prior to and/or after this period have been included. In addition, the Company changed its corporate name from Nippon Mining & Metals Co., Ltd. to JX Nippon Mining & Metals Corporation effective July 1, 2010. This Report has been consequently issued in the latter company’s name.

### Publication Date

October 2010 (the digest version of Sustainability Report 2009 was published in October 2009.)

### Group Companies Covered under this Report (Company names as of July 1, 2010)

#### Resources Development

Kasuga Mines Co., Ltd.  
Nikko Exploration and Development Co., Ltd.  
Nikko Drilling Co., Ltd.

#### Smelting and Refining

Pan Pacific Copper Co., Ltd.  
Hibi Kyodo Smelting Co., Ltd.  
Sankin Hibi Harbor Transportation Co., Ltd.  
Nissho Ko-un Co., Ltd.  
Nikko Plant Saganoseki Co., Ltd.  
Nissho Maintenance Factory Co., Ltd.  
Pan Pacific Copper Shanghai Co., Ltd.  
Japan Copper Casting Co., Ltd.  
Circum Pacific Navigation Co., Ltd.  
Changzhou Jinyuan Copper Co., Ltd.  
Kurobe Nikko Galva Co., Ltd.

#### Recycling and Environmental Services

Nikko Environmental Services Co., Ltd.  
Kamine Clean Service Co., Ltd.  
Tomakomai Chemical Co., Ltd.  
Nikko Tsuruga Recycle Co., Ltd.  
Nikko Mikkaichi Recycle Co., Ltd.

#### Electronic Materials

Nikko Metals USA, Inc.  
Nikko Metals Philippines, Inc.  
Gould Electronics GmbH  
Ichinoseki Foil Manufacturing Co., Ltd.  
Nikko Metals Korea Co., Ltd.  
Nikko Metals Hong Kong Ltd.  
Nikko Coil Center Co., Ltd.  
Nikko Fuji Electronics Dongguan Co., Ltd.  
Nippon Mining & Metals (Suzhou) Co., Ltd.  
Nikko Fuji Precision (Wuxi) Co., Ltd.  
Nippon Precision Technology (Malaysia) Sdn. Bhd.  
Nikko Metals Shanghai Co., Ltd.

#### Other Businesses

Nikko Shoji Co., Ltd.  
Nippon Marine Co., Ltd.  
Nikko Logistics Partners Co., Ltd.  
JX Nikko Art & Craft Co., Ltd.  
Nikko Metals Trading & Services (Shanghai) Co., Ltd.  
Nikko Metals Taiwan Co., Ltd.  
Materials Service Complex Malaysia Sdn. Bhd.

For a more detailed explanation of the underlined text throughout this Report, please refer to the glossary on pages 101 to 104.

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We will contribute to the  
through innovation in the

As a Global Corporate Citizen Engaged in  
the Business of Resources and Materials

JX Nippon Mining & Metals Corporation is the core company engaged in the non-ferrous metals business in the JX Group, which is aiming to become one of the largest “integrated energy, resources and materials business groups” in the world. As a member of the JX Group, we are constantly striving to realize the JX Group Values of ethics, advanced ideas, relationship with society, trustworthy products/services, and harmony with the environment. While acting in accordance with these values, the Company has been active in businesses covering upstream resources development, mid-stream metals smelting and refining, and the downstream areas of electronic materials and recycling and environmental services with copper at its core. As an integrated non-ferrous metal manufacturer, the Company is forging ahead with a global mindset under its basic policy not only to grow each field of its business in a steady and solid way, but also to maintain a well-balanced approach.

In this time when alarm bells of concern are ringing in regards to global warming, there is strong demand for companies to act as good global citizens and contribute to the sustainable development of both the economy and society. Since its founding over 100 years ago, the Company has been operating with the philosophy in mind that we should exert the utmost care and attention to the resolution of environmental issues and maintain a harmonious relationship with local communities. This is symbolized by the construction of the Giant Smokestack and the planting of Oshima zakura Cherry trees at the Hitachi Mine, which was the Company’s birthplace. (The author Jiro Nitta’s novel “Aru Machi no Takai Entotsu” / “A Tall Stack in a Town” was written on these themes.) Going forward, we will continue to implement such activities, which are the origin of our CSR activities, and further enhance our CSR activities, turning our attention toward issues that have been increasingly gaining international attention, such as biodiversity and human rights. Also, in response to the recent diversification of customer needs for materials, supply chain management is becoming more important, not to mention the need to provide high-quality and highly functional products. The Group believes that faithfully responding to such needs and becoming a valuable business partner to our customers is also an important part of our CSR activities.



Masanori Okada  
President and Chief Executive Officer  
Chairman of the CSR Committee  
JX Nippon Mining & Metals Corporation

M. Okada

development of a sustainable economy and society  
areas of energy, resources and materials.

Our CSR Activities are Nothing More or  
Less than Our Business Activities

The characteristics of our business are:

1. We supply society with the basic metal resources and materials that support daily life and industry activities in a broad sense.
2. Our business activities—ranging from the exploration of resources and the manufacturing and fabrication of the most cutting-edge materials to materials recycling—are consistently geared to a recycling-oriented business structure that uses the limited resources from the earth as its primary raw materials.
3. Our business activities are developing globally, widely, and diversely.

The Group has defined its code of conduct based on these characteristics and our resolve that we will contribute to the sustainable development of both the economy and society by further pursuing “innovation in productivity” based on the tenacious development of technologies, while working to maintain a harmonious relationship with a diverse range of stakeholders. In other words, we believe that developing our operations while maintaining harmony with the environment will contribute to the sustainable development of the economy and society; therefore, our CSR activities are nothing more or less than our business activities. For this reason, it is imperative that each employee play a principal role and conduct CSR activities as a matter of course in their daily work. In order to actualize such CSR activities, we formulated the CSR Action Policy, which spells out in concrete terms how we should implement the pillars of our code of conduct in each business field—“innovation in the productivity of resources and materials” and “a harmonious relationship with stakeholders.” Also, by including specific measures related to this code in our medium-term management plan and through the strict implementation of the PDCA (Plan, Do, Check, and Act) cycle, we are working to solidify this code.

Furthermore, we also believe that safety and disaster-prevention measures as well as compliance are prerequisites to the continuation of our business, and form the basis of our CSR activities. Regrettably, on June 13, 2009, a tragic accident took place that claimed the lives of three employees of Nissho Ko-un Co., Ltd., the Group member company engaged mainly in stevedoring of metal concentrates. Reflecting grievously on the occurrence of this accident, we are determined to once again exert our utmost efforts to materialize thorough safety and disaster-prevention measures in order to ensure that such an accident never happens again.

Toward the Stable Supply of Resources  
and Materials

The 21st century is said to be a period when resources will be increasingly scarce. By this token, the social mission the Group shoulders to stably supply resources and materials becomes even heavier than before. In February 2010, we decided to continue and advance the Caserones Copper and Molybdenum Deposit Development Project in Chile. Through this and other projects, we are aggressively promoting the development of new mines overseas. Furthermore, from various angles based on fully applying our own technologies, the Group is recovering rare and other value-bearing metals from used lithium-ion batteries for the power source for mobile phones and electric vehicles—otherwise called “urban mines”—and extracting value-bearing metals from low-grade copper ore. Going forward, we will work to further strengthen and solidify our CSR activities based on our mission of efficiently developing and producing a variety of products using the limited resources from the earth.

Deepening Your Understanding, Welcoming  
Your Opinions Regarding the Group’s  
CSR Activities

The Group has endorsed the 10 sustainable development principles of the ICMM (International Council on Mining and Metals), which is devoted to developing a sustainable society, agrees with the thoughts of the EITI (Extractive Industries Transparency Initiative), and supports the 10 principles of the United Nations Global Compact. Sustainability Report 2010 has been compiled in accordance with the initiatives listed above, as well as with the Sustainability Reporting Guidelines 2006 of the Global Reporting Initiative (GRI) and the GRI Mining and Metals Sector Supplement, and has incorporated the 10 sustainable development principles of the ICMM. We also investigated opinions relating to implementing initiatives regarding climate change issues including global warming, which is one of the four material issues that the Group has selected, by holding roundtable discussions with employees. This and other such initiatives are outlined in the special feature section of the report.

The Group clearly recognizes its wide and diverse range of social responsibilities. In addition to reviewing the CSR activities that we have engaged in, we also actively work to communicate information about these activities both inside and outside of the Group. By absorbing a wide range of views and opinions, we are determined to further deepen and advance our CSR activities going forward.

I hope that this sustainability report will help readers deepen their understanding of our CSR activities, and at the same time, encourage them to candidly voice their opinions.

# About JX Nippon Mining & Metals Corporation

## Group Philosophy and Code of Conduct

Guided by the JX Group Mission Statement put forward by JX Holdings, Inc., we formulated the JX Nippon Mining & Metals Corporation Code of Conduct.

[JX Group Slogan]

## The Future of Energy, Resources and Materials

[JX Group Symbol]



[JX Group Mission Statement]

JX Group will contribute to the development of a sustainable economy and society through innovation in the areas of energy, resources and materials.

[JX Group Values]

Our actions will respect the **EARTH**.

- Ethics
- Advanced ideas
- Relationship with society
- Trustworthy products/services
- Harmony with the environment

In accordance with our Group philosophy and code of conduct, we engage in CSR activities on the understanding that they are nothing more or less than our business activities.

About JX Nippon Mining & Metals Corporation

## Code of Conduct

Ensuring a stable supply of non-ferrous resources and materials is our social mission. We are engaged in a wide range of operations from exploration, mining, smelting & refining to metal fabrication and electronic materials production. Based on “JX Group Mission Statement” and complying with Code of Conduct stipulated below, we will continue to pursue technical rationality and efficiency and make improvements in quality & product properties and other matters in all aspects of our operations from development, production and marketing. At the same time, we will continue to promote recycling of resources and materials to achieve zero emission. This is our way of achieving continuous innovation in the productivity of resources and materials.

In the conduct of our business, we are committed to maintaining and enhancing a harmonious relationship with a wide range of stakeholders, including our customers and the communities in which we operate. We are committed to contributing to the sustainable development of society on a global scale.

- Our social mission**  
Based on continuous technological development and full awareness of our responsibilities in designing products, we will develop and produce a variety of products efficiently while minimizing waste. At the same time, we will promote recycling and reduce the impact of our operations on the environment. By doing so, we hope to obtain the satisfaction and trust of our customers and of society as a whole.
- Compliance with laws and regulations and engagement in fair trade**  
We will comply with domestic and/or overseas laws and regulations, and will engage in fair, transparent, and free competition and trade based on the fulfillment of our social responsibilities.
- Disclosure of corporate information and protection of personal information**  
We will communicate not only with our shareholders, but also with the public at large, and will disclose corporate information in an active and equitable manner while focusing on the protection of personal information.
- Creation of an optimum working environment**  
We will place top priority on health, safety, and disaster prevention and will ensure a comfortable working environment that respects employees’ personality, human rights, and individuality.
- Environmental conservation**  
Based on the awareness that tackling environmental issues is an essential requirement for corporate existence, we will engage in activities aimed at conserving the global environment, including biodiversity, in a voluntary, active, and continuous manner.
- Enhancement and strengthening of risk management**  
We will establish a risk management system based on scientific data to enhance and strengthen risk management.
- Harmonious relationship with society**  
We will commit ourselves to social contribution activities and work as a good corporate citizen to achieve a harmonious relationship with the rest of the society of which we are part.
- International business operations**  
In international business operations, we aim to contribute to sustainable development by protecting the fundamental human rights of people in countries and areas where we operate, and by respecting their cultures and customs.
- Elimination of antisocial activities**  
We stand firm against all antisocial forces and groups that threaten social order and safety.
- Management responsibilities**  
Management executives will take the lead in implementing this code of conduct and ensure it is thoroughly implemented across the Group. In the event of any non-compliance with the code of conduct, the management executives will investigate the causes, work to prevent a reoccurrence, disclose information to the public promptly and accurately, and be held accountable for the event.



# About JX Nippon Mining & Metals Corporation

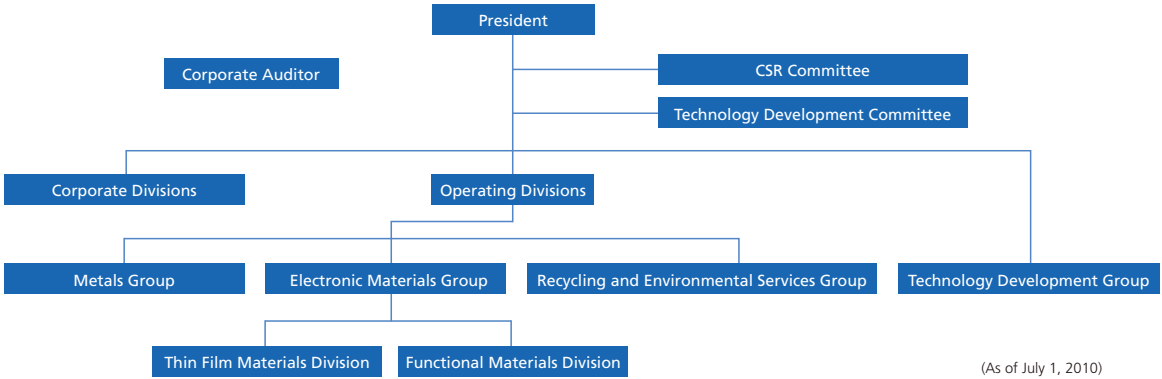
## Corporate Data

Company Name:	JX Nippon Mining & Metals Corporation	Operating Sites:	Hitachi Area Coordination Center (Ibaraki Prefecture)
Paid-in Capital:	¥40 billion (as of July 1, 2010)		Shirogane Works (Ibaraki Prefecture)
Representative:	Masanori Okada, President and Chief Executive Officer		Hitachi Fabricating Works (Ibaraki Prefecture)
Net Sales:	¥780.7 billion (consolidated result for fiscal 2009)		HMC Works (Ibaraki Prefecture)
Ordinary Income:	¥47.4 billion (consolidated result for fiscal 2009)		Isohara Works (Ibaraki Prefecture)
Head Office:	6-3, Otemachi 2-chome, Chiyoda-ku, Tokyo 104-8164, Japan		Isohara Fabricating Works (Ibaraki Prefecture)
Business Lines:	Resources Development		Technology Development Center (Ibaraki Prefecture)
	Smelting and Refining		Kurami Works (Kanagawa Prefecture)
	Manufacturing and Marketing of Electronic Materials		Toda Works (Saitama Prefecture)
	Recycling and Environmental Services		Tsuruga Plant (Fukui Prefecture)
		Overseas Operating Sites:	Chile Office
			Australia Office

Note: The JX Nippon Mining & Metals Group conducts business in 10 countries worldwide.

## Management Structure and Organization

JX Nippon Mining & Metals Corporation employs an organizational structure that is comprised of operating divisions, which engage in the Company's operating activities; corporate divisions, which are responsible for the planning, accounting, administrative, environmental safety, and related support functions; and technology development divisions, which are active in research and development pursuits. Operating activities are conducted through the Metals Group, the Recycling and Environmental Services Group, and the Electronic Materials Group.



## About the JX Group

Through the joint transfer of shares, Nippon Mining Holdings, Inc. and Nippon Oil Corporation established the holding company JX Holdings, Inc. in April 2010. The newly integrated JX Group will provide a stable and efficient supply of energy, resources, and materials both in Japan and overseas. The JX Nippon Mining & Metals Group is the metal business group company that plays a central role in the JX Group.



**About the logo for the JX Group**  
Based on the JX Group's basic philosophy, the JX Group logo represents the perpetuity of the global environment and the JX Group. This design, which shows the word "JX" crossing a sphere, expresses the contribution to a green earth, or a sustainable economy and society, through creation and innovation in energy, resources, and materials.

## Business Overview

JX Nippon Mining & Metals Corporation is engaged in integrated non-ferrous metals operations extending from resources development, smelting and refining, electronic materials manufacturing to sales and marketing, and recycling and environmental services. By pursuing technological rationality and efficiency as well as promoting materials stewardship, the Company strives to ensure the more effective use of value-bearing metal resources that will support the future.



HMC Works

About JX Nippon Mining & Metals Corporation

About JX Nippon Mining & Metals Corporation

Operating Sites Domestic

Smelting and Refining

- 1 Hitachi Works, Pan Pacific Copper Co., Ltd.
- 2 Saganoseki Smelter & Refinery, Pan Pacific Copper Co., Ltd.
- 3 Tamano Smelter, Hibi Kyodo Smelting Co., Ltd.
- 4 Kasuga Mines Co., Ltd.
- 5 Saganoseki Works, Japan Copper Casting Co., Ltd.
- 6 Kurobe Nikko Galva Co., Ltd.

Recycling and Environmental Services

- 1 HMC Works
- 2 Nikko Environmental Services Co., Ltd.
- 3 Tomakomai Chemical Co., Ltd.
- 4 Nikko Mikkaichi Recycle Co., Ltd.
- 5 Nikko Tsuruga Recycle Co., Ltd.
- 6 Tsuruga Plant
- 7 Kamine Clean Service Co., Ltd.

Electronic Materials

- 1 Isohara Works
- 2 Shiogane Works
- 3 Toda Works
- 4 Ichinoseki Foil Manufacturing Co., Ltd.
- 5 Kurami Works
- 6 Kawasaki Plant, Kurami Works
- 7 Isohara Fabricating Works
- 8 Hitachi Fabricating Works
- 9 Kurami Office, Nikko Coil Center Co., Ltd.
- 10 Kawasaki Office, Nikko Coil Center Co., Ltd.
- 11 Takatsuki Plant, Nikko Shoji Co., Ltd.
- 12 Head Office / Meguro Works, Sanyu Electronic Industrial Co., Ltd.
- 13 Tatebayashi Works, Sanyu Electronic Industry Co., Ltd.
- 14 Esashi Works, Sanyu Electronic Industry Co., Ltd.

Operating Sites Overseas

Resources Development

- 1 Collahuasi Mine\*
- 2 Escondida Mine\*
- 3 Los Pelambres Mine\*
- 4 Chile Office
- 5 Chile Office, Pan Pacific Copper Co., Ltd.
- 6 Minera Lumina Copper Chile S.A.
- 7 Compania Minera Quechua S.A.

Smelting and Refining

- 1 Changzhou Jinyuan Copper Co., Ltd.
- 2 LS-Nikko Copper Co., Ltd.
- 3 Australia Office
- 4 Pan Pacific Copper Shanghai Co., Ltd.

Recycling and Environmental Services, Other

- 1 Nikko Metals Trading & Services (Shanghai) Co., Ltd.
- 2 Nikko Metals Taiwan Co., Ltd.
- 3 Materials Service Complex Malaysia Sdn. Bhd.

Electronic Materials

- 1 Nikko Metals USA, Inc.
- 2 Gould Electronics GmbH
- 3 Nikko Metals Europe GmbH
- 4 Nikko Metals Korea Co., Ltd.
- 5 Poonsan-Nikko Tin Plating Corp.
- 6 Nikko Metals Shanghai Co., Ltd.
- 7 Nippon Mining & Metals (Suzhou) Co., Ltd.
- 8 Nikko Metals Suzhou Co., Ltd.
- 9 Nikko Fuji Precision (Wuxi) Co., Ltd.
- 10 Nikko Fuji Electronics Dongguan Co., Ltd.
- 11 Nikko Metals Hong Kong Ltd.
- 12 Nikko Metals Philippines, Inc.
- 13 Nippon Precision Technology (Malaysia) Sdn. Bhd.
- 14 Nikko Metals Singapore Pte. Ltd.

\* Mines that the JX Nippon Mining & Metals Group has invested in.

CSR Activities of the JX Nippon Mining & Metals Group

In the following section, we report on the CSR activities of the JX Nippon Mining & Metals Group.

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CSR Activities of the JX Nippon Mining & Metals Group

CSR Action Policy

The belief that “CSR activities are nothing more or less than our business activities” clarifies how we should incorporate our code of conduct into the day-to-day activities of the Group.

In line with this CSR Action Policy, the JX Nippon Mining & Metals Group is exerting efforts to smoothly carry out CSR activities that reflect the detailed annual plans set forth each fiscal year as well as undertake the strict implementation of the PDCA (Plan, Do, Check, and Act) cycle.

Innovation in the productivity of resources and materials	Harmonious relationship with stakeholders
<ul style="list-style-type: none"><li>In line with the distinctive characteristic of our business that we make use of the earth's resources as a direct raw material, we pursue innovation in the productivity of all processes and in all aspects of our business activities in order to continuously carry out mining, smelting and refining, electronic materials manufacturing, and recycling of the earth's limited resources as efficiently as possible.</li></ul>	<ul style="list-style-type: none"><li>Complying with the Company's Code of Conduct in relation to such areas as fair trade, compliance with laws and regulations, environmental protection and conservation, safety and disaster prevention, and disclosure.</li><li>Promoting social contribution in Japan and overseas (social contribution programs promoted in line with the specific characteristics of the Group's business activities).</li></ul>
Upstream	
<ul style="list-style-type: none"><li>Developing technologies, such as <u>bio-mining</u> technologies, to recover copper from unused low-grade copper sulfide ores.</li></ul>	<ul style="list-style-type: none"><li>Conducting mining development while simultaneously meeting global standards, such as the World Bank Environment, Health and Safety Guidelines.</li></ul>
Midstream	
<ul style="list-style-type: none"><li>Enhancing productivity, including streamlining operations and adopting advanced technologies, by strengthening cooperation among the Group's smelting operations (Saganoseki, Tamano, and LS-Nikko).</li><li>Developing <u>hydro-metallurgical</u> technology—the Nikko Chloride Process (“<u>N-Chlo. Process</u>”)—to efficiently recover copper as well as precious and other metals from low-grade <u>copper concentrates</u>.</li></ul>	<ul style="list-style-type: none"><li>Developing sustainable smelting technology friendly to the environment with no emission of SOx and other environment-friendly characteristics.</li></ul>
Downstream	
<ul style="list-style-type: none"><li>Developing products with innovative qualities and unique features.</li></ul>	<ul style="list-style-type: none"><li>Developing environment-friendly electronic materials.</li></ul>
Electronic Materials	
<ul style="list-style-type: none"><li>Promoting safe methods to process waste that is difficult to dispose of and requires special treatment, for example, asbestos and certain equipment containing trace amounts of PCB.</li><li>Recovering rare and precious metals, rare earth minerals, and other similar materials from recycled materials (further developing <u>urban mines</u>).</li></ul>	<ul style="list-style-type: none"><li>Promoting recycling with the goal of <u>zero emissions</u>.</li></ul>
Recycling and Environmental Services	

Communication with Stakeholders

Stakeholders of the Group

The business activities of the Group are supported by many stakeholders—individuals, organizations, and communities who have a vested interest in the Group. Stakeholders that we have close and regular ties with and the major responsibilities and activities in regard to these stakeholders, as well as our major communication tools are listed in the table below. We aim to establish and maintain strong relationships of trust with our various stakeholders through close communication.

Stakeholders	Major responsibilities and activities of the Group	Major communication tools
Customers	We consider it crucial to respond to the opinions and wishes of our customers, with whom we have frequent contact through our business activities.	<ul style="list-style-type: none"><li>Supplying value-bearing products</li><li>Providing product information from each of safety and environmental perspectives</li><li>Further improving the quality of our products</li><li>Enhancing services</li></ul>
Suppliers	We strive to foster relationships of mutual trust with our suppliers—one of our key business partners—to ensure the continuity of the Group's business.	<ul style="list-style-type: none"><li>Introducing and supplying products and services</li><li>Consulting about newly developed products and other related matters</li><li>Providing product information from each of safety and environmental perspectives</li><li>Exchanging information at exhibitions and other trade-related shows</li></ul>
Shareholders and investors	As a core operating company of the JX Group, we remain accountable to its shareholders and investors. Accordingly, we make every effort to secure highly transparent corporate management.	<ul style="list-style-type: none"><li>Carrying out open and fair trade transactions</li><li>Promoting environmental protection based on the Basic Environmental Policy and the <u>Green Purchase</u> Guideline</li><li>Collaborating to realize more-efficient logistics and recycling</li></ul>
Employees	While also key stakeholders in the Group's overall activities, employees play a central role in our CSR activities. We are building frameworks where each employee can reach his/her maximum capabilities.	<ul style="list-style-type: none"><li>Conducting business through the daily transactions of JX Nippon Procurement Corporation</li><li>Conducting shareholder meetings</li><li>Holding investor and other meetings hosted by JX Holdings, Inc.</li></ul>
Industry-government-academia groups	We recognize that these groups are important partners in efforts to build new technologies and nurture the next generation of human resources.	<ul style="list-style-type: none"><li>Implementing the Self-Statement System</li><li>Holding meetings of the Labor-Management Council</li><li>Holding meetings of the Health and Safety Committee</li><li>Carrying out a survey regarding CSR issues</li><li>Conducting roundtable discussions with CSR-related agendas</li></ul>
Global environment	We have taken steps to clarify our preferred policies and stance for addressing global environmental issues. These policies and our stance are reflected in our business activities.	<ul style="list-style-type: none"><li>Joining various organizations and attending their regular conferences</li><li>Implementing joint research and development with universities and research institutions</li><li>Participating in national projects and other related events</li></ul>
Local and global communities	Making the most of opportunities for exchange, we listen carefully to a multitude of voices from both local and global communities to efficiently develop our business activities.	<ul style="list-style-type: none"><li>Complying with environmental legislation and regulations</li><li>Implementing initiatives to conserve the global environment and assisting the sustainable development of society, as a corporate member of the <u>ICMM</u></li><li>Participating in various projects proposed by the ICMM</li><li>Sharing information and opinions at international conferences and other events</li></ul>
Non-profit organizations (NPOs) and non-governmental organizations (NGOs)	We promote dialogue and collaborative ties with NPOs and NGOs that undertake distinctive programs and projects. The fruits of these discussions and this cooperation are reflected in the Group's CSR activities.	<ul style="list-style-type: none"><li>Contributing to local communities (participating in cleanup as well as disaster prevention activities)</li><li>Regularly conducting summer festivals and opinion-exchange meetings</li><li>Participating in international conferences, exhibitions, and other trade-related events</li></ul>
Future generations	We continue dialogue with the next generation, who will carry inheritance forward future society, in an effort to clarify the Group's social role.	<ul style="list-style-type: none"><li>Supporting the activities of NPOs and NGOs</li><li>Exchanging opinions with NPOs and NGOs</li></ul>
		<ul style="list-style-type: none"><li>Heightening awareness about environmental conservation</li><li>Enlightening future generations about the importance of social-action programs by “<u>Monozukuri</u>” – manufacturing products</li><li>Conducting plant tours and other events as necessary</li></ul>

CSR Activities of the JX Nippon Mining & Metals Corporation



Communication with Stakeholders

Making Dialogue with Stakeholders

Reflecting the “Voices” of Stakeholders in our CSR Activities

The Group is creating wide-ranging opportunities to make dialogue with its various stakeholders. The aim of these endeavors is to reflect the “voices” of stakeholders in our CSR activities.

In fiscal 2009, we issued Sustainability Report 2009, as well as conducted an employee survey on the Group’s CSR activities. We also held CSR briefing sessions for our employees on 36 occasions, and at the same time we held 39 in-house roundtable discussions. Stakeholders meetings were

also convened and attended by leading external opinion makers, while a CSR meeting was held to provide employees with the opportunity to speak directly with top management. Drawing on this dialogue, we are providing stakeholders with a deeper understanding of the Group’s CSR activities. At the same time, we intend to incorporate stakeholder opinions to further advance the Group’s CSR activities.

Surveying Employees on the Group’s CSR Activities and Sustainability Report 2009 (Digest Version)

The Group conducted an employee survey on Sustainability Report 2009 as well as the Group’s CSR activities. The following section provides excerpts from the survey’s findings and results.

Topics of interest in Sustainability Report 2009

The topic with the greatest interest in Sustainability Report 2009, identified by 12% of respondents, was “Material Issues for the Nippon Mining & Metals Group.” In order, this was followed by the first special feature “Establishing a Recycling-Oriented Society,” “Introducing Our Business Activities,” and “Message from the President,” which all attracted replies of between 8% and 9% of respondents. On a year-on-year basis, there was little or no change in the leading five topics of interest as determined by those surveyed. This again reflects the significant interest that our employees maintain in the Company’s direction, management policies, and related issues.

Survey period: November to December 2009  
Parties surveyed: All directors, officers, and employees  
Response rate: 96.8% (responses received from 2,015 of 2,081 people surveyed)

Top 10 Topics of Interest (multiple responses allowed)

Topics	%
Material Issues for the Nippon Mining & Metals Group	12.4
Special Feature 1: Establishing a Recycling-Oriented Society	8.9
Introducing Our Business Activities	8.9
Message from the President	8.1
Special Feature 3: Implementing Initiatives Regarding Climate Change Problems including Global Warming	7.7
Special Feature 2: Developing Environment-Friendly Technologies	6.9
Improvement Activities in Fiscal 2008	5.4
Technology Development	5.0
Corporate Philosophy and Code of Conduct	4.6
Goals, Performance, and Evaluations for Fiscal 2008 and Plans for Fiscal 2009	4.1

Material issues to be addressed by the Company

Forty-two percent of all respondents identified the “development of recycling technologies” as a material issue for the Company to address. This was followed by the “development of human resources” and “reinforcement of earnings capacity through technology development and productivity enhancement.” These results have consequently been incorporated in Sustainability Report 2010, both as part of and outside of the special feature section.

Top 10 Material Issues to be Addressed by the Company (multiple responses allowed)

Issues	%
Development of recycling technologies	42.7
Development of human resources	35.2
Reinforcement of earnings capacity through technology development and productivity enhancement	24.3
Development of smelting technologies (from wide-ranging perspectives including cost competitiveness and the environment)	23.9
Health and safety activities	21.2
Resource development projects	20.2
Development of <u>urban mines</u>	19.7
Environmental conservation	19.6
Reinforcement of environmental businesses	19.0
Reinforcement of overall competitiveness including resource development	18.7

Conducting CSR Briefing Sessions and Roundtable Discussions with Employees

Each fiscal year, the CSR Department holds CSR briefing sessions at the Group’s operating sites both in Japan and overseas. These briefing sessions cover a wide range of topics including “recent CSR-related trends” as well as “the current and future direction of the Group’s CSR activities.” In fiscal 2009, briefing sessions were held at 12 domestic and 15 overseas operating sites.

Conducting these briefing sessions, we also hold in-house roundtable discussions involving all positions of employees. These roundtable discussions allowed us to hear directly from employees their opinions regarding our CSR activities and frank comments about Sustainability Report 2009. At the same time, these roundtable discussions gave employees a better and broader understanding of the Group’s initiatives relating to compliance, risk management, energy conservation, and improvement “KAIZEN” activities. Through

these discussions, we believe that we could further integrate the Group’s CSR Action Policy into our business activities, while at the same time share the same understanding of the CSR activities across the Group. A notable trend to emerge from this year’s discussions, particularly when compared with the previous fiscal year, was more proposals were put forward by operating sites themselves, each of which proactively offered proposals such as “pursuing initiatives that take into consideration the characteristics of individual operating site business activities” or “conducting a social action program based on the distinctive circumstances of each local community in which individual operating sites operate.” Going forward, we will consider how to realize these proposals in order to further advance and enhance our CSR activities.



Stakeholders Meeting 2009

The Group holds a “Stakeholders Meeting” involving external experts from a variety of fields. At the meetings, we solicit a variety of diverse opinions, comments, and requests from these experts in relation to our CSR activities and topics released in our sustainability report issued for the these previous fiscal year. Based on Sustainability Report 2008, a stakeholders meeting was convened in February 2009.

In this Report, we identify several key requests put forward by participating experts and outline the Group’s responses to them.



Ms. Hiroko Enomoto Deputy Chief Secretariat, Global Compact Japan Network  
Prof. Hidefumi Kurasawa Professor, Department of Policy Studies, Faculty of Law and Economics, Chiba University  
Ms. Wakako Shibata General Manager (CSR Promotion), CSR Division, Oki Electric Industry Co., Ltd.  
Mr. Yasushi Hibi Director, Japan Program, Conservation International

\*Official titles of the panelists are as of the date of this meeting.

CSR Activities of the JX Nippon Mining & Metals Corporation



Communication with Stakeholders

Requests Put forward during Discussions with Stakeholders at a Meeting Held in February 2009 and the Group’s Response for Fiscal 2009 and Beyond

Request 1: We would like the Group to report the effects and impact of its CSR activities.

**Response:** We are endeavoring, wherever possible, to quantify and report the results of reduced amounts of greenhouse gas emissions and other key environment-related data. In addition, a CSR meeting was held between employees responsible for environmental issues at each operating site and top management to discuss the initiatives implemented for curtailing CO<sub>2</sub> emissions. Details of these discussions are outlined in this Report. We will introduce our CSR initiatives and activities as well as details of their effects and impact.

Request 2: The Group should provide details on how it responds to biodiversity.

**Response:** In this Report, we provide details of the biodiversity initiatives implemented in conjunction with the Caserones Development Project in Chile, where development has commenced in earnest. We also introduce measures put forward at Toyoha Mines Co., Ltd. and Nikko Exploration and Development Co., Ltd.

Request 3: We ask that the Group introduces social themes.

**Response:** Conventionally, each operating site has worked diligently to foster and improve dialogue with local communities by holding summer festivals and participating in cleanup activities—we introduced notable examples of these in previous sustainability reports. In addition to these efforts, local community initiatives implemented at the Caserones Development Project, which enters the construction phase from fiscal 2010, is introduced in this Report. Looking ahead, we will continue to provide information on the Group’s social contribution measures.

Request 4: More detailed information regarding improvement of the supply chain is requested.

**Response:** Until fiscal 2009, we had been outsourcing our procurement tasks to Nippon Mining Procurement, Inc., who requested suppliers to complete a questionnaire with respect to those products we procured each year. In fiscal 2009, however, we added questions about human rights to improve our supply chain. From fiscal 2010, the procurement function will pass to JX Nippon Procurement Corporation. We will work in collaboration with JX Nippon Procurement Corporation to build a system from which we can advance our CSR activities to improve the entire supply chain, including suppliers and other business partners.

Request 5: We would like the Group to report on its overseas environmental conservation activities.

**Response:** In this Report, our overseas mine development activities, which exert a significant environmental load, are introduced. In particular, we outline details of the environmental conservation activities undertaken at the Caserones Development Project, where construction of essential facilities commenced in April 2010. In the future, we will continue to report mainly on our businesses, including mining developments, where the environmental impact is high.

Our CSR Activities Overseas

Proactive CSR activities are also undertaken at the Group’s overseas operating sites. Below, we provide an introduction to the CSR activities undertaken at these operating sites. We hear from employees responsible for CSR at Nikko Metals USA, Inc. (NMU) in North America and Nippon Precision Technology Malaysia Sdn. Bhd. (NPTM) in Malaysia.

Voice—From Nikko Metals USA



Kevin Peterson  
Senior Worldwide Sales  
Manager  
Nikko Metals USA, Inc.

Over the past few years, we’ve found that our customers have been more and more concerned about the idea of CSR and its practice. An important point is that the outline of CSR moves from far reaching company goals down to very specific goals. From an environmental standpoint, our group has done an excellent job. But another area is that of maintaining and protecting human rights. This is especially important from the perspective of responsibly sourcing mining materials. We are a key component in the supply chain, and we need to think about all of those individual links in that chain and how they contribute to the whole. We, and our customers, are finding that we can all play a bigger role when it comes to human rights and the protection of those rights. This aspect of human rights has always been a part of our CSR, but it’s now becoming a bigger topic for our customers. We’ve been quite involved in EICC working groups, both participating in meetings and deciding the best method for certifying materials to be “conflict free.” In the end, I still think the most important aspect is to maintain a good partnership with our customers. Therefore, customers want to a new process they have a best chance for success with NMU. We will also need to continue to listen to our customers and their needs in order to find new ways of improving our processes.

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Voice—From Nippon Precision Technology Malaysia



Jeff Wong P.L.  
Sales & Marketing Manager  
Nippon Precision  
Technology Malaysia Sdn. Bhd.

We recognize that responding appropriately to customers’ demands is a key issue to earn their trust and raise their level of satisfaction. In order to attain this goal, we are making the best use of the benefits of ISO standards and the RoHS directive and working to continually enhance the company’s level of compliance. At the same time, profit growth is a matter of vital importance for a corporate entity, and to this end, each and every employee must actively improve his or her everyday work. Implementing the PDCA cycle during the course of Total Productive Maintenance activities enables us to promote improvements in our operations. It’s not merely quality, cost, and delivery performance that encourage customers to choose our products. They put total solution including trustworthy to us at the core of their decisions. In view of that, I would like to take “speed” as a key word to further enhance customer satisfaction. I think we will have to create systems that allow us to immediately respond to customer requests going forward.

# Communication with Stakeholders

## Stakeholders Meeting 2010



Date and time: March 8, 2010 (Monday), 2:00–5:00 p.m. Place: the Nippon Mining Holdings Group's Roppongi Club

The Company recognizes the need to implement more-meaningful CSR activities by listening carefully to the opinions of its stakeholders and incorporating diverse points of view into its CSR business activities.

For this year's Stakeholders Meeting, we invited a panel of four experts who are actively involved in the fields of sustainability and CSR. The panelists expressed their opinions on Sustainability Report 2009 and discussed the desirable future direction of our CSR activities.

\*Official titles of the panelists are as of the date of this meeting.

### Having Read Sustainability Report 2009

**Moderator** • Our goals today are to listen to your thoughts, assessments, and comments on the Nippon Mining & Metals Group's CSR activities and to then discuss the connection between such activities and corporate value. First, could you please let us hear your frank thoughts on Sustainability Report 2009?

**Yura** • I look at a large number of CSR reports on a regular basis. Sustainability Report 2009 put together by the Group is very well thought out. Aiming for the application level of "A+" as defined under the GRI is by no means excessive, and I commend the Company to continue to make the ongoing effort in this regard. On the other hand, the CSR Action Policy, which advocates "CSR activities are nothing more or less than its business activities," generates a feeling of strangeness. At the same time, I feel a little awkward about the concept of "innovation in the productivity of resources and materials" being listed as one of the two pillars of the CSR Action Policy. I think that this seems to suggest CSR issues be incorporated into the management and operational processes. I would like, however, to see the Company emphasize its harmonious relationship with its stakeholders and its commitment to contribute to the sustainable development of society more, and to see it identify specific CSR activity goals by taking into consideration its business activities. This seems to me a much clearer picture.

**Mizuo** • I took a look at both the full and digest versions of Sustainability Report 2009 and came away with the impression that both are of a high standard and are close to perfection. I think the contents of the Report are quite impressive. Just as Mr. Yura has pointed out, however, I'm not sure that I fully understand or appreciate the "CSR activities are nothing more or less than its business activities" concept. I suspect that many employees conducting CSR activities are also somewhat in the dark concerning this issue. As I always advocate, CSR activities



**Mr. Satoshi Yura**  
Senior Fellow, Center for Public Resources Development



**Prof. Jyunnichi Mizuo**  
Professor, Faculty of Economics, Surugadai University  
Director, Economic Research Institute, Surugadai University

inherently have their "defensive" and "offensive" dimensions and features. "Defensive" CSR entails complying with laws and regulations, generating revenues and earnings, as well as establishing a sound management platform. "Offensive" CSR, on the other hand, comprises initiatives that contribute to society. I suggest that by better clarifying the Group's concept of CSR into its CSR reporting, it would help employees better approach and engage in CSR activities.

**Okumura** • Most CSR reports of other companies predominantly describe environmental issues. The Group's Sustainability Report 2009, on the other hand, does so, but in an easy-to-understand and concise manner. A notable feature of CSR reports is their broad readership. It is therefore important to ensure that the widest possible audience can easily grasp the purpose of the report. As I mentioned, common to most CSR reports is the excessive weight they place on environmental issues with a lot of supporting data. This is invariably at the expense of other equally important CSR issues. In focusing more on such concerns as human rights or labor rights, for example, the Nippon Mining & Metals Group could further enhance its report and better fulfill the requirements of global reporting standards.

**Awano** • I'd like to raise the attention to the selection of "material issues". The criteria to select those among over 30 material issues reflects the Company's identity. Although the material issues were all about environment, there must be

other issues than environment which the Company should tackle with. I think that the Company could convey the message that the Company are aware of and concerned about other important themes by explaining the issues not to be chosen finally. Another point I'd like to refer is how to sort activities. The Company's business was classified into its upstream, midstream, and downstream activities, but the same was not done for the environmental and social activities. This would not be easy but by showing these activities corresponding to these business stages, I think Nippon Mining & Metals Group is better positioned to highlight its originality.



**Mr. Shusaku Okumura**  
Network Representative,  
The Japanese Global Compact  
Local Network



**Ms. Mikako Awano**  
Senior Officer, Convention on  
Biological Diversity, World Wide  
Fund for Nature Japan

### CSR Activities and Corporate Value

**Moderator** • What are your thoughts on the connection between a company's CSR activities and its corporate value?

**Awano** • I must say that a significant gap exists between CSR discussions in Japan and trends overseas. This does not mean, however, that the initiatives of Japanese companies are lagging in comparison with their overseas counterparts. The point here is the lack of adequate communication about the CSR activities of companies. Accordingly, CSR activities are not accurately reflected in a company's corporate value. This might stem from Japanese characteristics valuing honesty and modesty, but generally speaking Japanese companies are inclined to announce their measures and efforts after they achieve certain results. Companies whose operations extend to every corner of the globe, however, tend to actively announce and promote their ongoing and future CSR activities prior to any resolution or achievement. Perhaps corporate value would be better served if information is openly and confidently disclosed, even at an interim stage.

**Moderator** • What are the benefits in actively drawing attention to the Group's initiatives?

**Mizuo** • The business of the Nippon Mining & Metals Group is largely B-to-B in nature. Thus, the general public would have little knowledge of who the Company is and what it does. Notwithstanding the B-to-B nature of a particular company, actively disclosing details of its CSR activities is sure to help raise its profile and reputation. For example, a certain chemical company supplies mosquito nets to the people of Africa as a part of its efforts to prevent the spread of malaria. This initiative is receiving high praise both within and outside of Japan.

At the same time, corporate measures that attract positive external attention serve as a source of immense pride for employees. This in turn injects considerable vitality throughout the organization. I am convinced that efforts to broadcast a clear and positive social message will result in increased corporate value.

**Awano** • Market impact is also important. Exerting all of one's CSR energies in a specific niche market may only lead to a limited or nominal effect from an overall perspective. On the other hand, even if the level of improvement is around 10%, in a large-scale market, the impact is easier to see. Under this latter scenario, a company's corporate value will be held in far greater esteem. It is therefore important to keep in mind the potential level of market impact when converting ideas into action.

**Moderator** • By extension, rather than pursue CSR through the Company's business activities as a whole, isn't there also the school of thought that there is merit in focusing on specific CSR measures that can be expected to create an enormous impact?

**Okumura** • Put simply, an adequate assessment of a company's corporate value cannot be undertaken from financial information alone. An assessment based solely on financial statement analysis is meaningless without an understanding and confirmation of authenticity of the conduct that underpins those statements. Important indicators that help determine the reliability of financial statements include such non-financial items as the nature and quality of a company's internal control and CSR activities.

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# Stakeholders Meeting 2010



The Notable COP program introduced by the Global Compact Office highlights and recognizes outstanding Communications on Progress (COP). The names of accredited companies are not only published by the Global Compact Office, but also appear on the official website of the United Nations. I am convinced that Japanese companies should leverage programs such as these to better disclose and draw attention to their CSR activities. Another major player in the Asia region, China, is aggressively showcasing the outstanding nature of its CSR activities. In this regard, "silence is not golden" when it comes to global markets.

**Awano** • I agree. The importance of using these schemes cannot be overestimated. These schemes reflect the opinions and

measures of participating companies. Companies run the risk of being left behind if they stay away from these forums. In this regard, I strongly believe in the need to actively participate and showcase their advanced capabilities comparing to their industry peers, which will lead to make these schemes to their best advantage.

**Mizuo** • Calls for the disclosure of environmental, social, and governance (ESG) information are increasing on a global scale. In the United States, for example, ESG information is appearing more frequently in Form-10K corporate disclosure documentation, the equivalent of Japan's annual securities reports. I expect Japan will inevitably follow this trend. Getting a jump on the market, I think it is important for companies to actively disclose information that they consider of value. In doing so, companies are more likely to raise in-house awareness and by association reinvigorate their structures and systems.

**Yura** • Indicators used to measure corporate value naturally differ depending on the type of stakeholder. One key indicator, however, is a company's share price. Regrettably, ESG information, which of course includes CSR data, is yet to secure a major position in criteria employed to assess a company's value in Japan. Looking at overseas trends, while there is also the lack of a universally standardized criteria despite ongoing efforts to explore by academics and organizations such as research institutions, rating agencies and even mainstream financial institutions as well, CSR plays a significant role in the investment decisions made by many institutional investors, particularly pension funds. Accordingly, companies are facing increased calls for greater CSR disclosure and dialogue. Taking these factors into consideration, market sentiment that equates CSR activities to long-term improvements in corporate value, which in turn lead to positive impacts on performance and share values, can be expected to grow.



## Expectations of the Nippon Mining & Metals Group's CSR Activities

**Moderator** • In closing, what expectations do you hold for the Nippon Mining & Metals Group's CSR activities?

**Awano** • I think that "biodiversity at mining sites" has previously been raised as a topic of discussion at the Nippon Mining & Metals Group. Recently, however, we are observing changes in the notion on business and biodiversity. Rather than positioning "biodiversity" as a theme of social contribution or philanthropy issue, business sectors start taking a new approach which regards biodiversity as an integral component of business sustainability. What will be required to business sector is not only to reduce its impact on ecological systems, but also contributing to improve ecological systems I would expect that the Nippon Mining & Metals Group will take this one step further.

**Okumura** • I have three expectations. First, and as I mentioned at the beginning of these discussions, I would like the Company to focus not just on environmental issues, but also on human rights and labor issues. Second, I would ask the Company to better clarify how such programs as the Global Compact are reflected in its business activities. Third is the issue of reducing CO<sub>2</sub> emissions. I am now more aware of the efforts undertaken by the Nippon Mining & Metals Group to reduce CO<sub>2</sub> emissions. At its broadest level, however, the corporate sector in Japan contributes to only around half of the nation's total emissions. The remaining contribution is from the households and transportation sectors. Put another way, I would hope that the Company would work not only in its corporate capacity, but also pursue efforts to involve its employees and their families. Taking care to switch off fluorescent lights at work, while leaving them on at home, has next to no meaning. Efforts like these draw a company closer to the true meaning of fulfilling one's corporate social responsibility.

**Mizuo** • I also would like to see employees and their families become more involved in CSR activities. Employees are the people that conduct CSR activities, make contributions to society, and approach compliance. CSR activities should be pursued from the perspective of the employee with an eye toward society at large. It is important for the Nippon Mining & Metals Group as well as its employees and their families to engage in CSR activities with a greater sense of shared purpose. I would

also like the Company to make more use of employee surveys. To date, the Company has tended to collate data at either the divisional or Companywide level. In the future, I would hope that issues could also be analyzed by a person's position or status within the Company such as employees, management, and directors. By incorporating those uncovered issues into the Company's management strategies, I am confident that the Nippon Mining & Metals Group will take positive steps toward their resolution. I am equally convinced that employee surveys conducted in two years later would clearly identify and verify the progress and improvements made. Furthermore, as employees recognize that the Company is addressing their concerns, employee motivation is sure to rise.

**Yura** • The digest version of the sustainability report in particular has positioned employees as an important target reader. I would therefore hope that this version will be continued. Returning to the relationship between CSR and business activities, I would offer that there is value in more explicitly incorporating CSR elements in the Company's improvement initiatives including, for example, "NPM ("Nippon Mining and Metals TPM") activities." My thoughts include the introduction of such improvement activities as energy conservation to the frontline as criteria for assessment of the Company's operations. Moreover, the Company should increasingly pursue partnerships with NGOs. It should also report more proactively on progress and results in this area.



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## Closing Remarks



**Nobuyuki Yamaki**  
Senior Executive Officer

I would like to thank all the panelists for sharing their valuable views with us today. Drawing from these discussions, I am again reminded of the significant level to which CSR pervades every aspect of global business and daily life. And yet, when we try to define CSR, we find that it has endless meanings. As a result, how the Company should define CSR is both a substantial and immediate issue. While stepping up efforts to shine the light on our CSR activities, I would like us to put forward a message that is truly unique to the Company to the widest possible audience.

CSR Activity Report

CSR Action Policy Goals, Performance, and Evaluation for Fiscal 2009 and Plans for Fiscal 2010

PLAN		DO		CHECK	ACT
Issues and goals	Fiscal 2009 goals	Initiatives	Fiscal 2009 performance	Evaluation	Fiscal 2010 goals and challenges
CSR Action Policy of the Group					
Innovation in the productivity of resources and materials					
Innovation in the productivity of each operation and throughout every aspect of our business activities	[1] Promote innovation in productivity (including streamline of other operations)	(1) Cases of commendations for innovation in productivity • Isohara Works • Tamano Smelter, Hibi Kyodo Smelting Co., Ltd.	President's Award President's Award (special encouragement award)	A	Continue implementation
		(2) Cases of commendations for streamline of other operations • JX Nippon Mining & Metals Corporation, Hibi Kyodo Smelter, and Saganoseki Smelter & Refinery; Pan Pacific Copper Co., Ltd. • Saganoseki Smelter & Refinery, Pan Pacific Copper Co., Ltd. • Isohara Works • Isohara Works	President's Award (encouragement award) President's Award (encouragement award) Works General Manager's Award Works General Manager's Award		
	[2] Promote innovation in productivity regarding environmental issues				
	① Reduce energy consumption intensity by 4% from the average of the period between fiscal 2003 and fiscal 2005	(1) Cases of promoting energy conservation activities • Heating boiler feed-water by utilizing waste heat generated at the sulfuric acid plant; renewing converter blowers; reducing refining electricity consumption intensity through improvements in current efficiency (Saganoseki Smelter & Refinery, Pan Pacific Copper Co., Ltd.) • Reducing intensity through an increase in the disposal of solid waste (Tomakomai Chemical Co., Ltd.) • Improving the product yield ratio; changing over to high-efficiency equipment (Isohara Works) • Shifting to an energy conservation type of timing belts for scrubber equipment (Toda Works)	Reduction of 3.5% from the average of the period between fiscal 2003 and fiscal 2005	C	Reduce by 5% from the average of the period between fiscal 2003 and fiscal 2005
	② Reduce CO <sub>2</sub> emission intensity by 6.0% from the average of the period between fiscal 2003 and fiscal 2005	(2) Cases of reducing CO <sub>2</sub> emissions • Reducing the use of heavy fuel oil at anode furnaces; cutting back slag cleaning furnace electricity consumption (Tamano Smelter, Hibi Kyodo Smelting Co., Ltd.) • Correcting water pump motor capacity (Nikko Mikkaichi Recycle Co., Ltd.) • Controlling the number of compact boilers and reducing the consumption of heavy fuel oil through adjustments of the operating load at cogeneration units (Shirogane Works)	Reduction of 6.9% from the average of the period between fiscal 2003 and fiscal 2005	A	Reduce by 7.5% from the average of the period between fiscal 2003 and fiscal 2005
	③ Reduce final waste disposal intensity by 60% from the average of the period between fiscal 2003 and fiscal 2005	(3) Cases of reducing the volume of waste and making effective use of value-bearing resources • Recovering value-bearing metals from scrap (Isohara Works) • Reusing wooden debris (Shirogane Works)	Reduction of 73% from the average of the period between fiscal 2003 and fiscal 2005	A	Reduce by 70% from the average of the period between fiscal 2003 and fiscal 2005
Harmonious relationship with our stakeholders					
Compliance with the Code of Conduct (Fair trade, compliance with laws and regulations, environmental conservation, safety and disaster prevention, disclosure of corporate information, and other related issues)	Eradicate misconduct	(1) Preventing misconduct • Raising awareness about compliance • Complying with goals related to compliance	No occurrence of major misconduct in fiscal 2009 reported	A	Continue to ensure no occurrence of major misconduct
	Secure safety and prevent disaster	(2) Securing safety and preventing disaster • Creating an optimum working environment • Eradicating occupational diseases	• Accidents with lost working days: 37 cases • Fires, explosions: 0 cases • Occupational diseases: 0 cases (January to December 2009)	C	• Promote activities to eradicate major accidents and damage; promote health and safety activities that match the status and conditions of each operating site; strengthen education and training programs in accordance with the levels and positions of employees; and promote health and safety activities in unison with partner companies (Implementation of the Management Policy on Health and Safety of fiscal 2010) • Continue implementation of activities to eradicate occupational diseases
	Organize education programs to raise awareness about CSR	(3) Conducting employee education and training • Conducting CSR briefing sessions (36 times), holding employee roundtable discussions (39 times), and carrying out employee surveys • Carrying out compliance education and training program	Implemented as planned	A	Continue implementation
	Comply with laws and regulations	(4) Complying with laws and regulations • Pre-registering those substances subject to REACH regulation • Disposing systematically of asbestos and PCB	Followed-up on REACH regulation pre-registration in accordance with plans; implemented final disposal of PCB	A	Continue implementation
	Engage in communication with local communities	(5) Promoting communication with local communities • Participating in cleanup activities • Engaging in communication through summer festivals and other events	Conducted annual events including cleanup activities and summer festivals at operating sites	A	Continue implementation
	Promote social action programs	(6) Promoting social action programs • Conducting a forest improvement activity at the site of a former mine—the Oe Mine • Supporting the activities of NPO 2050 (a program providing educational support to women of developing countries) • Providing support to a forest improvement project in Nanyo City, Yamagata Prefecture	In addition to the items outlined on the left, implemented relief activities in areas affected by large-scale disasters in the Philippines, Indonesia, Haiti, and Chile	A	Continue implementation
	Obtain certifications	(7) Obtaining OHSAS and ISO certifications • Obtaining OHSAS 18001 certification in fiscal 2009: Isohara Works, Toda Words, HMC Works, Tomakomai Chemical Co., Ltd., Nikko Mikkaichi Recycle Co., Ltd., Nikko Tsuruga Recycle Co., Ltd., Isohara Works of Nikko Fuji Electronics Co., Ltd. (currently Isohara Processing Works), and Gould Electronics GmbH • Obtaining ISO/TS 16949 certification in fiscal 2009: Isohara Works	Screening and assessment of OHSAS 18001 and ISO/TS 16949 were completed at each operating site identified on the left in accordance with plans; consequently certification obtained	A	Continue endeavors to obtain ISO and OHSAS certifications

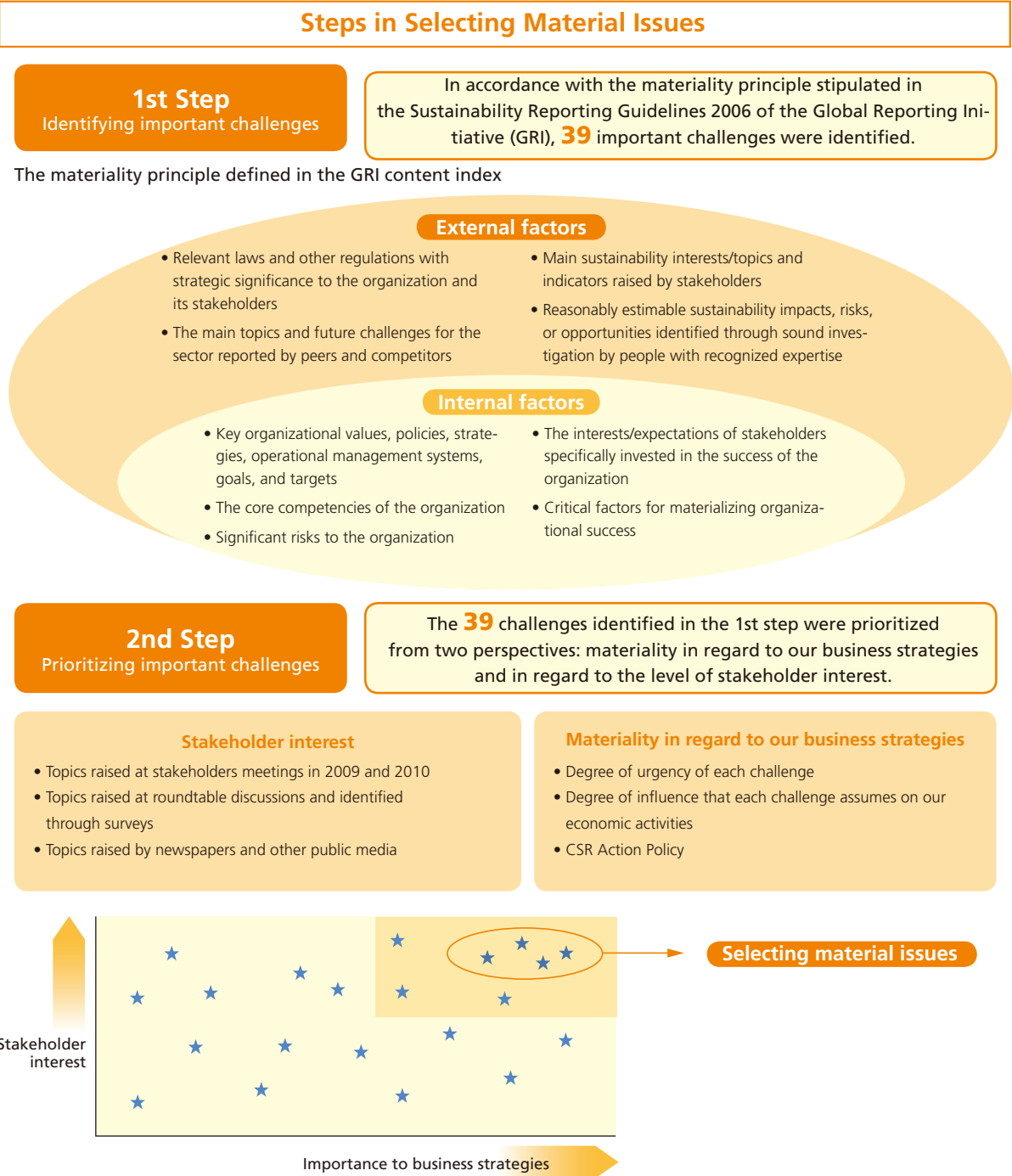
CSR Activities of the JX Nippon Mining & Metals Corporation



# Material Issues of the JX Nippon Mining & Metals Group

The Group addresses various economic, environmental, and social challenges. From these challenges, three material issues that should be given priority in reporting to stakeholders were selected, and are consequently introduced in Sustainability Report 2010.

Material issues are identified in accordance with Global Reporting Initiative (GRI) guidelines. The numerous material issues identified are then prioritized, before three material issues are subsequently selected following discussions and deliberation by the CSR Committee. In addition to the three material issues selected for fiscal 2010, a fourth material issue, “harmony with the JX Group’s mission statement,” has also been selected. Of these four material issues, the following three material issues are introduced in greater detail in this special feature from page 25.



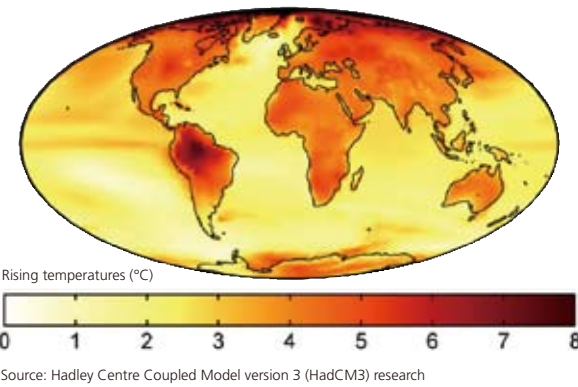
# Implementing Initiatives Regarding Climate Change Issues including Global Warming

Climate change, which includes global warming, is one of the most important issues confronting humankind today. The Fourth Assessment Report (AR4) released by the Intergovernmental Panel on Climate Change (IPCC) indicated the potential for a strong positive correlation between such greenhouse gas emissions as CO<sub>2</sub> and global warming.

## Map Outlining Projections Attributable to Global Warming

The continued advance of global warming not only causes changes in the environment, such as a rise in the sea level and abnormal weather, but also significantly affects the ecosystem. In this context, changes in our natural environment, which result in the depletion of water resources, have an escalating affect on both the farming and fishery industries that in turn place an increased burden on our food supply. In addition to causing significant and mounting damage to society, climate change has the potential to substantially impact the financial performance of our business activities. The AR4 is projecting a very real and highly possible surge in living costs associated with an increase of 2 – 3°C above current global average temperatures.

Projected Temperatures Changes Expressed as the Average for 2070–2100 Relative to the Average for 1960–1990



## Activities Undertaken by the Energy Conservation Subcommittee

In order to ensure that the Group as a whole advances activities that encompass the reduction of CO<sub>2</sub> emissions, a greenhouse gas, and the promotion of energy conservation, the Energy Conservation Subcommittee was established as a working group under the CSR Committee on October 1, 2008.

The Energy Conservation Subcommittee has identified annual reduction goals of 1.0% and 1.5% for energy consumption intensity and CO<sub>2</sub> emission intensity, respectively, as measured against the average of the results for the period

from fiscal 2003 to fiscal 2005. Since its establishment, the subcommittee has met on three separate occasions to follow up on the status of progress, particularly with respect to energy costs and the level of energy conservation improvement. The following pages provide a record of a roundtable meeting held to discuss the various CO<sub>2</sub> reduction initiatives and other initiatives implemented by the Group's operating sites. (CSR Meeting 2010 was held on February 24, 2010, in the Boardroom on the 20th floor of the Shin-Nikko Building.)



With the Energy Conservation Subcommittee playing a central role, the Group is actively engaged in efforts to reduce CO<sub>2</sub> emissions. Recently, a roundtable meeting was held between President Masanori Okada and employees responsible for energy conservation at each operating site to discuss a variety of ideas aimed at further addressing this issue.

**Moderator** • In kicking off discussions, let's review the current status of the subcommittee's efforts and initiatives.

**Nakata** • The Energy Conservation Subcommittee has identified specific benchmarks and goals. The principal, immediate goals have been to reduce both energy consumption and CO<sub>2</sub> emission intensity across all operating sites by 1.0% and 1.5%, respectively, on an annual basis between fiscal 2005 and fiscal 2010 compared with the average of the results for the period from fiscal 2003 to fiscal 2005. While the reduction in energy consumption intensity in fiscal 2008 fell slightly below this mark, the Group achieved its CO<sub>2</sub> emission intensity goal as planned. In fiscal 2009, however, our endeavors have been hit by the worldwide recession. Plagued by unavoidable cutbacks in production, prospects for achieving the established goals again would appear difficult.

The Japanese government has announced the bold target of reducing CO<sub>2</sub> emissions nationwide by 25% leading up to fiscal 2020 compared with levels recorded in fiscal 1990. In this context, it is imperative for the JX Nippon Mining & Metals Group to redouble its reduction efforts. In moving forward, I can see the need to consider investing in any project or proposal that offers the potential for further cutbacks in energy consumption or the development of clean energies even where such projects or proposals fall outside our current investment criteria.

## Why are Efforts to Conserve Energy so Important?

**Moderator** • What are your thoughts on the necessity for energy conservation activities?

**President** • The reduction of energy consumption and energy costs as well as the reduction of CO<sub>2</sub> emissions together with a corresponding increase in the development and use of clean energy are becoming increasingly important. Accordingly, there is a need to deliberate on CO<sub>2</sub>-related issues from the perspective of where best to procure energy resources.

**Shuto** • Industry has to date engaged in energy conservation activities as cost cutting measures. More recently, however, the need has arisen to consider energy conservation activities

that lead to a reduction in CO<sub>2</sub> emissions from a global warming prevention perspective. Taking into account the value of CO<sub>2</sub> allowances in emissions trading, I think we should argue more actively to invest in clean energies.

**Yamada** • The Hitachi Area Coordination Center continues to engage in energy conservation activities taking into account environmental protection concerns. In order to continue undertaking business activities while maintaining and protecting the environment, energy conservation activities must be continued as a logical endeavor. At the same time, energy conservation is an improvement activity in which all employees can participate. Currently, these activities are being undertaken, and I am looking to further continue employee participation.

**Ando** • In 1996, the Saganoseki Smelter & Refinery realized smelting operations utilizing a single flash furnace. This contributed to substantial energy conservation benefits. However, with the reduction of energy costs an increasingly important issue, the Saganoseki Smelter & Refinery has, since 1996, also undertaken other measures in pursuit of increased energy efficiency. These include the efficient recovery of waste heat produced by the smelting process and its reuse as an energy source. I am convinced that our ability to continue implementing these types of initiatives is the result of the "not to be wasteful" common awareness held by all employees.

**Takahashi** • Similar to the Saganoseki Smelter & Refinery, energy costs at the Tamano Smelter account for a large percentage of total costs. While acknowledging the difficulty in securing adequate investment yields from such facilities as small-scale hydropower plants, their application enhances the appeal of environment-friendly smelters.

**Sugawara** • As a plant engaged in the production of electronic materials, the Isohara Works has witnessed the successive construction of new facilities and structures. For the most part, energy conservation initiatives have focused largely on these new additions. It is only recently that steps have been launched to overhaul existing facilities. On this basis, energy conservation activities at the Isohara Works lag behind other operating sites. Drawing on your various examples, I would like to implement a number of improvement measures going forward.





**Masanori Okada**  
President and  
Chief Executive Officer



**Nobuyuki Yamaki**  
Senior Executive Officer



**Hirofumi Nakata**  
Executive Officer;  
General Manager,  
Technology  
Development Group



**Tadao Shuto**  
Advisor, Technology  
Development Group



**Shizuo Sugawara**  
General Manager,  
Production Control  
Department, Isohara  
Works



**Michiharu Yamamoto**  
General Manager, CSR  
Department  
(moderator)

# The Current Status and Pending Issues of Energy Conservation Activities at Each Operating Site

**Moderator** • Next, could you provide us with an overview of the current status and pending issues of energy conservation activities at each operating site?

**Sugawara** • With energy-efficient lighting installed in the new office buildings recently constructed, we also changed the lighting used in existing facilities to energy-efficient lighting. By attaching reflectors to the backside of fluorescent lamps to act as mirrors, this simple modification enabled us to successfully halve the number of lamps used. In fact, all employees commented how much brighter it was. When compared with the level of electricity consumed throughout the production process, this may seem like an insignificant measure. However, as a tool to boost employee awareness and motivation, it has had a positive effect.

**Yamada** • At the Hitachi Area Coordination Center, we increased the size of the crane buckets used to load process waste into incinerators, which reduced energy consumption. In enlarging the size of the buckets, we increased the volume of each individual input load. This in turn served to drastically curtail the amount of auxiliary fuel consumed. Meanwhile, seeing the reduction in production of electro-deposited copper foil at the Shirogane Works as an opportunity, we advanced measures to reduce electricity consumption. However, before we saw any positive effects, production began to increase again and we lost the opportunity to conserve energy.

**Sato** • At the Kurami Works, we have drawn up an internal electricity consumption map and determined a list of energy conservation activity priorities. In the future, we will continue to incorporate the promotion of energy conservation and measures to prevent global warming in our Total Productive Maintenance (TPM)\* activities.

\* The Total Productive Maintenance (TPM) method was developed by the Japan Institute of Plant Maintenance in 1971 as “a production method that seeks to maximize overall production system efficiency by improving personnel and facility quality.”

**Takahashi** • Approximately 30% of all CO<sub>2</sub> emitted by the JX Nippon Mining & Metals Group is attributable to the Tamano Smelter. In addition to the recovery of waste heat generated at the sulfuric acid manufacturing facility and to the reduction in the use of coke, we are also endeavoring to reduce CO<sub>2</sub> emissions by around 12% in fiscal 2012 compared with the average recorded between fiscal 2003 and fiscal 2005.

**Ando** • At the Saganoseki Smelter & Refinery, each employee looked around his or her work floor and implemented initiatives to try to save electricity. Through such initiatives as energy conservation patrols, we have effectively eliminated the wasteful use of electricity. The success of the campaign is attributable to the full participation of all employees. If the campaign had been limited to specific departments and divisions, I doubt the results would have had any effect. The recovery of steam generated at the sulfuric acid manufacturing facility was a significant contributing factor. Under normal circumstances, steam is used as a source of power generation. We are now also applying steam as a direct alternative to heavy fuel oil.

**President** • The Saganoseki Smelter & Refinery has four converters. When shutting down the middle of the four, the entire building interior becomes extremely dark. In this dark state, if an accident were to occur in the structure where the



converters operate, rescue attempts would be difficult.

**Yamaki** • Do you know of any safety or environmental issues that can be directly attributed to energy conservation activities?

**Yamada** • At the Hitachi Area Coordination Center, additional lighting is installed in all areas where increased illumination is considered necessary. In this regard, we are engaged in parallel activities aimed at both improving safety and environmental conservation.

**Sugawara** • When installing lights and related fixtures in newly constructed facilities, we actually found that by installing too many lights we caused undue brightness. Accordingly, we took steps to reduce the number of lights to the optimal level. I agree that appropriate lighting must be maintained to ensure safety. Of equal importance, however, is the need to maintain moderate brightness.

## Promoting Energy Conservation Activities to Pursue CO<sub>2</sub> Emission Reduction

**Moderator** • In promoting energy conservation activities, please tell us of any proposals aimed at reducing CO<sub>2</sub> emissions.

**President** • I believe that the issue of CO<sub>2</sub> emissions is not so much one of quantity but rather of the quality of energy. At the Saganoseki Smelter & Refinery, for example, which is beset by strong winds, I doubt the use of wind-powered electricity would significantly reduce energy costs. It could, on the other hand, contribute to the reduction of CO<sub>2</sub> emissions. On this basis, my thoughts are that a drastic change is required both in quantity as well as quality.

**Shuto** • We are looking at increasing the amount of waste heat recovered from the sulfuric acid plant at the Saganoseki Smelter & Refinery. In converting this recovered waste heat into electricity, we are considering to reduce fuel consumption by about half.

**Sugawara** • I see the need to reevaluate the approach that underpins the way investment benefits and yields are calculated as well as the investment decision-making process itself. For example, the Japanese government provides subsidies for photovoltaic power generation. In the event that these subsidies no longer apply, the likelihood of an investment return becomes negligible, and as a result investment becomes unattractive. Left unresolved, these issues would greatly impede the development and implementation of global warming prevention measures. In this regard, I strongly believe in the need for an investment criterion that incorporates a clean energy framework.

**Yamada** • With the changeover from heavy fuel oils to city gas, we can reduce our CO<sub>2</sub> emissions by between 20–30%. Our energy costs, on the other hand, would double as a result of this changeover. Under existing investment criteria, this type of investment proposal has little likelihood of coming to fruition. In the not-too-distant future, however, we can expect a value-added environment tax to be imposed, placing considerable weight on the quality of energy used. It is therefore imperative that we put in place an investment criterion and

decision-making framework that will allow us to implement in a timely fashion the necessary steps to ensure an appropriate response.

**Ando** • What about introducing a mechanism that encourages innovation to reduce environmental impact as an investment criteria? One school of thought is to simplify investment by introducing a criterion that measures the level of contribution toward reducing CO<sub>2</sub> emissions after taking into consideration the economic and commercial viability of energy conservation-related investment. A mechanism that quantifies the amount of CO<sub>2</sub> emissions in monetary terms can also be expected to have a greater effect on the frontline.

**Sato** • I agree. “MIERUKA (visualization)”, or the ability to present the results of activities in monetary terms, is an effective tool in lifting employee motivation.

**Sugawara** • From a visualization perspective, we provide a report on the level of electricity demand stipulated under contracts as well as penalty charges incurred for exceeding the level of electricity demand at the Isohara Works. With an understanding of the level of penalty charges incurred as a proportion of the Works’ total electricity bill, as well as the timing and period of excess demand, and whether the excess was of a regular or irregular nature, we are better positioned to engage in in-depth discussions. This helps to deter the convenient excuse that the penalties incurred were necessary in addressing customer needs.

**President** • I think that we are all in agreement that a change in mindset is required. In this regard, the most effective trigger would appear to be visualization. Conditions at each operating site differ, however, and in this context, visualization must accommodate and match individual operating site needs. I would like to see each operating site formulate and implement its own form of visualization initiative. This information can then be shared. I am sure that we would then be provided with a clearer picture on the priorities required with respect to energy conservation investment as a company.

**Moderator** • Are there any other ideas?

**Sato** • Disclosing to the local community that several floors of the operating site are powered by photovoltaic energy further solidifies our image as an environmentally conscious company.

**Takahashi** • That’s right. The Tamano Smelter is promoting the greenery project by 2,000 m<sup>2</sup> each year. In addition, we are considering challenging wind-powered, hydro-powered, and photovoltaic power generation to help highlight our environmentally conscious attitude to local residents. As an improvement measure put forward by employees, we are considering the introduction of increased financial incentives linked to assessment criteria and the reduction of CO<sub>2</sub> emissions.

**Yamada** • As a part of the Hitachi Renewal Project at the Hitachi Area Coordination Center, idle flues were demolished, which left bare patches on the slopes of the adjoining mountain. We are currently planting trees to beautify all these areas. In those areas within our operating site where tree planting is difficult, we are trying fresh and innovative afforestation methods.

**Sato** • While each operating site is confronted by its own set of unique issues, perhaps the Kurami Works and Isohara Works, both of which are engaged in the electronic materials business, can lift their respective levels for energy conservation initiatives by increasing a mutual exchange of ideas and information.

**Takahashi** • A member of the Energy Conservation Subcommittee from the Saganoseki Smelter & Refinery recently visited the Tamano Smelter to share information on energy conservation-related activities.

**Ando** • Promoting exchanges between operating sites that share little or no business fields would have the potential of triggering completely new concepts and ideas. Further, in calculating the profitability of a capital investment, isn’t it acceptable to introduce a new concept? For example, when investing in geothermal power generation, electricity purchasing prices can be used to evaluate the effect of capital investment. The results would provide momentum for further geothermal power generation investment.

**President** • In pursuing energy conservation activities in the future, I would like us to take into consideration three key issues. The first is “visualization.” Those indicators used in the visualization process will differ from operating site to operating site. I would therefore ask individual operating sites to discuss this among themselves accordingly. Thereafter, I will call on the Energy Conservation Subcommittee to take the lead in initiating an exchange of ideas and information between operating sites.

The second issue is “profitability.” As a commercial entity, we are not in the position to engage in investment activities without the strong potential for an adequate return. While it can be argued that “we have done all that basically can be done,” I would suggest that there is still much for us to accomplish. At the Saganoseki Smelter & Refinery, for example, where we utilize the waste heat produced from the sulfuric acid plant to generate electricity, I am convinced that there remains room for further modification and adjustment. Please think again about energy conservation investments that will produce a positive investment yield.

The third issue is to “expand our business while at the same time achieving established CO<sub>2</sub> emission reduction goals.” As Mr. Nakata mentioned, the Japanese government has stated the goal of curtailing CO<sub>2</sub> emissions by 25% leading up to 2020 compared with levels recorded in 1990. Accordingly, I see little likelihood of a change in trends that are currently underway. I suspect that in the future, we will be forced to consider capital investments that under existing calculation methods would prove unprofitable. We must therefore look toward reviewing our investment criteria. As one potential candidate for future energy conservation investment, we should consider the possibility of geothermal power generation at closure mines. At the wind-ravaged Saganoseki Smelter & Refinery, consideration must also be given to wind power generation should investment costs decline.

The ideas that have emerged from these discussions today should be collated and prioritized by the Energy Conservation Subcommittee. We must then pursue activities with a renewed sense of determination.

**Moderator** • I believe today’s roundtable meeting was extremely fruitful. I thank you all for your participation.

### Special Feature



**Hiroya Yamada**  
General Manager,  
Technical Department,  
Hitachi Area  
Coordination Center



**Hirohiko Sato**  
General Manager,  
Production Department,  
Kurami Works



**Shigeki Takahashi**  
General Manager,  
TPM Promotion Dept.,  
Hibi Kyodo Smelter, Pan  
Pacific Copper Co., Ltd.



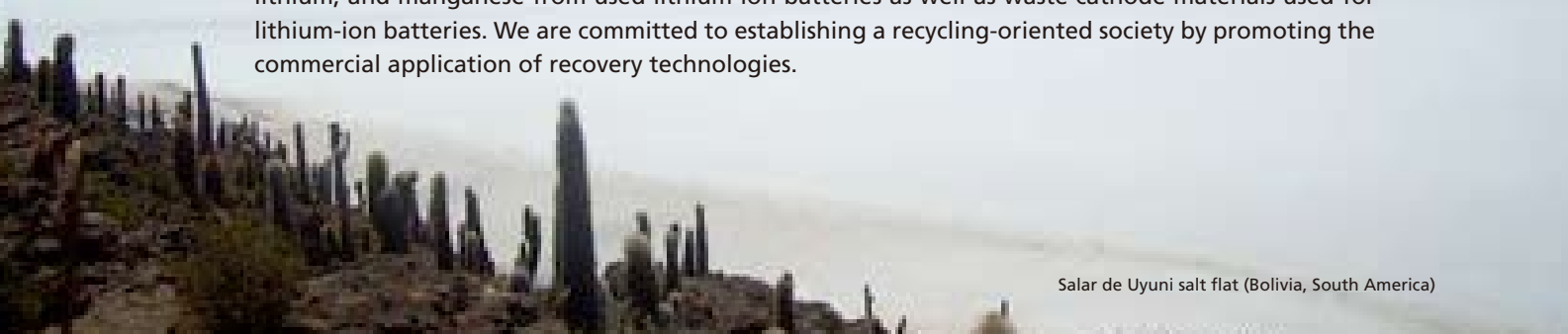
**Junichi Ando**  
Senior Engineer,  
Technology  
Development Group



# Establishing a Resource Recycling-Oriented Society

Mineral resources such as non-ferrous metals have become indispensable in everyday life. However, the supply of these resources is not indefinite. For this reason, we believe that the area in which we can best contribute to the sustainable development of society is the development of technologies and systems that can use these natural resources more effectively.

The Group has commenced demonstration trials in an effort to recover and recycle cobalt, nickel, lithium, and manganese from used lithium-ion batteries as well as waste cathode materials used for lithium-ion batteries. We are committed to establishing a recycling-oriented society by promoting the commercial application of recovery technologies.



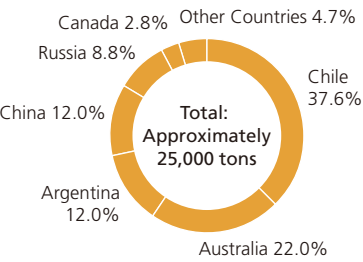
Salar de Uyuni salt flat (Bolivia, South America)

## An Urgent Need to Develop Rare Metal Recovery Technologies

Currently, lithium-ion batteries are used extensively in such electronic devices as mobile phones and personal computers. Looking at the not-too-distant future, demand for lithium-ion batteries is projected to rise dramatically as an in-vehicle power source for next-generation automobiles, including electric and hybrid vehicles, with respect to the growing trend toward the establishment of a low-carbon society. Lithium, one of several necessary raw material metals, on the other hand, is a scarce commodity with an uneven geographical distribution. Under these circumstances, the recovery of lithium from used batteries and the development of recycling technologies that facilitate its reuse are issues of immediate pressing concern.

### Lithium Ore Production Volumes by Country

2007: Including production from lakes and other sources.  
(Source: U.S. Geological Survey data)



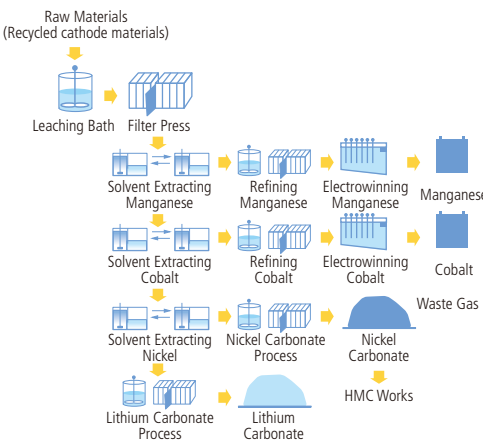
## Consolidating a Variety of Techniques

Drawing on its technological expertise accumulated in its smelting and refining business as well as its recycling and environmental services business, the Group has actively

engaged in the development of efficient recovery technologies that facilitate the extraction of value-bearing metals from used batteries and other sources. Following a public tender, the Group was commissioned by the Ministry of Economy, Trade and Industry (METI) to develop technology to recover rare metals from used lithium-ion batteries as a part of the ministry's industrial technology development program in September 2009. As a result, a pilot plant was constructed on the premises of Nikko Tsuruga Recycle Co., Ltd., a subsidiary company located in Tsuruga City, Fukui Prefecture, and operations subsequently commenced there. These metal recovery technology development operations are being conducted in collaboration with Waseda and Nagoya universities.

Basic technologies have been developed with respect to the recovery of lithium and manganese from lithium-ion batteries. Should these technologies be brought to practical application, it would represent a world first.

### Diagram of the Recycling Process



## Voice—From Demonstration Trials to Full-Fledged Operation



**Makoto Narusako**  
Manager, Technology Development, Tsuruga Plant

I first took up my post at the Tsuruga Plant in January 2010. While building construction had been completed, facilities were yet to be installed. From this point, I was involved in almost every facet of the project from facility installation through test operation to set up, the procurement of essential materials, the drawing up of operating plans, and the establishment of an operating structure and system.

Particular attention and time was given to the education and training of frontline operators. Thanks to the support of a great many people, trial operations commenced in early April 2010. By mid-May, our workforce had increased to 17 people working under a three-shift system.

The Plant itself is a maze of reaction tanks, liquid storage tanks, pipes, pumps, and other machinery and equipment. While the facilities can be controlled remotely through a touch panel in addition to a system that has been devised to make it easier to understand the process flow by displaying the names of each tank and direction of pipes confirmation of the onsite status and liquid composition of each process is undertaken. Through these means, operational safety as well as higher product quality is ensured.

Currently, these facilities are operating at around 20% of full capacity. After completing demonstration trials, we will realize early full-fledged operation. With the need to meet strict quality standards while maintaining low-cost operations, as an engineer, I am finding this project an extremely exciting challenge.



Solvent extraction equipment

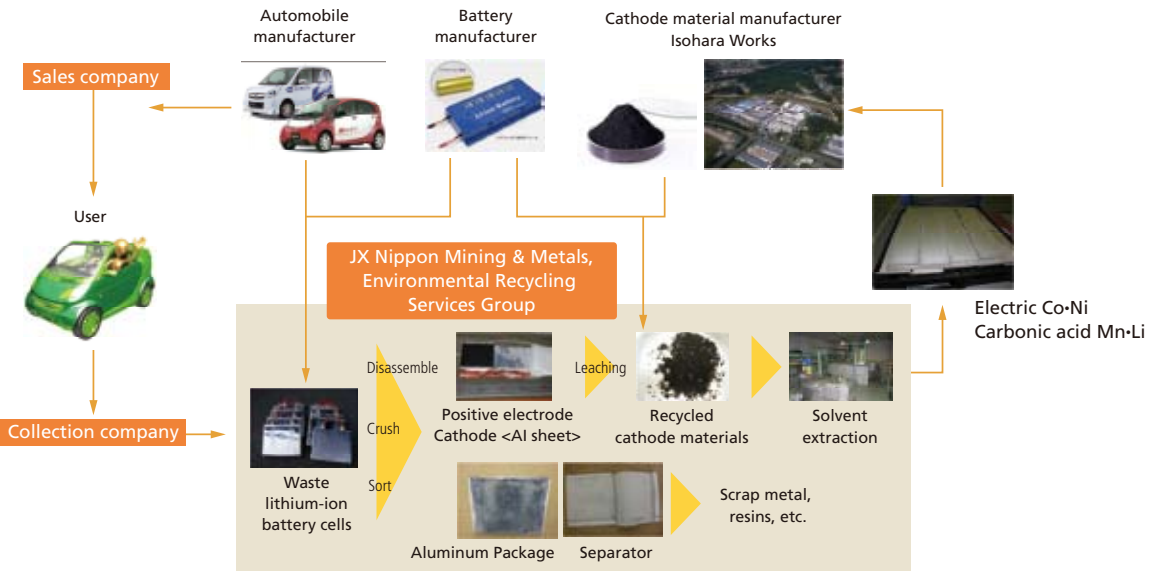
## Building a Recycling Model for Recovered Metals

Plans are in place to supply value-bearing metals recovered as raw materials for use in cathode materials of the in-vehicle lithium-ion batteries manufactured by the Group's Isohara Works located in Kitaibaraki City, Ibaraki Prefecture, and by other manufacturers.

In addition to striving to realize the practical application of recovery technologies in the future, the Group will endeavor to build an efficient supply chain encompassing lithium and other rare metals to realize materials stewardship.



Tsuruga Plant (pilot plant)







# Developing Environment-Friendly Technologies

The Group is endeavoring to develop technologies that reduce environmental impact as a part of efforts to secure the sustainable development of both society and the economy. Guided by the overarching goal to develop environment-friendly technologies, JX Nippon Mining & Metals Corporation established the joint venture company BioSigma S.A. with the Chilean state-owned Corporacion Nacional del Cobre de Chile (CODELCO) to pursue the development of bio-leaching technologies in 2002. In the following section, we introduce the initiatives undertaken by BioSigma in the field of bio-leaching technology development.

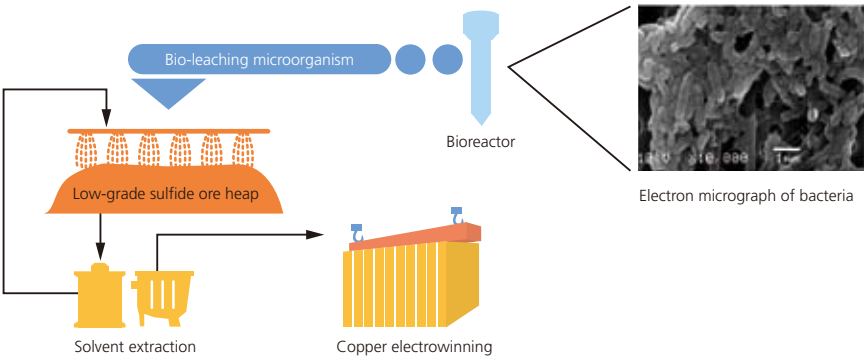
Bio Sigma S.A.

## What is Bio-leaching Technology?

Bio-leaching is a hydro-metallurgical process that extracts value-bearing metals from their ores through the use of bacteria. In recent years, demand for copper has risen dramatically. On this basis, the effective application of low-grade copper ore, which was previously discarded as tailings, has become an increasingly pressing issue. Since 1990, bio-leaching technology has been employed to extract copper from low-grade secondary copper sulfide ore at certain mines. Focusing not only on secondary copper sulfide ore, BioSigma is working to further harness the potential of the bacteria found in nature to develop a technology that will efficiently leach and refine copper from primary copper sulfide ore, long thought to be a difficult process.

Under the bio-leaching process, bacteria perform the action of oxidizing iron and sulfur. In order to procure the energy required to spur bacterial growth, both iron and sulfur oxidizing bacteria draw on electrons found in the iron and sulfur, respectively. As a result, the iron and sulfur oxidize. Copper, with which bacteria cannot be used, remains unoxidized. That is to say, copper is a by-product of the bio-leaching process. Previously discarded tailings serve as a resource while the bio-leaching technology also contributes to improved economic benefits by accelerating the speed of leaching in the hydro-metallurgical process.

## Copper Recovery Process utilizing Bio-leaching Technology



## Manufacture of Bio-leaching Refined Copper at the Pilot-scale Test Level

Pilot-scale tests were launched at CODELCO's Andina Mine to validate BioSigma's bio-leaching technology. Refined copper is currently being successfully produced using this technology.



View of the pilot-scale facility at the Andina Mine



Refined copper manufactured utilizing bio-leaching technology

## Voice—Recent Activities at BioSigma



Ricardo Badilla  
President, BioSigma S.A.

### Industrial plant operations to commence at the Radomiro Tomic Mines

Within the framework of the Collaboration Agreement between CODELCO and BioSigma signed on November 11, 2009, the construction of the first industrial biomass plant with BioSigma Technology was initiated at CODELCO's Radomiro Tomic Mines. The Plant is designed to supply BioSigma's proprietary microorganisms to enhance the copper recovery from some 20 million tons of a mixed sulfide copper bearing ore, from which some 50% is a primary ore containing bornite and chalcopyrite. This is the world's first plant of this kind, and it is expected that recovery will be significantly enhanced compared to that from conventional leaching technology once the full industrial scale of the technology is completed in the next four years.



### Bacteria patent acquired

BioSigma has adopted a strategy to study the microbial enhancement of copper sulfide bio-leaching through a combination of classical industrial microbiological methods to obtain consortia of high activity and with a system biology approach to establish the principal genes, proteins, and metabolites involved in the process. Since 2003, we have isolated more than 70 microorganisms of interest coming from mine sites, from which we have obtained the technology to use them in the recovery of metals from ores; three of them Wenelen, Licanantay and Yagan have been patented in many countries, including Chile and Japan, and are key elements of BioSigma Technology that will soon be applied in its First Industrial Level Operation.

### Company Profile

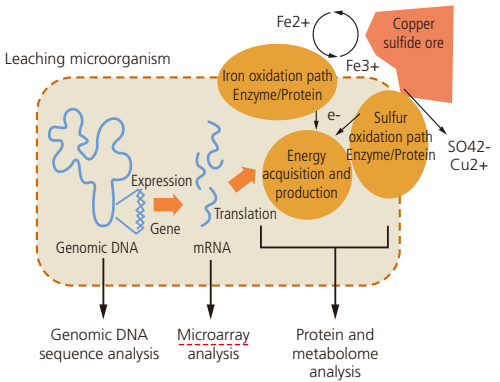
Place of incorporation	Republic of Chile
Company name	BioSigma S.A.
Head office	Santiago, Republic of Chile
Representative	Ricardo Badilla



## Strengthening Bio-leaching Technology

BioSigma's research laboratory, which is located in the suburbs of the city of Santiago, identifies and develops the cultivation methods for the bacteria used in its bio-leaching technologies. At the same time, BioSigma has entered into a cooperative research agreement with Keio University's Institute for Advanced Biosciences, which itself possesses leading-edge biotechnologies. Under the agreement, both parties engage in metabolome analysis as well as genome analysis. The results of this research are then applied in the functional analysis of bacteria. Furthermore, in order to realize efficient and stable bio-leaching processes, experimental column leaching trials are being undertaken to facilitate optimal condition searching. By strengthening these forms of research and development, promoting the application of the most optimal bio-research, and strengthening the qualities of bacteria essential to bio-leaching, every effort is being made to enhance the leaching performance.

## Strengthening Functional Analysis and Specified Performance Reinforcement of Bio-leaching Microorganisms (Biotechnology Development)



# Improvement Activities in Fiscal 2009

## Improvement Activities at Domestic and Overseas Operating Sites

The JX Nippon Mining & Metals Group is conducting NPM activities as well as other improvement activities in order to increase productivity, improve quality, and reduce production costs at domestic and overseas operating sites. Employees engage in improvement activities throughout their daily work based on the characteristics of their work places. The on-

going accumulative effect of these efforts has brought about great results. Further, improvement activities based on the PDCA cycle fulfill an important role in our CSR activities. Examples of activities playing a part in “innovation in productivity”—a motto identified in the Group’s Code of Conduct—are outlined below.

### The Group’s NPM Activities

The Total Productive Maintenance (TPM) method was developed by the Japan Institute of Plant Maintenance in 1971, based on “production methods that seek to maximize overall production system efficiency by improving personnel and facility quality.”

When the Group joined this movement in 1994, it decided to take the TPM method beyond its conventional framework, thereby transforming it. The result, borrowing the name of our predecessor company Nippon Mining & Metals, was the “Nippon Mining & Metals TPM (NPM)” method. This method takes a dynamic approach to continuous innovation and is still in effect today. The NPM method seeks to minimize various losses through a zero-accident, zero-defect, and zero-failure approach.

We are now proactively applying the NPM method at all major operating sites.

### Examples of Activities at Domestic Operating Sites

#### Shirogane Works (Ibaraki Prefecture)

The Shirogane Works kicked off its improvement activities in January 1996. Up until the present day, it has launched programs such as Part 2, which began in 2000, and Shirogane Style NPM, which began in 2005. The Works received the TPM Excellence Award in 1999 for its efforts up until that point.

After the implementation of the Part 2 program mentioned above, new issues surfaced pertaining to the promotion of appropriate improvement activities. To resolve these issues, employees of the Works were strongly encouraged to deepen their understanding of the relationship between operations and NPM activities as well as the fundamental principles behind facilities and processes.

Shirogane Style NPM was developed in 2005 for this reason. Shirogane Style NPM breaks down activities into themes related to individual departments. These themes were taken from the Work’s operating policies. The subsequent breakdown allowed for better overlap between its operations and NPM activities. Further, the Works developed the slogan of “lively operations that boost the morale of operators.” Accordingly, in order to make a shift from operations driven by managers to those driven by operators, the Works is employing an analysis program based on the “5 Whys.” Additionally, it has created unit diagrams that correspond with those in technology manuals, which have served as visualizations of the importance of various manufacturing conditions. Through these efforts, the Shirogane Works is reinforcing operators’ understanding of the importance of and making continuous improvements in product quality.

Based on the initiatives listed above, the Works improved product yield rates and shortened the production lead times of various products, including electro-deposited copper foil and treated rolled copper foil. The results born of these initiatives were great.



#### Pan Pacific Copper Co., Ltd. (Hibi Smelter), Hibi Kyodo Smelting Co., Ltd., and Sankin Hibi Harbor Transportation Co., Ltd. (Okayama Prefecture)

These three Group companies all began their TPM activities in February 1999. These activities are continuing to gain momentum with each coming year through their various efforts.

Currently, these companies have entered into Part 3 of their TPM activities. They have created the slogan of becoming “a custom smelter that can compete on a global scale.” Through TPM activities that all employees engage in, these companies are actively promoting improvement and maintenance activities throughout all employee groups.

With each step forward, the companies have achieved impressive results. As a result, these three companies received the following TPM awards:

- 2003: Award for TPM Excellence, Category A
- 2007: Award for Excellence in Consistent TPM Commitment
- 2008: Advanced Special Award for TPM Achievement

Ten years have passed since TPM activities were introduced at these companies. Since then, there has been an influx of young employees. As a result, these companies have been focusing on activities that get back to the roots of their TPM activities. The continued guidance of an outside consultant is supporting these efforts. Moreover, the companies aim to connect these TPM activities with their own CSR activities. In order to effectively promote these various activities, in fiscal 2009, the Energy Conservation Subcommittee was introduced into the existing operational structure. Subsequently, the companies have been driving forward with initiatives geared toward disseminating awareness regarding energy conservation.



### Exchanges between Operating Sites

Improvement activities are conducted at operating sites throughout the Group. In addition to the activities at individual operating sites, exchange forums are also held periodically between operating sites. At these forums, representatives from different operating sites exchange information and present examples of improvement activities

in place at their own operating site. Such exchanges offer these representatives chances to consider how to more effectively utilize their own facilities and improve productivity, to advance and sophisticate improvement activities at their operating sites.

### Example of Exchange Forums in the Smelting and Refining Business

Exchange forums are held yearly in either November or December between the Saganoseki Smelter & Refinery of Pan Pacific Copper Co., Ltd., the Hibi Smelter of Hibi Kyodo Smelting Co., Ltd., and the Onsan Refinery of LS-Nikko Copper Co., Ltd. The location of the forum rotates between each operating site and every year approximately 30 employee representatives participate in these forums.

- Principal Agenda
- Total of six presentations regarding the two themes of smelting and refining technologies and analytical skills are given by each company.
  - Group discussions are held based on these presentations.
  - A plant tour is held at the operating site hosting the forum (focused on new facilities introduced at the site).

To date, a variety of themes have been presented including improving the operation of flash furnace boilers, decreasing the percentage of copper in slag, increasing the efficiency of heat recovery in sulfuric acid processes, and introducing the permanent cathode method. Particular themes always bring about lively discussion and vigorous exchanges of questions and answers based on the experience and knowledge accumulated at each operating site. Going forward, we will continue to actively promote Groupwide operational improvement through such exchange forums.



### Examples of Activities at Overseas Operating Sites

#### Gould Electronics GmbH (Germany)

Gould Electronics GmbH has traditionally improved operational and management skills in cooperation with the Shirogane Works and Nikko Metals Philippines Inc., both operating sites working in the same field. In March 2010, having completed its preparations related to TPM activities, Gould Electronics held the “G-TPM Kick-off Ceremony,” and began the full-fledge introduction of these activities.

As part of this initiative, it has developed the slogan “The One to Win” and established four specialized divisions. Further, it is advancing various measures to improve productivity, increase product yield ratio.





The Group's CSR Roots

The Path toward Coexistence with Local Communities

The history of the Group dates back to 1905, when founder Fusanosuke Kuhara commenced work on the development of the Hitachi Mine. Supported by the dynamic growth in Japan's industrial sector at the time, this mine developed into a mine that boasted the nation's leading production of copper ore. Later, smelting and refining operations were launched utilizing the copper ore extracted from the Hitachi Mine.

Meanwhile, the Company was responsible for creating smoke damage due to the emission of sulfur dioxide from its smokestacks, which is said to be the fate of the copper smelting business. Smoke containing sulfur dioxide spread extensively to neighboring areas resulting in substantial damage to local agricultural produce.

Taking steps to negotiate with local residents on the issue of compensation, the Company was active in collecting information relating to the damage caused by the smoke and strove to grasp the full extent of the damage. In other efforts, the Company took the lead in providing farmers with guidance on the cultivation of produce highly resilient to the smoke. The relationship with the local community nurtured over this period is today an invaluable asset to realize coexistence and coprosperity.

As a part of the measures aimed at eliminating damage caused by the spread of the smoke, Fusanosuke Kuhara proposed the construction of a giant stack. At a large cost, and utilizing an aggregate workforce of 36,800 workers, construction of the 155.7 meter smokestack, the world's

tallest at that time, was successfully completed in December 1914, dramatically reducing smoke damage. Moreover, approximately 10 million seedlings, including Oshimazakura Cherry trees and black pines, recognized for their resilience against smoke, were planted in the barren areas of the mountain and surrounds of the Hitachi Mine. As a result, much of the mountainside was restored to its natural beauty. With each spring season, the mountain is filled with the color of cherry blossoms and is a place of major pride for the residents of Hitachi City.

Before long, the giant stack became a symbol of the relationship of coexistence and coprosperity between the industrial city of Hitachi and the Company. After mining and smelting operations were terminated in the Hitachi Region, two-thirds of the upper section of the stack collapsed in 1993. Thereafter, the stack was repaired with a height of 54 meters, which remains today as a symbol of mutually beneficial ties between the Company and the local community.

The Hitachi Region, which was previously the site of the Hitachi Mine, is currently the location of one of the Group's principal operating sites. In addition, the Daioin District of Hitachi City is adjacent to the Takasuzu Natural Park. Within this park, an area of approximately 120,000 square meters of mountains and forest is the property of the Hitachi Area Coordination Center.



Construction of the Hitachi giant stack and the giant stack on completion



The giant stack in Hitachi as it stands today



Oshimazakura Cherry blossoms lining Heiwa Street in Hitachi City

As a Member of the JX Group

The JX Group advocates the utmost respect in terms of five key values, abbreviated as EARTH. (For further details, please refer to page 5.) We are proud that the aforementioned activities undertaken throughout the Hitachi Region were in fact the forerunners to these five EARTH values. With a high sense of "ethics," the Company addressed the issue of smoke damage. Through "advanced ideas," the Company constructed a giant smokestack, successfully eliminating the damage, and thereby the Company could build a mutually beneficial "relationship with society" in the Hitachi Region.

The approaches undertaken at that time, serve as the cornerstone for the Group's "trustworthy products/services" as well as the source of a corporate culture that places the utmost emphasis on "harmony with the environment."

Looking ahead, we will continue to take pride in our history and corporate culture. At the same time, we recognize that in enriching our understanding of the JX Group's Mission Statement, we will be better positioned to put into practice that Mission Statement.

Management

In the following section, we report on the management and CSR promotion systems used by JX Nippon Mining & Metals Corporation.

Corporate Governance	037
Corporate Governance / CSR Promotion System	
Compliance / Risk Management	

Management

Corporate Governance Systems within the JX Group

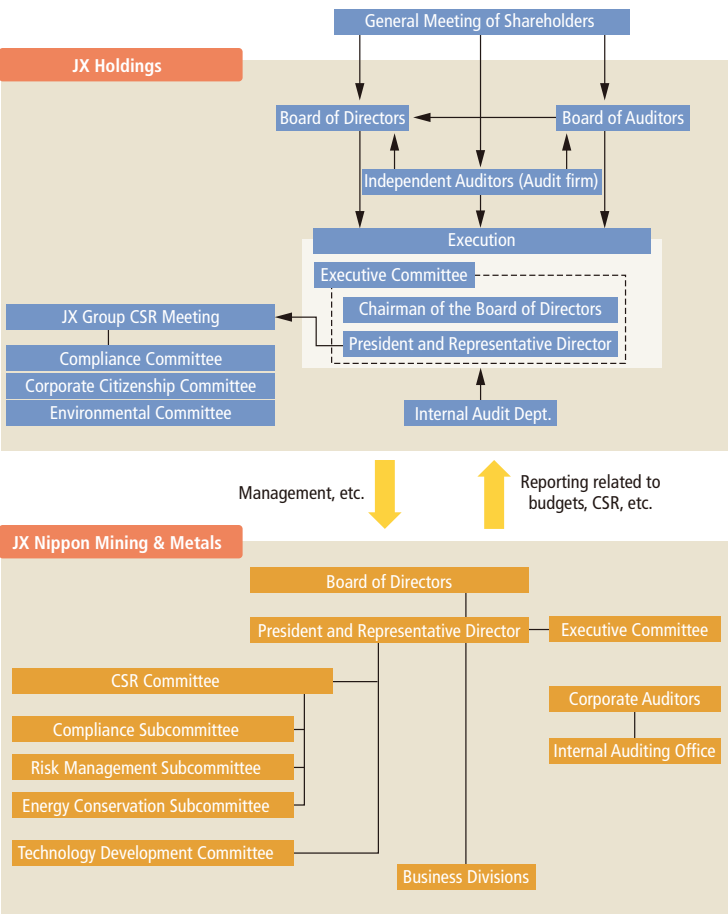
JX Nippon Mining & Metals Corporation, as a core operating company of the JX Group, is engaged in the non-ferrous metals business. JX Holdings Inc., the holding company of the JX Group, pursues its principal mission to promote groupwide development, innovation, and synergy, as well as to maximize corporate value by developing medium-to-long-term strategies for the JX Group and strategically allocating management resources in order to realize these strategies. To this end, we, along with the other core operating companies in the JX Group, have a responsibility to contribute to the improvement of the corporate value of the JX Group, through operating independently and autonomously our own business in accordance with the Group's strategy to achieve our business goals.

Board of directors of JX Holdings

The board of directors of JX Holdings is composed of a total of 16 directors, including:

- 8 full-time directors of JX Holdings
- 4 directors including the presidents of JX Nippon Mining & Metals and the other two core JX Group operating companies
- 4 external directors.

Overview of the JX Nippon Mining & Metals Group's Corporate Governance System



A total of six statutory auditors are employed, including two full-time corporate auditors and four outside auditors. The four external directors and four outside auditors are all independent directors/auditors.

Collective conferences in the JX Group

The JX Group convenes the JX Group CSR Meeting for the purpose of developing and promoting basic policy related to CSR. The following three committees have been created under the JX Group CSR Meeting based on the three areas of the JX Group's CSR Action Policy.

- JX Group Compliance Committee: Discusses, reports, and shares information related to groupwide compliance (including information security and human rights).
  - JX Group Corporate Citizenship Committee: Discusses, reports, and shares information related to groupwide corporate citizenship.
  - JX Group Environmental Committee: Discusses, reports, and shares information related to groupwide environmental issues.
- These committees consist of members chosen from JX Holdings and JX Group companies.

Board of Directors

The Company has established the Board of Directors to discuss issues defined by laws, regulations, and the Articles of Incorporation, as well as other important management issues. The Board is composed of the president and eight other directors, as well as three auditors. (All nine directors are inside directors and serve concurrently as executive officers.)

Committee of Executive Officers

The Company has established the Committee of Executive Officers as an advisory body to the president. The committee has consultations regarding important issues related to the management of the Company. The status of operational execution is also reported to the committee. The committee consists of the president and executive officers, who the president has designated to participate in the committee. The full-time auditors can also participate in the committee to deliver their opinions.

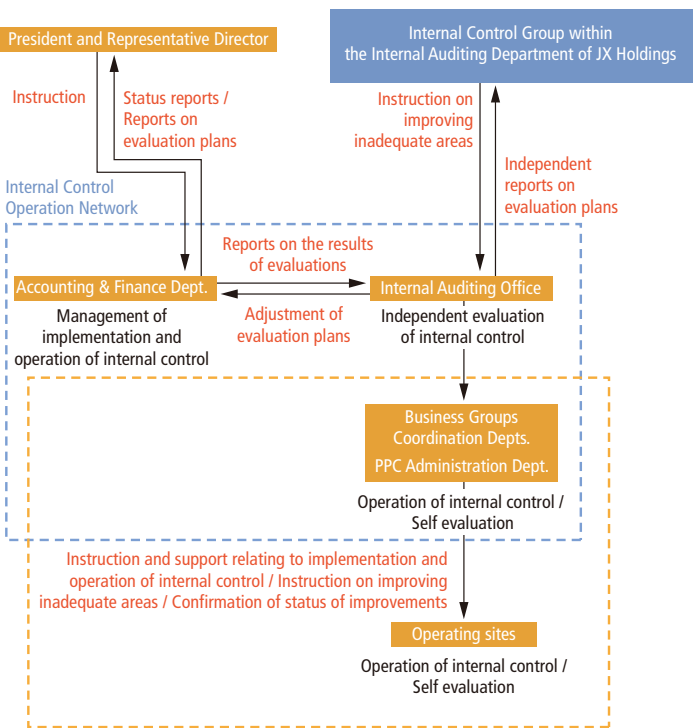
Internal Control System

The Internal Control Group within the Internal Auditing Department of JX Holdings comprehensively manages compliance with the Financial Instruments and Exchange Act of Japan and groupwide internal control systems. Further, acting in accordance with the JX Group's response policies, JX Nippon Mining & Metals is constructing an internal control system to ensure appropriate financial reporting, as required by the Financial Instruments and Exchange Act.

Compensation for directors and corporate auditors

Bonuses for the directors of JX Nippon Mining & Metals are determined on the basis of consolidated business results of the Company as well as of JX Holdings. Retirement benefits and stock options are not offered.

Operation of the Internal Control System Related to Financial Reporting



CSR Promotion System

The CSR Committee, an advisory body to the president, is responsible for determining basic policies for the Group's CSR activities, assessing progress toward CSR-related goals, and evaluating CSR performance from economic, environmental, and social perspectives. The JX Nippon Mining & Metals Group makes a concerted effort to get CSR activities pervaded and stick root across the Group.

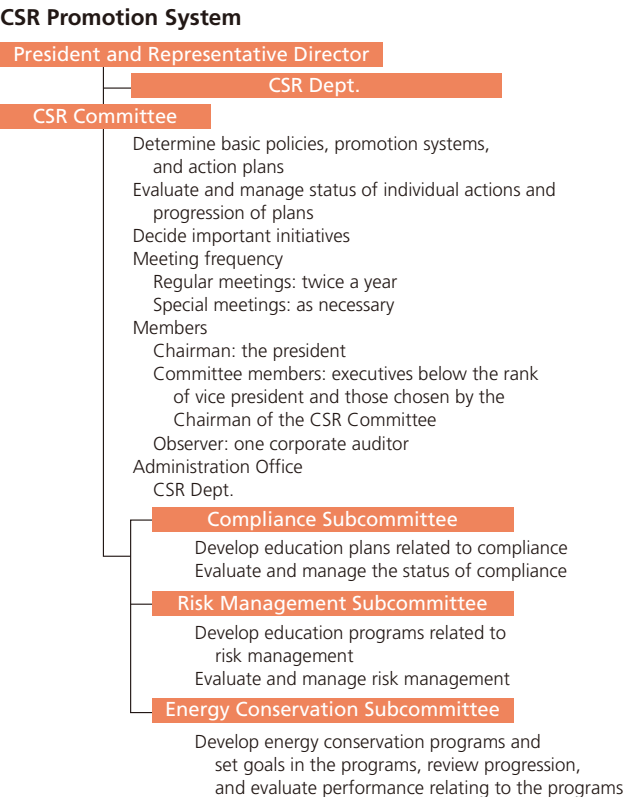
Key CSR Activity Initiatives

Fiscal 2006	<ul style="list-style-type: none"><li>■ Period for introducing CSR activities</li><li>• The new "Nippon Mining &amp; Metals Co., Ltd." was incorporated by the management integration of three metals companies.</li><li>• The CSR Kick-Off Convention was held.</li><li>• The CSR Committee and two of its subcommittees (the Compliance Subcommittee and Risk Management Subcommittee) were newly established.</li><li>• The Corporate Philosophy, Code of Conduct, Basic Environmental Policy, Basic Policy on Health and Safety, and <u>Green Purchase</u> Guideline were compiled.</li><li>• CSR activities were implemented at 24 operating sites.</li></ul>
Fiscal 2007	<ul style="list-style-type: none"><li>■ Period for promoting CSR activities at overseas operating sites</li><li>• The Corporate Philosophy and Code of Conduct were translated into five languages (including English and Chinese) and distributed to and posted at each overseas affiliate company.</li><li>• The boundary of CSR activities was expanded to 24 domestic and 4 overseas operating sites.</li></ul>
Fiscal 2008	<ul style="list-style-type: none"><li>■ Period for expanding and spreading awareness of CSR activities</li><li>• The CSR Office was newly established within the Administration Department.</li><li>• The boundary of CSR activities was expanded to 24 domestic and 14 overseas operating sites.</li><li>• The CSR Action Policy was compiled.</li><li>• The Group began supporting the Extractive Industries Transparency Initiative (EITI) and participating in the United Nations <u>Global Compact</u>.</li><li>• The Energy Conservation Subcommittee was established under the CSR Committee.</li></ul>
Fiscal 2009	<ul style="list-style-type: none"><li>■ Period for spreading and integrating awareness of CSR activities</li><li>• The CSR Office was separated from the Administration Department and became the CSR Department.</li><li>• Basic quality control policy was established.</li></ul>
Fiscal 2010	<ul style="list-style-type: none"><li>■ Period for spreading and integrating awareness of CSR activities—a continuation from fiscal 2009</li><li>• The Code of Conduct was revised and re-established based on the JX Group Mission Statement.</li></ul>



CSR Promotion

The Group is striving to upgrade the quality of its CSR activities. In pursuit of this, it engages in CSR activities based on the CSR action policy, evaluates performance against the policy, and sets new annual goals going forward. At the same time, it checks to confirm whether or not business activities are in compliance with the JX Group's Mission Statement and Code of Conduct by implementing the PDCA cycle. (For further details regarding the goals and performance in fiscal 2009, please see pages 21 and 22.)



Spreading Awareness of CSR Activities in Fiscal 2009

Conducting CSR briefing sessions and roundtable discussions

CSR briefing sessions were held at operating sites both in Japan and overseas. We also carried out an employee survey related to our CSR activities and held roundtable discussions regarding CSR activities at operating sites both in Japan and overseas. Through these efforts, we worked to spread and share CSR awareness across the Group.

Publishing Sustainability Report 2009

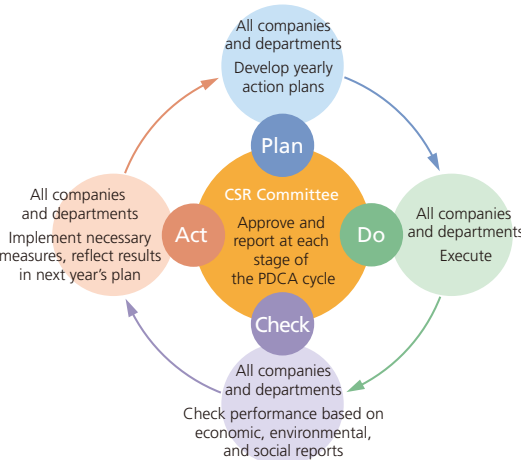
Both a full and digest version of Sustainability Report 2009 were published in Japanese, while the digest version was published in English. The Japanese full report attained the Application Level A+ as defined in the Sustainability Reporting Guidelines 2006 of the Global Reporting Initiative (GRI).

Carrying out an employee survey on our CSR activities

An employee survey on Sustainability Report 2009 and the Group's CSR activities was carried out, targeting executive officers and employees. With a response rate of 96.8% in the survey, we successfully disseminated and shared the importance of CSR awareness. The opinions and comments obtained through this survey will be used as tools for identifying areas for the enhancement of future CSR activities.

Introducing the activities of the Energy Conservation Subcommittee

The Energy Conservation Subcommittee supports the promotion of energy conservation activities at various operating sites within the Group. This is achieved by way of formulating goals and action plans as well as monitoring the activities implemented, assessing the progress, and summarizing data related to energy consumption. In fiscal 2009, the subcommittee held a roundtable meeting with the president geared toward reducing CO<sub>2</sub> emissions, and discussed efforts to reduce the emissions at each operating site. This roundtable meeting helped deepen discussion on our future initiatives. (For further details, please see pages 25 to 28.)



Compliance

The Compliance Subcommittee

Basic policies, priority issues for each fiscal year, education, and other issues regarding compliance are managed by the Compliance Subcommittee. The members of this committee consist of executive officers in charge of divisions of the head office and managers responsible. The Compliance Subcommittee meets regularly twice a year and at other times as needed to discuss the status of compliance throughout the Group and decide upon basic policies regarding compliance. At the end of each fiscal year, the subcommittee is convened to hear progress reports with regard to compliance-related matters from all operating sites and subsequently summarizes these results. In addition, from these reports the subcommittee assesses the risks of fraud and law violations, identifies priority issues, and incorporates this information into future education programs.

Compliance-related Education Programs

With the aim of increasing awareness about compliance and improving the level of understanding about basic points of concern, the Group organizes and conducts compliance-related education programs in Japan as part of the induction course for new recruits. The Group also organizes and conducts additional training programs for employees in their third year after joining the Company as well as for both newly promoted managers and assistant managers. Additionally, in fiscal 2009, compliance-related education programs were implemented based on the following two themes.

Education regarding the antitrust law

The Company implemented an education program at its head office regarding the antitrust law. A total of 75 employees working in the sales department at the head office and of related companies located near the head office took part in this program.

Education regarding export control

The Company holds explanation panels at its head office and at relevant operating sites regarding export control as one of the regular education programs. A total of 110 employees participated in these panels.

Environment and Occupational Health and Safety

Each operating site operates in compliance with ISO 14001 in order to deal with environmental issues. (For further details pertaining to certification, please see page 70.) Meanwhile, the Group has been employing Occupational Health and Safety Management Systems (OHSMS) to move ahead with systemizing Groupwide compliance with the relevant laws and regulations in the areas of labor, health, and safety, while also improving risk management. (For further details, please see page 87.)

Compliance Guidebook

In addition to the compliance guidebook, the Group has distributed booklets describing the Code of Conduct, the Basic Environmental Policy, and the contact information for the Group Hotline.

Group Hotline

The Group has established the Group Hotline for the purpose of preventing violations of the law as well as quickly uncovering and rectifying issues regarding such violations. In fiscal 2009, there were no reports of compliance violations, including mistreatment and discrimination.



Management

Initiatives of the Risk Management Subcommittee

Risk management issues are handled primarily by the Risk Management Subcommittee. This subcommittee meets twice a year and identifies and evaluates risks at major operating sites and divisions of JX Nippon Metals & Mining, Pan Pacific Copper Co., Ltd., and other related companies, based on basic risk management policies and action plans. Appropriate countermeasures are subsequently developed and implemented to address those risks identified. In fiscal 2009, the subcommittee identified the new-type influenza as a critical issue to the Group and as a result developed a manual on how to respond to it. Additionally, the subcommittee reviewed plans and performance to manage substantial risks identified by divisions of the Group. Also, each division undertakes self-assessments of its own progress in relation to risk management and identifies relevant risks once a year. The Group is continuously improving its risk management system by effectively implementing the PDCA cycle.

Information Security

Based on the evaluation of the risks of each division throughout the Group, information security was recognized as one of the substantial risks across the Group. We are working to bolster our management system for information security. As one facet of these efforts, the Information Security Rules and the Information Security Standards have been established in the Company and its principal subsidiaries, to sophisticate our management systems and standards. Further, we are systematically strengthening our IT-related security, management and use of personal computers, intra-company networks, and use of USB memory devices. Carrying out an education program regarding the promotion of information security measures was planned for fiscal 2009. However, it has been put off to fiscal 2010, due to the management integration of the Nippon Mining Holdings Group and Nippon Oil Corporation.

Protection of Personal Information

The JX Nippon Mining & Metals Group strives to properly manage personal information by setting forth the Personal Information Protection Rules based on the Personal Information Protection Policy stipulated below.

Information Security Protection Policy

- 1. Compliance with laws and the establishment and continual improvement of internal rules.
- 2. Proper collection, use, and provision of personal information.
- 3. Implementation of security measures.
- 4. Respect for the rights of individuals.
- 5. Personal information training for executive officers and employees.

Measures Related to New-type Influenza

The Group has prepared for the possibility of a major epidemic of new-type influenza. In particular, we have developed an action plan at each overseas operating site to prepare for such an epidemic in those overseas countries where we operate. In response to the outbreak of the H1N1 swine flu in April 2009, we established an emergency response center, implemented thorough infection control measures, established guidelines regarding overseas business trips, prepared non-woven protective masks and other related items, and implemented other measures deemed necessary. Further, in response to the rise in the number of infected people within Japan from fall 2009, we developed response guidelines to be used in the event that an executive officer, an employee, or a family member is infected. Until these guidelines were deemed no longer necessary and subsequently revoked in March 2010, we proactively worked to prevent the spread of this epidemic.

Risk Management of Large-scale Natural Disasters

The Group is working to manage risks regarding large-scale natural disasters, such as an earthquake, a storm, or a flood, by establishing countermeasures to be used at each operating site in the event of such a disaster.

Large-scale Disaster Response Manual



Economic Activities Report

Economic activities of the JX Nippon Mining & Metals Group, including its business performances and details of operations are reported.

Introducing Our Business Activities	043
Upstream (Resources Development Business)	
Midstream (Smelting and Refining Business)	
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\* Some pages in this section show differences between summations of individual figures and totals. These differences are caused by calculations of figures with decimals that do not appear on the pages.

Economic Activities Report



# Introducing Our Business Activities: Upstream (Resources Development Business)

In response to a global surge for copper ore, the JX Nippon Mining & Metals Group is developing new mines and acquiring prospective deposits. Through these efforts, we aim to raise the ratio of equity entitlement copper mine production and secure a stable supply of high-quality ores on a long-term basis. In regard to the Caserones Copper and Molybdenum Deposit Development Project (“Caserones Project”), since acquiring the mining concession in May 2006, we have been conducting a feasibility study based on data obtained by exploratory drilling to estimate the amount of deposits, dressing tests, and other forms of research. The feasibility study results recently revealed that the Caserones Project is economically viable and, at the same time, environmental approval for developing the Caserones Project was granted by the Environmental Committee of Region III of Chile. Accordingly, the Company decided to advance the Caserones Project into the full-fledged development stage. In this report, we outline this project, as well as our response to environmental and regional issues within and around the deposit, a development project that Minera Lumina Copper Chile S.A. (“MLCC”) is managing.

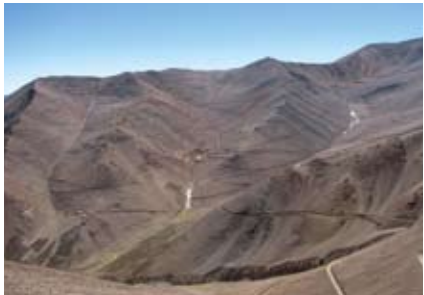
## Location of the Caserones Deposits



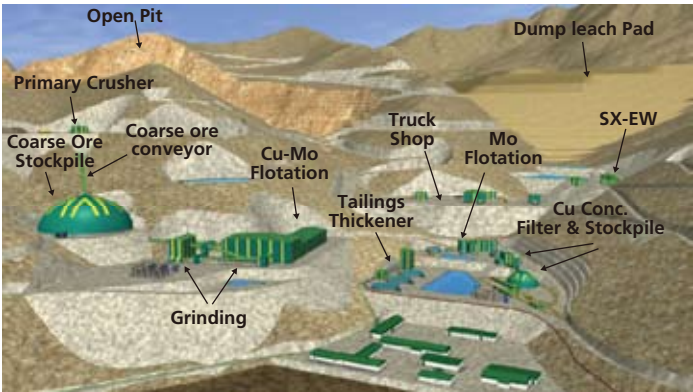
The Caserones copper and molybdenum deposits (“Caserones deposits”) are located 162 km southeast of the city of Copiapo, the capital of Region III of Chile, and 15 km from the border with Argentina, at a height of approximately 4,200–4,600 m above sea level.

## Launch of the Caserones Project

MLCC, an affiliated company located in Chile, began construction of the necessary facilities in April 2010, with the aim of commencing operations in 2013. A rendering of the deposits after operations commence is shown below.



Caserones deposits as of April 2010

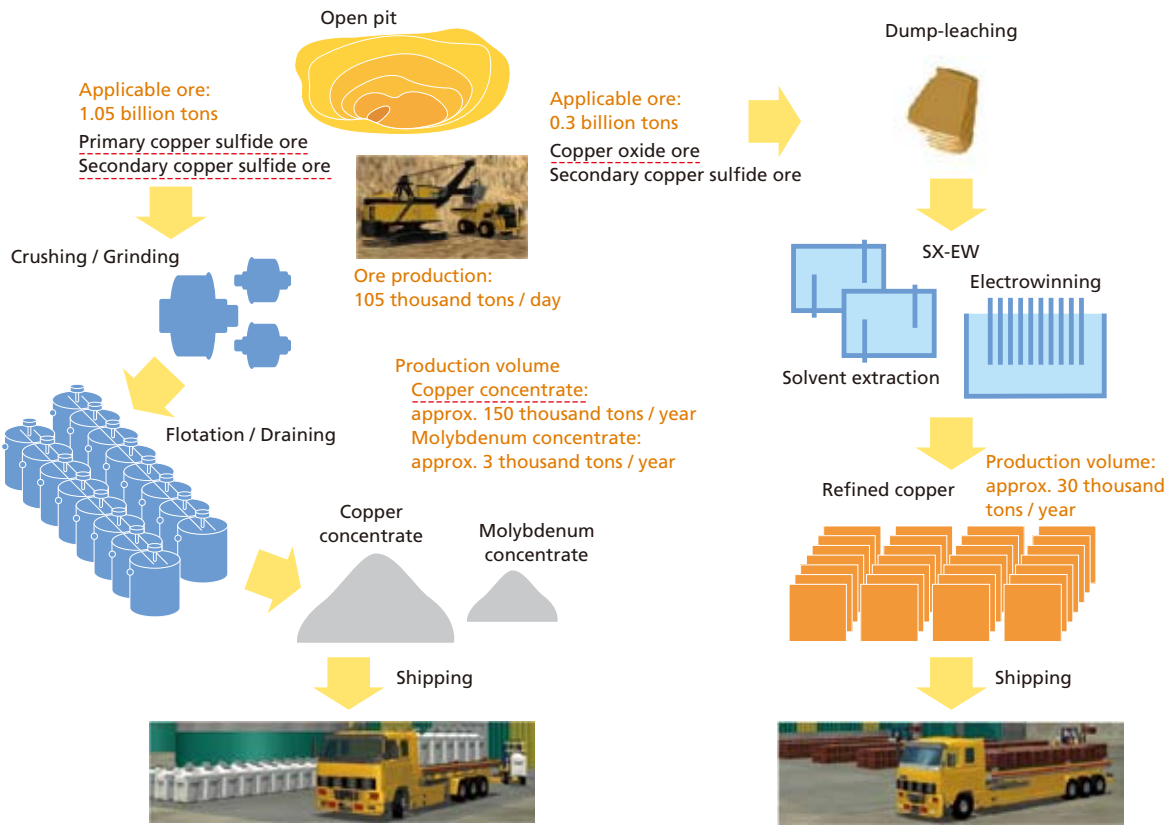


Rendering of Caserones deposits after operations commence

## Production at the Caserones Deposits

At the Caserones deposits, refined copper, made through the solvent extraction / electrowinning (SX-EW) process, and copper molybdenum concentrate, made through the floatation method, will be produced over the 28-year period until 2040.

(Production volumes are estimated averages for the first five years of production.)



## MLCC’s Initiatives at the Caserones Deposits

MLCC has conducted intensive studies to determine the economic, environmental, and social impacts that the Caserones Project will have in Region III of Chile. MLCC is enhancing harmonious relationships with its stakeholders through the pursuit of mutual benefits.

### Environmental initiatives

MLCC plans to implement environmental initiatives by developing and managing an environmental management system that is in compliance with ISO 14001 as well as Chilean laws and regulations. Also, it has invested approximately ¥100 million (US\$1.21 million) in conducting an environmental impact assessment, as required by the Chilean government.

### Biodiversity initiatives

MLCC investigated biodiversity at the project site in the course of its environmental impact assessment.

### • Vegetation

The vegetation most common to the project site is grasslands, which account for 55% of the total vegetated area. Areas of shrubbery, which account for 37% of the total vegetated area, are ranked second. Additionally, cacti, ferns, and woods have also been identified. Meanwhile, 11 species of plants that are subject to legal protection have been found within the site. Consequently, MLCC is making every effort to maintain and increase vegetation within the project site by conducting transplantation and other environmental conservation measures.



# Introducing Our Business Activities: Upstream (Resources Development Business)

Through deliberations with Chilean government authorities in relation to the environmental impact assessment, it was suggested to MLCC that the vega plant, a rare plant that thrives in wetlands under arid climates, be subject to legal protection, and consequently MLCC in Chile will take equivalent measures to legal protection including transplantation.



The vega plant

### • Animals

At the site of the Caserones Project, MLCC has confirmed inhabitation of 52 species, 13 orders, and 26 families of animals—of which, 40 species are mammals, 7 are birds, and 5 are reptiles or amphibians. Eleven of these species, including condors and llamas, are classified as endangered species. As a result, MLCC is monitoring these endangered species and taking measures to protect them.



### Initiatives toward the local community

In order to be a good neighbor to the local community, MLCC is proactively building relationships of trust with these communities. Accordingly, MLCC is nurturing communication with the local communities, and it has already held approximately 500 meetings with them since the commencement of the preliminary feasibility study in 2006. Specifically, since the end of 2006, MLCC has been engaging in the Community Management Program, with the three pillars of water management, transportation safety, and regional employment.

### Expenditure Amounts for July 2008 to June 2009 (US\$)

Water management	94,647
Transportation safety	11,717
Regional employment	39,350
Other regional support	70,115
Total	215,829

### Water management

While MLCC has acquired the rights to the use of ground-water approved by the Chilean government authorities, it has also recognized a water shortage in the lower reaches of the Copiapo riverine system. In order to deal with the water shortage, MLCC plans to achieve a water use intensity of 0.3 m³ per of water per ton of processed ore, the lowest level in Chile, as well as establishing a system to reuse 80% of its wastewater.

MLCC's initiatives include:

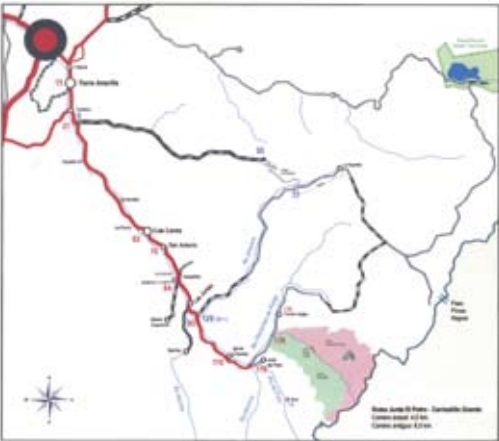
- Discontinue alfalfa cultivation at Carrizalillo Grande, an area on the outskirts of the project site that is owned by MLCC, due to the large loss of water incurred through evaporation (effect of 40 L/s).
- Provide desalinated sea water (150 L/s) to communities downstream along the Copiapo River.
- Discontinue use of the groundwater rights (effect of 50 L/s).

### • Treatment of wastewater

Water used in processes throughout this project will be collected, recycled, and reused, and consequently will not be released outside of these processes. Water used at camps and truck shops will be collected at effluent treatment facilities at each site to be treated in accordance with water irrigation guidelines before being sprinkled on the roads.

### Transportation safety

Copper and molybdenum concentrates as well as refined copper produced at the Caserones deposits will be transported by truck to the port of Totoralillo and other ports along the Pacific Ocean before being shipped by sea. MLCC will make every effort to secure transportation safety by implementing safety training for truck drivers and enhancing the monitoring systems of trucks in transit.



Route from Copiapo to Caserones deposits

Meanwhile, Highway C35 passes through Los Loros, a small urban community with a population of approximately 1,000 residents. MLCC intends to construct a detour in order to ensure safe transportation around Los Loros.



Los Loros, through which Highway C35 passes

### Regional employment

The Caserones deposits will employ approximately 5,000 workers during the construction period, which is scheduled to end in 2013, and approximately 1,500 workers after commencement of operations. MLCC is required to hire approximately 20% with direct and indirect employment forms in Region III.

In order to meet this requirement by the end of 2009, MLCC held three training programs in which 180 people participated.



A training program

## Voice—Message from the CEO of MLCC



**Nelson Pizarro**  
Chief Executive Officer  
Minera Lumina  
Copper Chile S.A.



The Caserones Project has begun its first steps. In fact, the start of April marked the start of the intense 41-month construction period. Simultaneous to all the human and material effort made from 2006, it is the identity formation of the Company. I refer to how we wish to take forward this business, a style of doing the things, a distinctive and powerful vision, the stamp that we want to print to the 28 years of operations that we have ahead, approximately.

In undertaking this project, we will implement the Community Management Program, with the three pillars of water management, transportation safety, and regional employment. We will also be focused on preserving the natural environment within and surrounding the project site. Through these efforts, we will not only pursue profit, but also strive to be a good neighbor to the local communities by proactively communicating with them.

### Company Profile

Established	August 2003
Head office	Santiago, Republic of Chile
Capital	US\$380 million (PPC 45%, PPC Canada 30%, Mitsui & Co., Ltd. 25%)
Business lines	<ul style="list-style-type: none"> <li>• Operating and developing the Caserones copper and molybdenum deposits</li> <li>• Exploring mines in Chile</li> </ul>
CEO	Nelson Pizarro



## Introducing Our Business Activities: Midstream (Smelting and Refining Business)

In the JX Nippon Mining & Metals Group, Pan Pacific Copper Co., Ltd. (PPC) conducts copper smelting and refining operations at both its Saganoseki Smelter & Refinery and Hitachi Works as well as at the Tamano Smelter of Hibi Kyodo Smelting Co., Ltd., each of which is proud of its world-class technical capability, cost competitiveness, and productivity. The Group's annual production capacity of refined copper totals 710,000 tons (a combined 450,000 tons at the Saganoseki and Hitachi plants and 260,000 tons at the Tamano Smelter), which is the largest in Japan. PPC stably supplies high-quality refined copper.

## About Pan Pacific Copper Co., Ltd.

PPC is an integrated copper operating company based on alliances between JX Nippon Mining & Metals Corporation and Mitsui Mining & Smelting Co., Ltd. Operating since January 2001, the company vertically integrates resources development, raw material procurement, production, and sales. Also, both parent companies of PPC have developed a business alliance with LS-Nikko Copper Co., Ltd., which is a smelting company jointly owned with the LS Group of South Korea. Accordingly, PPC has established a solid position as a leading copper producer in Asia.

\* On April 1, 2010, PPC absorbed Nikko Smelting & Refining Co., Ltd. to directly control operation of the Saganoseki Smelter & Refinery and the Hitachi Works.

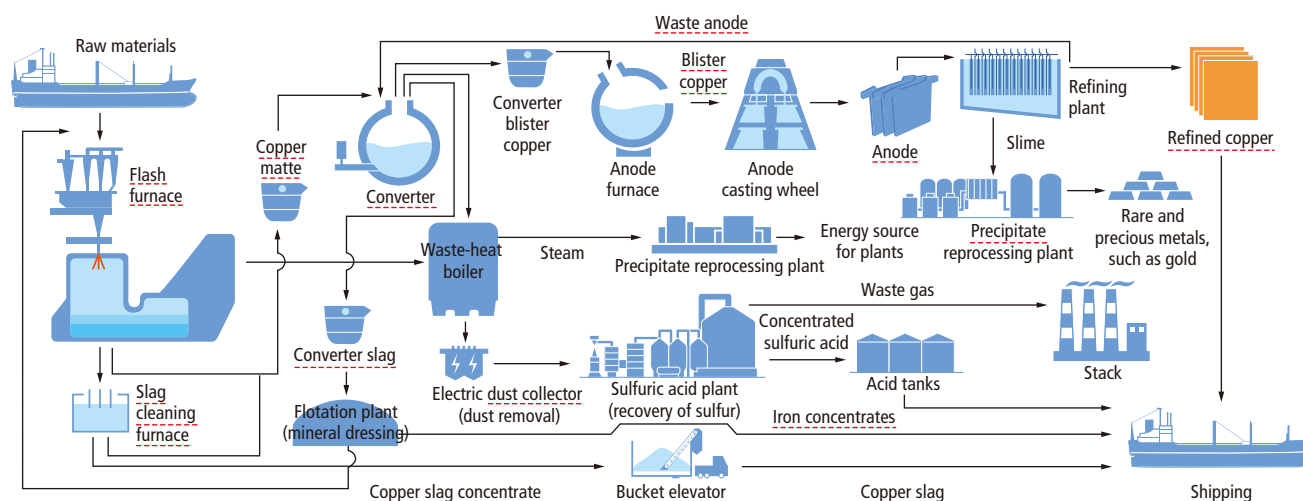


### Saganoseki Smelter & Refinery



### Tamano Smelter

### Smelting and Refining Process at the Saganoseki Smelter & Refinery



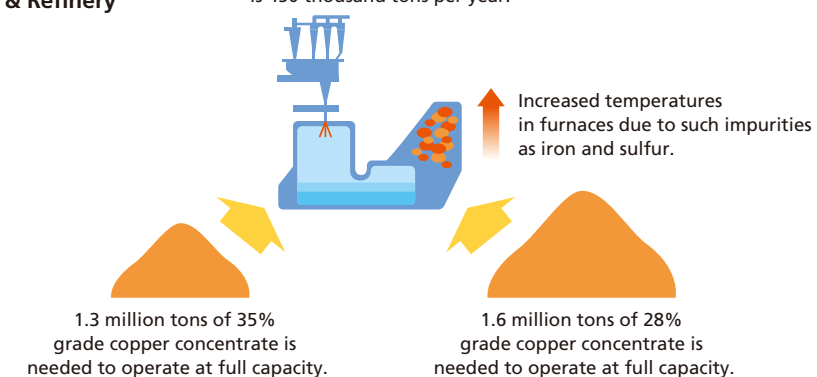
## Measures to Reduce CO<sub>2</sub> Emissions and Energy Consumption

The Saganoseki Smelter & Refinery and the Tamano Smelter are taking measures to utilize high-temperature waste gas produced at its sulfuric acid plant during the copper smelting process to dry raw materials and use it as an energy source. At the sulfuric acid plant, a process to recover sulfur from copper concentrate that produces sulfuric acid creates high-temperature gas, with temperatures ranging from 300 to 500°C. Waste-heat recovery facilities will recover this

high-temperature gas to enable its use in drying materials or as an energy source. Both the Saganoseki and Tamano plants are moving ahead with construction of these facilities, which are scheduled to be completed in 2013. After construction is complete, the facilities will generate electricity and will allow us to reduce electricity costs by ¥700–800 million a year and lower CO<sub>2</sub> emissions by approximately 20 thousand tons per annum.

## Effects of Deteriorating Copper Concentrate at the Saganoseki Smelter & Refinery

Copper production capacity of the Saganoseki Smelter & Refinery is 450 thousand tons per year.



## Responding to the Deteriorating Grade of Copper Concentrate

The number of quality mines that produce high-quality copper ore is continually decreasing around the world. Consequently, the grade of copper found in ore is declining. The grade of copper concentrate being used in the Saganoseki Smelter & Refinery, which was around 35% in the mid-1990s, has recently fallen to below 30%.

The deteriorating grade of copper concentrate used results in an increase in the amount of copper concentrate necessary to keep operation. At the same time, the relative increase in impurities, such as iron and sulfur, produces more reactive heat with a higher temperature, and consequently damages the flash furnace to reduce its useful life. In order to respond, we are taking measures to modify the shape of the water-cooling apparatus set on the outer wall of the furnace. This measure can increase the efficiency of the apparatus, and thus help prevent the refractory materials used as the walls of the furnace from melting and depleting. Further, the prevention of melting and depleting allows us to extend the intervals between regular maintenance operations. With this measure, we plan to conduct regular maintenance once every two years—we have conducted yearly maintenance to date. Going forward, we will extend the interval between maintenance to five years.

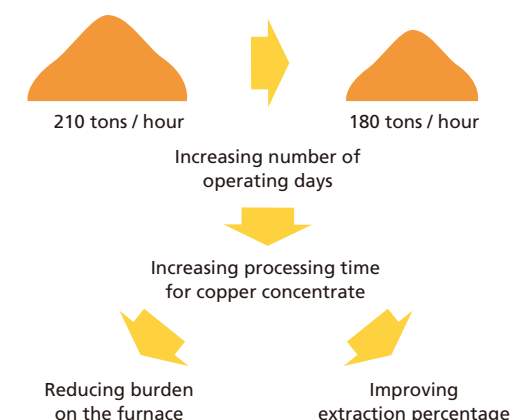
Although the extension of the interval between maintenance may increase the number of operating days in a year, we will not devote the increased capacity to process more copper concentrate. Instead, we will decrease the hourly input amount of copper concentrate and increase the processing time within the furnace. This will improve the extraction percentage of copper. In this way, we are streamlining our smelting operation to bolster its efficiency.

## Efficient Copper Production at the Saganoseki Smelter & Refinery

Extending maintenance intervals  
from annual to 2 years, and then to 5 years



Increasing number  
of operating days



# Introducing Our Business Activities: Downstream (Electronic Materials Business)

In the Group’s electronic materials business, functional materials and thin film materials, which are used in IT-related devices and automotive applications, are developed, manufactured, and marketed. In order to remain well informed of the diverse customer needs for electronic materials, we are proactively undertaking “communication” initiatives with customers. Further, we take on “challenges” to incorporate these needs into our electronic materials with “speed.” As a result, we strive to remain the “First Vendor”—the most trustworthy business partner to customers.

## Review of Operations

We manufacture and market the following electronic materials.

### Functional materials

#### • Electro-deposited copper foil

Electro-deposited copper foil is used in printed circuit boards (PCBs), which are embedded in a variety of electronic devices including personal computers and mobile phones. We manufacture this copper foil at operating sites in Japan, Germany, and the Philippines. We are also equipped to mass-produce copper foil for use in lithium-ion batteries.



#### • Treated rolled copper foil

We, as the world’s top supplier of treated rolled copper foil, a material used in flexible PCBs, supply the foil through an integrated manufacturing process that extends from the production of the raw material copper cakes through surface treatment processes.



#### • Precision rolled products

The Group develops, manufactures, and markets C7025 alloy, titanium copper, and phosphor bronze, which are used in IT-related devices, home electric appliances, and electronic components in automobiles. We also offer these alloys with improved inherent characteristics under the “Hyper Series” brand.



#### • Precision fabricated products

The gold-plating and pressing operations and design and production of molds, which were undertaken by Nikko Fuji Electronics Co., Ltd., an affiliated company, have been integrated into JX Nippon Mining & Metals. Also, by acquiring all of the equity of Sanyu Electronic Industrial Co., Ltd., we are striving to strengthen our competitiveness in the business field of precision plating on pressed materials, which Sanyu Electronic Industrial had previously handled.



Isohara Plant



Shirogane Works



Kurami Works

### Thin film materials

#### • Sputtering targets

Leveraging our various original elemental technologies, such as metal purification technology and crystal control technology, we have developed a variety of sputtering targets. We supply the global market with sputtering targets for semiconductors, flat panel displays (FPDs), as well as magnetic and phase-change recording devices.



#### • Compound semiconductor materials

We manufacture and market monocrystalline wafers of InP, CdTe, and others, which are used in light-emitting and photo diodes in optical communication systems that are indispensable to an advanced information society.



#### • Surface treatment agents

By combining such technologies as organic synthesis, purification crystal orientation control, surface treatment, analysis, as well as mixing and blending skills, we supply high-quality surface treatment agents.



#### • Metallic powder

We supply electrolytic copper powder, copper-coated graphite and molybdenum disulfide, as well as copper-coated iron powder, which are used in oil-less bearings, carbon brushes, and friction materials, as well as used as catalysts and in paints.



#### • UBM formation and bumping service on semiconductor wafers

Leveraging our proprietary electroless plating expertise, we offer services for Under Bump Metallurgy (UBM) formation and bumping of semiconductor wafers.



#### • Cathode materials

We manufacture cathode materials for lithium-ion batteries, which are incorporated into hybrid and electric automobiles, through our proprietary integrated manufacturing process.



## Introduction of Environment-friendly Copper Alloys—Hyper Eco Alloys

In recent years, automobiles have been increasingly equipped with highly functional electronic components. Brass (a copper-zinc alloy) has been widely used in the male terminals of connectors for automobile applications. However, there is growing concern about the use of conventional brass regarding the rise in temperature resulting from heat generated when a large current is conducted or when used in downsizing connectors. Meanwhile, brass is often plated with tin to improve its sliding characteristics and wear reliability when male terminals are inserted and pulled out. On the other hand, this tin-plated brass cannot be recycled to be reused as a melted raw material for pure brass, since tin is not easily isolated from brass. Accordingly, there is a demand for materials that have superior heat radiance and higher conductivity, and at the same time can use tin-plated brass as their raw material.

We have consequently succeeded in developing “Hyper Eco Alloys,” which possess a high conductivity that conventional brass could not achieve and with high recyclability. Hyper Eco Alloys are copper alloys with zinc and tin that can use recycled tin-plated brass as a raw material. Generally, increasing the conductivity impairs the mechanical properties of alloys. However, by optimizing the chemical composition and leveraging our unique “Hyper Processing Technologies,” we could give Hyper Eco Alloys equivalent mechanical strength, spring properties, and bend formability to the properties of conventional brass. The name Hyper Eco Alloys is derived from “high-electrical conductivity.” It is also derived from concepts of “economy” and “ecology,” since the alloys are easily recycled.



Connectors for automobile applications



Electronic devices in automobiles

### ■ Superior conductivity and mechanical properties

We offer three alloys—NKB083, NKB052, and NKB032—which have conductivity of 40%, 50%, and 60% IACS, respectively. The name NKB083, for example, is derived from Nikko Brass, as well as the fact that it is made of 8% zinc and 0.3% tin. Their conductivities greatly exceed 27% of conventional brass, while at the same time realizing equivalent mechanical strength, spring properties, and bend formability to those of conventional brass. Hyper Eco Alloys can respond to the technical requirements of smaller male terminals and those with narrower pitches. Hyper Eco Alloys, thus, contribute to resource saving, downsizing, and advancing and enhancing electronic control units (ECUs).

### ■ High recyclability

Tin-plated scraps of Hyper Eco Alloys can be recycled and used as melted raw materials. As tin-plated materials are recyclable, they contribute to reduced use of natural resources and energy.

### ■ Use in batteries

Hyper Eco Alloys are expected to be used for the electrode tabs in lithium-ion batteries. Pure nickel or nickel-coated steel have been used for this application to date. However, the high recyclability and improved conductivity of Hyper Eco Alloys are gaining increased attention, and as a result the evaluation of these alloys is being progressively directed toward adoption in this application.



Lithium-ion batteries

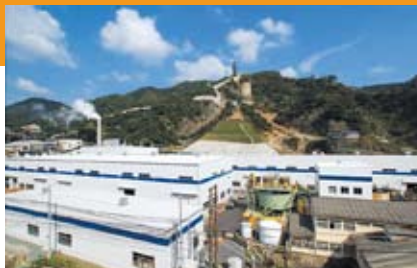


Electrode tab



# Introducing Our Business Activities: Downstream (Recycling and Environmental Services Business)

The JX Nippon Mining & Metals Group is an integrated recycling and environmental services operator that has built a nationwide network of recycling and environmental services businesses. In order to fully leverage the processing capabilities of the Hitachi Metal Recycling Complex (HMC) Works, located in Hitachi City, Ibaraki Prefecture, we are strengthening our ability to collect recycled materials as well as bolster our analysis and pre-treatment capabilities. Further, we strive to establish materials stewardship through such initiatives as advancing a project to recover lithium and other rare metals from used lithium-ion batteries.



HMC Works

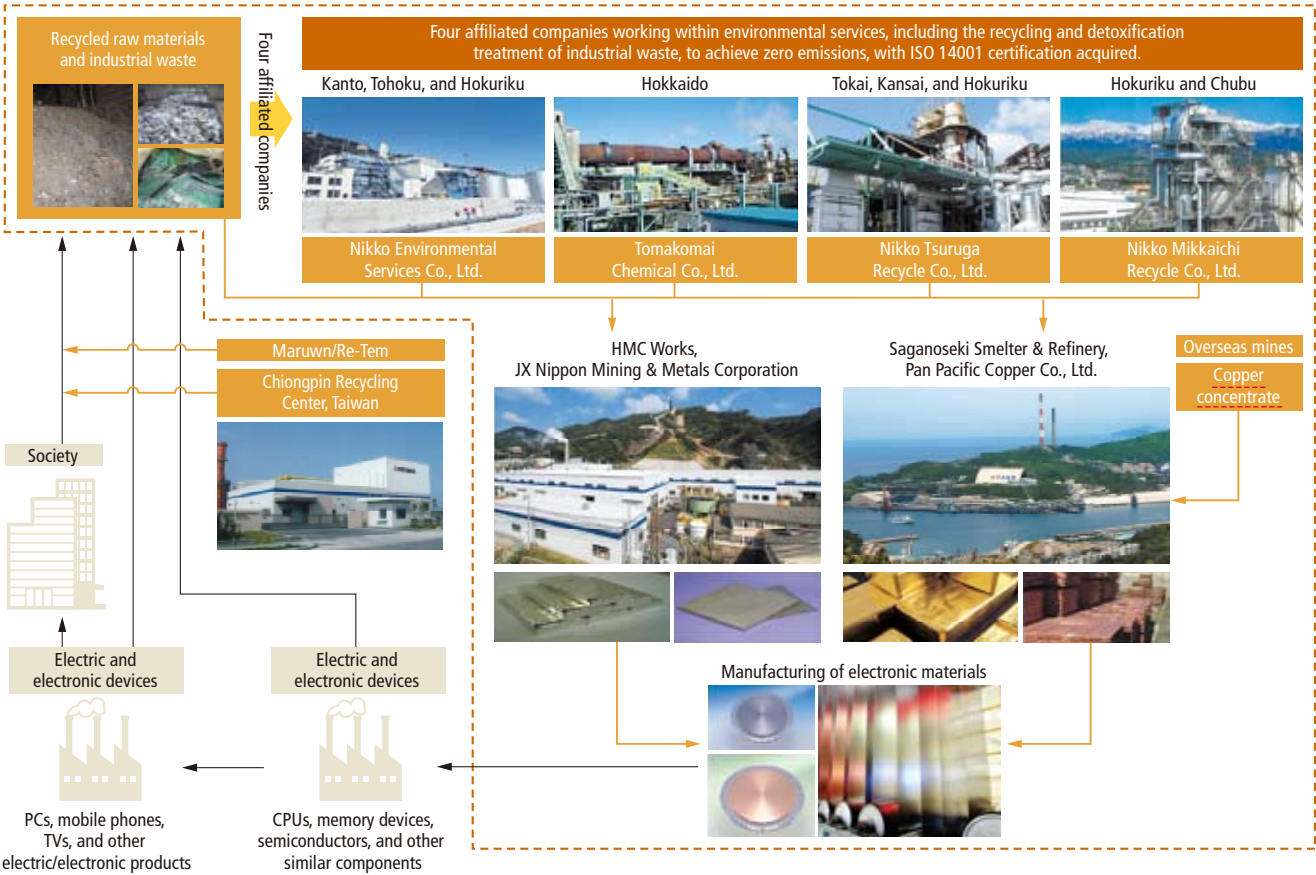


Saganoseki Smelter & Refinery



Chiongpin Recycling Center

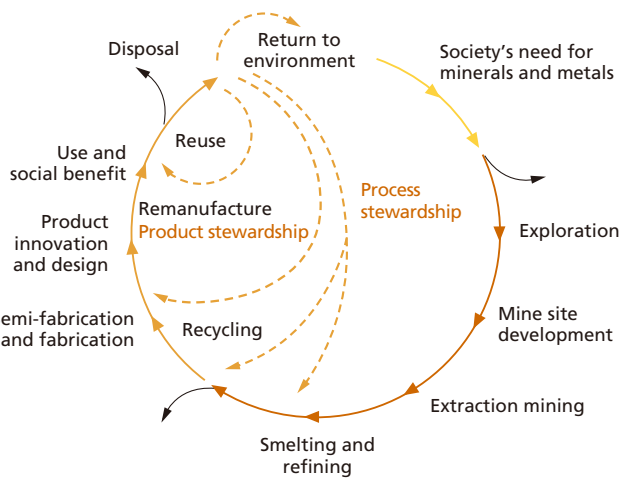
## Outline of Recycling and Environmental Services Business



## What is Materials Stewardship?

Materials stewardship, which is advocated and promoted by the International Council on Mining and Metals (ICMM), embodies the range of activities required to ensure the optimal and appropriate use of minerals and metals in society. In cooperation with its customers who work with IT-related businesses, the JX Nippon Mining & Metals Group is recovering non-ferrous metals as recycled materials, which the Group subsequently mines, smelts, and refines before sending them to society. Through these efforts, we are contributing to the development of a recycling-oriented society as well as aiming to realize materials stewardship.

### Materials Stewardship Diagram



## Our Initiatives to Realize Materials Stewardship

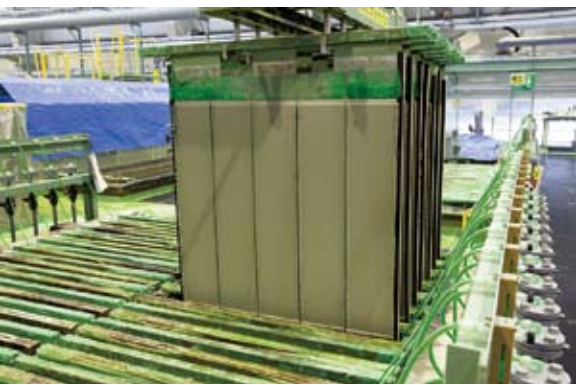
### Initiative in cooperation with Re-Tem and Maruwn

The Group launched a project to create a recycling network in cooperation with two companies, Maruwn Co., Ltd. and Re-Tem Cooperation. Maruwn is engaged in the carrier business, while Re-Tem recycles metallic composites, particularly office automation equipment and other electric and electronic devices. In the first stage of the project, we will construct a recycling network in the Kanto area. In this network, Maruwn will collect office automation equipment, which will be disassembled, pulverized, and sorted to realize approximately 3,500 tons of recyclable materials, including value-bearing metals, by Re-Tem. The HMC Works will then process these recycled materials to recover various value-bearing metals. Going forward, the Group intends to develop this project throughout Japan.

### Initiative at the Chiongpin Recycling Center, Nikko Metals Taiwan

Nikko Metals Taiwan Co., Ltd. has begun recycling-related operations at the Taichung Sales Office in Taichung City. At the same time, Nikko Metals Taiwan has started collecting recycled materials at the Chiongpin Recycling Center, its collection center in Changhua City.

The Chiongpin Recycling Center primarily collects used circuit boards embedded in electronic equipment as recycled materials, then implements pulverization and other pre-treating procedures. Pre-treated materials are then shipped to Japan, where operating sites located in Hitachi, Tsuruga, and Saganoseki recover various non-ferrous metals under the principle of "zero emissions." Our recovery system is highly evaluated by our customers, even those in Taiwan.



Nickel smelted and recovered at HMC Works



Pulverized recycled materials



Pulverizer

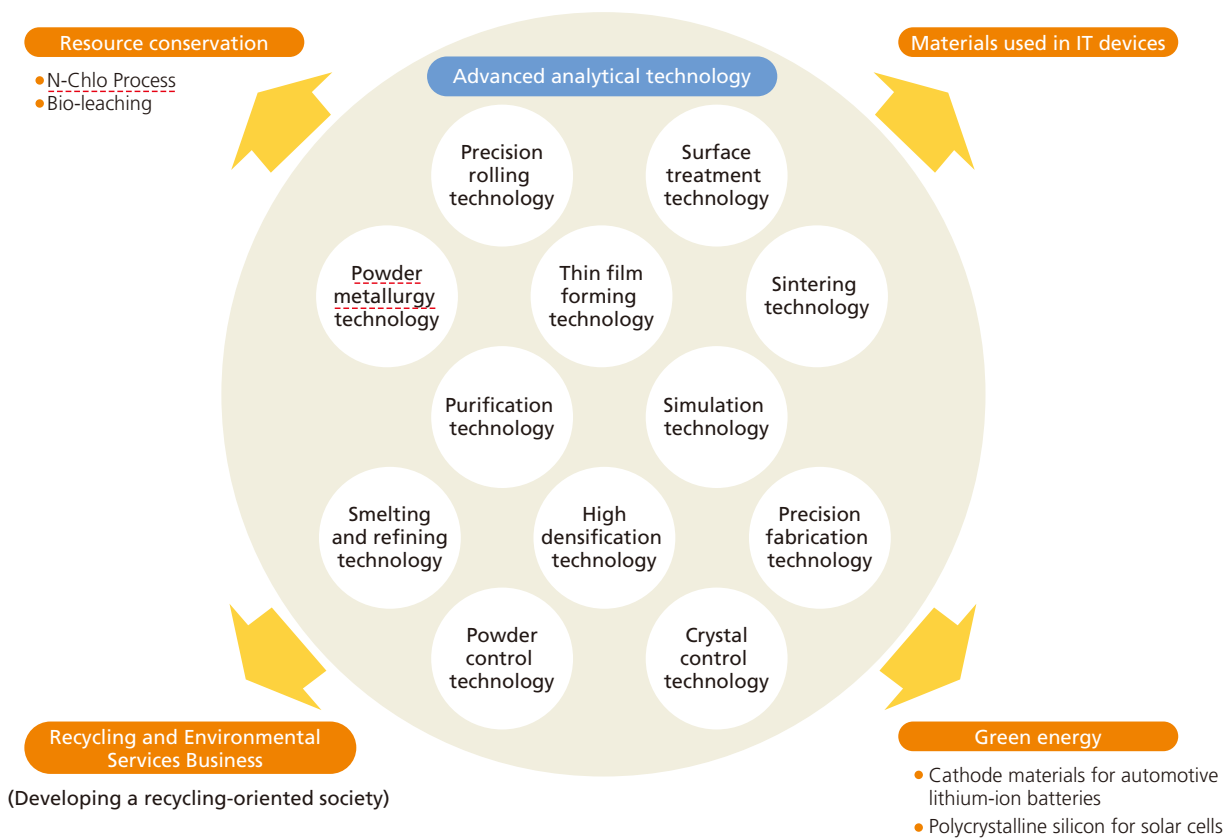


Automatic sampling equipment

# Technology Development

The JX Nippon Mining & Metals Group has accumulated various elemental technologies within its resources development, smelting and refining, and electronic materials operations. Leveraging these technologies, we will advance the development of the technology necessary to further progress and expand our operations. In advancing this technology development, the Group's sophisticated analytical technologies are becoming increasingly vital. In this section, we introduce the Group's technology development initiatives, as well as the sophisticated analytical technology that will support the future development of our business operations.

## The Sophisticated Analytical Technology that Supports the Group's Component Technologies



## Analyzing Chemical States and Crystal Structures (Identification of Chemical Compounds, Analysis at the Nano Level)

The JX Nippon Mining & Metals Group analyzes the surface conditions of materials by using Energy-Dispersive X-ray spectroscopy analysis conducted by means of Scanning Electron Microscopes (SEM-EDX) and Auger Electron Microscopes (AES), and analyzes crystal structures by Transmission Electron Microscopes (TEM) and X-Ray Diffractometers (XDR). Further, Electron Micro probe Analyzers (EMPA) help more clearly identify chemical compounds, at the same time newly equipped Scanning Transmission Electron Microscopes (STEM) allow us to map the distribution conditions of elements at the nano level. Also, combining the functions of Focused Ion Beams (FIB), Cross Section Polishers (CP), and Computing Tomography (CT) can expand the analyzable sphere, to consequently inspect the surface and inner

conditions of metals, semiconductors, and ores. This expertise, which is applied to analyze the interfacial microstructure between solder and other metals as well as examine the mechanism of metallic leaching, helps support the development of novel materials.



## Development of Highly Sensitive Analytical Skills

Leveraging a variety of analytical instruments—including Inductively Coupled Plasma Optical Emission Spectrometers (ICP-OES), Inductively Coupled Plasma Mass Spectrometers (ICP-MS), Flame-Less Atomic Absorption Spectrometers (FL-AAS), Glow Discharge Mass Spectrometers (GDMS), and Gas Chromatography-Mass Spectrometers (GC-MS)—and pre-treating skills to experimental materials, we can make highly sensitive analyses on parts per million (ppm) or parts per billion (ppb) levels. These analyses help improve quality control and develop manufacturing processes.

### Advancing ICP-MS—accelerating microanalysis

ICP-MS is a highly sensitive instrument that can simultaneously analyze many elements. However, this instrument requires that analytical samples be brought into solution and objective ingredients be isolated from the samples. This process, which is cumbersome and time consuming, consequently thwarts a speedy analysis. We have materialized accelerated analyses that do not require isolation skills for pre-treating and alleviate spectral interference.



## Strengthening Our Fundamental Analytical Skills

We are making every effort to maintain and improve our wet analysis methods, which are typified by volumetric and gravimetric analyses, and dry analysis methods used for the analysis of gold and silver, in order to use these methods for the rigorous inspection of raw materials, quality control, and the development of new products and production processes. In recent years, urban mines including various waste electric and electronic components are gaining ever more attention. In line with this trend, cultivating accurate sampling skills and blending techniques to make a sample with a homogeneous mixture from an urban mine with an inhomogeneous formulation of value-bearing metals is one of our most important issues.

### Fire assay analysis method

Under high temperatures, lead absorbs gold, silver, and other precious metals with the effect of reducing agents such as iron nails and wheat flour. The fire assay analysis method is an analytical technique to measure the quantity and purity of precious metals, which are extracted from lead and absorbed into bone ash, by means of the cupellation method.



Gold bead obtained by fire assay analysis method

### Application cases of advanced analytical skills to technology development

Improving analytical skills has played an important role in the development of technologies to extract platinum group metals (PGMs), such as rhodium and ruthenium. Originally, abundance of these elements in the earth is limited. Ultra-micro analytical skills, which can be applied to complex intermediates generated by the smelting process, are needed to extract these elements. Furthermore, these elements have insolubility, volatility, and other problematic characteristics. Combining dissection skills, isolation skills, and measurement techniques that can alleviate spectral interference, we have developed an analytical method that can work on a ppb level to help support the advancement of our extraction technologies.

Techniques to analyze the chemical compositions and chemical species of solids are extremely limited. Further, analytical methods to identify chemical compounds on a micron level are not ready for practical use. In line with the development of new smelting technologies and surface treatment technologies for foil products, the breakthrough of an analytical skill to find chemical compositions at the micron level significantly helps the probe chemical reaction mechanism and select raw materials. Our analysis team has put analytical skill to probe chemical compositions by using an Electron Probe Micro Analyzer (EPMA) to practical use, in cooperation with the National Institute for Materials Science, an independent administrative institution, and is providing analytical information to promote the advancement of technology development.



Business Results in Fiscal 2009

In fiscal 2009, Japan experienced a continuation of severe economic conditions, such as the worsening employment situation and slumping personal consumption, caused by the slowdown of the global economy triggered by the financial crisis, while signs of a partial economic recovery particularly in Asia emerged.

In the foreign exchange market, the appreciation of the Japanese yen against the U.S. dollar developed, from ¥99 per U.S. dollar at the beginning of the fiscal year to ¥86 per U.S. dollar in the third quarter of the fiscal year. Subsequently, however, the yen weakened to ¥93 per U.S. dollar at the end of the fiscal year. The average exchange rate for the period under review was ¥93 per U.S. dollar, compared with ¥101 per U.S. dollar during the previous fiscal year. The copper market was also stagnant for the first half of the fiscal year due to the global economic recession. However, subsequently, demand recovered and an influx of speculative money raised the copper price on the London Metal Exchange (LME) from 180 cents per pound at the start of the period to as high as 355 cents per pound at the end of the fiscal year. The average copper price for the period was 277 cents per pound, compared with 266 cents per pound during the previous fiscal year.

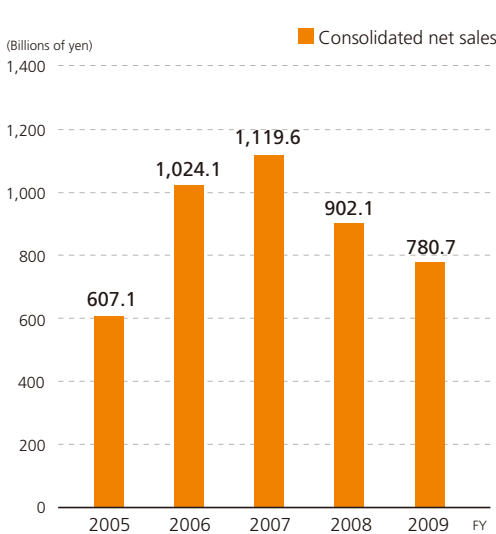
In the copper business, the sales volume of refined copper decreased year on year as a result of depressed domestic demand. International producer prices rose year on year, however, the yen-denominated prices were lower due to the negative impact of the high yen. Also, contractual terms of copper ore purchases, as well as the selling price of sulfuric acid, remained at low levels. The severe operating climate

surrounding the recycling and environmental services business also continued.

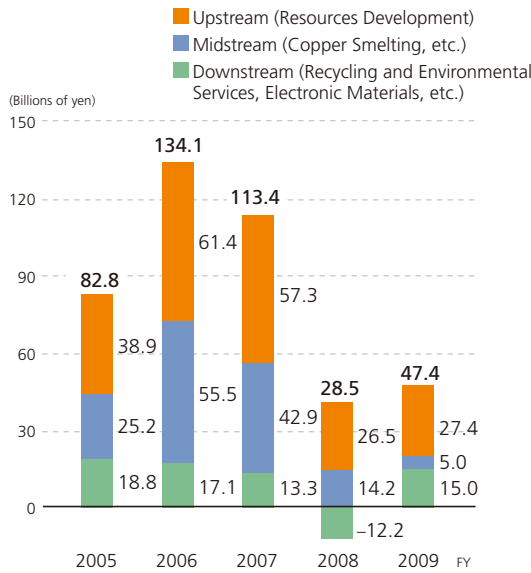
In the electronic materials business, with the exception of some products, the sales volume of copper foil (electro-deposited copper foil, treated rolled copper foil), thin film materials (sputtering targets for semiconductors and other applications), precision rolled products (phosphor bronze, Corson alloy, etc.), and precision fabricated products (gold-plated materials, etc.) exceeded the level of the previous period, reflected by a recovery of demand in the final products. In particular, the sales volume of sputtering targets for FPDs (flat panel displays) soared against the backdrop of increased demand for LCD (liquid crystal display) televisions in China, Europe, the United States, and other markets. The product price of sputtering targets for FPDs, however, fell due to the price drop of indium, a primary raw material of the targets. As a whole, prices of other products also fell below the level of the previous period due to changes in product configuration.

Consequently, the JX Nippon Mining & Metals Group's consolidated net sales declined 13.5% year on year, to ¥780.7 billion. Income before special items rose 66.4%, to ¥47.4 billion. This increased income was largely attributable to the rebound of copper prices and the reduction of the cost of goods sold due to inventory valuation adjustments, although a high yen and shrinking profit margins on sulfuric acid and electronic materials negatively impacted income.

Consolidated Net Sales



Consolidated Income Before Special Items by Business Segment



Economic Effects on Stakeholders

Economic Effects

The economic effects of specific items pertinent to stakeholders are shown in the table below. The economic effects are identified by stakeholder and by the geographical area in which companies of the Group operate.

Sales revenue from customers was ¥780.7 billion, over 82% of which was recognized from sales in Japan, while over 98% was the sum of sales in Japan and other Asian countries.

Other revenue totaled ¥3.2 billion, and the breakdown of this included dividends received from investments, interest received from financial institutions, and ¥90 million of considerations to implement “a development project for a recycling technology to extract rare metals from used lithium-ion batteries” that was chosen by the Ministry of Economy, Trade and Industry. In addition to the aforementioned other revenue, we received ¥27 million as financial assistance from a foreign government.

We paid ¥723.5 billion for the services rendered by suppliers, including materials procurement. Personnel expenses, including legal welfare expenses, totaled ¥36.5 billion.

The postretirement benefit plan, which JX Nippon Mining & Metals and its domestic subsidiary companies have adopted, includes an approved retirement annuity system, a corporate pension plan under the constitution and a severance indemnity plan as defined benefit plans. Also, JX Nippon Mining & Metals and some domestic subsidiary

companies employ a defined contribution corporate pension plan. Further, under certain circumstances, premium severance payments are provided to employees.

Additionally, some overseas subsidiaries have defined benefit plans and defined contribution plans.

The projected benefit obligation was ¥17.2 billion for the severance indemnity plans and ¥2.6 billion for defined benefit plans (turned over by different funds from the Group). Of the total of ¥19.8 billion, ¥2.5 billion was contributed to funds outside the Group as pension assets. As a result, the remaining ¥17.3 billion was recognized as accrued retirement benefits for employees. The projected benefit obligation is calculated as of the end of the fiscal year and, as the estimated pension benefit was allocated over the period of the pension plan with the discount rate of 2.0% in large part.

Dividends paid to shareholders totaled ¥2.3 billion. And ¥3.5 billion was interest on loans paid to creditors. The Group recorded income taxes of ¥4.0 billion in fiscal 2009 on the financial accounting standards. Additionally, we posted ¥2.6 billion as other taxes and public charges, which we included as an expense. In total, we recognized ¥6.6 billion as distributions to government administrations.

An amount of ¥48 million was donated to society as a part of our social contribution program.

Financial Flows by Geographical Area and Stakeholder (Value Added Through Operations)





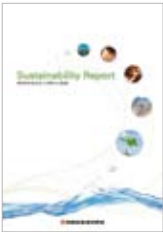

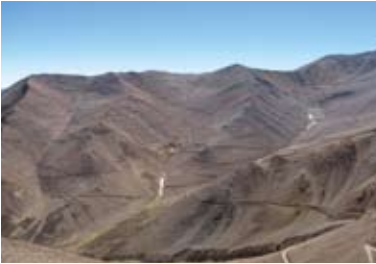

	In		Out						Value Added (IN-OUT)
Item	Sales revenue	Other revenue	Operating costs and expenses	Personnel expenses	Dividends	Interest paid	Taxes	Donations	
Stakeholder	Customers	Investments / Borrowers / Public institutions	Suppliers	Employees	Shareholders	Creditors	National and regional governments	Society	
Items used to calculate the amounts	Net sales*	Dividends received, interest received, gain on sales of fixed assets and marketable securities, grants, etc.	Cost of goods sold, selling, general and administrative expenses (excluding personnel expenses, taxes and public charges, and donations)	Labor costs (including wages and salaries, welfare expenses, and postretirement benefit expenses)			Income tax and other taxes and public charges borne as an expense and posted on the income statement		
Japan	644.1	3.2	593.9	32.2	2.2	2.8	5.7	0.05	10.5
Asia (excl. Japan)	125.6	0	120.1	2.3	0.1	0.7	0.9	—	1.5
North America	7.3	0	6.7	0.5	—	—	0	—	0.1
Europe	3.7	0	2.8	1.5	—	—	0	—	-0.6
Total	780.7	3.2	723.5	36.5	2.3	3.5	6.6	0.05	11.5

\* Figures in the table above are calculated by the geographical areas in which companies of the Group operate.



The JX Holdings, Inc.'s investor relations website (<http://www.hd.jx-group.co.jp/english/ir/>) shows detailed financial information for the JX Nippon Mining & Metals Group.

Topics in Fiscal 2009

April 2009	<ul style="list-style-type: none"><li>President Masanori Okada became the chairman of the Japan Mining Industry Association.</li></ul>	 
July	<ul style="list-style-type: none"><li>Minister of Mines and Minerals Development of the Republic of Zambia, Maxwell Mwale, visited the Tamano Smelter.</li><li>An agreement was concluded with Nanyo City in Yamagata Prefecture regarding the creation of the "Nikko Ryuju Forrest."</li></ul>	
September	<ul style="list-style-type: none"><li>Nippon Mining &amp; Metals Co., Ltd. held an opening ceremony for its pilot-scale plant to extract rare metals from used lithium-ion batteries.</li><li>Sustainability Report 2009 was published.</li><li>Pan Pacific Copper Co., Ltd. began fund-raising activities for the development of the Caserones copper and molybdenum deposits in Chile.</li></ul>	 
October	<ul style="list-style-type: none"><li>The Nippon Mining &amp; Metals Group donated relief funds to victims of both a flood in the Philippines and an earthquake in Indonesia's western Sumatra.</li></ul>	
November	<ul style="list-style-type: none"><li>Pan Pacific Copper geared up to the feasibility studies phase for the development of the Quechua copper deposits in Peru.</li></ul>	
December	<ul style="list-style-type: none"><li>The Nippon Mining &amp; Metals Group integrated Nikko Fuji Electronics Co., Ltd.</li></ul>	
February 2010	<ul style="list-style-type: none"><li>Nippon Mining &amp; Metals acquired all shares of the stock of Sanyu Electronic Industrial Co., Ltd.</li><li>Pan Pacific Copper made the final decision for the full-fledged development of the Caserones copper and molybdenum deposits. Mitsui &amp; Co., Ltd. began to participate in the project.</li></ul>	
March	<ul style="list-style-type: none"><li>The Nippon Mining &amp; Metals Group donated relief funds to victims of an earthquake in Haiti.</li><li>The Nippon Mining &amp; Metals Group donated relief funds to victims of an earthquake in Chile.</li><li>The Nippon Mining &amp; Metals Group received the Preferred Quality Supplier (PQS) award from Intel Corporation.</li></ul>	

Environmental Activities Report

In the following section, we report on the Group's efforts to create a clean and comfortable planet and a recycling-oriented society, as well as report on the structure of its environmental management system and its development of environment-friendly technologies.

Basic Environmental Policy	059
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\* Some pages in this section show differences between summations of individual figures and totals. These differences are caused by calculations of figures with decimals that do not appear on the pages.

Environmental Activities Report



Basic Environmental Policy

As a global manufacturer of non-ferrous metal resources and materials, the Group will drive forward the following activities based on the basic policy that we will contribute to environmental conservation on a global scale through innovation in the productivity of resources and materials.



Established in July 2010

Medium-term Plan for Environmental Conservation

Major Issues and Measures

Environmental management system

**1. Environmental management organization**  
The General Manager of the Environment & Safety Department is responsible for coordinating environmental efforts. The top managers at each operating site serve as supervisory environmental managers.

**2. Environmental management system**  
Through Groupwide commitment, from top management to frontline employees, and through appropriate implementation of the ISO 14001 compliant environmental management systems, we will continuously strengthen environmental conservation measures and reduce environmental risks.

**3. Environmental auditing**  
Supervisory environmental managers at each operating site will carry out reviews of the results of internal audits conducted at each operating site and affiliated company to verify the status of environmental management and of compliance with environmental regulations. Additionally, the Environment & Safety Department's environment and safety audit team will carry out periodic environmental audits of each operating site, research and identify problems as well as areas requiring remediation from an environmental management perspective, and continually strive to improve accident prevention and environmental conservation measures.

Measures to be taken

We will undertake the following measures to minimize the environmental impact of the Group's business activities:

- Help prevent global warming.
- Promote resource efficiency and recycling.
- Reduce waste materials.
- Better manage chemical substances.
- Maintain biodiversity.
- Promote our recycling business.
- Promote technology and product development and introduce new technologies.
- Promote green purchasing.
- Conduct training, public relations initiatives, and social activities to communicate our autonomous action plan and raise awareness of our environmental protection measures.

Environmental conservation at our overseas businesses

**1. Environment-friendly operations in our overseas business activities**  
We will ensure an appropriate approach to environmental conservation at overseas operating sites by promoting a thorough understanding of the need to take into account our environmental impact and of the need to strictly observe environmental regulations.

**2. Environment-friendly importing and exporting activities**  
In addition to adhering to the Basel Convention on waste materials, we will strive to ensure that our exporting and importing partners cause no harm in the area of environmental conservation.

Numerical Goals

In the Autonomous Action Plan for Environmental Protection, a medium-term action plan established in October 2006, we defined the prevention of global warming and reduction of waste materials as key issues. Accordingly, we have set numerical goals related to these issues. These numerical goals have been revised as necessary.

Item		2006	2007	2008	2009	2010	Approach
Reduction in energy consumption intensity*2	Goal	1%	2%	3%	4%	5%	Reducing 1% per year
	Achievement	3.0%	5.0%	2.7%	3.5%	—	—
Reduction in CO <sub>2</sub> emission intensity*2	Goal	1.5%	3.0%	4.5%	6.0%	7.5%	Reducing 1.5% per year
	Achievement*3	5.0%	6.8%	5.4%	6.9%	—	—
Reduction in final waste disposal intensity*2	Goal	6%	12%	18%	24%	30%	Reducing 30% over 5 years
	Revised goal	—	—	—	60%	70%	Reducing 50% in 3 years, 70% in 5 years
	Achievement*4	39%	63%	60%	73%	—	—

\*Operating sites pursuing these goals  
Domestic: All domestic operating sites classified as a Type 1 Designated Energy Management Factory. Operating sites covered are as follows: Shirogane Works, Isohara Works, Toda Works, Kurami Works, Saganoseki Smelter & Refinery (Pan Pacific Copper Co., Ltd.), Hitachi Works (Pan Pacific Copper Co., Ltd.), Tamano Smelter (Hibi Kyodo Smelting Co., Ltd.), Japan Copper Casting Co., Ltd., Nikko Environmental Services Co., Ltd., Tomakomai Chemical Co., Ltd., Nikko Mikkaichi Recycle Co., Ltd., and Nikko Tsuruga Recycle Co., Ltd.  
Overseas: Changzhou Jinyuan Copper Co., Ltd., Nikko Metals Philippines, Inc., Gould Electronics GmbH, and Nippon Mining & Metals (Suzhou) Co., Ltd.

\*1. Rates of some overseas operating sites are measured against fiscal 2006.  
\*2. Due to differences in operations between operating sites, performance is evaluated by comparing intensities of the entire Group with the respective goals. The intensities of the entire Group are calculated as weighted averages of an indexed intensity for each operating site in a particular year on the basis of the average values for the period between fiscal 2003 and fiscal 2005.  
\*3. The emission coefficients for electric power of 0.555 tons of CO<sub>2</sub>/MWh, which was initially established and used to calculate the intensity reported in Sustainability Report 2009, is uniformly used. On the other hand, although equivalent amounts of CO<sub>2</sub> emissions to the volume of electricity generated by the Group's hydroelectric power plants and sold outside the Group were deducted from the total amounts of emissions that were provided in and prior to Sustainability Report 2009, this Report shows the CO<sub>2</sub> emission figure from which the equivalent value of the electricity is not deducted. As a result, some reduction rates differ from those in Sustainability Report 2009.  
\*4. Figures of final waste disposal intensity were recalculated based on revisions of final waste disposal volumes at some operating sites. As a result, some reduction rates differ from those in Sustainability Report 2009.

# Energy Conservation, Energy Consumption, and Related Issues

## Fundamental Policy

Since the Kyoto Protocol took effect, industrialized countries overall are responsible for reducing greenhouse gas emissions, such as CO<sub>2</sub>, by 5% from 1990 levels in the five-year period from 2008 to 2012, with Japan being committed to reducing emissions to 6% below 1990 levels. From the point of view of preventing global warming, the promotion of energy conservation measures has become an imperative issue.

The Group has already made more efficient use of energy in its manufacturing processes, by rationalizing smelting methods and making effective use of hydroelectric power.

Under the current medium-term plan, which was revised in fiscal 2008, the Group's fiscal 2010 reduction goals for en-

ergy consumption intensity and CO<sub>2</sub> emission intensity are 5% or more and 7.5% or more, respectively, as measured against the average of the results for the period from fiscal 2003 to fiscal 2005. The Group will continue to monitor progress each year and strive to achieve these goals. (For further details, please see pages 21 and 60.)

The Saganoseki Smelter & Refinery of Pan Pacific Copper Co., Ltd. has participated in the trial implementation of CO<sub>2</sub> emissions trading in the Japanese market undertaken by the Japanese government.

## Energy Consumption and Energy Consumption Intensity in Manufacturing Activities

In fiscal 2009, the Group's overall energy consumption in calorific value was 16,666 TJ, compared with 16,809 TJ in fiscal 1990, the base year of the Kyoto Protocol\*.

Currently, energy consumed at its smelters and refineries accounts for 53% of the Group's total energy consumption in Japan. These smelters and refineries are making various efforts to reduce energy consumption. These efforts include conducting smelting operations with a single flash furnace, streamlining smelting and sulfuric acid processes, and effectively using the waste heat generated.

Further, by introducing the permanent cathode method into the refining process, we are improving the efficiency of the electric current used and consequently reducing energy consumption. As a result, the energy consumption intensity at smelters and refineries has decreased to 65% of the intensity of fiscal 1990.

Other domestic operating sites are also striving to reduce energy consumption by introducing cogeneration units, improving product yield rates, streamlining production processes, improving facilities, and reviewing operating conditions.

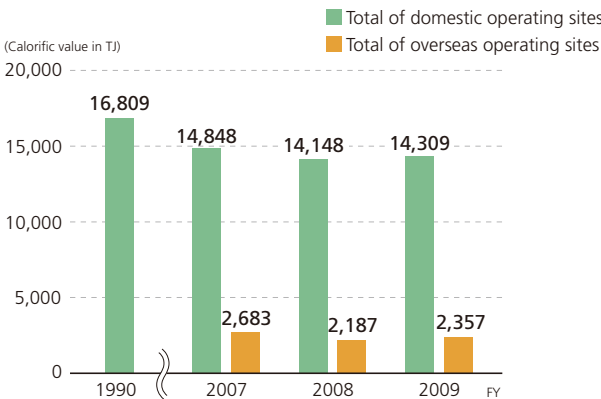
Additionally, our overseas operating sites are working to reduce energy use through such efforts as decreasing electricity intensity, as well as installing pump inverter control systems and highly functional cooling systems.

Going forward, we will further reduce energy consumption and effectively recover waste heat.



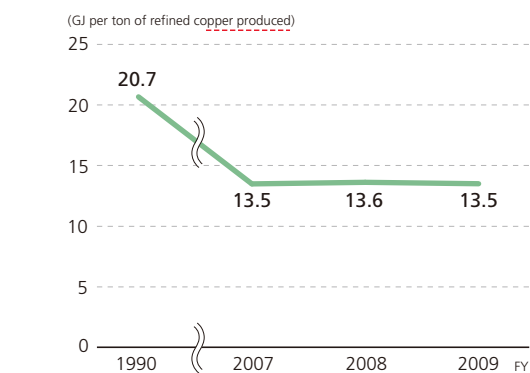
Converter at Saganoseki Smelter & Refinery

### Energy Consumption (fuel + electricity)



\* The Group uses coefficients in correspondence with the Act on the Rational Use of Energy at both domestic and overseas operating sites. (A coefficient defined in the Voluntary Action Plan of the Federation of Economic Organizations (Keidanren) is used to calculate the data in fiscal 1990.) Breakdowns that make up energy consumption are shown below.  
Fiscal 1990 (domestic only): Fuel (direct) 6,866 TJ; Electricity (indirect) 9,943 TJ  
Fiscal 2009: Fuel (direct) domestic 3,752 TJ, overseas 945 TJ; Electricity (indirect) domestic 10,557 TJ, overseas 1,412 TJ  
TJ (tera joule): 10<sup>12</sup> J

### Energy Consumption Intensity at Smelters and Refineries (fuel + electricity)



## CO<sub>2</sub> Emissions from Energy Consumption\*1

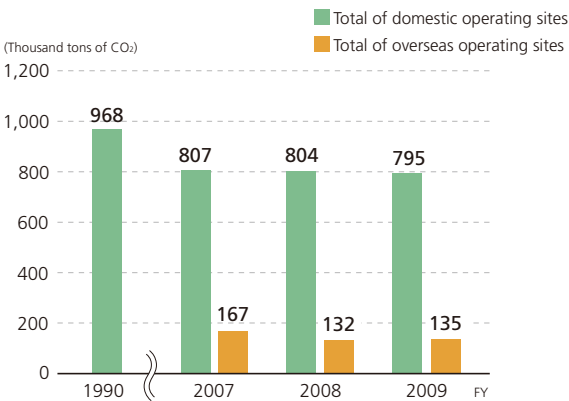
In fiscal 2009, the Group's CO<sub>2</sub> emissions from energy consumption were 930 thousand tons\*2.

Energy consumed at smelters and refineries accounts for 53% of the entire Groups. They have reduced the CO<sub>2</sub> emission intensity to 57% of the fiscal 1990 level by implementing energy conservation measures, such as conducting smelting operations with a single flash furnace.

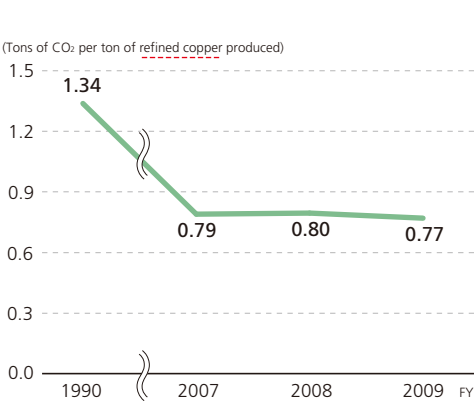
Due to unstable electric power supply conditions, some of

our overseas operating sites have had to rely on in-house power generation through the use of diesel engines. However, we have been promoting the shift from in-house power generation to purchasing electric power from electric power companies. This has resulted in a decrease of CO<sub>2</sub> emissions by about 23% (approximately 21 thousand tons). Also, these operating sites have shown an almost 16% improvement in CO<sub>2</sub> emission intensity.

### CO<sub>2</sub> Emissions from Energy Consumption



### CO<sub>2</sub> Emission Intensity at Smelters and Refineries



## CO<sub>2</sub> Emissions from Sources other than Energy Consumption and Other Greenhouse Gases\*1

Operating sites in the recycling and environmental services business are required to submit reports on the emission of the CO<sub>2</sub> from sources other than energy consumption\*3 as well as the emission of other greenhouse gases. In the Group's operations, nitrous oxide (N<sub>2</sub>O)\*4 meets the defini-

tion of other greenhouse gases.

Calculated on a CO<sub>2</sub> equivalent basis, emissions of these gases in fiscal 2009 were approximately 65 thousand tons, of which approximately 3 thousand tons was N<sub>2</sub>O.

\*1. Emissions are calculated using emission coefficients in correspondence with the Act on Promotion of Global Warming Countermeasures. In and prior to Sustainability Report 2009, the default value of 0.000555 tons CO<sub>2</sub>/kWh as the emission coefficient related to electricity was uniformly used. However, in this Report, actual emission coefficients for individual electric power companies made public by the government and statistical data released by the International Energy Agency (IEA) are adopted to calculate amounts of emissions in fiscal 2009 for domestic and overseas operating sites, respectively. Those values in previous fiscal years have been revised accordingly.  
\*2. Though equivalent amounts of CO<sub>2</sub> emissions to volume of electricity generated by the Group's hydroelectric power plant and sold outside the Group were deducted from the total amounts of emissions that were provided in and prior to Sustainability Report 2009, this Report shows the CO<sub>2</sub> emission figure from which the equivalent value of electricity is not deducted.  
\*3. Emitted during the incineration of waste oil, plastic, and rubber tires.  
\*4. Emitted during the incineration of sludge, waste oil, plastic, and rubber tires as well as during fuel consumption.

## Logistics Stage

In order to decrease the environmental impact caused by our operations during the logistics stage, we are advancing modal shifts, increasing the size of production lots, and improving loading rates.

In fiscal 2009, the Group's energy consumption was 608 TJ and CO<sub>2</sub> emissions were 42.9 thousand tons, compared

with 605 TJ and 42.7 thousand tons in fiscal 2008, respectively. Regardless of the 18% year-on-year increase in shipment volumes, these indexes remained at the same level as fiscal 2008. This was due to the effects of such initiatives as increasing the use of short-distance shipments and increasing shipment lots.

\* Figures are the sums of energy consumption and CO<sub>2</sub> emissions of three logistics companies that are subject to the Act on the Rational Use of Energy.

## Renewable Energy

Hydroelectric power, which is generated by using the force of water flowing downstream in a flowing river, is a form of renewable energy that does not emit CO<sub>2</sub>. It is also a form of energy that is renewed through the water cycle. The Group has been engaging in hydroelectric power generation since 1907, the days of Kuhara Mining Co., Ltd., which was

the predecessor to JX Nippon Mining & Metals. Currently, we generate hydroelectric power in Fukushima Prefecture, and sell the energy generated to a power producers and supplier (PPS). Hydroelectric power generation totaled about 28 MWh in fiscal 2009, compared with 31 MWh in fiscal 2008.



# Conserving Resources, Utilizing By-products, and Recycling and Reducing Waste Materials

## Fundamental Policy

In Japan, it is becoming increasingly difficult to secure sites for final waste disposal. Therefore, reducing waste is becoming ever more important.

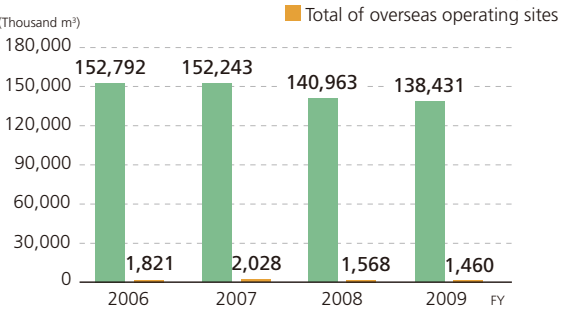
The Group aims to prevent the depletion of natural resources by using recycled resources as raw materials, more effectively utilizing by-products, and recycling waste materials. Needless to say, we are also working hard to reduce waste output. At the same time, we are leveraging the sophisticated technologies we have accumulated through our mining, and smelting and refining operations to recover value-bearing metals from waste materials.

Furthermore, by properly disposing of waste oils, liquids, and other such substances, we are working to detoxify and reuse waste materials, or at the very least neutralize the environmental impact. Through these efforts, we are contributing to the creation of a resource-conservation and zero-emission society.

## Conserving Resources (Water usage and water discharge volumes\*)

The Group's water usage in fiscal 2009 amounted to 139,891 thousand m<sup>3</sup>, of which 85% was sea water. The volume of water discharge was 153,530 thousand m<sup>3</sup>, of which 90% was discharged into the sea.

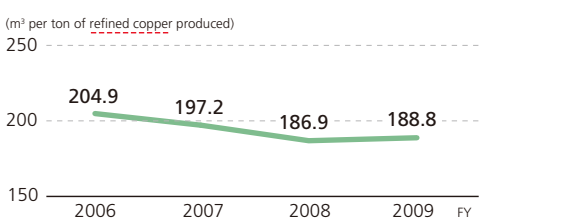
### Water Usage



### Water Usage (domestic and overseas)

	2006	2007	2008	2009
Sea water	133,735	132,306	121,138	118,685
Ground water / Industrial water	18,903	19,830	19,373	19,263
Waterworks	1,836	2,041	1,917	1,847
Rainwater	139	95	103	96
Total	154,613	154,271	142,531	139,891

### Water Usage Intensity at Smelters and Refineries

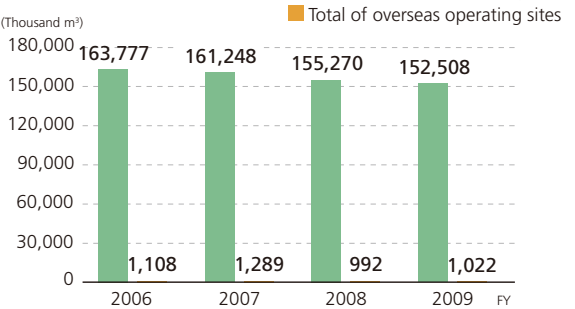


In particular, we strive to reduce the volume of waste materials for final disposal. Last year, we revised our goals for final waste disposal intensity (final disposal volume / production volume or treatment volume). We have subsequently established our new goal to reduce final waste disposal intensity by over 70% of the average value for the period from fiscal 2003 to fiscal 2005. We are actively monitoring operations and gearing up to meet this goal. (For further details, please see pages 21 and 60.)

Moving forward, we are making every effort to use recycled resources and reduce the volume of final landfill disposal, improve the yield ratio and extraction percentage, streamline production processes, and promote recycling. Through these efforts, we will contribute to creating a resource-conservation and zero-emission society.

The water usage intensity and water discharge intensity at smelters and refineries, which account for 89% of the Group's total water usage, remained at almost the same level as in recent years.

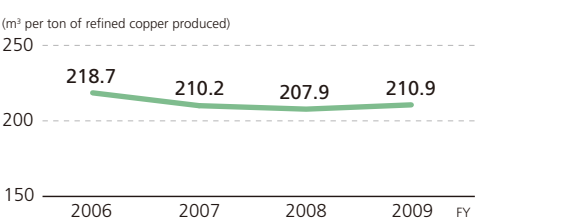
### Discharge Volumes



### Discharge Volumes (domestic and overseas)

	2006	2007	2008	2009
Ocean	147,791	146,327	140,748	138,598
River	16,763	15,871	15,184	14,617
Drainage systems	331	339	329	315
Total	164,885	162,537	156,261	153,530

### Discharge Intensity at Smelters and Refineries



## Resource Conservation (Recycled resource input volume and total material input)

Unfortunately, the ores and other resources extracted from the natural environment are limited, and as a result these resources must be preserved for the next generation. Therefore, shifting from resources that are extracted directly from nature to recycled resources is a pressing issue.

In fiscal 2009, the Group's total material input was 2,792 thousand tons. Of this, recycled resources accounted for 265 thousand tons, or 10% of the total material input.

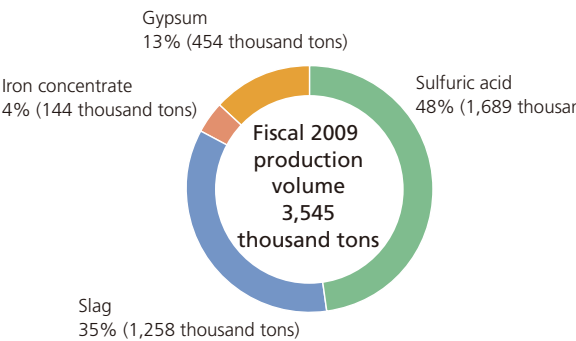
	Product	Input volume (thousand tons)
Primary resources	Copper concentrate, silicate ore, copper shot, iron and copper elements (bare strips), nickel, zinc, other metals, etc.	2,527
Recycled resources	Copper and copper alloy scraps, silver and gold residual slag, copper scraps, etc.	265
Total		2,792

## By-products

In fiscal 2009, the Group produced 3,545 thousand tons of by-products, including 1,689 thousand tons of sulfuric acid, 1,258 thousand tons of slag, 144 thousand tons of iron concentrate, and 454 thousand tons of gypsum.

Slag is utilized as a sandblasting material, a cement material, a caisson filler, and aggregate for wave-dissipating blocks. Iron concentrate and gypsum are used in cement.

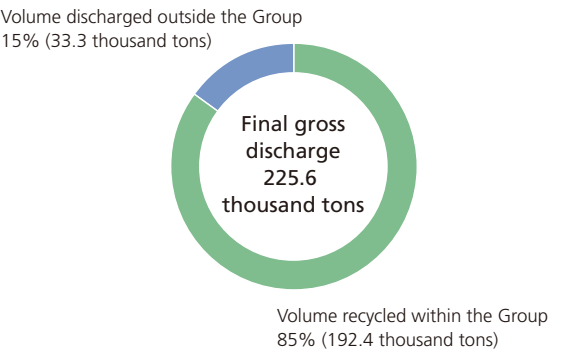
### By-product Production Volume



## Gross Generation of Waste Materials and Final Gross Discharge

The gross generation of waste materials in fiscal 2009 was 225.6 thousand tons, of which 85%, or 192.4 thousand tons, was reused within the Group. As a result, final gross discharge, including sales of value-bearing metals, was 33.3 thousand tons. The volume of landfill disposal, excluding the volume recycled externally,\* was 1.8 thousand tons in fiscal 2009, a year-on-year decrease of almost 0.3 thousand tons. This result is attributable to our efforts to continuously and repeatedly reuse all neutralized slag generated at smelters and refineries as well as expand applications of waste materials at operating sites manufacturing electronic materials.

### Gross Generation of Waste Materials and Volume Recycled Internally



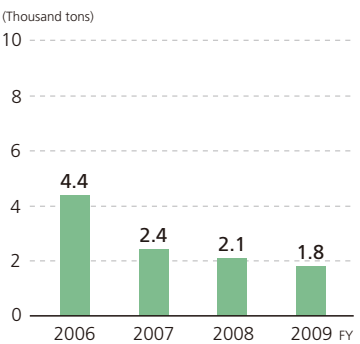
### Discharge Outside the Group

Purpose of discharge	2009
Recycling	
Sales of value-bearing metals	19.9
Waste	10.1
Heat recovery	
Waste	0.9
Incineration	
Waste	0.4
Final disposal	
Waste	1.8
Total waste	13.3
Total	33.3

### Type of Waste

Type	2009
Sludge	5.2
Cinder	2.8
Waste acid / Waste alkaline	1.6
Glass / Concrete / Ceramics / Porcelain	0.6
Waste plastic	0.8
Other	2.2
Total	13.3

### Volume of Final Landfill Disposal



\*Defined as the volume of materials disposed of in landfills by the Group as well as those materials for which a purpose of use could not be clearly identified as either recycling, heat recovery, or incineration before being discharged outside of the Group.

# Environmental Risk Management

## Fundamental Policy

Air and water systems have a great influence on people's health and daily life. The Group places the utmost importance on protecting the environment relating to these two systems. In addition to abiding by all relevant laws, regulations, and other ordinances to reduce the environmental

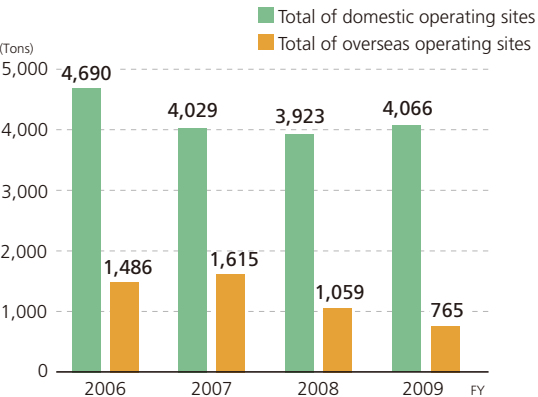
impact, we have developed our own voluntary standards to monitor air and water emissions at our operating sites. We also implement the PDCA cycle to reduce environmental risks.

## Preventing Air Pollution

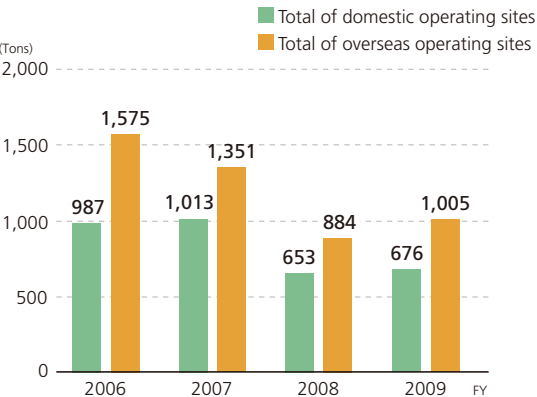
The Group monitors waste gas emissions at all operating sites in compliance with laws, regulations, and other ordinances, as well as its own voluntary standards. Emission volumes of sulfur oxides (SOx) and nitrogen oxides (NOx) in fiscal 2009 are described in the graphs below. Smelters and refineries have improved sulfuric acid inversion rates and effectively used recovered waste heat to generate power by the use of turbines. These efforts have allowed us to cease operation of diesel power generators, which run on heavy oil. These operating sites have also replaced the bricks used in flash furnaces with those that have better heat resistance. However, the total of SOx and NOx emission volumes at domestic operating sites increased by 143 tons and 23 tons, respectively, against those in the previous fiscal year. On the other hand, the SOx emission intensity remained nearly the same, while NOx emission intensity showed an improvement trend.

One overseas operating site previously depended on in-house power generation by diesel generators, due to the unstable supply of electricity. However, this operating site has been recently promoting a shift from in-house power generation to purchased power. It has also converted heavy oil to low-sulfur heavy oil (1%) to run the diesel generators. These efforts have resulted in a substantial decrease in SOx emission volumes. Due to the change of definition of the accounting year, only nine months of NOx emissions volumes were totaled to identify the total volume in fiscal 2008. Although that may provide the misunderstanding that the NOx emission volume in fiscal 2009 is larger than in fiscal 2008, the emission volume actually decreased between fiscal 2008 and fiscal 2009.

SOx Emission Volume\*

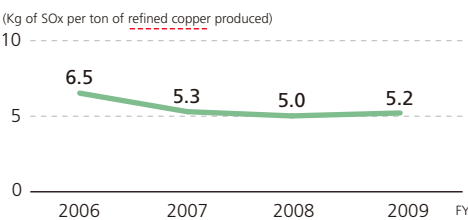


NOx Emission Volume\*

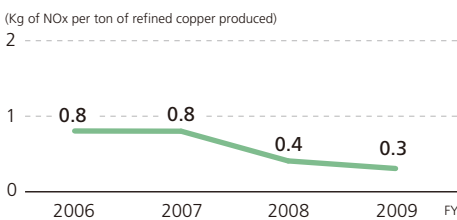


\* Totals of volumes of operating sites subject to legal requirements

SOx Emission Intensity of Smelters and Refineries



NOx Emission Intensity of Smelters and Refineries

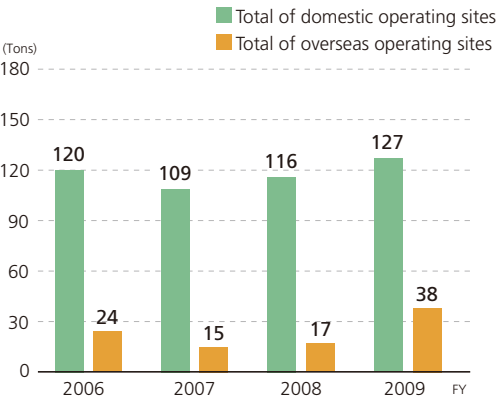


## Preventing Water Pollution

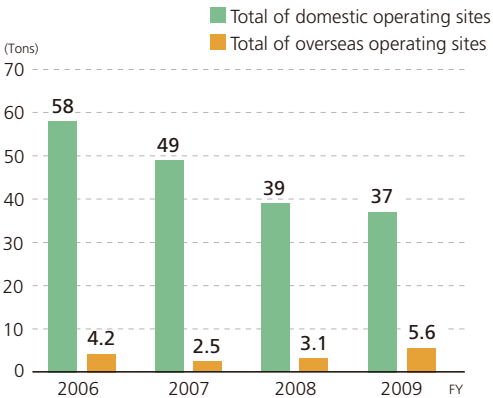
The Group monitors water discharge at all operating sites in compliance with relevant laws, regulations, and other ordinances, as well as our own voluntary standards. The amounts

of chemical oxygen demand (COD) and biochemical oxygen demand (BOD) are outlined below.

COD\*



BOD\*



\* Totals of volumes of operating sites subject to legal requirements

## Chemical Management

### Identifying quantities of specific chemical substances released into the environment and improving controls

The Group strictly adheres to the laws and regulations pertaining to the Pollutant Release and Transfer Register (PRTR). Also, the Group is working hard to reduce its environmental impact by decreasing the release of specific chemical substances into the environment, as part of its environmental management activities.

Further, we apply the Globally Harmonized System of Classification and Labeling of Chemicals (GHS) in the compilation of Material Safety Data Sheets (MSDS). We strive to provide easy-to-understand information regarding the characteristics and handling of chemical substances.

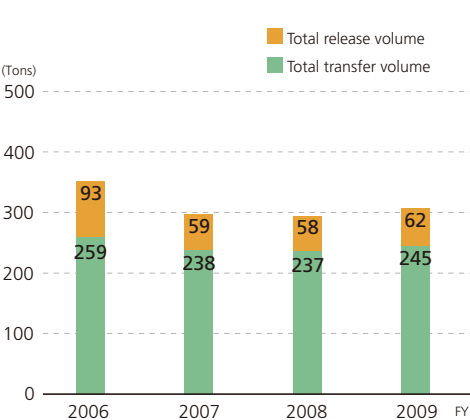
In fiscal 2009, the Group released and transferred approximately 307 tons of chemicals that are required to be report-

ed by PRTR. This represented a 12 ton increase from the previous fiscal year.

The volume of chemicals released into the atmosphere decreased due to our efforts to install dust collectors and curb the dispersion of dust in order to prevent heavy metals from being released into the atmosphere from smelting processes. However, the volume of chemicals released into the water environment rose as production volumes increased and additional substances were required to be reported at some operating sites. Consequently, a 4 ton increase of substances released into the water environment was realized relative to fiscal 2008.

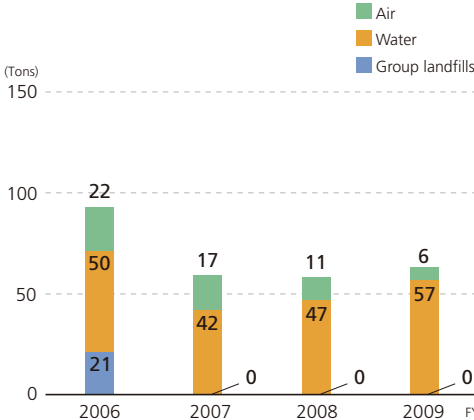
Meanwhile, increased production volumes and the expansion of new businesses resulted in an 8 ton increased in the transfer of chemicals.

Volume of Release / Transfer



\*While total transfer volume for fiscal 2008 was listed as 236 tons in the previous year's report, it was changed to 237 tons in this year's report.

Breakdown of Release Volumes





## Release and Transfer Volumes of Chemicals

No.	Material number	Chemical	Release volume			Transfer volume	
			Air	Water	Group landfills	Waste materials	Drainage systems
1	1	Zinc compounds (water soluble)	0.7	3.7	0	33	0
2	25	Antimony and its compounds	0.08	0.8	0	3.1	0
3	60	Cadmium and its compounds	0.7	0.2	0	0	0
4	63	Xylene	0.1	0	0	0	0
5	64	Silver and its water-soluble compounds	0	0.7	0	0.6	0
6	68	Chromium and trivalent chromium compounds	0	0.1	0	0.8	0
7	100	Cobalt and its compounds	0	0	0	4.7	0
8	108	Inorganic cyanide compounds (except complex salts and cyanates)	0	0.1	0	0	0
9	178	Selenium and its compounds	0.1	1.1	0	0.5	0
10	207	Copper salts (water soluble, except complex salts)	1.6	3.6	0	140	0
11	209	1,1,1-trichloroethane	0	0.5	0	0	0
12	230	Lead and its compounds	1	1	0	7.8	0
13	232	Nickel compounds	0.06	1.5	0	49.6	0
14	252	Arsenic and its inorganic compounds	1.2	2.5	0	4.3	0
15	283	Hydrogen fluoride and its water-soluble salts	0	30.3	0	0	0
16	304	Boron and its compounds	0	8.9	0	0.1	0
17	311	Manganese and its compounds	0	1.3	0	0.2	0

(Tons)

(g-TEQ)							
18	179	Dioxins	0.45	0.02	0	9.7	0

\*1. There are 40 chemicals that are required to be reported.  
 \*2. Except dioxins, all chemicals reported have a total release and transfer volume of over 0.1 tons.  
 \*3. There is no discharge into Group landfills, the soil, or the drainage system.

### Detoxification of products containing PCBs

Utilizing the early registration system of the Japan Environmental Safety Corporation (JESCO)\*, the Group completed registration of products containing PCBs in fiscal 2005. This includes condensers and transformers both in storage and in use.

JESCO's plans call for the disposal of these products to be completed by March 2015.

\* Japan Environmental Safety Corporation (JESCO): A special company wholly owned by the Japanese government that successively handles the PCB waste disposal program formally conducted by the Japan Environment Corporation.

### Compliance with the REACH Regulation

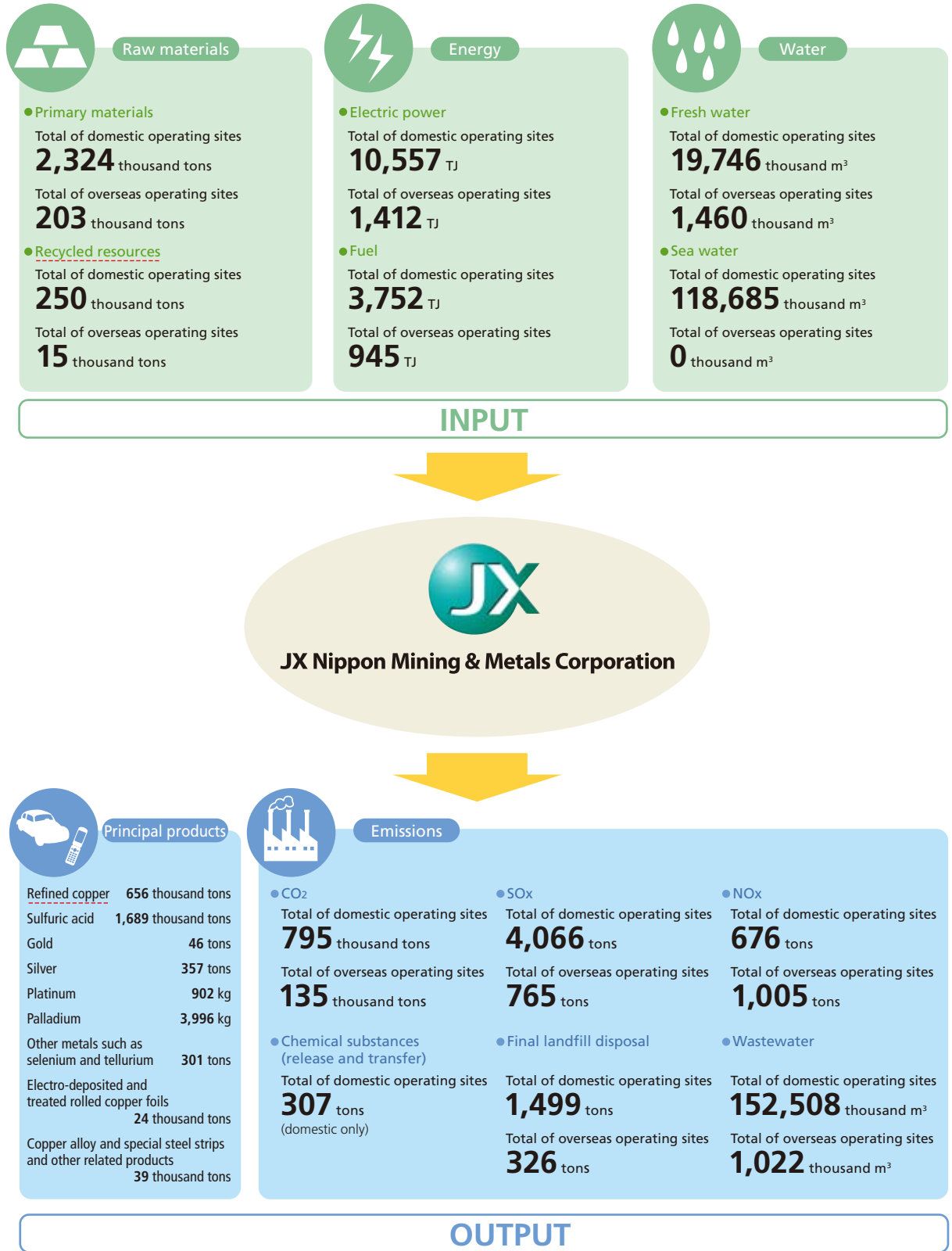
The European Union (EU)'s REACH Regulation, which applies precautionary principle, came into effect in June 2007. The purpose of this regulation is to harmonize the management of chemicals that are released and transported within the region, and to clarify risks that the chemicals bear and their impacts on the environment.

The Group assents to the intent of the regulation defined in REACH, and it has completed preliminary registration of products that are subject to the regulation and is currently preparing for official registration.

## Our Business Activities and the Environment

The Group strives to reduce the environmental impact arising from its business activities by precisely identifying and analyzing the impact.

### Mass Balance Table for the Group



Environmental  
Activities  
Report

Environmental Accounting

Purpose

Of the Group’s businesses, the environmental impact of the smelting and refining operations is particularly high. Meanwhile, the recycling and environmental services operations recycle value-bearing resources reduce the volume of waste materials and render them harmless, thus contributing to conservation of the global environment. Further, the electronic materials operations proactively utilize metal scraps and other recycled materials.

Investment and Expenses

Boundary of Accounting  
**Metals Business:** Pan Pacific Copper Co., Ltd., Hibi Kyodo Smelting Co., Ltd., and Japan Copper Casting Co., Ltd.  
**Recycling and Environmental Services Business:** HMC Works (including Hitachi Area Coordination Center), Nikko Environmental Services Co., Ltd., Tomakomai Chemical Co., Ltd., Nikko Mikkaichi Recycle Co., Ltd., and Nikko Tsuruga Recycle Co., Ltd.  
**Electronic Materials Business:** Isohara Works, Shirogane Works, Toda Works, and Kurami Works  
**Technology Development:** Technology Development Center and other related operating sites (The amount of investment and expenses associated with Technology Development are allocated among the three businesses above in consideration of the themes undertaken.)

Quantitative understanding of the costs and benefits of environmental conservation activities helps us to make rational decisions.  
The Group has adopted environmental accounting since fiscal 2002 in order to gain a better understanding of our operations among both domestic and overseas stakeholders.

(Billions of yen)											
Category		Activities	Environmental conservation benefits and economic benefits	Environmental conservation costs in fiscal 2009							
				Investment				Expenses			
				Metals business	Recycling and environmental services business	Electronic materials business	Total	Metals business	Recycling and environmental services business	Electronic materials business	Total
Pollution prevention expenses	Air pollution prevention	Recovery of sulfur and other materials, and maintenance of facilities	Preventing air pollution and dispersion of metallic dusts, reducing load levy caused by SO <sub>x</sub> , and selling sulfuric acid and gypsum	1.81	0.34	0.03	2.18	4.27	1.12	0.02	5.41
	Water pollution prevention and soil contamination prevention	Effluent treatment at operating sites, particularly production lines, maintenance of facilities	Preventing water pollution and soil contamination	0.93	0.10	0.06	1.09	0.74	0.50	0.39	1.63
	Noise abatement, odor control, and land subsidence prevention, etc.	Noise abatement, odor control, and land subsidence prevention, etc.	Reducing noise, etc.	0.04	0.01	0.01	0.06	0.00	0.02	0.00	0.02
	Total			2.78	0.44	0.10	3.32	5.01	1.64	0.41	7.06
Global environmental conservation expenses	Global warming prevention and energy conservation	In-house power generation by recovery of waste heat and generation of hydroelectric power, improvement of energy efficiency, and maintenance of facilities	Generating steam and electricity, and reducing CO <sub>2</sub> emissions	0.41	0.08	0.03	0.52	0.43	0.20	0.04	0.68
Resource circulation expenses	Circulation of industrial waste and other recycled resources	Recovery of value-bearing metals from waste anode, intermediate products circulating in smelting and refining processes, copper and copper alloy scraps, silver and gold residual slag; recycle scraps of rolled copper and copper alloy products; manufacture by-products such as copper slag and iron concentrate; and maintenance of facilities	Improving product yield rates, recovering value-bearing metals, conserving resources by recycling, and selling copper slag and iron concentrate	0.28	3.97	0.01	4.25	3.96	9.04	0.23	13.23
	Treatment and disposal of industrial and municipal waste	Treatment and disposal of bricks and garbage on commission		—	—	—	0.00	0.02	0.00	0.18	0.21
	Total			0.28	3.97	0.01	4.25	3.98	9.05	0.41	13.44
Upstream / downstream expenses	Reduction of environmental impact of packing materials	Recovery of packaging materials	Conserving resources by recycling	—	—	—	—	—	0.00	0.04	0.04
Administration expenses	Improvement and maintenance of environmental system, monitoring and analyzing of environmental data, nature conservation, and cleanup activities	Operation of ISO system, monitoring and analyzing environmental data, cleaning, maintenance of facilities, etc.	Improving the environment, developing social trust, and enhancing the work environment	0.02	0.01	0.02	0.05	0.29	0.15	0.07	0.51
	Research and development of products that safeguard the environment	Development of technologies to recover value-bearing metals and reprocess precipitate	Using resources effectively and recovering value-bearing metals	—	0.42	—	0.42	—	0.27	0.19	0.46
Research and development expenses	Control environmental impact of production processes	Development of hydro-metallurgical and bio-mining technologies	Reducing environmental impact by improving production processes, enhancing performance of products, and conserving resources	1.73	—	—	1.73	0.44	0.00	0.35	0.79
	Total			1.73	0.42	—	2.15	0.44	0.27	0.54	1.25
Social contribution activities expenses	Assistance for local communities	Contribution to relevant organizations, and cleaning up of public areas and facilities	Maintaining and improving the local environment, and supporting environmental conservation activities of external organizations and local communities	—	—	—	—	0.00	0.01	0.00	0.01
Environmental remediation expenses	Environmental restoration	Payment of load levy caused by SO <sub>x</sub> emissions, and maintenance of effluent treatment facilities at operating sites	Restoring the environment	—	—	—	—	0.34	0.03	0.12	0.49
Total				5.22	4.91	0.15	10.29	10.50	11.33	1.63	23.47

\*1. Figures for investment and expenses are calculated and disclosed based on the Ministry of the Environment’s Environmental Accounting Guidelines 2005.  
\*2. All expenses paid for recycling and environmental services are recorded as resources circulation expenses, since we consider that these expenses were paid for resource circulation, except expenses placed into each category such as the expense for effluent processing.

Environmental Management System

The Group has established a Groupwide environmental management system in line with the basic environmental policy of contributing to global environmental conservation, and our Autonomous Action Plan for Environmental Protection, which takes future environmental risks into account.

By developing an environmental management system based on the ISO 14001 standards, everyone within the Group is working together to continually improve environmental conservation activities and reduce environmental risks.

Environmental Audit

The Group conducts internal audits at each operating site at least once a year. At the same time, the environment and safety audit team of the Environment & Safety Department undertakes periodic environmental audits. Through these efforts, we are working to continually improve pollution prevention and environmental conservation activities.

Environmental Education

The Group conducts periodic environmental education, training, and drills for all levels of employees at each operating site in order to spread awareness regarding the Basic Environmental Policy and autonomous action plan for the environment. Further, several employees have acquired qualifications regarding the environment. The numbers of employees holding such qualifications is outlined below.

Holders of Qualifications Regarding the Environment

		(People)	
EMS (Environmental Management System) Provisional Auditor	2	First Grade Mining Pollution Control Manager	76
EMS Internal Auditor (Outside training completed)	248	Certified Environmental Measurer	16
EMS Internal Auditor (In-house training completed)	157	Waste Disposal Facilities Engineering Manager	39
First Grade Air Pollution Control Manager	77	Qualified Managers of Specially Controlled Industrial Wastes	46
First Grade Water Pollution Control Manager	110	Registered Energy Manager (Heat)	18
Noise Abatement Manager	14	Registered Energy Manager (Electricity)	4
Vibration Abatement Manager	6	Registered Energy Manager (New system)	62
Chief Manager of Pollution Control	2	Operation Chief Handling Specified Chemical Substances, etc.	997
Dioxins Pollution Control Manager	6		

\* Includes the Technology Development Group and affiliated companies under the jurisdiction of the Group (as of March 31, 2010)

Obtaining ISO 14001 Certification

Operating Sites that have Obtained ISO 14001 Certification

Domestic	Hitachi Area Coordination Center, Shirogane Works, Isohara Works, Toda Works, Kurami Works, Hitachi Fabricating Works, Isohara Fabricating Works, Pan Pacific Copper Co., Ltd., Hibi Kyodo Smelting Co., Ltd., Nissho Ko-un Co., Ltd., Japan Copper Casting Co., Ltd., Kurobe Nikko Galva Co., Ltd., Nikko Environmental Services Co., Ltd., Tomakomai Chemical Co., Ltd., Nikko Tsuruga Recycle Co., Ltd., Nikko Mikkaichi Co., Ltd., Nikko Coil Center Co., Ltd., Nikko Shoji Co., Ltd., and Nikko Logistics Partner Co., Ltd.
Overseas	Nikko Metals Korea Co., Ltd., Nikko Fuji Electronics Dongguan Co., Ltd., Nikko Fuji Precision (Wuxi) Co., Ltd., Nikko Metals Shanghai Co., Ltd., Nikko Metals Taiwan Co., Ltd. (Bade Works), Nikko Metals Philippines, Inc., Nippon Precision Technology (Malaysia) Sdn. Bhd., and Gould Electronics GmbH



## Emergency Response Measures

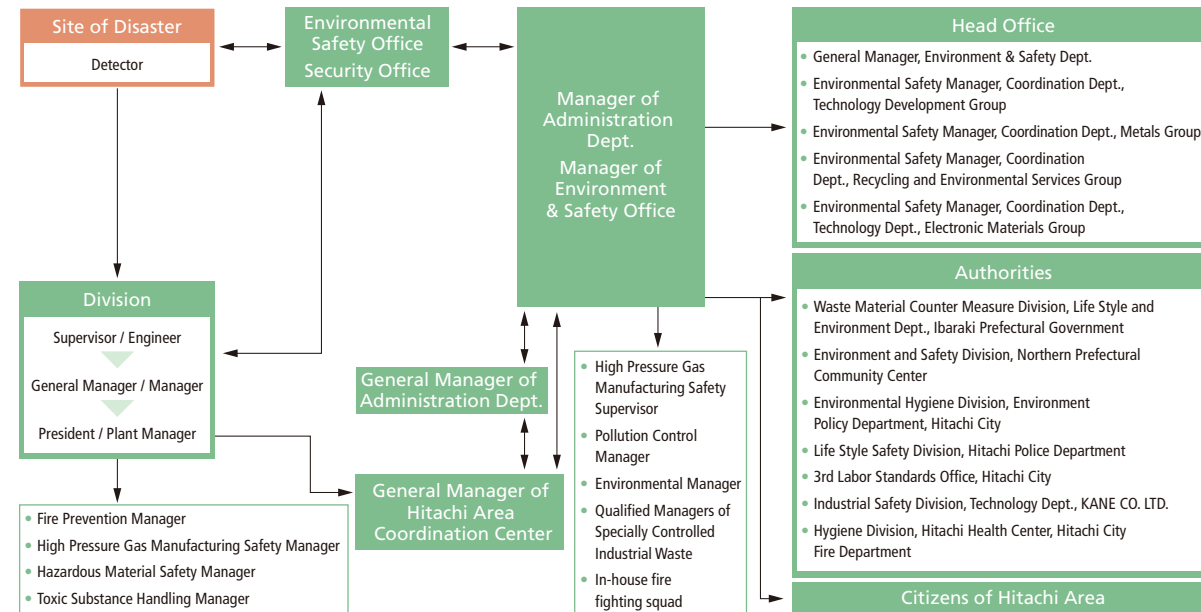
When an accident or disaster occurs, there is the potential for related environmental accidents such as fires, spills of hazardous materials or chemical substances, or the anomalous occurrence of smoke or wastewater.

The Group therefore strives to prevent accidents and disasters and to detect abnormality at an early stage through

periodical inspections of equipment including meticulous preventive maintenance and regular patrols.

Moreover, we conduct comprehensive disaster prevention drills and training with our own fire fighting squads in order to prevent accidents and disasters from exacerbating.

### Emergency Procedures at the Hitachi Area Coordination Center



Fire fighting squad training



## Compliance with Environmental Laws and Regulations

Through the sound operation of environmental management systems at each operating site, the Group is enhancing compliance with environmental laws and regulations.

The Environment & Safety Department at corporate head office is the umbrella administration for compliance, working with supervisory departments at each operating site.

In fiscal 2009, there were no administrative penalties such as the revocation of licenses, orders to suspend operations, orders to suspend the use of facilities, orders to improve operations, or fines incurred from regulatory bodies due to violations of environmental laws or regulations.

## Environmental Accidents

In fiscal 2009, there were no accidents, including spill incidents.

## Initiatives Regarding Biodiversity

In October 2010, the 10th Conference Parties (COP10) to discuss biodiversity will be held in Nagoya City, Aichi Prefecture. In recent years, biodiversity has been increasingly gaining attention in line with corporate activities. In this report, we introduce initiatives regarding biodiversity implemented by Group companies Toyoha Mine Co., Ltd. and Nikko Exploration and Development Co., Ltd.

### Initiatives Implemented at the Toyoha Mine

The Toyoha Mine produced zinc, lead, silver, and indium since it had been acquired by Kuhara Mining Co., Ltd. (the name at that time) in 1914. However, in March 2006, it ceased operation as its ore reserves had been depleted.

#### Maintaining and enhancing the surrounding environment through new effluent treatment facilities

Tailing dumping sites and used pits in closed mines possibly possess a risk of producing acidic wastewater that contains metals. Therefore, it is necessary to permanently process this wastewater and prevent water contamination of the surrounding rivers.

In order to purify wastewater more efficiently to safeguard the quality of water for future years, new effluent treatment facilities were constructed at the Toyoha Mine in October 2008. These facilities were designed and constructed in close cooperation with the Hokkaido government's Industrial Safety and Inspection Department and Sapporo City. The main features of these facilities are listed below.

1. All facilities are set indoors so that they can operate stably even in the depths of winter and under heavy snow.
2. The facilities are aligned with a dual line structure. While one line operates under ordinary conditions, the other line begins effluent treatment when it finds the volume of wastewater exceeds a specific level.
3. A pipeline set between the tailing dumping site and the facilities with dual structure of pipes placed into a concrete culvert strictly prevents leakage of wastewater.
4. Equipped with a power generator and large emergency water tanks, these facilities do not leak untreated waste water even when the electric power goes down or a malfunction occurs.

The facilities experienced no serious trouble and have routinely produced high-quality processed water during their one year test run. At the same time, these facilities meet the criterion relating to water quality stipulated in the agreement on environmental pollution control made with Sapporo City. Furthermore, we have covered the tailing dumping site with soil to create an environment in which we can help grow healthy plants. With these efforts, we strive to maintain and further improve biodiversity in and around the mine site.

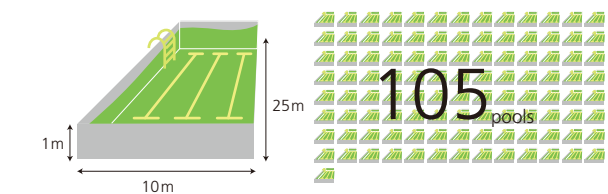
#### Contributing to the environment through forest improvement activities

In fiscal 1993, Toyoha Mine Co., Ltd. signed a forestry contract with the Hokkaido Regional Forest Office. In this contract, the company is working to improve approximately 6.8 hectares of a national forestland located in the Minami Ward of Sapporo City in Hokkaido Prefecture. With 10 years having passed since the contract was concluded, the Hokkaido Regional Forest Office recognized the following benefits on our activities.

#### 1. Contribution to grow watershed protection forests

Forests play a major role in stabilizing the flow volume of water in rivers by temporarily storing water and slowly draining it into the river system. As a result, forests help prevent floods and droughts as well as purify water.

Volume of water stored	26,364 m <sup>3</sup> (equivalent to 105 pools with dimensions 25 m length x 10 m width x 1 m depth)
Volume of water purified	26,364 m <sup>3</sup> (equivalent to 14,446 household filtration cartridges with a useful life of six months)

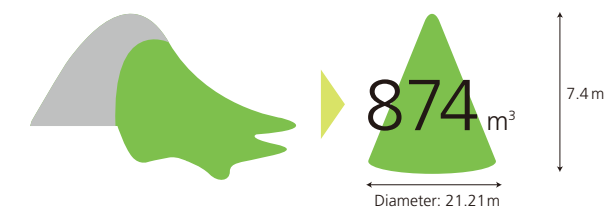


\* The figures are calculated from the difference between water volumes absorbed by soil with and without forests.

#### 2. Contribution to the prevention of soil erosion

Fallen leaves and plants protect soil in a forest from being eroded by rain water.

Volume of soil erosion prevented	874 m <sup>3</sup> (equivalent to volume of cone-shaped soil 7.4 m high and 21.21 m diameter)
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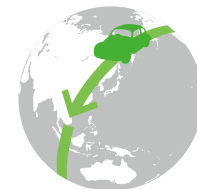


\* The figure is calculated from the difference between soil volume eroded from lands with and without forests.

### 3. Contribution to absorption of CO<sub>2</sub> and carbon fixation

When the trees in a forest perform photosynthesis, they absorb CO<sub>2</sub> from the atmosphere, thus helping to prevent global warming.

Volume of CO <sub>2</sub> absorption and carbon fixation	100 tons (CO <sub>2</sub> emitted by a car driving 430 thousand km, or driving around the circumference of the earth 10.8 times, with a fuel consumption rate of 10 km/l)
--	---



Driving around the circumference of the earth  
**10.8** times

\* The figure is estimated from the volume growth of tree shafts.

### Initiatives Implemented by Nikko Exploration and Development

Nikko Exploration and Development Co., Ltd. has been developing remote sensing technology, including aerial photography and analysis as well as the interpretation of satellite images since satellite remote sensing technology first made its appearance. Currently, Nikko Exploration and Development is applying this technology in a wide range of areas such as in the exploration of natural resources and the analysis of the global environment.

#### Resource exploration by remote sensing

Satellite images taken with light of a certain wavelength, which human eyes cannot see, show differences that reflect the type of minerals present.

The image on the far right is a mineral distribution map created from a picture taken by a satellite. The colors represent the following:

**Red:** areas where alunite and kaolin are distributed.

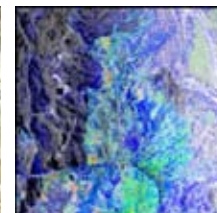
**Green:** areas where sericite is distributed.

**Blue:** areas where chlorite is distributed.

In addition to this example, applying various reflection signatures identifies a wide variety of minerals and estimates their volumes.



Satellite image taken by research satellite Terra (EOS AM-1)



Mineral distribution map created from the satellite image

#### Probe of the surface of the moon by remote sensing

The image on the far right is created by sharpening a photo of the moon's surface taken by the lunar probe Clementine to analyze the surface of the moon.

The yellow areas represent anorthosite, while the blue areas represent basalt in a mare of the moon. Analysis of the volume of titanium contained in the mare is also being tested as another approach.



Image of the moon surface near the Aristarchus crater taken by the lunar probe Clementine

#### Monitoring of the environment through remote sensing

Nikko Exploration and Development has applied remote sensing technology cultivated in resource exploration to monitor the natural environment in order to maintain and improve biodiversity.

#### Monitoring and protecting mangrove forests

Mangrove forests form rich biodiverse habitats in coastal areas of tropical and sub-tropical zones as well as being closely related to human life. However, as these forests are located in areas where access is difficult, it is hard to identify those areas where mangrove forests are found. Also, making periodic surveys to properly identify distribution conditions of each species of mangrove remain challenges to be solved. Nikko Exploration and Development is striving to protect mangrove forests in coastal areas by using satellite images and developing its mapping expertise.



Change in growth of mangrove forests decimated by defoliants  
(Left: March 1989; Right: February 2003)

## Social Activities Report

In the following section, we will report on the JX Nippon Mining & Metals Group's relationship with society and its social activities with respect to each of its stakeholders.

Earning the Trust of Our Customers and Suppliers	075
Involvement with Our Employees	079
Involvement with Local Communities	088
Regional / Social Contribution / International	

## Social Activities Report



Earning the Trust of Our Customers and Suppliers

The JX Nippon Mining & Metals Group is dedicated to being the “best partner” to its customers and suppliers. Accordingly, it works to supply high-quality, safe products that are worthy of the trust of its customers. At the same time, we are striving to develop “win-win” relationships with our suppliers. We place the greatest importance on building trusting relationships with our customers and suppliers by reflecting their opinions on improving the quality of our products and services.

Promoting Companywide Quality Management

Customer needs for quality grow more sophisticated and more diverse with each coming year. In order to respond to such customer needs, it has been a matter of great urgency to develop a system that promotes the sharing and effective use of knowledge and experience pertaining to quality control across the Group.

We took the April 2006 management integration of the three core companies in the former Nippon Mining & Metals Group as an opportunity to address this issue. From the

perspective of sharing information related to quality control, we integrated former systems, under which each operating site handled quality control, to consequently create a group-wide quality control system.

In fiscal 2009, we established a groupwide structure in which we can share knowledge, experience, and information about quality to conduct horizontal development of quality improvement activities within the Group. To this end, we implemented initiatives based on the following themes.

1. Establishment of a companywide quality management system

On October 1, 2009, we established the Basic Quality Policy and the Quality Management Rules.

JX Nippon Mining & Metals Corporation Basic Quality Policy

The JX Nippon Mining & Metals Group hereby sets forth, and acts in observance of, this Basic Policy on Quality in order to contribute to the development of sustainable society while recognizing that its mission for the society is to stably supply non-ferrous metals and materials.

- 1. Correctly grasp the requirements of the customers and of the society in order to offer products and services that the customers will trust and be satisfied with.
- 2. While paying due attention to safety and environmental conservation, improve and maintain quality at all processes from development, designing, production to delivery.
- 3. Establish quality management system, and carry out continual improvements and raise human resources.
- 4. Comply with all pertinent laws of both Japan and overseas countries, and offer to our customers and the society transparency with regard to the quality.

(At the time of its establishment, the policy was originally named the Nippon Mining & Metals Basic Quality Policy. In July 2010, it was subsequently launched as the JX Nippon Mining & Metals Basic Quality Policy.)

2. Sharing of quality-related information throughout operating sites

The Quality Supervisor Committee met in November 2009 for the purpose of reporting on the status of compliance with the ISO 9001 standard, quality losses, and quality-related complaints at operating sites under the direct control of the Company.

(In fiscal 2010, the committee met in May 2010. The third meeting is scheduled for November 2010.)

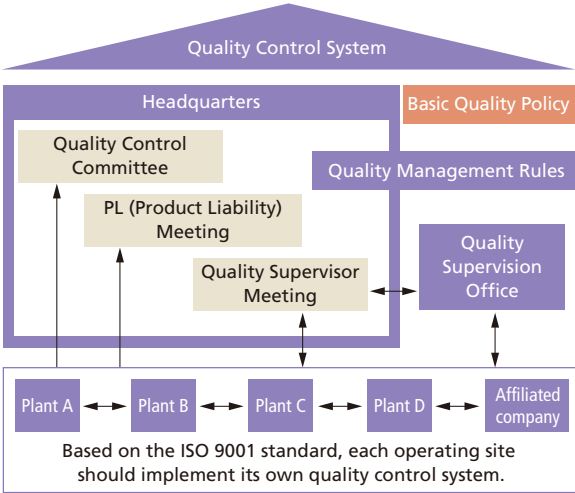
3. Reconstruction of quality-related education programs

We are advancing the development of new systematic quality-related education programs. While such programs were previously handled independently by each operating site, we reorganized these programs into ones that individual operating sites operate and ones that should be managed in an integrated fashion across the Group. These new programs incorporate newly compiled quality control and problem resolution methods as well as a quality control system in accordance with ISO 9001.

Based on the above-mentioned Basic Quality Policy, we will promote the sharing of information, knowledge, and experi-

ence related to quality control throughout the Group. At the same time, we will improve education and training programs for employees and enhance the Groupwide quality control system.

The Group's Quality-related Communication Structure



Quality Control and Assurance Systems at Operating Sites

The Group's quality control initiatives are not simply limited to the quality of products and services. The Group views quality control with a broader perspective that includes improving the quality of both its administration and management. In view of this concept of quality control, each operating site is operating its own quality control system, principally based on the ISO 9001 standard, and conducting TPM\* and other improvement activities.

Taking into consideration the specific characteristics of the products that each operating site manufactures, we have set concrete goals for reducing the percentage of defective products and the number of quality-related complaints and

others. To accomplish these goals, we have established a quality control structure that involves representatives responsible for sales, manufacturing, production management, technology, and product development. Implementing the PDCA cycle based on this quality control structure, the Group is coming together to promote quality improvements throughout the Group.

Further, several domestic and overseas operating sites have obtained ISO 9001 certification, the international standard for quality control systems.

\* Refer to page 33 for details regarding TPM.

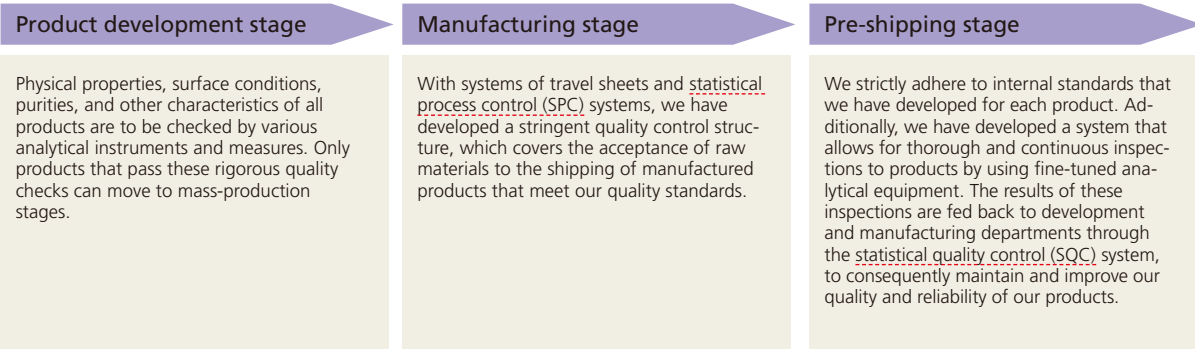
Operating Sites that have Obtained ISO 9001 Certification

Domestic	Shirogane Works, Isohara Works, Toda Works, Kurami Works, Isohara Fabricating Works, Hitachi Fabricating Works, Nikko Exploration and Development Co., Ltd., Pan Pacific Copper Co., Ltd. (Hibi Smelter, Saganoseki Smelter), Hibi Kyodo Smelting Co., Ltd., Japan Copper Casting Co., Ltd., Nikko Coil Center Co., Ltd., Nikko Shoji Co., Ltd. (Takatuski Plant)
Overseas	Nikko Metals Korea Co., Ltd., Changzhou Jinyuan Copper Co., Ltd., Nikko Fuji Electronics Dongguan Co., Ltd., Nippon Mining & Metals (Suzhou) Co., Ltd., Nikko Fuji Precision (Wuxi) Co., Ltd., Nikko Metals Shanghai Co., Ltd., Nikko Metals Taiwan Co., Ltd., Nikko Metals Philippines, Inc., Nippon Precision Technology (Malaysia) Sdn. Bhd., Nikko Metals USA, Inc., Gould Electronics GmbH

Quality Control Initiatives during the Stages of Development and Manufacturing

Our customers require a high level of quality and reliability in our electronic materials. In order to live up to these requirements, we have employed various quality control measures at stages from product development, manufacturing, to shipping.

Quality Control Flow



Overview of Specific Initiatives and their Results

Isohara Works obtains ISO/TS 16949 certification

Customers—especially those customers in businesses related to semiconductors—require a particularly high level of quality. In order to meet these requirements, in August 2009, the Isohara Works obtained ISO/TS 16949 certification—a standard for quality control systems employed in the automotive industry—encompassing the manufacturing of sputtering targets for semiconductors, one of its mainstay products.

The acquisition of this certification has allowed the Works to engage in more customer-oriented quality control activities to materialize higher quality performance. Accordingly, the Isohara Works is able to provide high-quality products that accommodate highly sophisticated customer requirements, thereby achieving greater customer satisfaction.

Earning the Trust of Our Customers and Suppliers

Product Safety Initiatives

In order to provide safe products, the Group thoroughly complies with applicable laws and regulations. For the purpose of developing a preventative approach toward product safety, and by taking into consideration the characteristics of each product, we are always aware of “product safety,” from product development to manufacturing and sales stages.

Examples of specific initiatives

- Developing safety measures for the shipping of copper ingots and other heavy materials, as well as substances such as sulfuric acid that require special care (Establishing and implementing Logistic Safety Action Plans, and sharing information regarding safety measures between Group companies, etc.)
- Providing customers with environmental and safety related information on all products through material safety data sheets (MSDS)
- Implementing education and training programs regarding product safety activities
- Ensuring quality control for safety
- Developing environmentally friendly products to reduce the environmental impact (Developing lead-free surface treatment agents ready for Restriction of Hazardous Substances (RoHS) Directive, etc.)

Moreover, Pan Pacific Copper Co., Ltd.—handling 2 million tons of sulfuric acid annually (fiscal 2009)—is making every effort to improve its education training programs designed for its logistics departments as well as partnering logistics companies, who are responsible for carefully handling chemical substances by employing the above-mentioned MSDS. In fiscal 2009, there were no violations of any laws and regulations with regard to product safety or the provision of products and services reported.

Awards Received from Customers

In fiscal 2009, thanks to our highly acclaimed technological capabilities and product qualities, the Group could receive a number of awards from our customers. Going forward, we will continue to work tirelessly to accurately respond to demands of our customers. (Company names listed below are as of fiscal 2009.)

Major Awards

Customer	Award	Receiving company	Background
Intel Corporation	PQS Award	JX Nippon Mining & Metals Co., Ltd.	PQS (Preferred Quality Supplier) Award This award was established by Intel to encourage continued and superior improvement among its principal suppliers. The Company was selected as a superior vendor of sputtering targets used in the shaping of thin films. The Company's cost, quality, supply system, delivery, and technological capabilities were highly evaluated, receiving scores of over 80% in each area.
TAIFLEX Scientific Co., Ltd.	Best Supplier Award	Nikko Metals Taiwan Co., Ltd.	Providing a stable supply of treated rolled copper foil.
Sony Corporation	Sony Green Partner Award	Nikko Metals Philippines, Inc.	Complying with chemical management standards.
RAYTHEON	NCS Supplier Excellence Award	Nikko Metals USA, Inc.	Providing high-quality products, etc.

Partnerships with Suppliers

The Group aims to develop “win-win” relationships with its suppliers based on mutual trust. With the purpose of developing a procurement system across the JX Group, we have entrusted our procurement function to JX Nippon Procurement Corporation. (In July 2010, the former Nippon Mining Procurement, Inc. changed its name to JX Nippon Procurement Corporation.) JX Nippon Procurement strives to realize fair and highly transparent procurement in accordance with the JX Nippon Procurement Purchasing Policies and strict compliance with relevant laws and regulations.

JX Nippon Procurement Purchasing Policies

- Purchasing Policies
  1. We will provide the group companies of the JX Group with the necessary materials and services in the most efficient and stable manner.
  2. We will contribute to the competitiveness of the group companies of the JX Group by working with group companies to reduce the cost of the materials to be purchased.
  3. We will conduct business with high level of precision, speed, and transparency so that we can gain the trust and satisfaction of the group companies of the JX Group.
  4. We will share information with and disclose the progress and results of the purchasing process to the group companies of the JX Group, in order to strengthen the purchasing functions of the JX Group.
- Course of Action for Purchasing Deals
  1. Transparent transactions  
We will provide those who wish to trade with us with fair opportunities, respond to any proposal earnestly, so that we can conduct transparent transactions. In addition to that, we will carry out purchasing deals in an open manner, by clearly specifying the fundamental rules for purchasing deals, registration procedures for new business partners, various procedures from ordering through payment, and contract details for the person in charge.
  2. Fair evaluation  
Selection of business partners will be conducted based on fair evaluations of product quality, price, delivery schedules, performance, and other factors. Where business partners are not selected in tenders or competitive bids, we will clearly inform them, if requested, of the facts and reason behind our decision.
  3. CSR and compliance  
During purchasing deals, we will comply with all related regulations, and will not only observe the individual clauses of each law, but will also adhere to the spirit of law.
  4. Environment conservation  
We will purchase environment-friendly materials.
  5. Partnership  
We will create the win-win situation, by cooperating with and build mutual trust with business partners, and realizing efficient purchasing deals.
  6. Ethics  
The person in charge of purchasing will keep fair relationship with business partners based on a rigorous ethical viewpoint.
  7. Management of confidential information  
We will strictly manage information received in the course of purchasing operations and ensure maintenance of confidentiality.

Voice—Overview of Specific Initiatives and their Results



Dr. Shinichi Ogawa  
Nanodevice Innovation Research Center  
National Institute of Advanced Industrial Science and Technology

Dr. Shinichi Ogawa has made a career of researching and developing semiconductors, working for Intel Corporation, Semiconductor Leading Edge Technologies, Inc. (Selete), and the semiconductor business of Panasonic Corporation. We asked Dr. Ogawa for his evaluation of the Company, a supplier of sputtering targets for semiconductors and a partner in research and development.

**What is your most impressive event in transactions with us?**  
I can think of one time when I was working to create a new electrode on a semiconductor circuit by adopting cobalt when I was at Panasonic's laboratory in Kyoto. Cobalt is a ferromagnetic metal and caused a number of issues when we tried to form a thin film of the metal on circuits. Nippon Mining & Metals (the predecessor of JX Nippon Mining & Metals) offered a speedy response to our requests to control magnetic permeability and crystals of cobalt and inhibit particles from generating during sputtering. We greatly appreciated Nippon Mining & Metals' assistance, which played a vital role in the successful development of the electrode material of cobalt. (Currently, cobalt is a common electrode material on semiconductor circuits.)

**Do you have any advice for our future business evolution as a materials manufacturer?**  
I believe that alloys will be increasingly employed as new metals for elements to be formed on semiconductor circuits. Only material manufacturers can develop an alloy that meets specific requirements and create production technologies to manufacture such an alloy. In other words, materials manufacturers should bear ever greater responsibilities to develop cutting-edge alloys. Moreover, when a materials manufacturer like JX Nippon Mining & Metals takes up tasks of experimental evaluations to properties of thin film elements of alloys formed on circuits, I think that development would progress more smoothly.

Lastly, although this suggestion is not confined to materials manufacturers, I believe it is a key element for further business growth to construct an organization flexible enough to maximize the attributes of women, who have quite a different way of thinking from men.



Earning the Trust of Our Customers and Suppliers

Green Purchase Guideline

The Company is encouraging green purchasing based on the Green Purchase Guideline instituted in October 2006, in order to contribute to the establishment of a recycling-oriented society, the prevention of global warming, and the promotion of 3R activities. The guideline was compiled for the purpose of establishing a common awareness regarding environment conservation to be shared with suppliers and purchasing environment-friendly materials and machinery.

We decide to purchase materials and machinery after carefully investigating the features, price, delivery conditions, as well as their contribution degrees to enable us to reduce the

environmental impact. We disclose the aforementioned Green Purchase Guideline as well as other policies regarding our procurement process to our suppliers, and request them to develop appropriate environmental management systems, guarantee that materials or machinery do not contain banned substances, thoroughly investigate chemical substances that may be contained in materials or machinery, and promote environment conservation initiatives.

Involvement with Our Employees

“People”—Our Greatest Asset

The Group’s philosophy toward employees dates back to 1905, when the Hitachi Mine was founded. Like other mines, the Hitachi Mine was located deep in the mountains. The founder, Fusanosuke Kuhara, realized that it would be imperative to provide employees with an environment in which they can work with peace of mind, in order to build business success at the Hitachi Mine, which was located at a desolate area distant from urban regions. For this reason, he focused his efforts on raising the standard of living at the mine. The Group’s philosophy of “respect for employees” originates with this initiative.

Striving to create an environment in which employees could live with their families, Mr. Kuhara built a town that offered not only housing but also schools for children, hospitals, railroads, as well as recreational facilities. Living in the area, which was equipped with workplaces and residences, employees shared all their joys and sorrows with each other, while fostering a sense of togetherness. At the same time, a



Company's office in the Motoyama District



Company residential district in the Daioin District

Breakdown of Employees (As of March 31, 2010)

	Full-time			Other			Total	Temporary employees	Total workforce
	A	B	Total	A	B	Total			
Domestic companies (24)	3,457	337	3,794	2	56	58	3,852	209	4,061
Overseas companies (15)	1,127	775	1,902	5	12	17	1,919	14	1,933
Total	4,584	1,112	5,696	7	68	75	5,771	223	5,994

\* The “domestic companies” category includes the Company. The “full-time” category encompasses regular employees and employees working equivalent hours to regular employees. A: Employees not on fixed-term contracts. B: Employees on fixed-term contracts.  
\* The number of companies as of April 1, 2010.

spirit of “respect for employees” was nurtured, which has subsequently been passed down to the current Group. This spirit of “respect for employees” has also influenced our business activities, subsequently bringing free and vigorous discussions and a flexible organization where employees can freely communicate with each other. For 300 years since a vein was first discovered at the Hitachi Mine, many have tried to develop the mine, but have only ended in failure. The mine was beset with various issues to be solved, such as smoke damage. It was through free and vigorous discussions that provided these solutions to these issues. And our flexible organization underpinned such discussions. Engineers and experts at the time considered deeply and argued aggressively to find solutions to these issues, before they could finally develop the Hitachi Mine into one of the leading domestic mines with considerable production capacity.

Today, we believe that such discussion will lead to the creation of new opportunities. In line with this thinking, we aim to develop a working environment in which employees feel free to exchange opinions regardless of position, age, or gender.



Fusanosuke Kuhara, the Company's founder

Respect for Human Rights

The Group aims to create an organization where employees’ human rights, personalities, and individuality are respected. Since fiscal 2008, the Company has participated in the United Nations Global Compact, an international initiative that advocates ten Universal Principles, including human rights and labor. Also, the Group’s Code of Conduct states “respect for employees’ personality, human rights and individuality” in Article 4, in order to increase awareness about the Group’s attitude of respecting human rights in both domestic and overseas affiliated companies. Furthermore, the Group’s Compliance Guidebook, which is distributed to each employee, specifies to strictly inhibit unjust discrimination and sexual harassment.

Also, the Group does not condone child labor and forced labor. An investigation into child labor conducted by the International Labour Organization (ILO) shows that over 9,600 children between the ages of 5 and 14 years old are currently working in the Asia-Pacific region. The Group, developing its business in this region where approximately 1,700 employees work, has implemented strict control on em-

ployee age, especially through pre-employment examinations, and rigorously inhibits forced labor. As a result, no issues regarding child labor or forced labor have been reported.

Going forward, we will globally expand our operations. We aim to build a workplace where employees can be involved in his or her operation by complying with laws and regulations in countries where overseas operating sites are located and enhancing harmonious relationships with the local communities.

Number of Managers Employed at Overseas Operating Sites (As of March 31, 2010)

(People)	
Local employees	Of which, managers
1,902	113

\* Local employees are those employees who work full-time at our overseas operating sites. Managers are those employees positioned as a manager or higher. Approximately 99% of local employees possess citizenship of the country in which they are employed.

Description of the Group’s Workforce

The tables below describes the workforce of JX Nippon Mining & Metals and its 38 subsidiary companies (23 domestic, 15 overseas) encompassed in the boundary of this Report. The average age of employees is 39 years old and the average number of years of service is 12 years.

Composition of Managerial-level Employees by Region (As of March 31, 2010)

		Managerial-level employees			Others			Total		
		Men	Women	Total	Men	Women	Total	Men	Women	Total
Domestic companies (24)	Japan	1,296	26	1,322	2,099	288	2,387	3,395	314	3,709
	North America	9	0	9	0	0	0	9	0	9
	South America	24	0	24	0	0	0	24	0	24
	Asia	42	0	42	4	0	4	46	0	46
	Europe	1	0	1	0	0	0	1	0	1
	Oceania	4	1	5	0	0	0	4	1	5
Subtotal		1,376	27	1,403	2,103	288	2,391	3,479	315	3,794
Overseas companies (15)	North America	12	1	13	43	13	56	55	14	69
	Asia	169	102	271	875	548	1,423	1,044	650	1,694
	Europe	16	1	17	117	5	122	133	6	139
Subtotal		197	104	301	1,035	566	1,601	1,232	670	1,902
Total		1,573	131	1,704	3,138	854	3,992	4,711	985	5,696

\* The figures stipulated in the table above represent the number of full-time employees. Managerial staff encompasses general managers, managers, assistant managers, and supervisory staff members.  
\* Number of companies as of April 1, 2010.  
\* The “domestic companies” category includes the Company.

Composition of Managerial-level Employees by Age (As of March 31, 2010)

		Managerial-level employees			Others			Total		
		Men	Women	Total	Men	Women	Total	Men	Women	Total
Domestic companies (24)	Below 29 years of age	106	7	113	481	43	524	587	50	637
	30–49 years of age	748	18	766	1,106	179	1,285	1,854	197	2,051
	Above 50 years of age	522	2	524	516	66	582	1,038	68	1,106
Subtotal		1,376	27	1,403	2,103	288	2,391	3,479	315	3,794
Overseas companies (15)	Below 29 years of age	30	54	84	393	345	738	423	399	822
	30–49 years of age	134	49	183	549	202	751	683	251	934
	Above 50 years of age	33	1	34	93	19	112	126	20	146
Subtotal		197	104	301	1,035	566	1,601	1,232	670	1,902
Total		1,573	131	1,704	3,138	854	3,992	4,711	985	5,696

\* The figures stipulated in the table above represent the number of full-time employees. Managerial staff encompasses general managers, managers, assistant managers, and supervisory staff members.  
\* The number of companies as of April 1, 2010.  
\* The “domestic companies” category includes the Company.

Involvement with Our Employees

Average Age and Average Number of Years of Service (As of March 31, 2010)

	Age (years)			Years of service (years)		
	Men	Women	Total	Men	Women	Total
Domestic companies (24)	42.4	40.5	42.3	15.0	12.2	14.8
Overseas companies (15)	35.0	29.6	33.1	7.6	5.2	6.7
Average	40.6	33.1	39.2	13.1	7.5	12.1

\* The number of companies as of April 1, 2010.  
\* The "domestic companies" category includes the Company.

Number of Employees Recruited (April 1, 2009 to March 31, 2010)

	(People)		
	Men	Women	Total
Domestic companies (24)	284	31	315
Overseas companies (15)	165	155	320
Total	449	186	635

\* The number of companies as of April 1, 2010.  
\* The "domestic companies" category includes the Company.

Number of Employees that Left the Company (April 1, 2009 to March 31, 2010)

		Number of employees that left the Company (people)			Rate of employees leaving the Company (%)		
		Men	Women	Total	Men	Women	Total
Domestic companies (24)	Below 29 years of age	34	1	35	1	0	1
	30–49 years of age	28	8	36	1	3	2
	Above 50 years of age	102	8	110	3	3	3
Subtotal		164	17	181	2	2	2
Overseas companies (15)	Below 29 years of age	118	239	357	10	36	23
	30–49 years of age	53	28	81	4	4	4
	Above 50 years of age	8	0	8	1	0	0
Subtotal		179	267	446	5	13	9
Total		343	284	627	3	8	5

\* The number of employees that left the Company includes the number of those who left the company due to age-limit retirement, personal circumstances, death, and involuntary retirement.  
\* Rate of employees leaving the Company is the percentage of the number of employees who left the Company to the total number of employees.  
\* The number of companies as of April 1, 2010.  
\* The "domestic companies" category includes the Company.

Initiatives toward Diversity

We believe it is necessary for the Group to improve the environment of workplaces in which employees can harness their full potential, in order to accommodate the evolving business circumstances while at the same time continuously growing its business. In view of that, the Group values diversity in both human resources and working ways.

In compliance with relevant laws and regulations in Japan and overseas, JX Nippon Mining & Metals is promoting the reemployment of retirees and the use of women workers' abilities. We have set systems for child rearing, granny volunteer leaves, and improving our workplace environment such that employees can choose the work that most suits their life style.

Reemployment of retirees

The Company is promoting the reemployment of retirees, based on its reemployment program. We expect that the reemployment program will not merely engage retirees in day-to-day duties, but will also enable them to pass on their technological know-how and skills to younger employees as well as contribute to operational management by maintaining and improving safety and quality control.

Status of Rehiring Efforts (JX Nippon Mining & Metals) (April 1, 2009 to March 31, 2009)

The number of age-limit retirees (people)	The number of those reemployed (people)	Reemployment ratio (%)
59	36	61

Creating workplaces where women can play significant roles

The Company aims to create a workplace that empowers female employees to play active and significant roles. As of March 31, 2010, a total of 985 female employees were working at domestic and overseas operating sites in the Group. Of this, approximately 13% occupy managerial positions. JX Nippon Mining & Metals employed 135 female employees, of whom approximately 17% were currently active in managerial roles. Regardless of gender, fair treatment and base pay compensation are strictly controlled.

Work-life balance

The Company believes that measures to help employees achieve a balance between their professional and their family lives are essential.

In fiscal 2009, nine employees used maternity leave and child care leave systems.

Initiatives to employ the physically challenged

We view the creation of a society where the physically challenged can work in accordance with their aptitudes and capabilities as one of our missions. On the other hand, some physically challenged employees left their workplaces due to age-limit retirement. A reduction in the number of physically challenged employees with an increase in the total number of employees consequently brought the employment ratio of the physically challenged to 1.55%. As a result, the Company did not meet the legally required ratio of 1.8% in fiscal 2009. With this situation in mind, we are proactively striving to meet the legally required ratio in fiscal 2010.



Maintaining a Good Relationship between Labor and Management

Labor unions are organized in most domestic affiliated companies of the Group.

Based on mutual trust between management and employees, a sound relationship is maintained. At all regular meetings between representatives of management and a labor union of each company, management discloses details of the business condition of the Company to the union. Also, joint committees on health and safety issues at each company thoroughly discuss causes and other factors involved in any accidents and any necessary remedial measures. The union thus plays an important role as a partner with management.

Moreover, we believe that employees' full understanding

allows the smooth change of the Companies' business lines or organizational structure. For that purpose, after adequate explanation and discussion preliminarily made with sufficient duration, the provisional Labor-Management Council is held to obtain deeper understanding of the labor union, in line with labor agreement.

In fiscal 2009, we held an extraordinary Labor-Management Council to adequately explain and discuss a strategic reorganization plan to gain the understanding of employees.

Furthermore, in fiscal 2009, there were no shutdowns of plants or lockouts caused by strikes or labor-management negotiations.

Labor Union Members (As of March 31, 2010)

		The number of union members (people)			Percentage of labor union members (%)		
		Men	Women	Total	Men	Women	Total
Domestic companies (24)	Below 29 years of age	503	36	539	81	72	77
	30–49 years of age	1,452	166	1,618	78	84	81
	Above 50 years of age	476	25	501	46	37	41
Total		2,431	227	2,658	68	64	66

\* The percentage of labor union members is the ratio of the number of union members to the number of full-time employees.  
\* The number of companies as of April 1, 2010.  
\* The "domestic companies" category includes the Company.





Involvement with Our Employees

Human Resources Development and Personnel Systems

We follow a basic policy of running our business operations with a small number of highly skilled staff. To translate this policy into reality, it is essential to provide education and training programs that will develop the individual skills of each employee. Amidst the rapidly and structurally changing business environment, surviving against competitors in the global marketplace and sustainably growing our business increasingly requires us to vigorously strengthen our human resources, an engine of our business activities.

Currently, the Company is developing and conducting companywide education and training programs based on themes to enhance expertise and improve the judgment of those who work on the manufacturing floor, as well as cultivate strategic thinking among employees. Additionally, we encourage employees to participate in a wide range of education and training programs, including studying at overseas graduate schools or at institutes for foreign language education in Japan as well as self-enlightenment seminars on financial analysis or presentation skills.

Further, we have introduced the “Competency Evaluation Program,” “Performance Evaluation System,” and “Self-Statement System” into our personnel systems. We strive to foster a better working environment by integrating functions to improve communication between the Company and its employees into the personnel systems.

Education and Training Programs Undertaken in Fiscal 2009

(Programs undertaken at JX Nippon Mining & Metals, Nikko Smelting & Refining, and Nikko Environmental Services)

	Managers	General employees	Total
Total hours of programs (annually)	11,796	49,574	61,370
Average hours per employee (annually)	29.34	27.03	27.45

Voice—The Fundamentals of Human Resources Development



Ryo Nagatsu  
General Manager  
Human Resources Dept.

Q: What is the origin of human resources development at JX Nippon Mining & Metals?

A: The origin of our human resources development lies in workplaces for manufacturing.

As a manufacturer, it goes without saying that our primary business is manufacturing. Sales, accounting, purchasing, and human resources management are indispensable to the Company. However, when asked what the origin of

our human resources development is, there can be no other answer—workplaces for manufacturing. Our business originates from mining operations with the motto of “one mine, one family.” We have inherited the tradition of respecting people working at mining and manufacturing workplaces in an unbroken line. This shows that the JX Nippon Mining & Metals Group’s human resources development is attributable to workplaces for manufacturing.

Q: What style of human resources development does the Company employ?

A: Programs of on-the-job training and personnel rotation are our two pillars of human resource development.

The fundamental of our human resources development is a program of on-the-job training (OJT). In addition to implementing OJT in the course of daily operations, we also place an emphasis on personnel rotations. We position planning and implementing job rotations as a key measure for human resources development. Job rotation, with or without relocation, is implemented individually or based on the class of employee. Being vividly aware that each re-deployment of personnel, a main occupation of the Human Resources Department, is considered with the aim of human resources development, we are undertaking our daily transactions.

On the other hand, we think off-the-job training, which is conducted at each major career transition point, is supplementary to the OJT program. Although these trainings are highly effective, particularly in motivating employees and offering further job stimulation, we, in principle, view it as a supplement to OJT. This attitude is based on the concept that the fundamentals of human resources development, as well as issues and solutions to them, should lie on manufacturing floors. Recently, in order to take a long-term perspective toward human resources development, we

re-clarified job classifications and started the individual rotation program based on the newly designed job classifications.

Q: What is necessary for promoting human resources development?  
A: Recruitment is one of the key elements to maintain a working environment where education and training programs can be properly fulfilled.

The presence of newcomers, or so-called “juniors,” awakens other employees to the fact that they are “senior” associates to them. Also, by thinking seriously about how to educate their juniors, the seniors also grow.

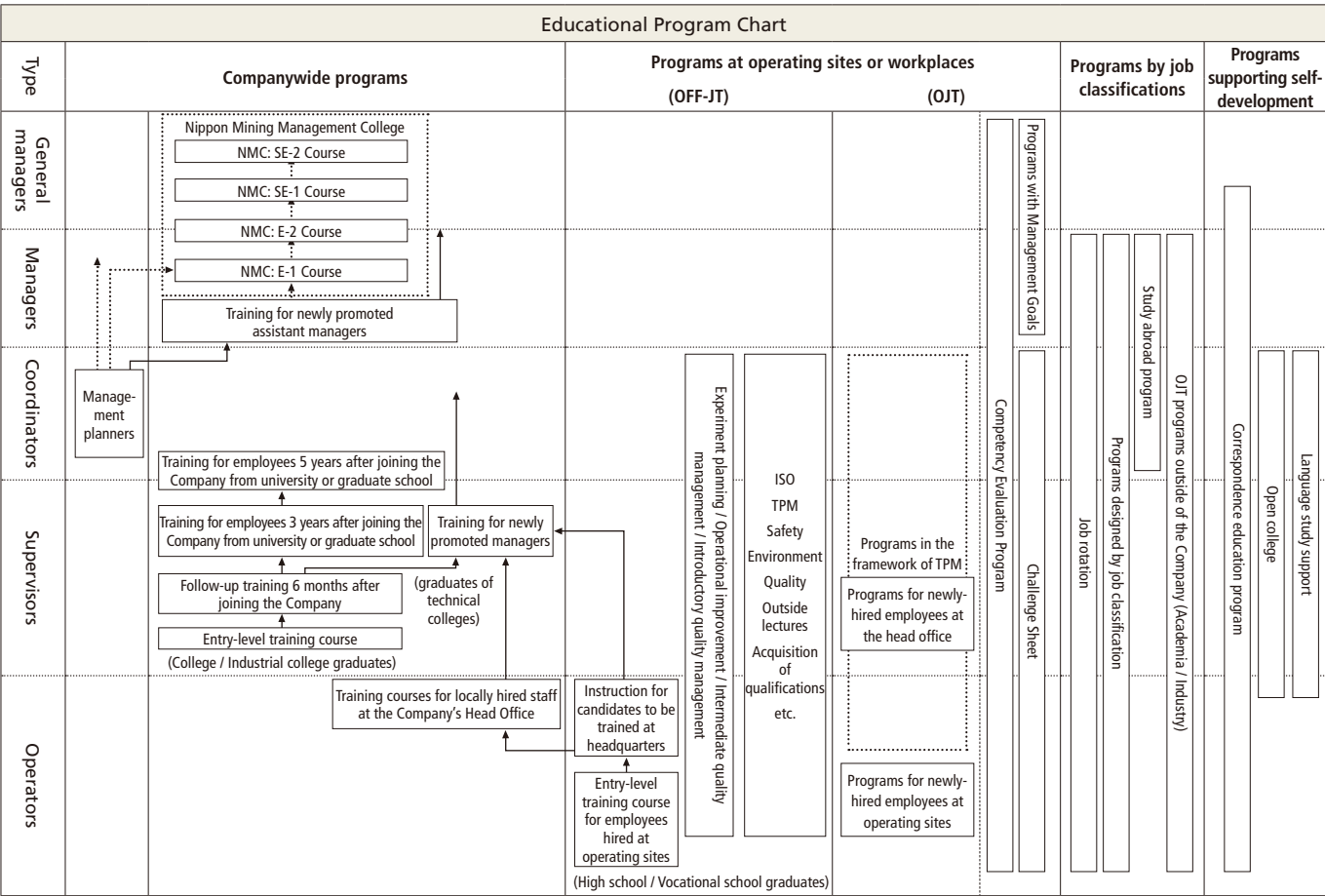
Conversely, those who have educated themselves without support from their seniors are apt to turn to their own juniors and say that you should be your own person. In order to maintain a sound working environment in which proper relationships between seniors and juniors can be formed, it is necessary to continuously recruit the appropriate number of employees. The important thing is to recruit neither too many nor too few. When we adjust the number of recruits in view of the business conditions of the Company, mass hiring in one year may cause no hiring in the subsequent year. Regurgitating random numbers of employees to be hired makes an awkwardly shaped demographic pyramid of employees. Eliminating the influence of the business conditions, we should continually hire a stable number of recruits so that we can avoid such a vicious cycle. In view of human resources development, I eagerly desire to materialize “standardization of recruitment,” which we have failed to accomplish so far over the long history of the Company.

Q: Could you please let us know your enthusiasm regarding future human resources development?  
A: I will promote human resources development based on the concept of respecting people.

Needless to say, the Human Resources Department is working for “human resources.” Among our duties, human resource development is of essence. In preparation for this interview, I looked over the history of the Company. I think human resources development, besides “safety,” could be a part of the Company’s ideology.

And, I intend to work for human resources development, based on the Company’s concept of respecting people.

Our Educational Program in Fiscal 2009



Systematic education and training program for college graduates

For employees who are college graduates, we positioned the first five years after joining the Company as a period for systematic human resources development. During this period, they participate in various education and training programs that help develop specific business skills.



Education and Training Programs Implemented in Fiscal 2009

	Goals
Programs for new employees	1. Understanding the current business conditions and management issues of the Company. 2. Acquiring basic skills requisite to a business person, including business manners, English conversation, financial accounting, etc. 3. Developing a sense of cooperation and community among employees entering the Company at the same time.
Programs at 6 months after joining the Company	1. Looking back on their lives as members of society after entering the Company and examining current issues. 2. Strengthening basic skills requisite to a business person such as communication and presentation.
Programs in the 3rd year after joining the Company	1. Deepening understanding of the current business conditions and management issues of the Company. 2. Acquiring additional business skills such as logical thinking. 3. Understanding role expectations and enhancing motivation.
Programs in the 5th year after joining the Company	1. Enhancing self-advancement problem-solving ability. 2. Acquiring business skills necessary for problem solving such as logical thinking, problem identification, problem resolution, project management, etc. as the final step in the education and training programs for college graduate employees. 3. Logically and systematically implementing issues found in actual operations, and practicing business skills acquired in the programs into actual operations.



Social  
Activities  
Report

Involvement with Our Employees

Enhancing education and training programs by job classification

We have developed a system to promote education and training programs that are headed by executive employees. These programs are designed for the enhancement of specialized skills requisite to professionals in order to carry out their duties. The contents of the programs are considered, and education and trainings are implemented in line with the program by job classification. In this program, individual job rotations are also planned. Periodically revising the contents of the program, we are providing employees with opportunities to work in various job fields, and at the same time enhance the education and training programs for human resources development.

Ensuring appropriate personnel evaluation

To maintain the Group's policy of operating with a small number of highly skilled staff, one of the keys is to create a system that allows individual employees to fully realize their potential and make the best use of their unique abilities. To make this possible, we need to accurately evaluate their abilities. The Company has introduced the "Competency Evaluation Program" based on "competency models" and a performance appraisal system with management goals. The evaluation of the "Competency Evaluation Program" requires each employee to have an interview with his or her supervisor.



Promoting Physical and Mental Health Maintenance

We believe that enhancing and maintaining the physical and mental well-being of employees is important.

Mental health care

We recognize good mental health as a requisite to create a happy life for each employee and his or her family as well as a lively workplace. Taking a broad sense of mental healthcare, a wide range of initiatives, including facilitating communication at workplaces, have been taken.



In July 2008, we implemented the "Mental and Emotional Health Maintenance Plan," and subsequently worked to spread awareness of this plan throughout the Group. Each operating site has launched a system to support employees to maintain good mental health. Some measures involved in this plan cover the families of employees.

The interview is conducted in line with competency items determined by the work that each employee is responsible for and their job position. This program aims to evaluate efforts to produce significant results required in the competency models. Results of the evaluation are taken into consideration in relation to employee promotion. Under the "Performance Evaluation Program," employees set work-related goals at the beginning of each fiscal year. The challenge levels of goals and goal attainment levels are discussed with their supervisors and subsequently evaluated. The results of these evaluations are reflected in employee bonuses. We are willing to enhance fairness of and increase employees' consent degrees to evaluation to their performances and the human resource development program, by appropriately implementing these programs.

"Self-Statement System"

The aim of this system is that the Company identifies each employee's career interests and aspirations, and reflects them in the human resources development programs to the utmost extent. Once a year, looking back at his or her performance, each employee completes and submits the "Self-Statement" sheet, filling in his or her business affairs, skills they would like to improve and business lines they are willing to challenge, and also any private circumstances they want to let the Company know.

- [ Principal Measures ]
- 1. Face-to-face counseling
  - 2. Counseling by means of telephone
  - 3. Mental health training
  - 4. Workplace stress checks



Mental healthcare pamphlet

"Stress Checks" Surveyed at Workplaces of the Company

Number of participants	Approx. 2,700
Parties surveyed	Employees of the Company, contract employees, commission-based employees, short-term employees, temporary employees, employees seconded from other companies, employees from affiliated companies, etc.
Results of the survey	Fed back to individuals, advising individuals to have a mental checkup as necessary, conducting workshops to improve the various working environments, etc.



Health and Safety Activities

JX Nippon Mining & Metals Basic Policy on Health and Safety

We place the highest priority on ensuring the health and safety for all members working at the JX Nippon Mining & Metals Group and thereby strive to create a safe and secure working place.

- 1. We will continuously improve health and safety management levels through the establishment and efficient operation of health and safety management system.
- 2. We will work to identify, eliminate, and reduce hazards and harmful factors in all areas of business operations and to ensure no accidents occur.
- 3. We will work to maintain and improve employees' mental and physical health by ensuring good communication and comfortable working environment
- 4. We will actively provide information and education in order to develop human resources that can act spontaneously and have strong safety competencies.
- 5. We will not only comply with health and safety laws and regulations, but will also establish and observe necessary voluntary standards.

Management Policy on Health and Safety

The Group, acting in line with its Basic Policy on Health and Safety, sets the Management Policy on Health and Safety each fiscal year. The goals and focal measures of the policy in any particular fiscal year are set in view of an analysis of the performance results for health and safety in the previous fiscal year. The Management Policy on Health and Safety for any particular fiscal year should be discussed and approved by the Central Health and Safety Committee, and then promulgated across the Group.

Health and Safety Related Performance in Fiscal 2009\*1

In fiscal 2009, there were no explosions, fires, or occurrences of occupational diseases reported, but there was a rise in the number of accidents. Details regarding health and safety performance are outlined in the table below.

	Category	2007	2008	2009
Safety performance at domestic operating sites*2	Instances of accidents with lost work days and fatal accidents (people)	8	15	15*5
	Instances of accidents without lost work days (people)	13	17	22
	Total (people)	21	32	37
	Frequency rate of industrial accidents*3	0.32	0.61	0.61
	Accident severity rate*3	0.08	0.09	0.01
Health performance at domestic operating sites	Explosions, fires (occurrences)	1	0	0
	Occupational diseases (people)	1*4	0	0
(Reference) Safety performance at overseas operating sites	Instances of accidents with lost work days (people)	7	17	9
	Instances of accidents without lost work days (people)	6	9	10
	Total (people)	13	26	19

\*1. Data on health and safety performance is counted on a calendar year basis.  
\*2. The figures include the performance of related companies and business partners.  
\*3. Both the frequency rate of industrial accidents (the number of casualties caused by occupational accidents per total actual working million hours) and the accident severity rate (the number of work days lost per total actual working thousand hours) were calculated on the base of performances of the Company's employees. (Reference) From January through December 2009, the frequency rate of industrial accidents and the accident severity rate of all businesses in Japan were 1.62 and 0.09, respectively. (Industrial Accident Trend Survey by the Ministry of Health, Labour and Welfare)  
\*4. The occupational disease listed in 2007 was a pulmonary disease caused by dust to be certified as a work-related accident by the relevant labor standards supervision office. We continuously implement measures against pulmonary disease, such as preventing the occurrence of airborne dust, carrying out medical examinations, and providing information and education to the relevant employees.  
\*5. The three fatalities related to the accident that occurred on June 13, 2009, are included.

Significant Accident at the Saganoseki Smelter & Refinery

On June 13, 2009, a significant accident that involved three employees of Nissho Ko-un Co., Ltd., a Group company involved in the transportation of copper concentrate, who passed away of oxygen deficiency occurred at the Saganoseki Smelter & Refinery. In view of the severity of this accident, the Group has been identifying and remedying problems on safety in an expeditious way. The measures for recurrence prevention that we have implemented include improving the management of

the working environment, including reexamination of how oxygen concentration is measured; reviewing the working methods for loading copper concentrate; reinforcing education and training programs to deepen understanding about all laws and regulations related to safety; enhancing emergency response equipment; and developing an emergency-response manual to help prevent secondary disasters, as well as overhauling the safety systems and reexamining the accident prevention measures that we had previously compiled.



Involvement with Our Employees

In February 2010, we invited Mr. Michio Niwa as a guest lecturer, who conducted a special lecture presentation about safety that was entitled “Top managements’ responsibilities for safety control,” targeting the Group’s top management. After the lecture, the President indicated “thorough initiatives to integrate a climate of safety into the Group’s culture.” Currently, these initiatives are eagerly being

Management System for Health and Safety

Health and safety management organizations

The Group has established Health and Safety Committees at each of its domestic operating sites. We have also established the Central Health and Safety Committee as well as the Central Health and Safety Standing Committee at corporate headquarters to monitor health and safety jointly by employees and management so that we can strive to ensure

Committee name	Function	Committee member	Meeting frequency
Central Health and Safety Committee	Reviewing the health and safety performance in the current fiscal year and discussing health and safety management policies for the next fiscal year	Committee members from both management and the labor union (representatives from corporate headquarters and operating bases)	Once every year
Central Health and Safety Standing Committee	Discussing and reporting issues commissioned from the Central Health and Safety Committee (Discussing and reporting issues associated with identifying the causes of disasters and preventing reoccurrence)	Committee members from both management and the labor union (representatives of corporate headquarters)	Five times every year
Health and Safety Committees at Operating Sites	Discussing and reporting issues concerning health and safety at each operating site	Committee members from both management and the labor union—representatives of affiliates/business partners attend when necessary.	Once every month
Corporate Supervisors’ Meeting on Health and Safety	Reviewing measures for health and safety at each operating base, showing cases of each operating site’s activity, and exchanging opinions	Health and safety supervisors at the operating sites of the Group	Twice every year
Labor–Management Joint Monitoring on Health and Safety	Monitoring the status of health and safety management at the operating sites, and exchanging opinions on problems and improvement measures	Members of the Central Health & Safety Standing Committee	Once every year

Establishing and operating an occupational health and safety management system

The Basic Policy on Health and Safety of the Group stipulates the establishment and efficient implementation of occupational health and safety management systems. The operating sites listed in the table below have obtained OHSAS 18001.

Fiscal year certification obtained	Operating site
Fiscal 2006	Hibi Smelter, Pan Pacific Copper Co., Ltd. (Including Tamano Smelter, Hibi Kyodo Smelting Co., Ltd., Sankin Hibi Harbor Transportation Co., Ltd.)
Fiscal 2008	Hitachi Area Coordination Center (Including Shirogane Works, HMC Works, Hitachi Fabricating Works Technology Development Center, Hitachi Works, Pan Pacific Copper Co., Ltd., Nikko Environmental Services Co., Ltd., Hitachi Area Coordination Center, Nikko Foundry Co., Ltd. HMC Works all obtained certification via extension audit in January 2010), Kurami Works (Including Nikko Coil Center Co., Ltd., Kurami Office, Nikko Shoji Co., Ltd.), Saganoseki Smelter & Refinery, Pan Pacific Copper Co., Ltd. (Including Japan Copper Casting Co., Ltd., Nissho Ko-un Co., Ltd., Nikko Plant Saganoseki Co., Ltd.), Nikko Metals Taiwan Co., Ltd. (Bade Works)
Fiscal 2009	Isohara Works (Including Nikko Foundry Co., Ltd., Isohara Administration Office), Toda Works, Tomakomai Chemical Co., Ltd., Nikko Mikkaichi Recycle Co., Ltd., Nikko Tsuruga Recycle Co., Ltd., Isohara Fabricating Works, Gould Electronics GmbH

Safety audits

The Group aims to eliminate disasters and accidents through audits conducted by the environment safety audit team, working directly under the CEO. Operating sites and business partners are subject to the audit. In principle, the audit

Compliance with Laws and Regulations

The Group has introduced a legal and regulatory monitoring system for the purpose of gathering accurate information on revisions made to relevant laws and regulations regarding health, safety, and the environment, and appropriately responding to the revisions. Upon receipt of the latest information on regulatory revisions each week, we compile

implemented across the Group.

Moreover, we advocate “promoting elimination of significant accidents” in the Management Policy on Health and Safety for Fiscal 2010. With strong determination, we are working together to enhance health and safety management activities in the Group.

safety and promote the health management of employees including those of our related companies and business partners. Moreover, we convene the Corporate Supervisors’ Meeting on Health and Safety that is attended by representatives of domestic operating sites of the Group to discuss and share information about health and safety measures.

is conducted once every year. The problems identified are reported to top management and then passed to each operating site to elicit improvement. The subsequent status of implementation is reviewed later.

explanatory materials regarding important points in relation to the revisions and manuals on how to respond to these revisions. We distribute these materials to all operating sites so that they can understand the points and comply with the relevant laws and regulations without fail.

Involvement with Local Communities

Regional

Communication with Local Communities

In this section, we will introduce examples of communication with local communities in fiscal 2009.

Participation in regional organizations (Fiscal 2009)

The Company participates in chambers of commerce and other such organizations in all regions in which it has operating sites (Tomakomai, Kitaibaraki, Hitachi, Kurobe, Tsuruga, Tokyo, Samukawa, Tamano, Oita, Makurazaki, the Philip-

pines, Freiburg (Germany), etc.). Further, it is a member of the organizations listed below, and participates in regular meetings (Executive Committee) and various other committees. Through these and other initiatives, we are actively participating in regional organizations.

Organization (Other)	Participating operating site / Group company (Position with the organization)
Industrial Waste Association (Hokkaido, Toyama, Ibaraki, Fukui, Osaka)	Tomakomai Chemical Co., Ltd. (Executive Secretary), Nikko Mikkaichi Recycle Co., Ltd., Nikko Environmental Services Co., Ltd., Nikko Tsuruga Recycle Co., Ltd. (Director), Nikko Shoji Co., Ltd.
The Foundation For The Advancement of Industrial Technology In Dohoh Area	Tomakomai Chemical Co., Ltd. (Councilor)
Kitaibaraki-shi Boka-Kanri-Kyogikai (Fire Protection and Control Council of Kitaibaraki)	Isohara Works (Director)
Takahagi-chiku Koyo Taisaku Kyogikai (an association for employment measures in Takahagi District)	Isohara Works (Director)
Hitachi-roudoukijunkyoikai (an organization to provide information about labor regulations, industrial accidents, and others)	Hitachi Area Coordination Center
Hitachi Traffic Safety Association	Hitachi Area Coordination Center
Kurobe Water Resource Management Committee	Nikko Mikkaichi Recycle Co., Ltd. (Director)
Kurobe Industrial District Support Organization	Kurobe Nikko Galva Co., Ltd.
Reinan Environmental Conservation Organization	Nikko Tsuruga Recycle Co., Ltd. (Chairman)
Tsuruga Mikata Association for Safety of Hazardous Materials	Nikko Tsuruga Recycle Co., Ltd. (Vice Chairman)
Samukawa Hazardous Substance Safety Association	Kurami Works (Vice Chairman)
Tamono-shibu (Tamano branch division), Japan Coast Guard Association	Hibi Kyodo Smelting Co., Ltd. (Assistant Branch Manager)

\* The above is an abbreviated list of organization membership.

Organization (Other)	Participating operating site / Group company (Position with the organization)
Tamano Traffic Safety Association	Hibi Kyodo Smelting Co., Ltd. (Director)
Saganoseki Machidukuri Kyogikai (Council for Revitalization of Saganoseki)	Saganoseki Smelter & Refinery, Pan Pacific Copper Co., Ltd. (Vice Chairman)
Saganoseki Donation Allocation Intermediately Association	Saganoseki Smelter & Refinery, Pan Pacific Copper Co., Ltd. (Vice Chairman)
Kyushu-chihou Kouzan-kai (Mining Association of Kyushu-district)	Saganoseki Smelter & Refinery, Pan Pacific Copper Co., Ltd. (Chairman), Kasuga Mines Co., Ltd. (Director)
Oita Labour Standards Association	Nissho Ko-un Co., Ltd.
Waigaoqiao Free Trade Zone Industrial Association	Nikko Metals Shanghai Co., Ltd.
Suzhou Foreign Business Association	Nippon Mining & Metals (Suzhou) Co., Ltd. (Standing Director)
Suzhou Nissho Club	Nippon Mining & Metals (Suzhou) Co., Ltd.
Association of Enterprises with Foreign Investment, Changzhou City	Changzhou Jinyuan Copper Co., Ltd.
Wuxi Foreign Investors Industrial Association	Nikko Fuji Precision (Wuxi) Co., Ltd.
Dongwan Hongmeizhen Support Association	Nikko Fuji Electronics Dongguan Co., Ltd.
Taoyuan Waste Committee	Nikko Metals Taiwan Co., Ltd.
The Japanese Association, Manila, Inc.	Nikko Metals Philippines, Inc.
Laguna Industrial District Organization	Nikko Metals Philippines, Inc.
Japan Business Association of Arizona	Nikko Metals USA, Inc. (Director)

Responding to complaints

The Company responds earnestly to any complaints it receives from local communities. And, it makes sincere efforts to rectify the situation by working to quickly assess the situation and develop necessary improvement measures.

The complaints received in fiscal 2009 are recorded in the table below. In all cases, the Company responded quickly and took appropriate corrective measures. Going forward, we will redouble our efforts to prevent such complaints from arising in the future.

Operating site	Complaint	Response measure	Future improvements, etc.
Hitachi Area Coordination Center	Noise pollution	The Ag oxidation furnace burners continuously emitted a shrilling noise due to their slant. In addition to reinforcing the fixtures that keep these burners in place, we improved the noise insulation of the building.	The budget is being assembled to improve the mouths of the burners and upgrade to new quiet-running burners.
Kurami Works	Noise pollution	We evaluated the noise pollution in the area bordering the plant’s grounds and investigated possible measures to reduce it. We explained the results of these investigations to the issuer of the complaint.	We will continue working to reduce noise pollution. Also, we will pursue active communication with members of the local community in order to gain their understanding in regard to our operations.

Involvement with Local Communities

Examples of communication with local communities

Implementation of Plant Tours, Etc. (Fiscal 2009)

Operating site	Initiative	Target group (Organization)	Period of implementation (Fiscal 2009)	Number of participants
Hitachi Area Coordination Center	Plant tour	Students from ASEAN countries, China, and Korea	March 2010	Approximately 30
Tomakomai Chemical Co., Ltd.	Plant tour	Students from local technical schools	July and August	Approximately 70
Nikko Mikkaichi Recycle Co., Ltd.	Plant tour	KAMIICHI Manufacturing & Industrial Association (Toyama Prefecture)	November	Approximately 20
Kurobe Nikko Galva Co., Ltd.	Plant tour	Members of the local community	August	Approximately 50
		Local junior high schools	October	6
Nikko Tsuruga Recycle Co., Ltd.	Plant tour	Asahi Commerce and Industry Association (Toyama Prefecture)	March 2010	Approximately 10
		Tsuruga Togo District Farmers Association (Fukui Prefecture)	November	Approximately 10
Hibi Smelter, Pan Pacific Copper Co., Ltd., Hibi Kyodo Smelting Co., Ltd.	Plant tour	Local high schools	May and June	Approximately 80
		The Tamano Chamber of Commerce & Industry	November	Approximately 40
Saganoseki Smelter & Refinery, Pan Pacific Copper Co., Ltd.	Plant tour	The Oita Chamber of Commerce & Industry	September	Approximately 20
		Kensei Fureai Talk	November	Approximately 10
Nikko Metals Philippines, Inc.	Plant tour	De La Salle University	April 2009 and March 2010	Approximately 10

Plant tour (Kurobe Nikko Galva Co., Ltd.)



Asahi Commerce and Industry Association



Program organized by the city in which children visit local companies

Convivial Events (Summer festivals and other events to which members of the community were invited, fiscal 2009)

Operating site	Event details, participants, etc.
Hitachi Area Coordination Center	• Conducted an outdoor event held as a part of the “Sanjin-sai” summer festival held on company grounds and a martial arts tournament held in the Nikko Shido Kan (Held annually in July, approx. 2,000 participants)
Kurami Works	• Conducted “Hazuki-sai” summer festival held on the company ground (Held annually in August, approx. 7,000 participants) • Participated in the “Shinko-sai” festival (Held annually in September, approx. 300 participants): The company participated in a festival held at the local Kurami Shrine. Part of the plant is opened to visitors and employees participated in “carrying a mikoshi,” a traditional Japanese festival event.
Toda Works	• Participated in a summer festival sponsored by Japan Energy Corporation of the JX Nippon Mining & Metals Group at its Toda Administration Office (Held annually in August, approx. 900 participants)
Nikko Tsuruga Recycle Co., Ltd.	• Held firefly viewing event in cooperation with the local NPO Aqua Sangha (June, approx. 20 participants)
Hibi Smelter, Pan Pacific Copper Co., Ltd., Hibi Kyodo Smelting Co., Ltd.	• Participated in the Hibi District Autumnal Festival of the Hibi District of Tamano City, Okayama Prefecture (October, approx. 150 participants)
Saganoseki Smelter & Refinery, Pan Pacific Copper Co., Ltd.	• Participated in the “Seki no Tai-tsuru Odori Taikai” festival (Held annually in September, approximately 40 participants)
Kasuga Mines Co., Ltd.	• Held the “Sanjin-sai” festival (Held annually in October, approx. 30 participants)
Nikko Metals USA, Inc.	• Participated in the Japan Business Association of Arizona’s New Year’s Party (January 2009, approx. 150 participants)



Sanjin-sai (Hitachi Area Coordination Center)



Shinko-sai (Kurami Works)



Hibi District Autumnal Festival (Hibi Smelter, Pan Pacific Copper Co., Ltd., Hibi Kyodo Smelting Co., Ltd.)

Contributions to local communities

In addition to contributing to society through its business activities, the Group acts in accordance with its Code of Conduct and engages in social contribution activities geared toward helping develop and enrich local communities, while also building harmony with these communities. The Group engages in a variety of activities including cleanup activities as well as crime prevention activities and disaster preparedness

drills. Through these activities, we are promoting continuous communication and interaction with members of the local community, as well as developing mutual understanding and friendship.

Major contribution activities in fiscal 2009 toward local communities in areas where Group operations are located are listed in the table below.

Local Cleanup Activities (Fiscal 2009)

Operating site	Activity details
Isohara Works	• Participated in a beautification campaign sponsored by Kitaibaraki City (Ibaraki Prefecture) and cleaned such areas as the coast of Isohara (May and July, approx. 280 participants). • Organized a beautification campaign and cleaned the area around the plant (Conducted 4 times in fiscal 2009, approx. 250 participants).
Hitachi Area Coordination Center	• Participated in cleanup activities of the Miyadagawa River in Hitachi City (June and December, approx. 100 participants).
Toda Works	• Participated in “Operation Clean and Green Toda District” and cleaned the area around the plant (June and October, approx. 20 participants each time).
Kurami Works	• Participated in the Sagami River Clean Campaign (May, approx. 50 participants). Participated in a beautification campaign organized by Samukawa City (Kanagawa Prefecture) to clean the riverbed of the Sagami River, which flows through the area.
Tomakomai Chemical Co., Ltd.	• Participated in cleanup activities sponsored by Tomakomai City (April and October, approx. 20 participants). • Conducted autonomous cleanup activities around the plant (August, 6 participants).
Nikko Tsuruga Recycle Co., Ltd.	• Participated in “Operation Cleanup Fukui” sponsored by Tsuruga City in Fukui Prefecture (4 times a year, approx. 30 participants each time). Participated in various cleanup activities including the cleanup of the Kehi-No-Matsubara Beach, weeding and trash collection along the public roads in front of the company, cleanup of the rivers within company grounds, and cleanup of the rivers and farm roads behind the company. • Collected illegally dumped garbage along the levees of the Kinomegawa River (February 2010, approx. 20 participants).
Hibi Smelter, Pan Pacific Copper Co., Ltd., Hibi Kyodo Smelting Co., Ltd.	• Conducted bi-monthly cleanup activities of the roads and sidewalks around the plant (Approx. 10 participants each time). • Participated in cleanup activities of the coast of Shibukawa (June, approx. 30 participants). * The coast of Shibukawa is a specially designated area of the Setonaikai National Park. The Pan Pacific Copper Hibi Kyodo Smelter and Hibi Kyodo Smelting Co., Ltd. are located on an area of land bordering the coast that is approximately 789,517 m².
Saganoseki Smelter & Refinery, Pan Pacific Copper Co., Ltd.	• Conducted cleanup activities of the public roads adjacent to the smelter (Once a month, approx. 30 participants each time).
Kasuga Mines Co., Ltd.	• Participated in volunteer activities in the local community (Cleanup of the port, mowing grass along public roads, and cleanup of the coast on Marine Day).
Nippon Mining & Metals (Suzhou) Co., Ltd.	• Conducted monthly cleanup activities of the area around the plant (Approx. 200 participants each time).
Nikko Metals Philippines, Inc.	• Participated in cleanup activities along the shore of Laguna de Bay (April, approx. 10 participants).
Nippon Precision Technology (Malaysia) Sdn. Bhd.	• Conducted cleanup activities of the area around the plant (January 2010, approx. 120 participants).



Cleanup activities of the riverbed of the Sagami River (Kurami Works)



Cleanup activities in the area neighboring the plant (Tomakomai Chemical Co., Ltd.)



Cleanup activities of the Kehi-No-Matsubara Beach (Nikko Tsuruga Recycle Co., Ltd.)



Cleanup activities along the shore of Laguna de Bay (Nikko Metals Philippines, Inc.)

Crime Prevention and Disaster Preparedness Drills (Fiscal 2009)

Operating site	Activity details
Toda Works	• Participated in the Toda City Fire Fighting Olympics (November, 2 participants).
Kurami Works	• Conducted disaster preparedness drills (October, approx. 150 participants).
Tomakomai Chemical Co., Ltd.	• Conducted disaster preparedness drills (November, approx. 70 participants).
Nikko Tsuruga Recycle Co., Ltd.	• Conducted emergency response drills (July, approx. 50 participants).
Saganoseki Smelter & Refinery, Pan Pacific Copper Co., Ltd.	• Conducted crime prevention patrols as part of the Saganoseki Donation Allocation Committee’s Umineko-Tai, a local patrol team (Once a month, 8 participants each time).
	• Conducted disaster preparedness drills (September, approx. 150 participants).
	• Conducted autonomous gate-front high-pressure gas training (March 2010, approx. 20 participants).
Nikko Fuji Electronics Dongguan Co., Ltd.	• Conducted firefighting education and training program for employees (November, approx. 270 participants).
Nikko Metals Philippines, Inc.	• Participated in the LTA Fire Fighting Olympics (March 2010, 13 participants).
Nippon Precision Technology (Malaysia) Sdn. Bhd.	• Conducted disaster preparedness drills (December, approx. 20 participants).



Involvement with Local Communities



Disaster preparedness drills (Kurami Works)



Blood drive (Nikko Metals Philippines, Inc.)



Disaster preparedness drills (Nippon Precision Technology (Malaysia) Sdn. Bhd.)

Traffic Safety and Blood Drive Activities (Fiscal 2009)

Operating site	Activity details
Isohara Works	• Conducted monthly traffic safety activities (Approx. 150 participants). • Conducted blood drives (November 2009 and March 2010, approx. 100 participants).
Hitachi Area Coordination Center	• Organized road traffic safety volunteers on a monthly basis (Approx. 20 participants each time). • Participated in events sponsored by the Hitachi Traffic Safety Association (5 times a year, approx. 50 participants each time). • Conducted blood drives (2 times a year, approx. 80 participants).
Toda Works	• Conducted blood drives (2 times a year, approx. 5 participants each time).
Kurami Works	• Conducted road traffic safety lectures (December, approx. 100 participants). • Conducted blood drives (November, approx. 30 participants).
Tomakomai Chemical Co., Ltd.	• Participated in road traffic safety lectures conducted by local municipal bodies responsible for traffic safety and the police (May, approx. 60 participants). • Participated in road traffic safety rallies organized by local municipal bodies responsible for traffic safety (July–November, approx. 60 participants).
Nikko Tsuruga Recycle Co., Ltd.	• Participated in traffic safety activities organized by residents of the prefecture (4 times in the year, 3 participants each time).
Hibi Smelter, Pan Pacific Copper Co., Ltd., Hibi Kyodo Smelting Co., Ltd.	• Conducted blood drives (2 times a year, approx. 80 participants).
Saganoseki Smelter & Refinery, Pan Pacific Copper Co., Ltd.	• Conducted monthly “Yamabiko Undo” traffic safety awareness activities (Approx. 20 participants each time). • Conducted blood drives (2 times a year, approx. 80 participants).
Nikko Metals Philippines, Inc.	• Conducted blood drives (4 times a year, approx. 90 participants). • Participated in flood relief activities (September and October, the majority of employees made donations).
Nippon Precision Technology (Malaysia) Sdn. Bhd.	• Visited facilities for people with disabilities in the local community (October, 4 participants).

Opening of company facilities

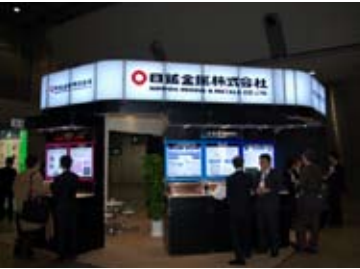
The Group opens a number of its facilities to the public, such as the grounds, at principal operating sites and affiliated companies. These facilities are used throughout the year to hold a wide variety of events. Examples of opening facilities to the public are listed in the table below.

Operating site	Facility	Activity details
Isohara Works	Parking lot of company dormitory	Provided an area for children’s events to be held.
Hitachi Area Coordination Center	Nikko Shido Kan	Provided a place for children as well as junior high school and high school kyudo (Japanese archery) and kendo teams (Japanese fencing) to practice.
Kurami Works	Company grounds	Provided an area for baseball tournaments to be held.
Nikko Mikkaichi Recycle Co., Ltd.	Company grounds	Provided an area for local firefighters to train.
Hibi Smelter, Pan Pacific Copper Co., Ltd., Hibi Kyodo Smelting Co., Ltd.	E-No-Hara Grounds	Provided an area for baseball and softball tournaments to be held.
	Kyohi Gymnasium	Provided an area for sports tournaments to be held (volleyball, badminton, kendo, etc.).
	Idle land on grounds of company dormitory	Provided a space for local residents to park their cars as part of typhoon and flood tide countermeasures.
Saganoseki Smelter & Refinery, Pan Pacific Copper Co., Ltd.	Osuiki Baseball Field	Provided an area for baseball tournaments to be held.
	Fujiu Grounds	Provided an area for Ground Golf tournaments to be held.
Kasuga Mines Co., Ltd.	Grounds of company dormitory	Provided an area to practice golf.

Principal Displays in Exhibitions (Fiscal 2009)

Related Group company	Activity details
Nippon Mining & Metals Co., Ltd.	• Displayed various manufactured products such as treated rolled copper foil, electro-deposited copper foil, and copper foil for lithium-ion batteries at JPCA Show 2009 (June). • Displayed treated rolled copper foil, electro-deposited copper foil, surface treatment agents, etc. at TPCA Show 2009, sponsored by the Taiwan Printed Circuit Association (October). • Displayed ITO targets and IGZO targets at FPD International 2009 (October). • Displayed various sputtering targets for semiconductors, 450mm-diameter polycrystalline silicon wafers, the electro-less Under Bump Metallurgy (UBM) formation service, super high-purity copper sulfate, etc. at SEMI-CON Japan 2009 (December). • Participated in NEPCON WORLD JAPAN 2010 (January 2010). 1. IC Packaging Technology Expo: Displayed the electroless tin-plating process, super high-purity copper sulfate, functional surface treatment agents, etc. 2. EV & HEV Drive System Technology Expo: Displayed NMC cathode materials, the world’s thinnest treated rolled copper foil (6μm), materials for automotive connectors, etc. • Displayed various sputtering targets, etc. at SEMICON Korea 2010 (February 2010).
Tomakomai Chemical Co., Ltd.	• Participated in the Hokkaido Technical Information & Business Exchange Fair (Business EXPO) (November).
Nikko Mikkaichi Recycle Co., Ltd., Kurobe Nikko Galva Co., Ltd.	• Participated in “Kurobe Fair 2009,” hosted by Kurobe City and the Kurobe City Chamber of Commerce and Industry (August).
Nikko Tsuruga Recycle Co., Ltd.	• Participated in the “Tsuruga City Environmental Forum,” hosted by the Tsuruga Kankyo Mirai Network of Tsuruga City (February).
Nikko Art & Craft Co., Ltd.	• Displayed and sold jewelry, precious metals, and arts and crafts at the Industrial Culture Festival of Saganoseki, Oita City (November).
Nikko Metals Taiwan Co., Ltd.	• Displayed ITO sputtering targets at Display Taiwan 2009 and introduced the newly developed UHD-IV grade targets (June). • Displayed various sputtering targets, 450mm-diameter polycrystalline silicon wafers and wafers for handling tests, etc. at SEMICON Taiwan 2009 (September and October).

\* Company names are their names during fiscal 2009.



NEPCON WORLD JAPAN 2010



“Tsuruga City Environmental Forum”



FDP International 2009

Donations to Local Communities, Etc. (Fiscal 2009)

Receiving organization	Number of donations	Amount (thousands of yen)
1. Local public organizations (Including schools and hospitals)	6	4,070
2. Other regional organizations (Festivals, events, municipal councils, etc.)	76	5,813
3. Non-profit foundations, corporations, charities, etc.	33	29,517
Total	115	39,400

\* Donations through the matching gift program described below are excluded.  
\* Total donations made by the Group were ¥0.05 billion (page 56).  
\* Donations from overseas affiliated companies are translated into Japanese yen using the average exchange rate for fiscal 2009.

Matching gift program

In fiscal 2009, the Company implemented a matching gift program in which donations collected from executives and employees were matched in amount by the Company. These donations were used to support victims of flooding in Manila (the Philippines) and earthquakes in both Sumatra (Indonesia) and Haiti. Details about these donations are outlined in the table on the right.

Donations amount	Matching gift amount	Total
760	760	1,520

(Thousands of yen)

Involvement with Local Communities

Awards received from external organizations

In fiscal 2009, the Group received a wide variety of awards from public and industry organizations in the various regions in which it operates. Details about these awards are outlined in the table below.

Public and Industrial Organizations, Etc.

Operating site	Organization	Award details	Reason
Isohara Works	Takahagi-chiku Koyo Taisaku Kyogikai (an association for employment measures in Takahagi District), Hitachi-roudoukijunkyokai (an organization to provide information about labor regulations, industrial accidents, and others)	Superior Employee Award	Received for contributing to the development of the plant (Target group for award: managers)
	Hitachi-roudoukijunkyokai (an organization to provide information about labor regulations, industrial accidents, and others)	Superior Employee Award	Received by employees who have served a long term of continued service (those that set a good example for other employees)
Hitachi Area Coordination Center	Hitachi-shi Bosai Kyokai (an association of disaster prevention in Hitachi City)	Superior Employee Award	Received by employees who set a good example for other employees and have three or more years experience handling hazardous substances and managing fire prevention initiatives
	Japan Crane Association	Superior Crane Operator	Received by crane operators that have achieved significant results in promoting accident prevention and improving their operation of cranes, etc.
	Japan Copper and Brass Association	Superior Employee Award	Received by employees who possess a rich wealth of knowledge and technical skills (those that set a good example for other employees)
Kurami Works	Japan Copper and Brass Association	Superior Employee Award	Received by employees who have served a long term of continued service (those that set a good example for other employees)
Tomakomai Chemical Co., Ltd.	Tomakomai Chamber of Commerce and Industry	Employee Award for Long-term Continued Service	Received by employees who have served a long term of continued service (those that set a good example for other employees)
Nikko Tsuruga Recycle Co., Ltd.	Fukui Measurement Association	Letter of Appreciation	Received for contributing to improved organizational performance over the course of many years
	Fukui Prefecture Labor Standards Association, Reinan Branch	Employee Award for Superior Health and Safety	Received for implementing health and safety management initiatives and improving the standards for workplace health and safety over the course of many years
Hibi Smelter, Pan Pacific Copper Co., Ltd., Hibi Kyodo Smelting Co., Ltd.	Marine Rescue Japan	Letter of Appreciation	Received for collecting donations through donation-based vending machines placed at three locations within the plant
Saganoseki Smelter & Refinery, Pan Pacific Copper Co., Ltd.	Sulfuric Acid Association of Japan	Sulfuric Acid Award	Received for contributing to the sulfuric acid industry by advancing and developing sulfuric acid production processes over the course of many years
	The Japan Society for Analytical Chemistry	Merit Award	Received for contributing to the advancement of the analytical industry over the course of many years
	Japan Boiler Association	Japan Boiler Association Branch Head's Award	Received for the stable and safe operation of boilers
Kasuga Mines Co., Ltd.	Makurazaki Chamber of Commerce and Industry	Makurazaki Mayor's Award	Received by superior employees (those that set a good example for other employees)
Changzhou Jinyuan Copper Co., Ltd.	Changzhou Municipal People's Government	Four-star Corporation	Received for the company's superior performance (sales and income)
	Tian Ning Qu Municipal People's Government	Excellent Tax Paying Industrial Corporation	Received for contributing to the local community through the payment of taxes
	Changzhou City Labor-Society Security Board	Reliable Corporation for Labor Safety	Received for ensuring the safety of employees
Nikko Fuji Electronics Dongguan Co., Ltd.	Dongguan Municipal People's Government	Reliable Corporation for Payment of Taxes	Received for contributing to the local community through the payment of taxes

Environmental

Operating site	Organization	Award details	Reference
Tomakomai Chemical Co., Ltd.	Tomakomai Association for Safety of Hazardous Materials, Hokkaido Association for Safety of Hazardous Materials	Superior Hazardous Material Handler	Working to prevent accidents by complying with laws and regulations pertaining to hazardous materials and properly handling hazardous substances
Saganoseki Smelter & Refinery, Pan Pacific Copper Co., Ltd.	Oita Disaster Prevention Association	Award for Distinguished Management of the Safety of Hazardous Materials	Contributing to the maintenance and management of fire and disaster prevention activities and hazardous material safety facilities
Nikko Metals Philippines, Inc.	Philippine Economic Zone Authority (PEZA)	Outstanding Environmental Performer Award	Reducing NOx and SOx emissions by shifting certain plants from in-house power generation using heavy crude oil to purchase energy from power companies
	Philippine Department of Energy (DOE)	Award for Energy Saving Initiatives	Reducing energy consumption by decreasing use of heavy crude oil by 5% year on year

The fact that various day-to-day activities have been highly evaluated will serve as a driving force behind future efforts to develop our operations. Going forward, we will work to ensure the continuation of these activities.

Industry Organizations Participated in by Group Companies (Abbreviated list for fiscal 2009)

Organization	Participating Group company (Position with the organization)
Japan Mining Industry Association	Nippon Mining & Metals Co., Ltd. (Council Member), Kasuga Mines Co., Ltd., Nikko Exploration and Development Co., Ltd., Pan Pacific Copper Co., Ltd. (Director), Hibi Kyodo Smelting Co., Ltd. (Director), Nikko Logistics Partners Co., Ltd.
International Council on Mining & Metals (ICMM)	Nippon Mining & Metals Co., Ltd.
International Copper Association (ICA)	Pan Pacific Copper Co., Ltd.
Mining Safety and Health Association, Japan	Kasuga Mines Co., Ltd.
SHIGEN SOZAI GAKKAI	Nippon Mining & Metals Co., Ltd., Hibi Kyodo Smelting Co., Ltd. (Regular Member)
Japan Society of Newer Metals	Nippon Mining & Metals Co., Ltd.
The Japan Institute of Metals	Nippon Mining & Metals Co., Ltd.
The Japan Society of Applied Physics	Nippon Mining & Metals Co., Ltd.
Japan Institute of Electronics Packaging	Nippon Mining & Metals Co., Ltd.
Copper Foil Industries Associations	Nippon Mining & Metals Co., Ltd.
Japan Powder Metallurgy Association	Nippon Mining & Metals Co., Ltd.
The Japan Society for Analytical Chemistry	Nippon Mining & Metals Co., Ltd.
Japan Copper and Brass Association	Nippon Mining & Metals Co., Ltd.
Japan Catalyst Recovering Association	Nippon Mining & Metals Co., Ltd.
The Society of Resource Geology	Nippon Mining & Metals Co., Ltd., Nikko Exploration and Development Co., Ltd.
Sulfuric Acid Association of Japan	Pan Pacific Copper Co., Ltd., Tomakomai Chemical Co., Ltd. (Director), Hibi Kyodo Smelting Co., Ltd. (Director)
Hokuriku Electric Association	Nikko Mikkaichi Recycle Co., Ltd.
Japan Galvanizers Association	Kurobe Nikko Galva Co., Ltd.
Japan Plating Suppliers Association	Nikko Shoji Co., Ltd.
Japan Federation of Coastal Shipping Associations	Nippon Marine Co., Ltd. (Special IMO Related Committee Member, etc.)
The Japanese Shipowners' Association	Nippon Marine Co., Ltd. (Costal Shipping Committee Member, etc.)
Japan-Peru Business Committee	Pan Pacific Copper Co., Ltd.
Korea Display Industry Association	Nikko Metals Korea Co., Ltd.
China Non-ferrous Metals Industry Association	Changzhou Jinyuan Copper Co., Ltd.
Association of German PCB Manufacturers	Gould Electronics GmbH

\* Company names are their names during fiscal 2009.

Social Contribution

Activities in Domestic and International Societies

Afforestation and reforestation activities at the sites of closed mines

With the aim of protecting the environment and preserving biodiversity, the Group is conducting afforestation and reforestation activities at closed mines. In fiscal 2008, a five-year afforestation project was commenced at the site of the closed Oe Mine in Yoichi County, Hokkaido. This project is being conducted in cooperation with the local forestry union.

Further, with a change in management systems, the Company took over the afforestation activities that were previously conducted by Japan Energy Corporation (currently JX Nippon Oil & Energy Corporation) at the sites of the closed



Site of the Kameda Mine

Kameda Mine, in Hakodate, Hokkaido, and the Takatama Mine, in Koriyama, Fukushima Prefecture, and will conduct them from fiscal 2010.

Participating in reforestation at Kurakake Mountain

Approximately 500 trees of different varieties, including Oshimazakura cherry and Japanese mountain cherry, were planted on Kurakake Mountain, adjacent to the Hitachi Area Coordination Center, during the Meiji and Taisho periods. Since fiscal 2008, reforestation activities on this mountain have been carried out under the supervision of the Kurakake Mountain Cherry Tree 100-Year Committee, an organization formed by the city of Hitachi. Employees of the Hitachi Area Coordination Center have been regularly volunteering in these activities.

In fiscal 2009, the reforestation activities were conducted in mid-November and approximately 150 people participated in them. About 30 employees of the Hitachi Area Coordination Center took part in these activities, to clean the hiking tracks, remove and chop up fallen wood, and cut long grass.

The city of Hitachi intends to establish the mountain as a place for people to relax as well as a site for children to observe nature, experience the forest, and learn about the



Involvement with Local Communities

environment. To this end, the government and citizens of Hitachi, as well as companies located there, will work together to continue conducting reforestation activities going forward.



Reforestation activities at Kurakake Mountain

Supporting the activities of NPO 2050—Increasing the status and quality of life of women in developing nations

NPO 2050 is an organization that tackles such global problems as rapid population growth, poverty, environmental destruction, as well as HIV/AIDS. It believes one of the keys to solving these problems is to increase the status and quality of life of women in developing countries. Accordingly, the organization is currently undertaking projects in various Asian countries to help women in poor families to become more self-reliant through establishing educational funds and conducting agricultural instruction. The Company agrees with the organization's activities to support approximately 120 women in five southwest Asian countries to study at high schools and colleges.



Scholarship students from Guizhou Province, China



Scholarship students from Bangladesh

Concluding a basic agreement to participate in the "Ryu-ju Satoyama" Reforestation Project

On July 24, 2009, the Company concluded an agreement with the city of Nanyo in Yamagata Prefecture to participate in the "Ryu-ju Satoyama" Reforestation Project. Satoyama is a Japanese term that represents an area neighboring a local community and covering a hill and a flat field surrounding it. Satoyama is widely used for the life of humankind especially for agriculture and forestry, and can foster biodiversity when well-managed by human beings.

Nippon Mining Co., Ltd. (currently JX Nippon Mining & Metals Corporation) previously conducted operations at the Yoshino Mine located in Yoshino City. In view of the history of the Group and the relationship with the city, we decided to take part in the project. The project plans to be conducted over a 13 hectare area located south of Takehara Public Park, between the park and Ryu-ju Mountain, at an elevation of 376 meters. The area is home to a diverse range of wildlife including wild deer (*Cervus nippon yesoensis*). The Company will support the project over the five-year period until fiscal 2013.

Under this project, new trees will be planted while activating existing broad-leaf trees that currently grow in the area. The project has two pillars, one is establishing the "Satoyama Area for Relaxation," an area in which people can collect mushrooms at forest thinning and enjoy forest bathing; the other is the "Satoyama Four Seasons Area," an area in which visitors can enjoy cherry blossoms and other seasonal flowers and fruits. Further, the current walking path will be connected to a new path that will be 600 meters long and a service road that is 220 meters long. Observation decks and gazebos are also scheduled to be constructed.



Voice—From Nanyo City



Hideo Shiota  
Mayor of Nanyo City

Satoyamas such as Ryu-ju Mountain have been a part of people's lives for a long time. Also, Satoyamas have brought many blessings to those who live and work around them, however, many of these areas have been abandoned or have not received proper upkeep. The rejuvenation of these areas, is not a simple act of environmental conservation. I believe that these activities should be a type of social action program to revitalize the relationship of coexistence and coprosperity that has traditionally existed between people and nature. The effects of these efforts may not be immediately apparent. However, I still believe it is the duty of the people and companies of today to push forward with such initiatives. Also, it is the responsibility of the government to plan this kind of social action program.

Nippon Mining (currently JX Nippon Mining & Metals) mined copper, zinc, lead, and other metals at the Yoshino Mine in Nanyo City up until 1974. It was this connection between the city and the company that inspired me to contact Nippon Mining & Metals (name at that time) to act as our partner in the "Ryu-ju Satoyama" Reforestation Project. Another reason I solicited Nippon Mining & Metals to work with us is that the company has a grounding to accept our proposal since it is developing overseas mining projects. As I expected, the company readily concurred with our approach. I hope JX Nippon Mining & Metals will aggressively work with other social action programs that have the same significance as the "Ryu-ju Satoyama" Reforestation Project.

International

ICMM Activities in Fiscal 2009

Since inception in 2001, ICMM and its members have made considerable progress. Our 10 fundamental sustainable development principles provide a strong values-based foundation to guide performance. We have produced policy and practice guidance on a range of challenging topics, the most recent of which is climate change. Our system of public reporting and third party assurance continues to evolve as we learn how to best demonstrate our performance. Our engagement with a broad range of stakeholders is ongoing.

All of this activity continues to be aimed at strengthening performance and enhancing our contribution to sustainable development.

Our niche is unique, and we are proud of the steps we have taken. However, to ICMM must continue to evolve. Thus, 2009 saw the completion of a comprehensive strategic review of direction and focus.

The resulting Strategy and Action Plan 2010–2012 re-enforces the role of our Council of CEOs in setting crucial policy direction, entrenches a rigorous means for annually assessing organizational performance, introduces a three-year planning cycle to bring stability and foresight into our decision making, and initiates an annual review of emerging issues to strengthen our ability to be proactive, not reactive.

Our renewed vision is "Leading companies working together and with others to strengthen the contribution of mining, minerals and metals to sustainable development". Three ideas sit at its core.

First, our vision talks of "leading companies." 2009 saw ICMM joined by African Rainbow Minerals and Goldcorp bringing our company members to 19, many of the largest in the industry. Together, they account for a significant percentage of the production of many key minerals and metals used by society, and some 800,000 of the 2.5 million workers employed in the industry. ICMM also serves as a convener of some 30 commodities and country-focused industry

associations. Through them, our potential reach extends to another 1,500 companies. Though we are far from being the whole industry, what we hope is that the actions of our members can serve as a catalyst for improved performance across the whole industry.

Second, we highlight "working together." The idea of working together applies both within the ICMM as well as between ICMM members and others in the industry, governments, indigenous peoples, international organizations, communities, end-users, civil society organizations, and academia. Though there are actions that companies must address alone, we believe that on many of the tough issues the industry faces, it is only through collaboration that success is possible.

Third, our emphasis is on our "contribution to sustainable development." Such a perspective allows us to continue work on assessing, minimizing, and redressing impacts while strengthening the positive contributions that we offer to society—as well as others' understanding of the result. This is a lens that encourages an assessment of the long-term contribution of mining to people and the environment. In doing so, we recognize that we are raising the bar, that in focusing on contribution, the industry will be judged on that basis—on its usefulness to society.

The strategic review process has given us a renewed sense of purpose, a focus and a compass for moving forward. Our work continues with the same degree of energy and commitment that has always been a hallmark of the ICMM. It is for others to judge the results.



Dr. R. Anthony Hodge  
President, ICMM



As a member of the ICMM, JX Nippon Mining & Metals supports the ICMM's 10 fundamental principles, and has developed its Code of Conduct in accordance with these principles. (ICMM website: <http://www.icmm.com/>)

Involvement with Local Communities

Endorsement and Support of the Extractive Industries Transparency Initiative (EITI)

The Extractive Industries Transparency Initiative (EITI) was first announced at the World Summit on Sustainable Development in Johannesburg, South Africa, in September 2002 by the then British Prime Minister Tony Blair. This initiative calls for the revenues and flows of assets of companies in extractive industries, such as the oil, natural gas, and metals industries, to be made transparent. Further, it encourages these companies to contribute to the development of a

sustainable society and to the elimination of poverty in resource-rich nations. With membership particularly strong among African nations, there are currently 23 countries implementing EITI. In 2005, the ICMM announced that it would offer its continued support to EITI. Additionally, the JX Nippon Mining & Metals Group endorses the initiative and offers its own support.

The EITI Principles

- 1. We share a belief that the prudent use of natural resource wealth should be an important engine for sustainable economic growth that contributes to sustainable development and poverty reduction, but if not managed properly, can create negative economic and social impacts.
- 2. We affirm that management of natural resource wealth for the benefit of a country's citizens is in the domain of sovereign governments to be exercised in the interests of their national development.
- 3. We recognize that the benefits of resource extraction occur as revenue streams over many years and can be highly price dependent.
- 4. We recognize that a public understanding of government revenues and expenditure over time could help public debate and inform choice of appropriate and realistic options for sustainable development.
- 5. We underline the importance of transparency by governments and companies in the extractive industries and the need to enhance public financial management and accountability.
- 6. We recognize that achievement of greater transparency must be set in the context of respect for contracts and laws.
- 7. We recognize the enhanced environment for domestic and foreign direct investment that financial transparency may bring.
- 8. We believe in the principle and practice of accountability by government to all citizens for the stewardship of revenue streams and public expenditure.
- 9. We are committed to encouraging high standards of transparency and accountability in public life, government operations and in business.
- 10. We believe that a broadly consistent and workable approach to the disclosure of payments and revenues is required, which is simple to undertake and to use.
- 11. We believe that payments' disclosure in a given country should involve all extractive industry companies operating in that country.
- 12. In seeking solutions, we believe that all stakeholders have important and relevant contributions to make—including governments and their agencies, extractive industry companies, service companies, multilateral organizations, financial organizations, investors, and non-governmental organizations.



EITI website <http://www.eitransparency.org>

Participation in the United Nations Global Compact

The Company joined the United Nations Global Compact in July 2008. It supports the 10 principles on human rights, labour, the environment, and anti-corruption, and is working to realize these ideals.



The UN Global Compact's Ten Principles

- Human Rights**  
Principle 1: Businesses should support and respect the protection of internationally proclaimed human rights; and  
Principle 2: make sure that they are not complicit in human rights abuses.
- Labour**  
Principle 3: Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining;  
Principle 4: the elimination of all forms of forced and compulsory labour;  
Principle 5: the effective abolition of child labour; and  
Principle 6: the elimination of discrimination in respect of employment and occupation.
- Environment**  
Principle 7: Businesses should support a precautionary approach to environmental challenges;  
Principle 8: undertake initiatives to promote greater environmental responsibility; and  
Principle 9: encourage the development and diffusion of environmentally friendly technologies.
- Anti-Corruption**  
Principle 10: Businesses should work against corruption in all its forms, including extortion and bribery.

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Overview of the Main Group Companies

\* As of July 1, 2010

Resources Development

- Kasuga Mines Co., Ltd.**  
Extraction of gold-bearing silicate ore  
¥10 million (100%)  
Makurazaki, Kagoshima Prefecture
- Nikko Exploration and Development Co., Ltd.**  
Geological surveys, test drilling  
¥90 million (100%)  
Minato-ku, Tokyo
- Nikko Drilling Co., Ltd.**  
Test drilling  
¥10 million (100%)  
Minato-ku, Tokyo
- Minera Lumina Copper Chile S.A.**  
Ownership and development of equity interests in deposits at Caserones  
US\$380,001,000 (75%)  
Santiago, Republic of Chile
- Compania Minera Quechua S.A.**  
Ownership and development of equity interests in deposits at Quechua  
S/.173 million (100%)  
Lima, Republic of Peru

- BioSigma S.A.**  
Biotechnology research and development  
¥31.6 million (33.3%)  
Coline, Republic of Chile

Smelting and Refining

- Pan Pacific Copper Co., Ltd.**  
Manufacturing and sales of refined copper, sulfuric acid, and other copper by-products, metal mining  
¥28,450 million (66%)  
Minato-ku, Tokyo
- Hibi Kyodo Smelting Co., Ltd.**  
Smelting and refining of refined copper  
¥4,700 million (63.5%)  
Minato-ku, Tokyo
- Japan Copper Casting Co., Ltd.**  
Manufacturing of mold copper  
¥200 million (65%)  
Minato-ku, Tokyo
- Nissho Ko-un Co., Ltd.**  
Cargo handling, trucking  
¥135 million (100%)  
Oita, Oita Prefecture
- Nikko Plant Saganoseki Co., Ltd.**  
Construction and maintenance of facilities by contract  
¥20 million (100%)  
Oita, Oita Prefecture

- Pan Pacific Copper Shanghai Co., Ltd.**  
Primarily trading of refined copper  
CNY8,277,000 (100%)  
Shanghai, People's Republic of China
- LS-Nikko Copper Co., Ltd.**  
Manufacturing and sales of refined copper, precious and rare metals, and sulfuric acid  
₩283,204 million (49.9%)  
Ulsan, Republic of Korea
- Changzhou Jinyuan Copper Co., Ltd.**  
Manufacturing and sales of copper wire rods  
CNY282.4 million (61.4%)  
Changzhou, Jiangsu Province, People's Republic of China



- Kurobe Nikko Galva Co., Ltd.**  
Hot-dip zinc-plating  
¥150 million (93.4%)  
Kurobe, Toyama Prefecture

Electronic Materials

- Nikko Metals USA, Inc.**  
Processing and sales of sputtering targets, purchasing and sales of compound semicon-ductor materials  
US\$5 million (100%)  
Chandler, Arizona, United States
- Nikko Metals Philippines, Inc.**  
Manufacturing and sales of electro-deposited and treated rolled copper foils, purchase and sales of surface treatment agents  
US\$4 million (100%)  
Binan, Laguna, Republic of the Philippines



Business lines  
Capital (percentage of voting rights held directly or indirectly)  
Location

- Gould Electronics GmbH**  
Manufacturing and sales of electro-deposited copper foils  
€5,113,000 (100%)  
Eichstetten, Land Baden-Württemberg, Federal Republic of Germany



- Nikko Metals Korea Co., Ltd.**  
Processing and sales of indium tin oxide (ITO) targets  
₩2,000 million (100%)  
Pyeongtaek-si, Gyeonggi-do, Republic of Korea



- Nikko Metals Hong Kong Ltd.**  
Processing and sales of electro-deposited copper foils  
HK\$17 million (100%)  
Hong Kong S.A.R., People's Republic of China



- Ichinoseki Foil Manufacturing Co., Ltd.**  
Processing copper foil into sheets, bonding copper foil to aluminum sheets  
¥30 million (100%)  
Ichinoseki, Iwate Prefecture



- Kitaibaraki Precision Co., Ltd.**  
Cutting and grinding of metals and metal alloys  
¥40 million (50.3%)  
Kitaibaraki, Ibaraki Prefecture

- Nikko Foundry Co., Ltd.**  
Undertaking of manufacturing processes of Isohara Works and Shirogane Works of JX Nippon Mining & Metals by contract  
¥10 million (100%)  
Kitaibaraki, Ibaraki Prefecture

- Nikko Coil Center Co., Ltd.**  
Slitting processing of fabricated metal products  
¥15 million (100%)  
Samukawa, Kouza, Kanagawa Prefecture

- Nippon Mining & Metals (Suzhou) Co., Ltd.**  
Manufacturing and sales of precision rolled products and precision pressed products  
CNY492 million  
Suzhou, Jiangsu Province, People's Republic of China



- Nikko Fuji Electronics Dongguan Co., Ltd.**  
Manufacturing and sales of display components  
CNY29,578,000 (100%)  
Dongguan, Guangdong Province, People's Republic of China



- Nikko Fuji Precision (Wuxi) Co., Ltd.**  
Manufacturing of precision plated products for electronic components  
CNY31,806,000 (100%)  
Wuxi, Jiangsu Province, People's Republic of China



- Nippon Precision Technology (Malaysia) Sdn. Bhd.**  
Manufacturing and sales of display components  
RM14 million (80.5%)  
Kuantan, Pahang Darul Makmur, Republic of Malaysia



- Nikko Metals Shanghai Co., Ltd.**  
Slitting processing and sales of fabricated metal products  
CNY42,498,000 (100%)  
Shanghai, People's Republic of China



- Poonsan-Nikko Tin Plating Corp.**  
Plating of copper strips  
₩2,000 million (40%)  
Ulsan, Republic of Korea

- Nikko Metals Singapore Pte. Ltd.**  
Import and sales of various electronic materials  
US\$700,000 (100%)  
Singapore, Republic of Singapore

- Sanyu Electronic Industry Co., Ltd.**  
Plating of electronic equipment  
¥90 million (100%)  
Meguro-ku, Tokyo

Recycling and Environmental Services

- Nikko Environmental Services Co., Ltd.**  
Processing of industrial waste  
¥200 million (100%)  
Hitachi, Ibaraki Prefecture
- Tomakomai Chemical Co., Ltd.**  
Processing of industrial waste  
¥100 million (100%)  
Tomakomai, Hokkaido
- Nikko Tsuruga Recycle Co., Ltd.**  
Processing of industrial waste  
¥50 million (100%)  
Tsuruga, Fukui Prefecture
- Nikko Mikkaichi Recycle Co., Ltd.**  
Processing of industrial waste  
¥50 million (100%)  
Kurobe, Toyama Prefecture
- Kamine Clean Service Co., Ltd.**  
Undertaking of operational management of waste processing facilities by contract  
¥10 million (100%)  
Hitachi, Ibaraki Prefecture

Other Business

- Nikko Shoji Co., Ltd.**  
Wholesale sales of non-ferrous metals, fabricated metal products, sulfuric acid, and chemical products, manufacturing of surface treatment agents, purchase and sales of copper clad laminates (CCLs)  
¥390 million (100%)  
Chuo-ku, Tokyo

Business lines  
Capital (percentage of voting rights held directly or indirectly)  
Location

- Nippon Marine Co., Ltd.**  
Marine transportation services  
¥300 million (100%)  
Minato-ku, Tokyo
- Nikko Logistics Partners Co., Ltd.**  
Logistics services and consultation  
¥100 million (90%)  
Minato-ku, Tokyo

- JX Nikko Art & Craft Co., Ltd.**  
Sales of arts and crafts  
¥20 million (100%)  
Minato-ku, Tokyo

- Nikko Metals Taiwan Co., Ltd.**  
Manufacturing and sales of electronic materials, slitting processing and sales of fabricated metal products, sales of industrial products, collection and sales of metal scrap and high-quality copper scraps  
NT\$63.5 million (100%)  
Bade, Tao-Yuan, Taiwan



- Materials Service Complex Malaysia Sdn. Bhd.**  
Slitting processing and sales of metal materials and fabricated metal products, collection, sorting, and sales of metal scrap, sales of chemical products, electronic components  
RM30 million (100%)  
Gelang Patah, Johor, Republic of Malaysia



- Nikko Metals Trading & Services (Shanghai) Co., Ltd.**  
Support of back-office operations, collection of market-related information about People's Republic of China  
CNY2 million (100%)  
Shanghai, People's Republic of China

Term	Explanation	Page(s)
3R	Initial letters of “Reduce, Reuse, and Recycle.” One of the basic concepts to create a recycling-oriented society.	P79
alunite	A sulfate mineral, and a hydrated cobalt sulfate. Its chemical composition is CoSO <sub>4</sub> ·7H <sub>2</sub> O.	P73
anode	A positive plate for refining with concentrations of trace quantities of precious metals such as gold and silver; made of copper of over 99% purity, after separation and removal of impurities by smelting copper concentrate.	P47
B-to-B	An abbreviation for business to business, meaning business transactions between companies.	P18
Basel Convention	The official name is the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal; the Basel Convention sets forth an international framework and procedures regarding the regulation of certain wastes that are transported beyond national borders.	P60
biodiversity	The variation of life forms within a given ecosystem, biome, or on the earth. Covering biodiversities of genes, species, and ecosystems of a region.	P3, 6, 15, 20, 24, 44, 60, 61, 62, 72, 73, 94, 95
biomass	Resources that originate from living organisms and can be reused as energy.	P32
bio-mining	A type of heap leaching, to leach objective metals with the use of microorganisms.	P11, 69
blister copper	A semi-manufactured copper with an approximate copper content of 99% or more after removing sulfur, iron, and other impurities in a process using a flash furnace and a converter.	P47
BOD	Biochemical oxygen demand: an index of water quality indicating the amount of oxygen needed to decompose organic substances in the water by the activities of microorganisms; it is a typical index used for measuring river pollution.	P66
bornite	A copper sulfide ore. Its chemical composition is Cu <sub>5</sub> FeS <sub>4</sub> .	P32
caisson filler	A filler to be poured into caissons, the hollow concrete boxes used for building breakwaters and other underwater structures, to prevent them from floating up by buoyancy.	P64
carbon brushes	Components that conduct electricity while sliding against the rotating components of motors or electric generators.	P50
CCLs	Copper clad laminates: laminates with copper foil used for printed circuit boards.	P100
chalcopyrite	A typical copper sulfide ore containing copper, iron, and sulfur. Its chemical composition is CuFeS <sub>2</sub> .	P32
chlorite	A clay mineral. A secondary mineral produced when biotite, amphibole, or pyroxene alters. Normally found in small green flakes in igneous rock, metamorphic rock, and sedimentary rock.	P73
COD	Chemical oxygen demand: an index of water quality indicating the amount of oxygen needed to decompose organic substances that are susceptible to oxidation; it is a typical index used for measuring ocean and lake pollution by organic substances.	P66
compound semiconductor	A semiconductor that consists of two or more elements.	P49, 99
converter	An inclined-rotation furnace for converting sulfides, chiefly containing copper, which are a semi-manufactured product in the copper smelting process that is called matte, into blister copper.	P21, 27, 47, 61
converter slag	Compound ferrous, silicate, and other oxides generated during the converter process.	P47
copper concentrate	20–40% purity raw copper after concentration and separation of copper through breaking, crushing, and floatation processing of copper ore.	P11, 44, 48, 51, 64
copper matte	An intermediate product in the copper smelting and refining process, sulfides containing chiefly copper.	P47
copper oxide ore	Copper ore that is found in copper deposit zones, which have been oxidized due to weathering and/or by surface water.	P44
copper slag	Compound ferrous, silicate, and other oxides generated during the flash furnace process.	P47, 69
copper slag concentrate	Powdered materials with high-copper content, obtained from the treatment of converter slag.	P47
Corson alloy	A precipitation-hardening-type copper-nickel-silicon alloy that precipitates Ni <sub>3</sub> Si. Currently, it is the most actively developed alloy category because it combines comparatively high conductivity and strength with stress relaxation properties and bend-formability.	P55
defined contribution corporate pension plan	A pension plan in which the amount an employee pays into the plan while he or she is working is fixed; although, after retirement the amount the employee receive as a pension benefit is not fixed as it reflects any losses or gains recognized as a result of fund management.	P56
dust collector	Equipment for separating and collecting dust contained in the air flow.	P47, 66
EICC	Electronics Industry Code of Conduct: a guideline instituted in 2004 with the aim of ensuring corporate social responsibility in the supply chain of the electronics industry.	P79

Term	Explanation	Page(s)
EITI	Extractive Industries Transparency Initiative: An initiative to increase the transparency of capital flows in the extractive industries engaged in the development of mining, oil, coal, and other natural resources. Former Prime Minister of the United Kingdom Tony Blair advocated this initiative at the Johannesburg Summit held in 2002.	P38, 97
electroless plating	A plating method that precipitates a uniform thin metal film without using electricity.	P50, 92
ESG information	Non-financial information that relates to the environment, society, and corporate governance. In recent years, awareness of the importance of this information has grown to project future corporate value.	P19
extraction percentage	The ratio of intended products to the content, or more specifically the ratio of the production volume in the smelting process to the metal content in the copper concentrate or in recycled materials.	P44, 48, 59
flash furnace	A furnace that uses oxidation and the exothermic reaction of ores themselves to melt and separate copper and iron in the form of matte and slag while recovering sulfur in the form of sulfur oxide gas.	P26, 47, 48, 61, 62
FPD	Flat panel display: a planar display of liquid crystal, plasma, and others.	P49, 55, 92
Sustainability Reporting Guidelines 2006	Version 3 of the GRI (G3) published in October 2006: G3 particularly encourages a company to determine what information to disclose by taking into account the materiality of each piece of information, as well as a boundary to be reported by considering control and significant influence to entities that could be involved in the boundary.	P1, 4, 39
genome analysis	A comprehensive analysis of the genetic information, or genomes, of living organisms.	P32
GHS	Globally Harmonized System of Classification and Labeling of Chemicals: a system that classifies chemicals by the type of hazard and proposes harmonized hazard communication elements.	P66
Global Compact	A program regarding autonomous code of conducts of companies, which was officially launched at the United Nations Headquarters in New York in 2000. Participating companies in the world adhere to the 10 principles of the Global Compact with respect to human rights, labor, the environment, and anti-corruption.	P4, 14, 18, 19, 20, 38, 80, 97
green purchasing	Purchase of products and services with the smallest possible environmental impact, with reference to suppliers dedicated to reducing the environmental impact.	P12, 22, 38, 60
GRI	Global Reporting Initiative: an institution established in 1997 by the United Nations Environment Program (UNEP), Coalition for Environment Responsible Economies (CERES), and other entities, for the purpose of developing and disseminating globally applicable sustainability reporting guidelines.	P1, 2, 4, 17, 23, 39
GRI Mining and Metals Sector Supplement	A guideline supplementing the G3 Guidelines with issues that the G3 does not cover.	P1, 4
high-quality copper scraps	A collective term for high-quality copper and copper alloy scraps.	P64, 69, 100
hydro-metallurgy	A smelting process to produce objective metals by dissolving and refining ore with the use of chemicals, such as sulfuric acid, at ordinary temperatures.	P11, 31, 69
ICA	International Copper Association	P94
ICMM	International Council on Mining & Metals	P1, 4, 12, 52, 94, 96, 97
intensity	The quantity of materials, labor, power, and other elements required for a fixed volume of industrial product; for example, the intensity of energy refers to the energy consumption necessary to produce or treat one metric ton.	P21, 25, 26, 45, 60, 61, 62, 63, 65
iron concentrate	Powdered materials with high-ferrous content, obtained from the treatment of converter slag.	P47, 64, 69
ISO	International Organization for Standardization: a non-profit organization in the civic sector established to draft international standards that apply to industrial fields, except for the field of electrical equipment; its front office is located in Amsterdam, the Netherlands.	P16, 21, 22, 69, 75, 84
ISO 9001	An international standard established by the ISO (see above). An international standard, which provides quality control guidelines implemented by the International Organization for Standardization, with the aim of improving customer satisfaction.	P75, 76
ISO 14001	An international standard established by the ISO (see above). It stipulates the requirements for environmental management systems with the aim of attenuating the environmental impact and risks caused by the activities, products, and services of an organization, and preventing their occurrence.	P40, 44, 60, 70
ISO/TS 16949	A standard that adds specific requirements in the automobile industry in addition to ISO 9001, an international standard for quality control.	P22, 76
ITO	Indium tin oxide: a kind of transparent, conductive material used in FPDs.	P92, 99
kaolin	A clay mineral of an aluminum hydrous silicate.	P22



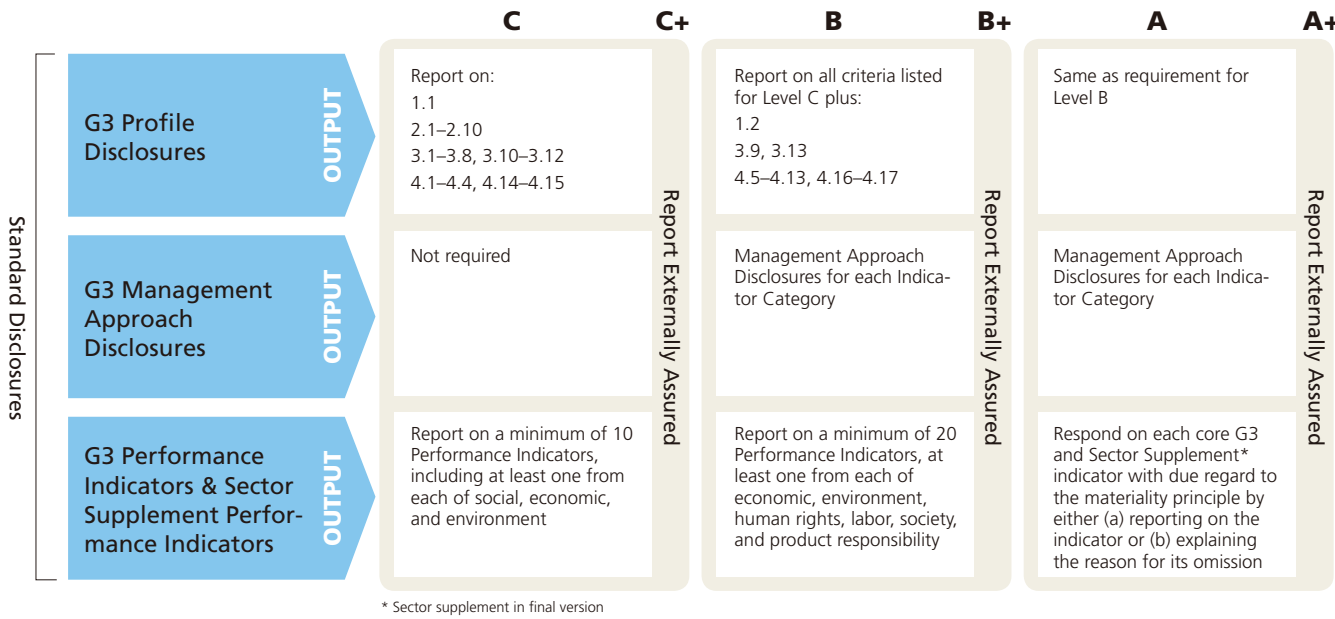
Glossary

Term	Explanation	Page(s)
LME	London Metal Exchange: Established in 1877, the world's largest futures exchange specializing in non-ferrous metals, listing seven metals including copper, nickel, lead, zinc, and aluminum.	P55
light-emitting and photo diode	A collective term for a light-emitting device, which converts electrical energy into light energy, and a light-receiving device, which works reversely.	P49
lockout	A countermeasure taken by management in response to a labor dispute, including a strike that a labor union calls. Management temporarily shuts down offices and plants to lock out workers participating in the labor dispute to reject wage payment.	P82
materials stewardship	The range of activities required to ensure the optimal and appropriate use of minerals and metals in society. It is a life cycle based concept and includes activities and actions to improve both the upstream processes that support the production of the material as well as the downstream product(s) that it goes into.	P8, 24, 30, 51, 52
metabolome analysis	A comprehensive analysis of molecules produces by cell activity.	P32
microarray	A material or a technology used in a simultaneous examination or experimental trial to fixed multiple subjects.	P32
MSDS	Material Safety Data Sheet: a data sheet supplied by the chemical substance supplier to provide information on the chemical substances used with the materials, to ensure the health and safety of the users who handle these chemical substances.	P66, 77
neutralized slag	Waste produced by a neutralization reaction in the smelting process.	P64
N-Chlo Process	Nikko Chloride Process: a hydro-metallurgical technology that efficiently extracts copper and gold, silver, and other precious metals from low-grade copper concentrates.	P53
Notable COP	Of Communication on Progress—COP, which should be submitted by companies affirming the 10 principles of the United Nations Global Compact—the Global Compact Office subsequently recognizes a notable one.	P18
OHSAS	Occupational Health and Safety Assessment Specification: an international standard that stipulates requirements for health and safety management systems, with the aim to improve risk management systems and the performance of the systems.	P21, 22, 40, 87
oilless bearing	A bearing made of porous sintered metal that impregnates itself with lubricant oil. Heat generated by shaft rotation transudes the oil into the gaps between bearings to lubricate them.	P50
PDCA cycle	Processes of “plan,” “do,” “check,” and “act” are implemented in this order. The final process, “act,” in which the contents of the “plan” process are determined to be either continued, revised, or rescinded based on the results of the “check” process and subsequently turned into the next “plan” process. The PDCA cycle is a management method to continuously improve quality and business through repetition of this process.	P4, 11, 16, 39, 41, 65, 76
permanent cathode method	A method for producing refined copper in which stainless steel plates are used as the cathodes in the refining process, to improve current efficiency in comparison to conventional processes and produce higher-quality refined copper.	P34
phosphor bronze	A copper alloy added with tin and a minute amount of phosphorus.	P8, 49, 55
powder metallurgy	A method to produce metal products by pressurizing, casting, and sintering metal powder.	P53, 94
precipitate	Concentrates of gold, silver, and other value-bearing metals that precipitate at the bottom of refining tanks during copper refining.	P47, 69
primary copper sulfide ore	A copper sulfate ore, which is largely a copper pyrite.	P31, 32, 44
PRTR	Pollutant Release and Transfer Register: a system under which information on the release of pollutants into the air, water, and soil, as well as transfers of waste and pollutants, is reported to a nation, which compiles the information and publishes the results.	P66
ratio of equity entitlement copper mine production	The ratio of copper concentrate obtained from sources where the Group owns mining rights to its total copper concentrate requirements for its smelting and refining business.	P43
REACH	A system of registration requiring all manufacturers and importers of chemicals in quantities of 1 ton or more per year to identify and manage the risks related to the substances they manufacture and market.	P22, 67
recycled resources	Waste and other materials containing copper, gold, silver, and other value-bearing metals, which can be recycled to be used as raw materials.	P63, 64, 68
refined copper	Copper of over 99.99% purity after refining with an anode as a positive plate.	P32, 44, 45, 47, 55, 61, 62, 63, 65, 68, 99
RoHS directive	A directive of the EU regarding restrictions on the use of certain hazardous substances in electrical and electronic equipment; the six restricted hazardous substances include lead, cadmium, mercury, chromium hexavalent, and two brominated flame retardants (PBB and PBDE).	P16, 77
sandblasting material	An abrasive used to repair or remove rust from vessels in the shipping industry. With the use of compressed air, centrifugal force, or other such force, it is sprayed for abrasion.	P64

Term	Explanation	Page(s)
secondary copper sulfide ore	Copper ore, typified by chalcocite, formed through a reaction between copper leached in oxidized zones and underlying primary copper sulfide ore, after preparation of a copper deposit.	P44
sericite	A clay mineral of silicate.	P73
shot	A granulated metal product.	P64
silicate ore	Ore that consists of quartz and other silicates, containing a minute amount of gold.	P64, 99
silver and gold slag	Industrial waste that contains gold and silver.	P64, 69
slag	Compound ferrous, silicate, and other oxides generated by various production processes.	P64
slag cleaning furnace	A furnace that retains slag generated from a flash furnace for recovering copper from slag.	P21, 47
slitting	Longitudinally slitting rolled copper, copper alloy, and special steel strips, as well as electro-deposited copper foil, by the product width.	P100
SPC	Statistical Process Control: A statistical method to evaluate performance of production lines and project a significant deviation on occurrences of rejected products.	P76
spectral interference	A phenomenon in which measurements are impeded due to the incomplete isolation of the radiation emitted or absorbed by the target analyte from other radiation detected by the instrument.	P54
sputtering	A method in which inert gas ions collide with metal and other targets to form an even high-quality thin film consisting of ejected metal and other substances on the surface of the object.	P49, 77, 78, 79, 92, 99
SQC	Statistical quality control: a statistical method to control product quality with variability of qualities of entire manufacturing lines, including raw materials, equipment and facilities, operations and finished products, rather than with qualities of individual products.	P76
sulfuric acid inversion rate	The ratio of sulfur dioxide (SO <sub>2</sub> ) generated in the smelting process, which is inverted to sulfur trioxide (SO <sub>3</sub> ) by the actions of catalysts.	P65
supply chain	The process from the production of raw materials through to the delivery to consumers. In recent years, as a facet of corporate social responsibility, companies hold an increasing responsibility for the entire supply chain of each of their products.	P3, 16, 30
SX-EW	Solvent extraction/electrowinning process: one of the copper production methods; copper is refined through a refining process after extracting copper ions from the leaching solution obtained by leaching out the copper element from mined copper ores using diluted sulfuric acid.	P44
systematic biology	An academic field in which the understanding of life phenomena as systems is pursued by applying the approaches of system engineering as well as analytical methods.	P32
target	A material put in a sputtering machine to form a thin film; used in semiconductors, FPDs, and other applications.	P8, 49, 55, 76, 77, 78, 79, 92, 99
test drilling	The means of boring holes into the ground in order to investigate soil and rock properties, and identify water sources and oil-bearing stratum.	P99
titanium copper	A copper alloy with titanium added, which is often used for springs due to its comparable mechanical strength with that of beryllium copper.	P8, 49
total material input	Total amount of recycled resources and primary raw materials such as copper concentrate, input into the smelting process.	P63
Type 1 Designated Energy Management Factory	A production plant consuming more than 3,000kl of crude oil equivalent per annum as stipulated by the Act on the Rational Use of Energy (energy-saving law).	P1, 60
UBM	Under Bump Metallurgy: underlying metals of solder bumps, which are solder balls used to bond flip chips and substrates.	P50, 92
upstream / downstream expenses	Expenses for reducing the environmental impact generated in the upstream or downstream stages of a certain business activity.	P69
urban mine	A collective term that denotes all the metals able to be recycled and classified from among the non-ferrous metals that were originally extracted from natural ores and made into various forms after going through smelting and refining processes and that were once used in human economic activities.	P2, 4, 11, 13, 24, 54
visualization	An initiative to clarify problems in a company's operations by examining them based on numerical results for objective assessments.	P33
wafer	A thin plate cut from a single semiconductor crystal, used as a substrate of integral circuits.	P49, 50, 92
waste anode	Anode after use in copper refining process.	P47, 69
yield	The ratio of non-defective products to all products that have been manufactured; the fewer the defective products, the higher the yield rate.	P21, 34, 59, 69
zero emission	A structure where no waste subject to landfill disposal is discharged.	P6, 11, 52, 63

GRI Content Index

This report has an A+ application level as defined by the G3 Guidelines of the Global Reporting Initiative.





GRI Content Index

Number	Item	Content to be included	Page(s)
Economic			
Disclosure on Management Approach			P5, 11, 43–56
EC1	Economic Performance	Direct economic value generated and distributed, including revenues, operating costs, employee compensation, donations and other community investments, retained earnings, and payments to capital providers and governments	P56
EC2		Financial implications and other risks and opportunities for the organization's activities due to climate change	P24–25
EC3		Coverage of the organization's defined benefit plan obligations	P56
EC4		Significant financial assistance received from government	P56
EC6	Market Presence	Policy, practices, and proportion of spending on locally-based suppliers at significant locations of operation	Not applicable. The Company consigns purchasing to JX Nippon Procurement Corporation. Therefore, the purchasing policy of JX Nippon Procurement Corporation is used.
EC7		Procedures for local hiring and proportion of senior management hired from the local community at significant locations of operation	P46, 80
EC8	Indirect Economic Impacts	Development and impact of infrastructure investments and services provided primarily for public benefit through commercial, in-kind, or pro bono engagement	P91
Environment			
Disclosure on Management Approach			P5–6, 11, 59–61, 63, 65, 70
EN1	Materials	Materials used by weight or volume	P64
EN2		Percentage of materials used that are recycled input materials	P64
EN3	Energy	Direct energy consumption by primary energy source	P61
EN4		Indirect energy consumption by primary energy source	P61
EN8	Water	Total water withdrawal by source	P63
EN11	Biodiversity	Location and size of land owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	P35, 90
EN12		Description of significant impacts of activities, products, and services on biodiversity in protected areas and areas of high biodiversity value outside protected areas	P44–45
EN13		Habitats protected or restored	Not applicable*
EN14		Strategies, current actions, and future plans for managing impacts on biodiversity	As there are no operating sites in areas judged to possess high values of biodiversity, there are currently no strategies for managing the effects on biodiversity.
EN16	Emissions, Effluents, and Waste	Total direct and indirect greenhouse gas emissions by weight	P62
EN17		Other relevant indirect greenhouse gas emissions by weight	P62
EN19		Emissions of ozone-depleting substances by weight	Not applicable
EN20		NOx, SOx, and other significant air emissions by type and weight	P65
EN21		Total water discharge by quality and destination	P63
EN22		Total weight of waste by type and disposal method	P64
EN23		Total number and volume of significant spills	P71
EN26	Products and Services	Initiatives to mitigate environmental impacts of products and services, and extent of impact mitigation	P50
EN27		Percentage of products sold and their packaging materials that are reclaimed by category	Not applicable
EN28	Compliance	Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with environmental laws and regulations	P71
EN30	Overall	Total environmental protection expenditures and investments by type	P69
MM1	Biodiversity	Amount of land (owned or leased, and managed for production activities or extractive use) disturbed or rehabilitated(Land owned: Land owned or leased by the Company)(Land use: Production activities or the extraction of specific materials)	Not applicable*
MM2		The number and percentage of total sites identified as requiring biodiversity management plans according to stated criteria, and the number (percentage) of those sites with plans in place	P44–45
MM3	Emissions, Effluents, and Waste	Total amounts of overburden, rock, tailings, and sludges and their associated risks	Not applicable*

Number	Item	Content to be included	Page(s)
Labor Practices & Decent Work			
Disclosure on Management Approach			P6, 11, 79, 81–83, 85–87
LA1	Employment	Total workforce by employment type, employment contract, and region	P79–80
LA2		Total number and rate of employee turnover by age group, gender, and region	P81
LA4	Labor/Management Relations	Percentage of employees covered by collective bargaining agreements	P82
LA5		Minimum notice period(s) regarding significant operational changes, including whether it is specified in collective agreements	P82
LA7	Occupational Health and Safety	Rates of injury, occupational diseases, lost days, and absenteeism, and total number of work-related fatalities by region	P86
LA8		Education, training, counseling, prevention, and risk-control programs in place to assist workforce members and their families or community members regarding serious diseases	P41, 85
LA10	Training and Education	Average hours of training per year per employee by employee category	P83
LA11		Programs for skills management and lifelong learning that support the continued employability of employees and assist them in managing career endings	P83–85
LA13	Diversity and Equal Opportunity	Composition of governance bodies and breakdown of employees per category according to gender, age group, minority group membership, and other indicators of diversity	P80, 82
LA14		Ratio of basic salary of men to women by employee category	P81
MM4	Labor/Management Relations	Number of strikes and lockouts exceeding one week's duration, by country	P82
Human Rights			
Disclosure on Management Approach			P6, 11, 80
HR1	Investment and Procurement Practices	Percentage and total number of significant investment agreements that include human rights clauses or that have undergone human rights screening	There were no applicable investment agreements.
HR2		Percentage of significant suppliers and contractors that have undergone screening on human rights and actions taken	The Company consigns purchasing to JX Nippon Procurement Corporation. Therefore, the purchasing policy of JX Nippon Procurement Corporation is used.
HR4	Non-discrimination	Total number of incidents of discrimination and actions taken	P40
HR5	Freedom of Association and Collective Bargaining	Operations identified in which the right to exercise freedom of association and collective bargaining may be at significant risk, and actions taken to support these rights	For overseas subsidiaries, the Company conducts operations in accordance with the labor laws and statutory regulations of the respective countries and does not restrict collective bargaining. For Japan, please see page 82.
HR6	Child Labor	Operations identified as having significant risk for incidents of child labor, and measures taken to contribute to the elimination of child labor	P80
HR7	Forced and Compulsory Labor	Operations identified as having significant risk for incidents of forced or compulsory labor, and measures taken to contribute to the elimination of forced or compulsory labor	P80
MM5	Indigenous Rights	Total number of operations taking place in or adjacent to Indigenous Peoples' territories, and number and percentage of operations or sites where there are formal agreements with Indigenous Peoples' communities	There are no operating sites in or adjacent to Indigenous Peoples' territories.
Society			
Disclosure on Management Approach			P5–6, 11, 40, 88, 90
SO1	Community	Nature, scope, and effectiveness of any programs and practices that assess and manage the impacts of operations on communities, including entering, operating, and exiting	P44–46, 88–92
SO2	Corruption	Percentage and total number of business units analyzed for risks related to corruption	P40
SO3		Percentage of employees trained in organization's anti-corruption policies and procedures	P40
SO4		Actions taken in response to incidents of corruption	Not applicable
SO5	Public Policy	Public policy positions and participation in public policy development and lobbying	P96–97
SO8	Compliance	Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with laws and regulations	There were no fines or non-monetary sanctions for non-compliance with laws and regulations.

Number	Item	Content to be included	Page(s)
MM6	Community	Number and description of significant disputes relating to land use, customary rights of local communities and Indigenous Peoples	There were no significant disputes relating to land use, customary rights of local communities and Indigenous Peoples.
MM7		The extent to which grievance mechanisms were used to resolve disputes relating to land use, customary rights of local communities and Indigenous Peoples, and the outcomes	There were no significant disputes relating to land use, or the customary rights of local communities and Indigenous Peoples.
MM8	Artisanal and Small-scale Mining	Number (and percentage) of company operating sites where artisanal and small-scale mining (ASM) takes place on, or adjacent to, the site; the associated risks and the actions taken to manage and mitigate these risks	There are no operating sites on, or adjacent to, ASM sites.
MM9	Resettlement	Sites where resettlements took place, the number of households resettled in each, and how their livelihoods were affected in the process	There were no operating sites where resettlements took place.
MM10	Closure Planning	Number and percentage of operations with closure plans	Not applicable (Plans for closure of the Caserones Copper Deposit and a molybdenum deposit are currently being prepared.)
Product Responsibility			
Disclosure on Management Approach			P5–6, 11, 75–77
PR1	Customer Health and Safety	Life cycle stages in which health and safety impacts of products and services are assessed for improvement, and percentage of significant products and services categories subject to such procedures	P77
PR3	Product and Service Labeling	Type of product and service information required by procedures, and percentage of significant products and services subject to such information requirements	P77
PR6	Marketing Communications	Programs for adherence to laws, standards, and voluntary codes related to marketing communications, including advertising, promotion, and sponsorship	Promoted as an issue of compliance relating to business activities in accordance with the Compliance Guidebook.
PR9	Compliance	Monetary value of significant fines for non-compliance with laws and regulations concerning the provision and use of products and services	P77
MM11	Materials Stewardship	Programs and progress relating to materials stewardship	P29–30, 52

\* For the Caserones Copper Deposit development project, in February 2010 it was concluded that the project promised to be economically viable and an environmental license was obtained from Chile's Region III environmental committee. Therefore, the Company has decided to proceed with development. Extraction is scheduled to begin in 2013.



Independent Assurance Report

To the President and Chief Executive Officer of JX Nippon Mining & Metals Corporation

**Purpose and Scope**  
We were engaged by JX Nippon Mining & Metals Corporation (the “Company”) to provide limited assurance on its Sustainability Report 2010 (the “Report”) for the fiscal year ended March 31, 2010. The purpose of our assurance engagement was to express our conclusion, based on our assurance procedures, on whether:

- the environmental, social and economic performance indicators and environmental accounting indicators (the “Indicators”) for the period from April 1, 2009 to March 31, 2010 included in the Report are prepared, in all material respects, in accordance with the Company's reporting criteria;
- the Company's self-declaration on the Global Reporting Initiative (“the GRI”) application level conforms to the application level criteria stipulated by the GRI;
- the Company's policies are aligned to the International Council on Mining and Metals (“ICMM”)’s 10 Sustainable Development (“SD”) Principles as described on page 96;
- the Company has identified and prioritized its material issues as described on page 23;
- the Company has approached and managed its material issues as described on page 24.

The content of the Report is the responsibility of the Company's management. Our responsibility is to carry out a limited assurance engagement and to express our conclusion based on the work performed.

**Criteria**  
The Company applies its own reporting criteria as described in the Report. These are derived, among others, from the Sustainability Reporting Guidelines 2006 of the Global Reporting Initiative. We used these criteria to evaluate the Indicators. For the GRI application level, we used the criteria stipulated by the GRI.

**Procedures Performed**  
We conducted our engagement in accordance with ‘International Standard on Assurance Engagements (ISAE) 3000, Assurance Engagements other than Audits or Reviews of Historical Financial Information’ issued by the International Auditing and Assurance Standards Board, and the ‘Practical Guidelines of Sustainability Information Assurance’ of the Japanese Association of Assurance Organizations for Sustainability Information (“J-SUS”).

The limited assurance engagement on the Report consisted of making inquiries, primarily of persons responsible for the preparation of information presented in the Report, and applying analytical and other procedures. The level of assurance provided is thus not as high as that provided by a reasonable assurance engagement. Our assurance procedures included:

- Interviews with the Company's responsible personnel to obtain an understanding of its policy for the preparation of the Report.
- With respect to the Indicators,
  - reviews of the Company's reporting criteria,
  - obtaining an understanding of the systems used to generate, aggregate and report the Indicators, and of the internal controls at corporate and site level,
  - analytical reviews of the Indicators aggregated at corporate level,
  - examining, on a test basis, evidence supporting the generation, aggregation and reporting of the Indicators in conformity with the Company's reporting criteria, and also a recalculation of the Indicators,
  - visit to the Company's Isohara Works, and
  - evaluating the overall statement in which the Indicators are expressed.
- Evaluating the Company's self-declared GRI application level against the application level criteria.
- An assessment of the alignment of the Company's policies to ICMM's 10 SD Principles through documentation reviews and interviews.
- Interviews and documentation reviews of the Company's process of identifying and prioritizing its material issues.
- Interviews and documentation reviews of the Company's approach to and management of its material issues.

**Conclusion**  
Based on the assurance procedures conducted by the Company, no serious issues such as those listed below were found in the Sustainability Report:

- the Indicators in the Report are not prepared, in all material respects, in accordance with the Company's reporting criteria as described in the Report;
- the Company's self-declaration on the GRI application level does not conform to the application level criteria;
- the Company's policies are not aligned to the ICMM's 10 SD Principles as described on page 96;
- the Company has not identified and prioritized its material issues as described on page 23; and
- the Company has not approached and managed its material issues as described on page 24.

We have no conflict of interest relationships with the Company that are specified in the Code of Ethics of J-SUS.

KPMG AZSA Sustainability Co., Ltd.

KPMG AZSA Sustainability Co., Ltd.  
Tokyo, Japan  
November 19, 2010



Please feel free to give us your frank opinions about Sustainability Report 2010 to help us make the next report even better. We welcome any suggestions for improving this report.

Send your reviews on this report to:  
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