



# Sustainability Report 2011



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

## 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.

Our Sustainability Report 2011 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 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 JX Nippon Mining & Metals Corporation's website.

### Boundary of the Report

The Report covers JX Nippon Mining & Metals Corporation ("the Company") as well as its 53 major domestic and overseas affiliated companies as of April 1, 2011. Further, the reporting boundaries of respective indicators are as follows.

Boundaries of the Data	Domestic	Overseas	Total
Economic Data <sup>*1</sup>	12	12	24
Environmental Data	11 <sup>*2</sup>	4 <sup>*3</sup>	15
Social Data <sup>*4</sup>	38	16	54

<sup>\*1</sup>. This represents the number of reporting companies covered in the "Economic Effects on Stakeholders" section of the Economic Activities Report. In addition to consolidated subsidiaries (not including companies that do not conduct business activities), the nonconsolidated subsidiary SCM Minera Lumina Copper Chile is included.

<sup>\*2</sup>. Included are operating sites that engage in production activities and which the Company controls directly and companies that have relatively substantial environmental impacts, specifically companies that operate factories classified as a Type 1 Designated Energy Management Factory or companies for which reporting is required under the laws and regulations pertaining to the Pollutant Release and Transfer Register (PRTR).

<sup>\*3</sup>. The four companies included are Changzhou Jinyuan Copper Co., Ltd., Nippon Mining & Metals (Suzhou) Co., Ltd., JX Nippon Mining & Metals Philippines, Inc., and Gould Electronics GmbH.

<sup>\*4</sup>. This represents the number of reporting companies covered in the "Involvement with Our Employees" section of the Company's Social Activities Report.

### Publication Date

November 2011 (Publication date of previous report: September 2010)

### Reporting Period

In principle, this Report covers our business activities for the period from April 2010 to March 2011 (fiscal 2010). In order to ensure comprehensive disclosure, however, certain information regarding important events that occurred prior to and/or after this period have been included. This Report also covers our activities in and after April 2011, to recover and reconstruct from the Great East Japan Earthquake, which occurred on March 11, 2011.



The indicators that are externally assured are marked with "☑".

For a more detailed explanation of the underlined text throughout this Report, please refer to the glossary on pages 97 to 100.

"At the Occurrence of the Great East Japan Earthquake" subsections within each section report on the effect of the March 11, 2011, Great East Japan Earthquake on the Group and the measures it took in response.

P39, 44, 46, 48, 69



assisting the sustainable development of society.

#### Group Companies Covered under This Report (Company names as of July 1, 2011)

##### Resources Development

Kasuga Mines Co., Ltd.  
JX Nippon Exploration and Development Co., Ltd.  
JX Nippon Drilling Co., Ltd.  
SCM Minera Lumina Copper Chile<sup>\*1</sup>

##### Smelting and Refining

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

##### Recycling and

##### Environmental Services

JX Nippon Environmental Services Co., Ltd.  
Kamine Clean Service Co., Ltd.  
JX Nippon Tomakomai Chemical Co., Ltd.  
JX Nippon Tsuruga Recycle Co., Ltd.  
JX Nippon Mikkaichi Recycle Co., Ltd.  
JX Nippon Kurobe Galva Co., Ltd.

##### Electronic Materials

JX Nippon Mining & Metals USA, Inc.  
JX Nippon Mining & Metals Europe GmbH<sup>\*1</sup>  
JX Nippon Mining & Metals Philippines, Inc.  
JX Nippon Mining & Metals Singapore Pte. Ltd.<sup>\*1</sup>  
Gould Electronics GmbH

Ichinoseki Foil Manufacturing Co., Ltd.

JX Nippon Mining & Metals Korea Co., Ltd.  
Nikko Metals Hong Kong Ltd.  
JX Nippon Coil Center 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.  
Sanyu Electronic Industry Co., Ltd.

##### Other Business

JX Metals Trading Co., Ltd.  
Nippon Marine Co., Ltd.  
Nikko Logistics Partners Co., Ltd.  
Circum Pacific Navigation Co., Ltd.  
JX Nippon Mining Ecomanagement, Inc.<sup>\*1</sup>  
Yoshino Mines Co., Ltd.<sup>\*1</sup>  
Oya Mines Co., Ltd.<sup>\*1</sup>  
Hokuriku Mines Co., Ltd.<sup>\*1</sup>  
Shin-Takatama Mining Co., Ltd.<sup>\*1</sup>  
Kaneuchi Mining Co., Ltd.<sup>\*1</sup>  
Hitachi Mines Co., Ltd.<sup>\*1</sup>  
Shakanai Mines Co., Ltd.<sup>\*1</sup>  
Hanawa Mines Co., Ltd.<sup>\*1</sup>  
Hokushin Mining Co., Ltd.<sup>\*1</sup>  
Namariyama Mining Co., Ltd.<sup>\*1</sup>  
Shimoda Hot Spring Inc.<sup>\*1</sup>  
Toyoha Mine Co., Ltd.<sup>\*1</sup>  
JX Nikko Art & Craft Co., Ltd.  
Nikko Metals Trading & Services (Shanghai) Co., Ltd.  
Nikko Metals Taiwan Co., Ltd.  
Materials Service Complex Malaysia Sdn. Bhd.

Group companies included within the reporting boundaries of the "Involvement with Our Employees" section of the Social Activities Report (not including SCM Minera Lumina Copper Chile).

<sup>\*1</sup>. Companies newly added within the reporting boundary for this report (16 companies).

Further, from July 2010 the Company assumed control of JX Nippon Mining Ecomanagement, Inc., and companies managing closure mines.

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**We will contribute to the development of a  
through innovation in the areas of energy,**



**Masanori Okada**

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

A handwritten signature in black ink, reading "Mr. Okada" with a stylized flourish at the end.



# sustainable economy and society

## resources and materials.

### Regarding the Great East Japan Earthquake

The Great East Japan Earthquake, which occurred on March 11, 2011, is a disaster the likes of which Japan has never before experienced. We would like to take this opportunity to express our most heartfelt condolences to all those who have suffered. As for the JX Group, we too were affected, suffering damage to some of our facilities located in the Isohara, Hitachi, and other areas of the Tohoku and Northern Kanto regions of Japan. Because of these damages, as well as losses of electric and water utilities, we were forced to suspend operations at the affected facilities. Repairs, however, are being made and operations are gradually being restarted. The recent disaster also caused the escape of tailings from storage areas at the Oya Mine (Miyagi Prefecture) and Takatama Mine (Fukushima Prefecture). We are working with the greatest urgency to remove this slag and prevent a secondary disaster, while updating local residents on our actions.

### 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 nonferrous 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, midstream metals smelting and refining, and the downstream areas of electronic materials and recycling and environmental services with copper at its core. As an integrated nonferrous metal manufacturer, the Company is forging ahead with a global mindset under its basic policy to not only grow each field of its business in a steady and solid way, but also maintain a well-balanced approach.

### Our CSR Activities Are Nothing More or Less Than Our Business Activities

The characteristics of our business are:

- ❶ We supply society with the basic metal resources and materials that support daily life and industry activities in a broad sense.
- ❷ 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.
- ❸ 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 based on the tenacious development of technologies. In other words, we believe that developing our operations will contribute to the sustainable development of the economy and society; therefore, our CSR activities are

nothing more or less than our business activities. It is critical, therefore, that our employees playing main roles in carrying out our business activities are constantly aware of the degree to which they can contribute to the sustainable development of the economy and society through their daily work.

Looking back, since the Company's establishment over 100 years ago, we have worked to resolve environmental problems and pursue our business activities always with the aim of coexisting with local communities as a top concern. Our construction of the Giant Smokestack and planting of cherry trees (Jiro Nitta's novel *Aru Machi no Takai Entotsu* [A Tall Stack in a Town] was written on these themes) at the Hitachi Mine, the Company's birthplace, are just two of the ways in which this aspect of our company has been manifested. Now, as a member of the JX Group, we remember this aspect of our Group culture and re-acknowledge our commitment to live up to our social responsibilities in pursuing innovation in the productivity of resources and a harmonious relationship with stakeholders – two elements of our Code of Conduct.

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. Despite our best efforts to conduct safe, disaster-free operations, however, we did suffer two significant accidents in fiscal 2010. Reflecting seriously on the occurrence of these accidents, we are determined to once again exert our utmost efforts to implement thorough safety and disaster-prevention measures in order to ensure that such accidents never happen again.

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

The Group has endorsed the 10 sustainable development principles of the International Council on Mining and Metals (ICMM), which is devoted to developing a sustainable society, agrees with the thoughts of the Extractive Industries Transparency Initiative (EITI), and supports the 10 principles of the United Nations Global Compact. We have also discussed the ICMM Position Statement in our CSR Committee and have given our support to it. The Sustainability Report 2011 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.

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

## JX Group Mission Statement

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 JX Group Mission Statement and our Code of Conduct, we engage in CSR activities on the understanding that they are nothing more or less than our business activities.**

## Code of Conduct

Ensuring a stable supply of nonferrous 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.

### 1. 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.

### 2. 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.

### 3. 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.

### 4. 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.

### 5. 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.

### 6. Enhancement and strengthening of risk management

We will establish a risk management system based on scientific data to enhance and strengthen risk management.

### 7. 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.

### 8. 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.

### 9. Elimination of antisocial activities

We stand firm against all antisocial forces and groups that threaten social order and safety.

### 10. 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.



With the theme of “Roles to Be Carried Out by the JX Nippon Mining & Metals Group toward the Development of a Sustainable Economy and Society,” a roundtable meeting was held between several members of the Company’s management team and the employees responsible for the day-to-day business at each operating site to discuss and ascertain the Group’s corporate DNA, which has been nurtured for more than 100 years, and the CSR activities to be tackled by each and every employee.

### JX Group Mission Statement and JX Nippon Mining & Metals’ DNA

**Moderator:** Initially, please talk about the JX Group Mission Statement and JX Nippon Mining & Metals’ corporate DNA. The JX Nippon Mining & Metals Group’s Code of Conduct was compiled by incorporating the JX Group Mission Statement into our corporate DNA, which has been forged in the century since our foundation. In your day-to-day business activities, what issues do you typically encounter with regard to the JX Group Mission Statement or the Nippon Mining & Metals’ Code of Conduct?

**Takamura:** I work at the Technology Development Department of the Isohara Works. As an engineer in the development field, the phrase “Advanced ideas,” or the “A” in the JX Group’s five key values abbreviated as EARTH, surfaces in my consciousness. I have been engaged in the development of larger-diameter silicon wafers for semiconductors to increase from 300mm to 450mm. This enlargement of wafer diameter has a direct impact on productivity improvement for LSI chips. I believe that it is important for us to have advanced ideas continuously to contribute to the growth of the semiconductor industry.

**Uemura:** I am in charge of sales of chemical products such as sulfuric acid and slag. As I have long been engaged in sales activity, I’m always conscious of whether our products can gain customers’ confidence. Therefore, “Advanced ideas” and “Trustworthy products/services” from the JX Group Mission Statement are crucial phrases for me.

**Sato:** I prepare the financial statements for release to investors. So I am always strongly conscious of “Compliance with laws and regulations and engagement in fair trade” and “Disclosure of corporate

information and protection of personal information,” both of which are stated in the Code of Conduct. Currently, my efforts are focused on preparing the financial statements in compliance with international financial reporting standards.

**Saito:** As I work at the Recycling and Environmental Services Group, I feel close to such concepts as “Harmony with the environment” and “Trustworthy products/services” in the JX Group Mission Statement and the sustainable development of society, which is advocated in the Code of Conduct.

**Soga:** I personally feel conscious of “Ethics” in the JX Group Mission Statement. When I took a post in Malaysia, I was assigned to a top management position where I had to lead by example with full responsibility for my behavior. In fact, I noticed that it was not until I took responsibility for my actions that local employees really followed me. Now I am a sales manager at the Tokyo Head Office, and I continue to take such responsibility based on a sense of ethics.

**Kamegai:** As I work at a copper smelting site, Saganoseki, my priority is to ensure safety and a comfortable working environment, which falls under “Creation of an optimum working environment” in the Code of Conduct. In addition, I put into practice “Innovation in the productivity of resources and materials” in my business field through productivity improvement in collaboration with other smelting and refining sites.

**Masuda:** I worked at the Toyoha Mine for about 10 years after joining the Company, and I was especially conscious of the values of “Relationship with society” and “Harmony with the environment” in the JX Group Mission Statement. As I am now engaged in managing



closure mines from the Tokyo Head Office, I continue to take into consideration harmonious coexistence with society and the global environment.

**Moderator:** Next, I would like to ask your opinion about the Company's corporate culture. Do you feel that the Company has an original culture or ethos? If yes, what is your view of that?

**Takamura:** I especially feel the culture through the Company emblem. I was disappointed that the "Janome mark" of the former Nippon Mining & Metals Co., Ltd., disappeared pursuant to the establishment of the JX Group. Janome was initially designed by the founder, Fusanosuke Kuhara, in the illustrated form of an annular eclipse to symbolize eternal corporate development. Meanwhile, I swiftly became familiar with the new JX Mark, which was also designed together with a circle to symbolize eternity and a well-rounded status. I am confident that our culture is strongly inherited in the development of smelting and refining and purification technologies, which are our strengths. The targeted metals in my development field include a variety of nonferrous metals such as copper, titanium and manganese. Accordingly, I feel that the technological buildup since the Company's foundation has been applied to the development of various electronic materials.

**Uemura:** When I became part of the sales staff, I was often told that Nippon Mining's salespeople were samurai warriors without a specific sovereign lord. This expression, I believe, means that Nippon Mining's salespeople often give the impression of being supported by a frontier spirit in a free and vigorous atmosphere to best address innovations in anticipation of customers' needs. I still feel such an atmosphere as we contemplate challenging new fields such as urban mine development.

**Saito:** At the Hitachi Metal Recycling Complex (HMC), we have endeavored to put a new business on track through a trial-and-error process by implementing new technologies to recover various kinds of valuable metals from such waste as home electrical appliances. I believe this business embodies the frontier spirit of meeting the challenges of innovation and overcoming difficulties.

**Soga:** When I started a new posting in Malaysia, the mainstay business of the locally incorporated corporation was electronic materials processing. Subsequently, new business opportunities emerged, including recycling and environmental services. Starting a new business overseas was accompanied by extreme difficulties. However, we succeeded in obtaining a recycling business license from the Malaysian government and therefore could launch a new business.

**Kamegai:** Since joining the Company, I have worked at the Saganoseki Smelter & Refinery. I feel strongly about the history and importance of our accumulated trust relationship with local communities. Our current jobs are based on that relationship of trust, which has been fortified by the laborious efforts of our predecessors and the cooperation and understanding of local residents. I firmly believe that we should address social and environmental issues on the basis of this relationship of trust.

**Masuda:** I have the impression that mine workers are somewhat rough-natured persons who are prone to trivial disputes. However, they devote themselves to a targeted task with a single purpose regardless of

hierarchical relationships when necessary. I think this trend represents the original corporate culture of the JX Nippon Mining & Metals Group. I believe that one reason we were able to safely close the Toyoha Mine was the trusting relationship between management and labor.

**Moderator:** In summary, we have mentioned several catchphrases: **frontier spirit; free, vigorous, simple and sturdy atmosphere; mutual trust; and the respect for coexistence with local communities.** Can we consider that these features represent the Company's corporate culture?

**Okada:** The Company is rapidly changing its culture through continuing management integrations. Given such changing circumstances, I have recently made it a point to speak with newcomers about our entrepreneurship so that the Company's corporate DNA would not be ambiguous to them.

Copper is our mainstay product, and it is indispensable for the sustainable development of society. Meanwhile, resource development and smelting for producing copper inevitably have an adverse effect on the environment. Our predecessors have labored to find a good balance between the positive and negative factors of copper production in developing solutions. The efforts of our predecessors helped to create today's corporate culture and the dignity of the Company. In my opinion, one's personality gradually deepens as he or she gets older. Similarly, a corporation's dignity is enhanced along with the continuation of its business activities. The dignity of the Company has been nurtured and supported for more than a century. It did not happen overnight.

**Matsui:** I personally believe that the starting point of our CSR activities was the construction of a giant stack and the afforestation of 10 million trees in Hitachi City.

In the days before the concept of CSR even existed and not long after its foundation, the Company achieved the construction of a giant stack of 155.7 meters in height by investing vast funds and engaging close to 40,000 workers. The height of the giant stack was a world record at that time. This undertaking was underpinned by the Company's strong sense of mission that the Company must take responsibility for its smoke damage. In parallel with its construction, the large-scale afforestation of *oshimazakura* (a kind of Japanese cherry tree) and other plant species was executed as an initiative to regenerate the natural environment. This innovative and challenging project was carried out a century ago. As described earlier, a



mind-set comparable to the frontier spirit and an original corporate culture respecting coexistence with local communities have long been inherited as a part of the Company's culture.

**Yamaki:** As for the construction of a giant stack and the afforestation of cherry trees, which Mr. Matsui mentioned, I think that there are two noteworthy points taking into account the background and details.

One point is that these actions were not forced by any compulsory laws or administrative guidance, and the Company did not implement them out of necessity. The measures were taken based on voluntary managerial decisions from a moral standpoint: "The

Company can no more bother local residents" and "Business cannot survive without the understanding of local residents." The other point is that the Company focused on technological rationality and scientific grounds in conducting these measures. One example of such an attitude was the establishment of agricultural and forestry experiment stations and weather stations. That is why the Company's attitude to these issues was accepted as sincere by local people. The giant stack still stands as a symbol of that city although its height was subsequently altered. I believe this long-term attitude of the Company is the source of our CSR activities.

## Our CSR Activities and Tasks to Be Addressed

**Moderator:** Now, please explain the actual circumstances at your individual operating site and the major tasks regarding CSR activities.

**Masuda:** Environmental restrictions surrounding the management operations of closed mines have become increasingly stringent. We are committed to treating and managing water discharged from the closed mines, which has long been a crucial task thoroughly tackled by our predecessors.

**Okada:** Currently, the Group owns 39 closed mines in Japan. At 12 of these 39, we treat and manage discharged water at our own expense. This is quasi-perpetual work that must be continued for many years so that no dirty water flows into rivers. Water management is a social responsibility that we must address to continue our businesses, and the Company is determined to continue this low-profile work. The Company has invested enormous energy in taking responsibility for recovering any natural environment that it has damaged. I'm sure that this sense of responsibility is part of our original corporate DNA. We have constructed water treatment and management facilities of a globally unprecedented scale at the site of the Toyoha Mine, which was recently closed, by investing approximately ¥10 billion. In fiscal 2010, we sent our second-year employees to these facilities for on-site observation so that they can better understand the Company's initiatives for environmental conservation and coexistence with local communities.

**Soga:** Sales staff of electronic materials are often requested to offer innovative and attractive proposals to customers. Above all, I am most conscious about environment-friendly electronic materials. Highly recyclable materials that allow for repeated use are well received by customers due to enhanced usefulness. Furthermore,

used materials available as recyclable resources may sometimes be handled as industrial waste because the relevant laws are not yet adequate in China and Southeast Asian countries. We are currently endeavoring to create a new mechanism that would contribute to creating a so-called recycling-oriented society, through which materials deemed as waste could be directly recovered from customers.

**Takamura:** The pursuit of environment-friendly electronic materials is also my future task as is the case with Mr. Soga. Recently, we have actively promoted product development of next-generation, transparent semiconductors, with which a considerable reduction in electric power consumption can be expected for their use in flat panel displays (FPD) and other products.

**Sato:** My job is to prepare closing financial statements for disclosure, including quarterly reports, securities reports and annual reports. In preparing these documents, we take special care to use expressions that are easy to understand for the various stakeholders, including shareholders, investors and business partners.

**Moderator:** On the manufacturing floor, sometimes we are asked whether CSR is truly disseminated to the level of each employee. What do you think of such a concern? How would you address this point?

**Kamegai:** On the spot, some employees react in a negative way toward CSR by saying, "CSR seems difficult to understand, and I don't know it well." I explain to such people that CSR activities are nothing more or less than our business activities and doing our normal operations in itself will lead to CSR activities. However, I feel the necessity to make such explanations in clearer and simpler terms.

**Okada:** *Kaizen* (or continuous improvements) and innovations in our daily operations are increasingly useful. This process is equal to CSR. How about explaining it in this manner? Isn't this way the most understandable?

**Matsui:** I understand that CSR refers to a mind-set of corporations that means "Gaining society's confidence." Many examples show that once a corporation has lost the confidence of society it cannot survive. In other words, each and every employee of the Company must work on his/her own job on a day-to-day basis with the phrase "Gaining society's confidence" always in mind. CSR does not necessarily mean adding new CSR-related jobs to routine ones. This simple method explains why we believe CSR activities are nothing more or less than our business activities.





**Masanori Okada**  
President & CEO  
Chairman of the CSR Committee



**Hiroshi Matsui**  
Director  
Deputy Chief Executive Officer



**Nobuyuki Yamaki**  
Director  
Senior Executive Officer



**Michiharu Yamamoto (Moderator)**  
General Manager  
CSR Department



**Tomonori Uemura**  
Manager  
Sales Department, Pan Pacific  
Copper Co., Ltd.



**Toshihiro Kamegai**  
Manager  
Sulfuric Acid Section, Production  
Department, Saganoseki Smelter &  
Refinery, Pan Pacific Copper Co., Ltd.



**Akio Saito**  
Manager  
Marketing Department, Recycling  
and Environmental Services Group



**Hikaru Sato**  
Manager  
JX Nippon Business Services  
Corporation



**Hiroshi Takamura**  
Principal Engineer  
Technology Development  
Department, Isohara Works



**Koji Masuda**  
Principal Engineer  
Resources Development  
Department, Metals Group



**Takashi Soga**  
Manager  
Rolled & Fabricated Products  
Department, Functional Materials  
Division, Electronic Materials Group

## What Should We Do as a Constituent Member of Society?

**Moderator:** Finally, please tell me what you should do as a constituent member of society.

**Uemura:** The JX Nippon Mining & Metals Group is a leading company in global copper production. The Group therefore is proud of contributing to the development of Japanese and, by extension, the world's industries. Conversely, we feel a strong responsibility for copper supply.

**Saito:** As the number of producer countries for several kinds of non-ferrous metals is considerably limited, many customers are alarmed by the supply. Consequently, there are customers who request that the Company supply certain nonferrous metals as an emergency means to diversify their supply sources. Some customers ask about methods to effectively reuse industrial waste. In these fields, the Group must provide guidance in helping customers cope with their own issues, and I believe that conducting our day-to-day operations will serve, in this context, as a kind of social contribution.

**Soga:** Domestic customers are accustomed to neatly sorting used materials by type into high-quality, recyclable raw materials. A strong need for raw materials of high quality exists at the Group's works, and the works use reliable recyclable raw materials that are recovered from customers in Japan. On the other hand, we cannot always purchase high-quality recyclable raw materials in other countries because the sorting systems are often deficient. We therefore intend to globally streamline the recycling mechanism toward the establishment of a recycling-oriented society.

**Masuda:** In recent years, I have had opportunities to lecture at universities. Although the mining industry is bedeviled by such

negative images as "tiring," "dirty" and "dangerous," I'd like to report on the attractive character of the mining business to university students. I will strive to relay a message that informs students that "mining technology is an exclusive feature of JX Nippon Mining & Metals."

**Yamaki:** The resource materials industry traditionally has had a low profile. Of course, this perception has not changed substantially, but the industry has been spotlighted as people are increasingly aware of the usefulness, diversity and/or rarity of mineral resources. This development is positive for us, but we should keep in mind in our daily operations that social responsibility for our ongoing businesses and the supply of good products are increasingly important.

**Matsui:** I again repeat my conviction that CSR is a fundamental requirement for corporations to survive and develop themselves in the future, that is, gain the confidence of stakeholders and society. I'm confident that the Company, which has a long history of more than a century, can be proud of its worthy activities while sufficiently meeting this requirement.

**Okada:** Hearing your opinions, I now understand that your images of the Company are not so different from mine. These images have been formed on the basis of the centennial history of our predecessors. A lesson that we can learn from the laborious efforts of our predecessors is that we must not shy away from harsh conditions. We must confront them. This spirit of addressing any challenge lies at the root of the Group's corporate DNA. I hope that everyone remembers this point.

## Corporate Data

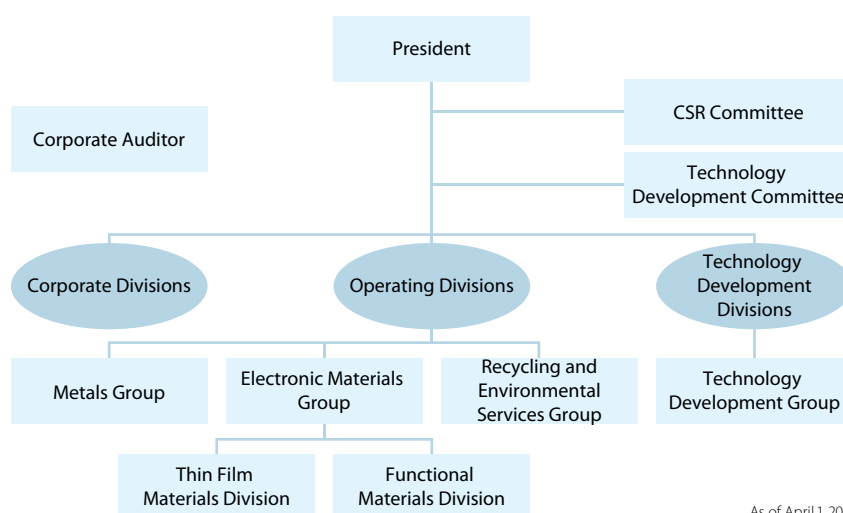
Company Name: JX Nippon Mining & Metals Corporation  
 Paid-in Capital: ¥40 billion (as of April 1, 2011)  
 Representative: Masanori Okada,  
 President and Chief Executive Officer  
 Net Sales: ¥940.6 billion (consolidated result for fiscal 2010)  
 Ordinary Income: ¥70.7 billion (consolidated result for fiscal 2010)  
 Head Office: 6-3, Otemachi 2-chome, Chiyoda-ku,  
 Tokyo 100-8164, Japan  
 Business Lines: Resources Development  
 Smelting and Refining  
 Manufacturing and Marketing of  
 Electronic Materials  
 Recycling and Environmental Services

Domestic  
 Operating Sites: Hitachi Works (Ibaraki Prefecture)  
 Isohara Works (Ibaraki Prefecture)  
 Isohara Fabricating Works (Ibaraki Prefecture)  
 Technology Development Center  
 (Ibaraki Prefecture)  
 Kurami Works (Kanagawa Prefecture)  
 Kawasaki Plant, Kurami Works (Kanagawa Prefecture)  
 Tsuruga Plant (Fukui Prefecture)  
 Overseas  
 Operating Sites\*: Chile Office  
 Australia Office

\*1. The JX Nippon Mining & Metals Group conducts business in 10 countries worldwide.

## Management Structure and Organization

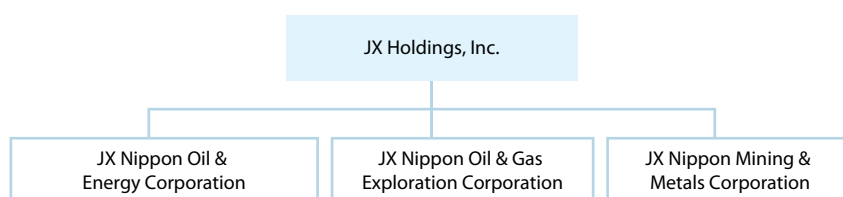
JX Nippon Mining & Metals Corporation employs an organizational structure that is comprised of operating divisions, which engage in the Company's operating activities; corporate divisions, which are responsible for the planning, accounting, administrative, environmental safety, and related support functions;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



As of April 1, 2011

## 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 nonferrous 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.

### Upstream Resources Development

As early as in the planning phase, the Company has actively participated in promising mine development projects. We are also engaged in the development of our own mines and are currently promoting the Caserones Copper and Molybdenum Deposit Development Project in Chile.



Los Pelambres copper mine in Chile



Escondida copper mine in Chile

Copper concentrate production by mines  
in which the Group holds an equity entitlement

**97** thousand tons per year  
Fiscal 2010  
copper volume contained  
in concentrate

### Midstream Smelting and Refining

Through a collaborative relationship with global copper producers—in terms of both quality and quantity—including domestic and overseas companies, we have established a world-class copper producer alliance for the production and marketing of nonferrous metals such as copper, gold, and silver.



Tamano Smelter, Hibi Kyodo  
Smelting Co., Ltd.



Saganoseki Smelter & Refinery,  
Pan Pacific Copper Co., Ltd.

Group refining capacity

**1,170** thousand  
tons per year  
Pan Pacific Copper: 610 thousand tons;  
LS-Nikko Copper: 560 thousand tons

The Natural Flow of  
Our Business Activities

### Downstream

#### Recycling and Environmental Services

Activities include recycling, where precious and other value-bearing metals such as copper are recovered from recycled raw materials, and environmental services, where industrial waste materials are detoxified without generating any secondary waste.



HMC Department, Hitachi Works



Chiongpin Recycling Center in Taiwan

Volume of gold production through recycling

**6.5** tons per year  
Fiscal 2010

### Downstream

#### Electronic Materials Business

In this field, the Company focuses largely on thin film materials and functional materials. The Company boasts a top global market share in large numbers of products including treated rolled copper foil, sputtering targets for semiconductors and flat panel displays (FPDs), and hyper-titanium copper.



Sputtering target for semiconductors



Phosphor bronze strips

Global market share

**No. 1**  
share in a family of products



## Operating Sites

### Domestic

#### Smelting and Refining

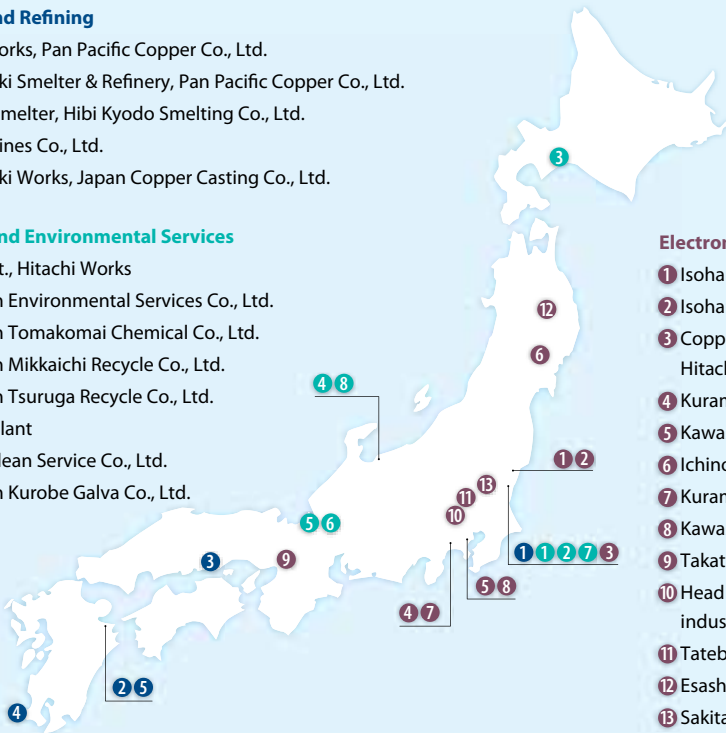
- ① Hitachi Works, Pan Pacific Copper Co., Ltd.
- ② Saganoseki Smelter & Refinery, Pan Pacific Copper Co., Ltd.
- ③ Tamano Smelter, Hibi Kyodo Smelting Co., Ltd.
- ④ Kasuga Mines Co., Ltd.
- ⑤ Saganoseki Works, Japan Copper Casting Co., Ltd.

#### Recycling and Environmental Services

- ① HMC Dept., Hitachi Works
- ② JX Nippon Environmental Services Co., Ltd.
- ③ JX Nippon Tomakomai Chemical Co., Ltd.
- ④ JX Nippon Mikkaichi Recycle Co., Ltd.
- ⑤ JX Nippon Tsuruga Recycle Co., Ltd.
- ⑥ Tsuruga Plant
- ⑦ Kamine Clean Service Co., Ltd.
- ⑧ JX Nippon Kurobe Galva Co., Ltd.

#### Electronic Materials

- ① Isohara Works
- ② Isohara Fabricating Works
- ③ Copper Foil Dept. and Precision Plating Dept., Hitachi Works
- ④ Kurami Works
- ⑤ Kawasaki Plant, Kurami Works
- ⑥ Ichinoseki Foil Manufacturing Co., Ltd.
- ⑦ Kurami Office, JX Nippon Coil Center Co., Ltd.
- ⑧ Kawasaki Office, JX Nippon Coil Center Co., Ltd.
- ⑨ Takatsuki Plant, JX Metals Trading Co., Ltd.
- ⑩ Head Office / Meguro Works, Sanyu Electronic Industry Co., Ltd.
- ⑪ Tatebayashi Works, Sanyu Electronic Industry Co., Ltd.
- ⑫ Esashi Works, Sanyu Electronic Industry Co., Ltd.
- ⑬ Sakitama Works, Suzuki Manufacturing Co., Ltd.



### Overseas

#### Electronic Materials

- ① JX Nippon Mining & Metals USA, Inc.
- ② Gould Electronics GmbH
- ③ JX Nippon Mining & Metals Europe GmbH
- ④ JX Nippon Mining & 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 Fuji Precision (Wuxi) Co., Ltd.
- ⑨ Nikko Fuji Electronics Dongguan Co., Ltd.
- ⑩ Nikko Metals Hong Kong Ltd.
- ⑪ JX Nippon Mining & Metals Philippines, Inc.
- ⑫ JX Nippon Mining & Metals Singapore Pte. Ltd.

#### Smelting and Refining

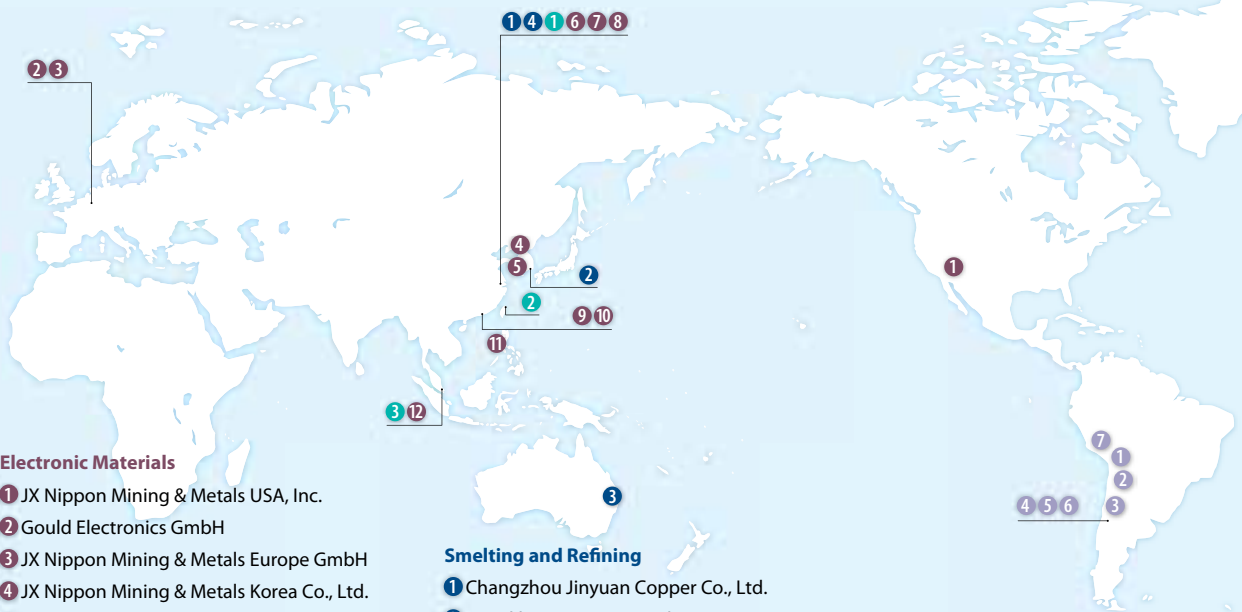
- ① Changzhou Jinyuan Copper Co., Ltd.
- ② LS-Nikko Copper Co., Ltd.
- ③ Australia Office
- ④ Pan Pacific Copper Shanghai Co., Ltd.

#### Recycling and Environmental Services

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

#### Resources Development

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



\*1. Mines in which the JX Nippon Mining & Metals Group has invested.



# CSR Activities of the JX Nippon Mining & Metals Group

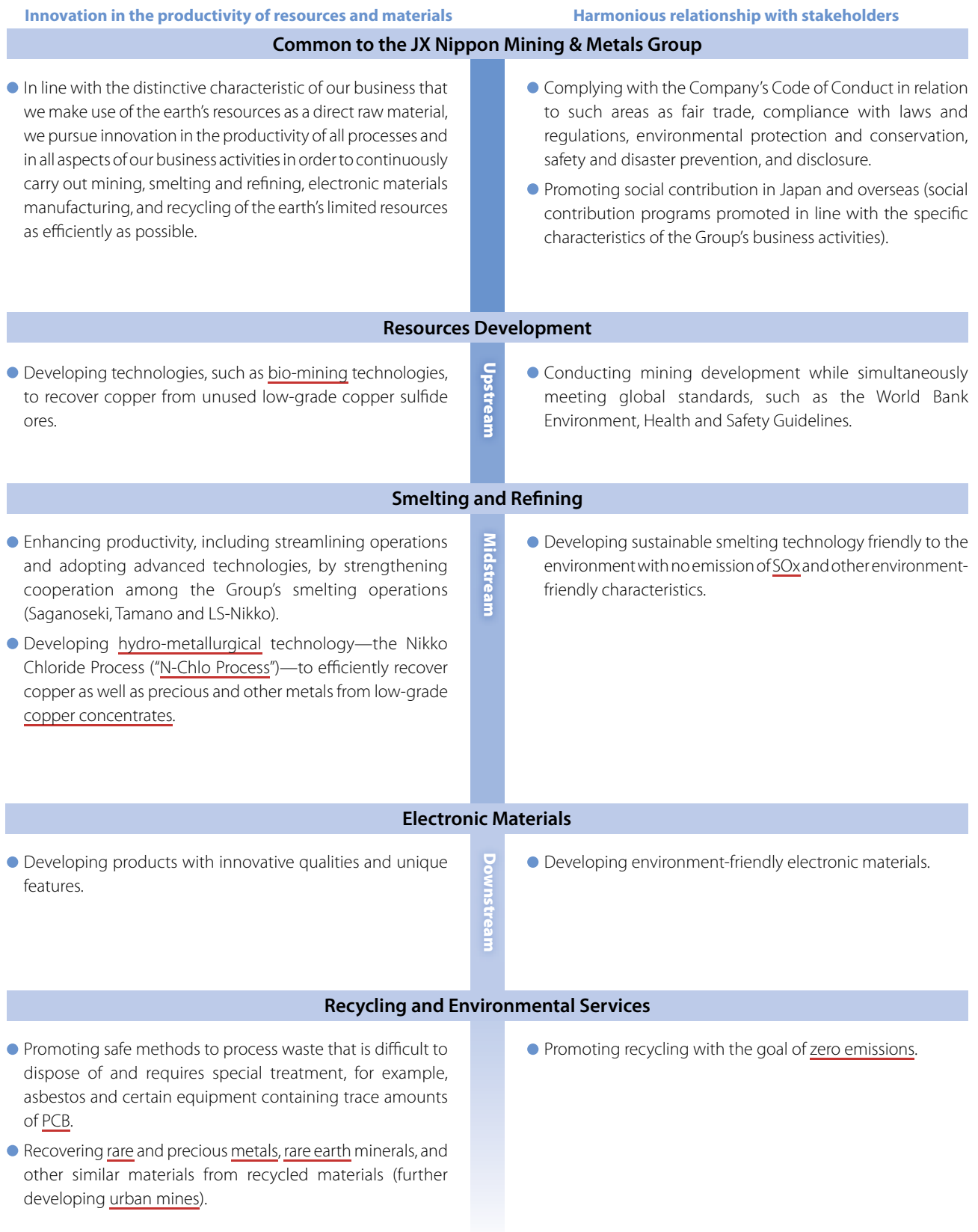
In the following section, we report on the CSR activities of the JX Nippon Mining & Metals Group.

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<b>Material Issues of the JX Nippon Mining &amp; Metals Group</b>	<b>21</b>
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# 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.



# 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 have close and regular ties with us 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
<b>Customers</b>	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 both safety and environmental perspectives</li> <li>• Further improving the quality of our products</li> <li>• Enhancing services</li> </ul>	<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 both safety and environmental perspectives</li> <li>• Exchanging information at exhibitions and other trade-related shows</li> </ul>
<b>Suppliers</b>	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>• Carrying out open and fair trade transactions</li> <li>• Promoting environmental protection based on the Basic Environmental Policy and the <u>Green Purchase Guideline</u></li> <li>• Collaborating to realize more-efficient logistics and recycling</li> </ul>	<ul style="list-style-type: none"> <li>• Conducting business through the daily transactions of JX Nippon Procurement Corporation</li> </ul>
<b>Shareholders and investors</b>	As a core operating company of the JX Group, we remain accountable to our shareholders and investors. Accordingly, we make every effort to secure highly transparent corporate management.	<ul style="list-style-type: none"> <li>• Undertaking proper and prompt disclosure through the activities of JX Holdings, Inc.</li> <li>• Increasing corporate value from economic, environmental, and social perspectives</li> </ul>	<ul style="list-style-type: none"> <li>• Conducting shareholder meetings</li> <li>• Holding investor and other meetings hosted by JX Holdings, Inc.</li> </ul>
<b>Employees</b>	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>• Ensuring a work environment</li> <li>• Providing equal opportunities and securing diversity</li> <li>• Improving the Group's education and training program</li> <li>• Enhancing the level of employee satisfaction</li> </ul>	<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>
<b>Industry-government-academia groups</b>	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>• Making proposals in a wide range of areas</li> <li>• Promoting the advancement of science and technology</li> </ul>	<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>
<b>Global environment</b>	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>• 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> </ul>	<ul style="list-style-type: none"> <li>• Participating in various projects proposed by the ICMM</li> <li>• Sharing information and opinions at international conferences and other events</li> </ul>
<b>Local and global communities</b>	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>• Preserving the local environment by complying with environmental legislation and regulations</li> <li>• Preventing accidents and disasters at our domestic and overseas operating sites</li> <li>• Respecting cultures and customs in overseas countries</li> </ul>	<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>
<b>Nonprofit organizations (NPOs) and non-governmental organizations (NGOs)</b>	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>• Collaborating in social contribution activities across such fields as poverty alleviation and environmental protection</li> <li>• Collaborating in business development</li> </ul>	<ul style="list-style-type: none"> <li>• Supporting the activities of NPOs and NGOs</li> <li>• Exchanging opinions with NPOs and NGOs</li> </ul>
<b>Future generations</b>	We continue dialogue with the next generation, who will carry inheritance forward to the future society, in an effort to clarify the Group's social role.	<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 <i>monozukuri</i> – manufacturing products</li> </ul>	<ul style="list-style-type: none"> <li>• Conducting plant tours and other events as necessary</li> </ul>

## Making Dialogue with Stakeholders

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 2010, we issued the Sustainability Report 2010, as well as conducted an employee survey on the Group’s CSR activities. We also held CSR briefing sessions for our employees on 45 occasions, and at the same time we held 43 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 2010 (Digest Version)

The Group conducted an employee survey on the Sustainability Report 2010 as well as the Group’s CSR activities. The following section provides excerpts from the survey’s findings and results.

- Survey period: November to December 2010
- Parties surveyed: All directors, officers, and employees
- Response rate: 95.1% (responses received from 2,142 of 2,251 people surveyed)

### About the use of the Sustainability Report

Six responses were prepared in advance with a precondition of “Multiple responses allowed.” The response of “Use the report as reference in daily work” accounted for a majority of all the responses, and almost 40% of respondents selected the response of “Bring back home to circulate the report among family members.”

### Use of the Sustainability Report

Use	Ratio (%)
Use the report as job-related reference data	50.5
Bring back home to circulate the report among family members	37.3
Prepare any materials using the excerpt of the report’s content	5.1
Distribute the report to customers	2.4
Distribute the report to business partners	2.4
Distribute the report to other stakeholders	2.3

### Topics of interest in Sustainability Report 2010

Topics of interest were scored for 22 topics with respondents designating three interesting topics by giving 3 points for their first choice, 2 points for their second choice and 1 point for their third choice. The results revealed that three of the top five topics of interest in the Sustainability Report 2010, as determined by those surveyed, were related to the “Material Issues for the JX Nippon Mining & Metals Group.” This again reflects the significant interest that our employees maintain in material issues, similarly to the previous fiscal year.

### Top 10 Topics of Interest

Topics	Points
Progress of Climate Change (Global Warming) and the Impact Thereof	1,534
Message from the President	1,393
Establishing a Recycling-Oriented Society	1,011
Material Issues for the JX Nippon Mining & Metals Group	941
Group Philosophy and Code of Conduct	760
Developing Environment-Friendly Technologies	678
Introducing Our Business Activities: Downstream (Electronic Materials Business)	676
Introducing Our Business Activities: Midstream (Smelting and Refining Business)	559
Introducing Our Business Activities: Upstream (Resources Development Business)	520
Downstream (Recycling and Environmental Services Business)	492

## 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 initiatives implemented at each operating site and the Group’s initiatives regarding biodiversity, in addition to conventional CSR-related topics. In fiscal 2010, briefing sessions were held at 25 domestic and 14 overseas operating sites.

In 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 the Sustainability Report 2010. At the same time, these roundtable discussions gave employees a better and broader understanding of the Group’s initiatives relating to compliance, risk management, and

energy conservation 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 at individual operating sites.”

Going forward, we will consider how to realize these proposals in order to further advance and enhance our CSR activities.

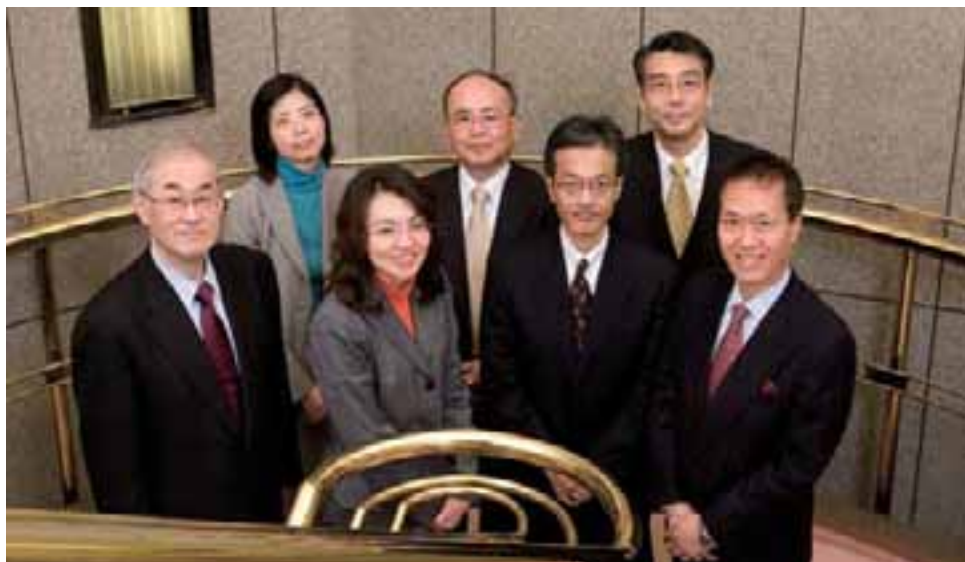




## Stakeholders Meeting 2010

The Group holds a Stakeholders Meeting involving external experts from a variety of fields. At the meeting, we solicit diverse opinions, comments and requests from these experts in relation to our CSR activities and the topics released in our sustainability report issued for the previous fiscal year. In the previous fiscal year, based on the

Sustainability Report 2009, a stakeholders meeting was convened in March 2010, and opinions and comments were given especially with regard to "CSR Activities and Corporate Value." In this Report, we identify several key requests put forward by participating experts and outline the Group's responses.



**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

**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

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

## Requests Put forward at the Stakeholders Meeting Held in March 2010 and the Group's Response for Fiscal 2010 and Beyond

### Request

We would like the Group to focus more efforts on human rights and labor without limiting the description of the Report to only environmental issues.

We ask that the Group reinforce initiatives toward the so-called Offensive CSR approach and be increasingly proactive in disclosing information.

We would like the Group to conduct CSR activities with its employees and their families.

### Response

Taking into account the attributes of our business operations, we can do nothing about the fact that the material issues are selected primarily in the environmental aspect. The important challenges selected were identified as topics of interest in this Report with reference to the seven core subjects of social responsibility, including human rights and labor practices, in the ISO26000.

The Group established the Citizenship Committee in April 2011 to activate its social contribution activities. In addition, in the Sustainability Report 2011 we introduced the Group's initiatives regarding closure mines, for which we had not previously disclosed information. Although the activities at the closure mines do not directly lead to an increase in revenue or profit, they are introduced in the Report as an example that indicates our initiatives toward the corporate social responsibility of the Group.

Previously, the Group has been committed to the CSR activities by considering that employees are principal participants in the activities. We now encourage our employees to actively engage in CSR activities with their families, for example, by having offered a questionnaire on "Energy conservation activities with family members in private hours" as part of the employee survey on the Group's CSR activities conducted in fiscal 2010.

# CSR Activity Report

## CSR Action Policy Goals, Performance, and Evaluation for Fiscal 2010 and Goals for Fiscal 2011

PLAN		DO
Issues and goals	Fiscal 2010 goals	Initiatives
<b>● Innovation in the productivity of resources and materials</b>		
Innovation in the productivity of each operation and throughout every aspect of our business activities	<b>❶</b> Promote innovation in productivity (including streamline of other operations)	(1) Cases of commendations for innovation in productivity <ul style="list-style-type: none"> <li>● Saganoseki Smelter &amp; Refinery, Pan Pacific Copper Co., Ltd.</li> <li>● JX Nippon Environmental Services Co., Ltd.</li> <li>● Tamano Smelter, Hibi Kyodo Smelting Co., Ltd.</li> </ul> (2) Cases of commendations for streamline of other operations <ul style="list-style-type: none"> <li>● Saganoseki Smelter &amp; Refinery, Pan Pacific Copper Co., Ltd.</li> <li>● Tamano Smelter, Hibi Kyodo Smelting Co., Ltd.</li> <li>● JX Nippon Tsuruga Recycle Co., Ltd.</li> <li>● Isohara Works</li> <li>● Shirogane Works</li> </ul>
	<b>❷</b> Promote innovation in productivity regarding environmental issues	
	Reduce energy consumption intensity by 5% from the average of the period between fiscal 2003 and fiscal 2005	(1) Cases of promoting energy conservation activities <ul style="list-style-type: none"> <li>● Energy conservation via the shutdown of foundry machines due to the consolidation of manufacturing facilities (Saganoseki Smelter &amp; Refinery, Pan Pacific Copper Co., Ltd., and Japan Copper Casting Co., Ltd.)</li> <li>● Increase in adiabatic efficiency of <u>annealing</u> furnaces, the enhanced adoption of inverter fan motors, etc. (Kurami Works)</li> <li>● Improvement of current efficiency, reduction of shutdown frequencies due to machine failure, etc. (Shirogane Works)</li> </ul>
	Reduce CO <sub>2</sub> emission intensity by 7.5% from the average of the period between fiscal 2003 and fiscal 2005	(2) Cases of reducing CO <sub>2</sub> emissions <ul style="list-style-type: none"> <li>● Improved recovery rate of waste heat from sulfuric acid (Tamano Smelter, Hibi Kyodo Smelting Co., Ltd.)</li> <li>● Improved production efficiency by increasing the processed volume of solid materials, etc. (JX Nippon Tomakomai Chemical Co., Ltd.)</li> <li>● Improved production efficiency by increasing the processed volume of waste (JX Nippon Tsuruga Recycle Co., Ltd.)</li> </ul>
	Reduce final waste disposal intensity by 70% 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 <ul style="list-style-type: none"> <li>● Reduced volume of waste through the repeated in-process treatment of <u>slag</u> (Saganoseki Smelter &amp; Refinery, Pan Pacific Copper Co., Ltd., and Tamano Smelter, Hibi Kyodo Smelting Co., Ltd.)</li> <li>● Reduced volume of waste disposed of in landfills via the enhanced sorting of waste plastics (Shirogane Works)</li> <li>● Reduced volume of waste disposed of in landfills via the enhanced sorting of <u>sludge</u> (In fiscal 2010, a fact-finding survey and a review of the disposal method were conducted.) As for the waste disposed of in landfills, wreckage and waste plastics were disposed of and reduced to zero in 2008 and 2009. (Kurami Works)</li> <li>● Continued initiatives toward zero final disposal volume of waste (four environmental business-related companies and the HMC Department, Hitachi Works)</li> </ul>
	<b>❸</b> Other initiatives	Recovery of <u>rare metals</u> from materials for thin-film solar panels (Isohara Works)
<b>● Harmonious relationship with our stakeholders</b>		
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	Preventing misconduct <ul style="list-style-type: none"> <li>● Raising awareness about compliance</li> <li>● Complying with goals related to compliance</li> </ul>
	Secure safety and prevent disaster	Securing safety and preventing disaster <ul style="list-style-type: none"> <li>● Creating an optimum working environment</li> <li>● Eradicating occupational diseases</li> </ul>
	Organize education programs to raise awareness about CSR	Conducting employee education and training <ul style="list-style-type: none"> <li>● Participating in CSR briefing sessions and employee roundtable discussions</li> <li>● Carrying out compliance education and training, and other programs</li> </ul>
	Comply with laws and regulations	Complying with laws and regulations <ul style="list-style-type: none"> <li>● Pre-registering those substances subject to <u>REACH</u> regulation</li> <li>● Disposing systematically of <u>PCB</u></li> <li>● Others (strengthening measures to control asbestos and to avoid failure of necessary notifications to regulatory agencies, etc.)</li> </ul>
Promoting matters related to social contribution and local communities	Engage in communication with local communities	Promoting communication with local communities <ul style="list-style-type: none"> <li>● Participating in cleanup activities</li> <li>● Engaging in communication through summer festivals and other events</li> </ul>
	Promote social action programs	Promoting social action programs <ul style="list-style-type: none"> <li>● Afforestation and reforestation activities at the sites of closure mines</li> <li>● Supporting the activities of <u>NPO 2050</u> (a program providing educational support to women of developing countries)</li> <li>● Supporting those who have been affected by the Great East Japan Earthquake</li> </ul>
Acquiring trust of stakeholders	Obtain certifications	Obtaining <u>OHSAS</u> and <u>ISO</u> certifications <ul style="list-style-type: none"> <li>● Obtaining <u>OHSAS 18001</u> certification in fiscal 2010: HMC Dept. of Hitachi Works, Tatebayashi Works of Sanyu Electronic Industry Co., Ltd.</li> <li>● Obtaining <u>ISO 14001</u> certification in fiscal 2009: HMC Dept. of Hitachi Works</li> </ul>

Evaluation: Attained goals = A Partially attained goals = B Did not attain goals = C

	CHECK	ACT
Fiscal 2010 performance (Numerical data, variances from benchmarks, progress of development projects, and others)	Evaluation	Fiscal 2011 goals (Numerical goal or degrees of progress to goals, and others) and challenges
President's Award (encouragement award) President's Award (encouragement award) PPC President's Award (encouragement award)	A	Continue implementation
PPC President's Award (encouragement award) President's Award (special encouragement award) President's Award (special encouragement award) Works General Manager's Award Works General Manager's Award		
Reduction of 5.4% from the average of the period between fiscal 2003 and fiscal 2005	A	As the goals for preventing global warming to be achieved by fiscal 2010 have been attained, new goals for reducing energy consumption intensity by 1% and CO <sub>2</sub> emission intensity by 1% (compared with the average of the period from fiscal 2008 to fiscal 2010) are set for fiscal 2011 and beyond. However, the goal of the reduction of CO <sub>2</sub> emission intensity may have to be revised in light of the installation of privately owned electrical power facilities (that use fuels) in association with the shutdown of several nuclear power generation.
Reduction of 8.1% from the average of the period between fiscal 2003 and fiscal 2005	A	
Reduction of 78% from the average of the period between fiscal 2003 and fiscal 2005	A	As the goals for reducing waste to be achieved by fiscal 2010 have already been attained, a new goal of maintaining the ratio of non-value-bearing waste volume*1 at less than 1% is set for fiscal 2011 and beyond. *1. Ratio of non-value-bearing waste volume: (Volume incinerated + Volume of final disposal)/Waste generated and others The ratio was 0.93% for fiscal 2010.
Confirmed recoverability.	A	Conducted recovery operation
● No occurrence of significant misconduct in fiscal 2010 reported	A	Continue to ensure no occurrence of significant misconduct
● Accidents with lost working days and fatal accidents: 29 cases ● Fires, explosions: 1 case ● Occupational diseases: 0 cases	C	Promote activities to eradicate significant accidents and damage Promote the activity toward creating and ensuring a culture of safety
● Conducting CSR briefing sessions (45 times), holding employee roundtable discussions (43 times), and carrying out employee surveys, when visiting 25 domestic and 14 overseas operating sites ● Carrying out employee surveys ● Conducting specialized education by job grade, as well as education on antitrust law and the stamp duty	A	Participate in CSR briefing sessions Continuously carry out compliance education and training, and other programs
● Conducting investigations on suspect areas and relevant removal works for residual, scattering-type asbestos ● Taking necessary measures pursuant to the revision of environmental laws and preventive steps to avoid leakage of notifications required in compliance with the relevant provisions of the laws and regulations ● Conducting follow-up on the REACH regulation and the final disposition of the PCB based on the predetermined plans	A	Continue implementation
● Conducted annual events including cleanup activities and summer festivals at operating sites ● Participating in the Kurakake Mountain cleanup volunteer activities (Hitachi Works) ● Cleanup activities at the Kehi-No-Matsubara Beach and the holding of a firefly appreciation event (JX Nippon Tsuruga Recycle Co., Ltd.)	A	Continue implementation
● Supporting the afforestation at the sites of the Oe, Kameda and Takatama Mines, and reforestation activity in Nanyo City ● Continuing support of a program providing educational support to women of developing countries ● Supporting goods and donating relief funds to the devastated areas of the Great East Japan Earthquake ● Supporting those who have been affected by the recent earthquake in New Zealand (JX Nippon Mikkaichi Recycle Co., Ltd.) ● Supporting the Japan Philharmonic Orchestra (Pan Pacific Copper Co., Ltd.)	A	Continue implementation
● Continue regular inspections at operating sites and companies that have obtained OHSAS and ISO certifications Saganoseki Smelter & Refinery, Pan Pacific Copper Co., Ltd., Tamano Smelter, Hibi Kyodo Smelting Co., Ltd., Kurami Works, Isohara Works, Isohara Fabricating Works, Hitachi Works, JX Nippon Environmental Services Co., Ltd., JX Nippon Tomakomai Chemical Co., Ltd., JX Nippon Mikkaichi Recycle Co., Ltd., JX Nippon Tsuruga Recycle Co., Ltd.	A	Continue endeavors to obtain OHSAS and ISO certifications

# Material Issues of the JX Nippon Mining & Metals Group

The Group addresses various economic, environmental and social challenges. From these challenges, four material issues that should be given priority in reporting to stakeholders were selected and consequently introduced in the Sustainability Report 2011. Important challenges are identified in accordance with the Global Reporting Initiative (GRI) guidelines. The numerous important challenges identified were first prioritized, before four material issues were subsequently selected following discussions and deliberation by the CSR Committee. As a result, in addition to the three material issues for fiscal 2010—"Developing environment-friendly technologies," "Implementing initiatives regarding climate change issues including global warming" and "Establishing a recycling-oriented society"—a fourth material issue, "Responses to the Great East Japan Earthquake," has been included in this report.

## Steps in Selecting Material Issues

### 1st Step

#### Identifying important challenges

In accordance with the materiality principle stipulated in the Sustainability Reporting Guidelines 2006 of the Global Reporting Initiatives (GRI), **44 important challenges** were identified.

The material principle defined in the GRI content index

#### External factors

- Relevant laws and other regulations with strategic significance to the organization and its stakeholders
- The main topics and future challenges for the sector reported by peers and companies
- Main sustainability interest/topics and indicators raised by stakeholders
- Reasonably estimable sustainability impacts, risks, or opportunities identified through sound investigation by people with recognized expertise

#### Internal factors

- Key organizational values, policies, strategies, operational management systems, goals, and targets
- The core competencies of the organization
- The interests/expectations of stakeholders specifically invested in the success of the organization
- Significant risks to the organization
- Critical factors for materializing organizational success

### 2nd Step

#### Prioritizing important challenges

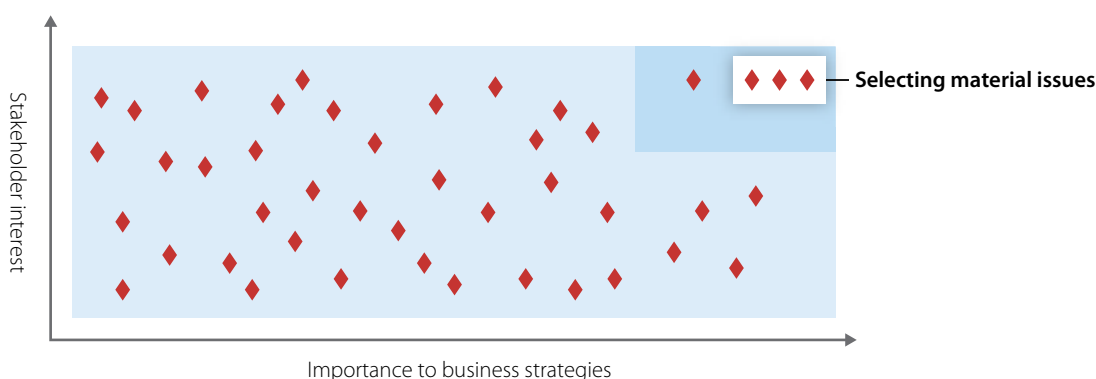
The **44 challenges** identified in the first step were prioritized from two perspectives: materiality in regard to our business strategies and in regard to the level of stakeholder interest.

#### Stakeholder interest

- Topics raised at stakeholders meetings in 2010
- Topics raised at roundtable discussions and identified through surveys
- Topics raised by newspapers and other public media

#### Materiality in regard to our business strategies

- Degree of urgency of each challenge
- Degree of influence that each challenge assumes in our economic activities
- CSR Action Policy



## Results of the Selection of Material Issues

In the selection of important challenges for the Sustainability Report 2011, eight issues, including "Risk management" and "Governance," which naturally should be pursued, were reviewed from among the issues discussed at the CSR Committee in 2010 and 13 new issues, including "Non-procurement of conflict minerals" and the "Great East Japan Earthquake," were chosen to finalize the 44 important challenges for the Sustainability Report 2011. The challenges were then prioritized with scores in terms of degree of urgency, degree of incidence, the topic's attractiveness at stakeholder meetings, employee surveys and other attributes. Furthermore, the important challenges selected were identified as topics of interest in this Report with reference to the seven core subjects (organizational governance, human rights, labor

practices, the environment, fair operating practices, consumer issues, and community involvement and development) in the [ISO26000: Guidance on Social Responsibility](#). The 44 prioritized challenges were deliberated by the CSR Committee in 2011, as was the case for selecting material issues in the Sustainability Report 2010, with the three material issues below being selected. Moreover, taking into consideration the enormous impact on the Group business and Japanese society of the Great East Japan Earthquake that occurred on March 11, 2011, a fourth material issue, "Responses to the Great East Japan Earthquake," was added in this special feature section of the Sustainability Report 2011.

## The Three Material Issues Selected, as well as Their Risks and Opportunities

A brief outline of the risks and opportunities as well as the approaches adopted toward each material issue is presented as follows.

Issues	Risks and opportunities	Approaches
<b>Developing environment-friendly technologies</b>	<ul style="list-style-type: none"> <li>Changing needs of customers and other stakeholders</li> <li>Need to develop highly functional materials to realize resource conservation, high recyclability, and reduction of the environmental impact</li> </ul>	Based on requests received from stakeholders, the Technology Development Center plays a primary role in pursuing the development of technologies that are capable of addressing foreseeable risks in each business field.
<b>Implementing initiatives regarding climate change issues including global warming</b>	<ul style="list-style-type: none"> <li>Growing concern and pressure from society to address the issue of global warming and to particularly bolster efforts to reduce CO<sub>2</sub> emissions</li> <li>Demands imposed to further reduce environmental impact through innovations in the productivity of resources and materials</li> </ul>	The Group will systematically reduce the amount of greenhouse gas emissions from a variety of angles in accordance with the activities of the Energy Conservation Subcommittee.
<b>Establishing a recycling-oriented society</b>	<ul style="list-style-type: none"> <li>Tight demand-supply conditions in the resources market and higher resource prices stemming from the global shortage of resources and their uneven geographical distribution</li> <li>Need to collect recycled materials and develop technologies to efficiently recover value-bearing metals from recycled materials</li> </ul>	The challenge of recovering value-bearing metals from recycled materials is imperative to the establishment of a recycling-oriented society. The Group is promoting <a href="#">materials stewardship</a> and is actively recovering metals from <a href="#">urban mines</a> .

## Management of Material Issues

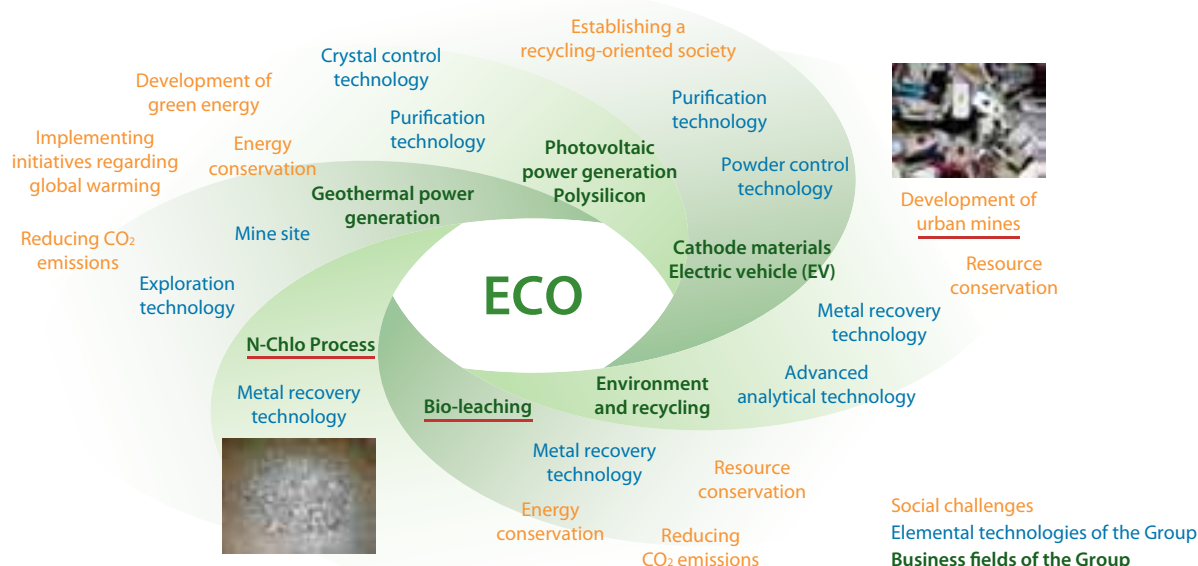
The CSR Department annually reviews the material issues selected and obtains their subsequent approval from the CSR Committee. The relevant divisions draw up action plans on an individual material issue basis with respect to specific initiatives and engage in activities in

accordance with these plans. The progress of each plan is periodically reported to the CSR Committee, which has overall responsibility to manage each issue.



# 1 Developing Environment-Friendly Technologies

Given revisions in domestic and overseas laws and governmental policies toward enhanced environmental protection, the Company has reduced the environmental impact at the manufacturing stage within the Group based on the belief that environmental consciousness will contribute to the sustainable development of society and corporations. Accordingly, the Company endeavors to reduce its environmental impact by promoting the development of environment-friendly products as a nonferrous manufacturer so that such environmental impact can be reduced when customers and end users employ the products of the Group companies.



To precisely understand customers' requests and effectively promote environment-friendly technologies, a branch of the Technology Development Center is placed in each plant aimed at strengthening the product development function. As the Company is engaged in integrated nonferrous metals operations extending from resource development, smelting and refining to the manufacture, sales and marketing of electronic materials, as well as recycling and environmental services, the Technology Development Group was established to improve the application of relevant technologies and enhance synergies between different technologies in different business fields. Under this R&D structure, the JX Nippon Mining & Metals Group is fully engaged in the Groupwide development of environment-friendly products to realize resource conservation, high recyclability and the reduction of environment impact.

Taking into account resource depletion and the degradation of ore grade—phenomena often seen in recent years in the fields of resource development and metal smelting and refining—the Group strives to develop technologies that would effectively utilize resources such as bio-leaching and the Nikko Chloride (N-Chlo) Process. Meanwhile, in the electronic materials business, the Group continues to develop a variety of products to address the various environmental concerns of customers and end users in addition to energy conservation and the reduction or elimination of hazardous substances.

In the years ahead, the Group intends to continue developing environment-friendly products by drawing on technologies accumulated through its consistent development of business activities.

The chart below presents part of our environmental technologies related to electronic materials.

Broad classification	Narrow classification	Major technology developments for electronic materials	Location for onset of effects
Resource recycling/ Resource conservation	Miniaturizing	High-performance copper alloys	Customers
	Downsizing	Under Bump Metallurgy (UBM) plating	End users
	Weight saving	Nano plating	
Resource recycling/ Product life cycles	Reduction in the number of components	Copper foil with integrated thin film resistor/TCR®	Customers
	Replacement of precious metals	High-purity metals	End users
	Extending product life	Highly functional foil	End users
Preventing global warming and reducing CO <sub>2</sub> emissions	Reduction in power consumption	Gallium Nitride (GaN) thick-layer substrates	Customers
		Transparent semiconductors	End users
		Cathode materials for lithium-ion batteries	End users
Environmental risks	Reducing substances that increase the environmental impact	Lead-free surface-mounted chemicals	Customers
		Cyanide-free electroless gold plating	
		Arsenicum-free copper foil	

The JX Nippon Mining & Metals Group is promoting the development of technologies that would contribute to mitigating environmental impact toward the goal of realizing the sustainable development of society and corporations. In this Report, we would like to introduce the advice and comments of Professor Shuzo Fujimura of the Tokyo Institute of Technology and Mr. Ken-ichiro Oka of Toray Industries, Inc., with regard to the orientation of the “Development of Environment-Friendly Technologies.”

## Promoting Innovation Management

### Q Would you please give your opinion on our Sustainability Report 2010?

I was impressed by your company's keen and well-reflected approach. However, if I could point out one issue, the report is too conscious of the CSR format that derives from Europe, and I'm afraid that the corporate features of JX Nippon Mining & Metals are described ambiguously without clarity despite its century-plus history. If this weakness is improved with clear expressions, the features of your CSR must be further stressed to bring about a much more impressive report. Indeed, the report has adopted advanced features such as the inclusion of relevant clauses of the JX Group Mission Statement and the JX Nippon Mining & Metals Group's Code of Conduct into the CSR Action Policy. When personifying companies as human beings, we would prefer contacts with people who have good character, as a rule. I suppose, therefore, that CSR for corporations plays the role of the good character of people in this analogy. Accordingly, I hope that you will assiduously prepare the Sustainability Report because the report is a means for presenting the corporate character of each company.

### Q Could you explain in detail your research theme, Innovation Management?

In many cases, the term “innovation” is somewhat misunderstood. Its definition may be literally “innovative action that would accompany an economic success.” According to this definition, the basis of innovation management is to deliberate how to increase the probability that might lead to innovation. As corporations that have established superior systems can gain superiority in pursuing good results from their business activities, it becomes important for us to carry out innovations after having determined the ideal image in advance.

Addressing the above theory via an analogy to technology development, we will inevitably be required to have both the abstract



capacity to sufficiently understand the substance of the relevant technologies and the mapping capability to imagine the future of a targeted product by taking into account the role of technologies in the predictable business environment of the near future. An academic domain to study the method of achieving such solutions is Management of Technology (MOT). As ensuring all the necessary resources in this domain would be difficult for a single company, I think the use of universities or graduate schools is needed.

### Q What is your impression of the environment-friendly technology development of the Company?

It would be interesting to create a conceptual scheme one level above the current technology development system based on a wide range of technological developments.

For example, you might be a corporation that could propose mutual portfolios relative to “clean energy” if you have a strong cooperative relationship with JX Nippon Oil & Energy Corporation, one of the Group companies, as well as with the energy industry. Furthermore, if you could develop innovative technologies to finalize the whole energy consumption cycle without remaining an energy-consuming corporation, you might be able to create a new concept for an integrated energy company.



**Shuzo Fujimura**

Professor

Department of Management of Technology/Department of the Innovation Graduate School of Innovation Management, Tokyo Institute of Technology

## Necessity of Life Cycle Assessment

### Q Please state your impression of the CSR activities of the JX Nippon Mining & Metals Group.

What I think is remarkable is that you have actively introduced and incorporated the opinions of stakeholders in your CSR activities. I understand that the Group endeavors to obtain stakeholder input through employee surveys and in-house and external stakeholder meetings to confirm the impact and degree of CSR activities.

On the other hand, the wording "CSR activities are nothing more or less than our business activities" sounds beautiful. But for every employee to have such a consciousness in its core meaning, it would be necessary for you to have a framework or a mechanism in which the results of CSR activities are incorporated as part of the personnel evaluation system or other measures, in addition to continuing education to employees. Toray Industries is proactively committed to developing environment-friendly products, and in April 2011 launched a project under the direct control of the president. This project, which incorporates specific targets of the Green Innovation business in the medium term management plan, has led to a considerable change in employees' consciousness.

### Q What are the major issues as a chemical materials manufacturer?

The chemical industry involves the heavy consumption of energy, and environmental conservation is therefore an important area to be addressed. The era in which we have to deal with such emerging issues as pollution has come to an end, and preventive initiatives, which require new values, are increasingly indispensable to solving such issues as protection of the global environment. Given this global trend, CSR activities are becoming extremely difficult to conduct, I believe.

The reduction of CO<sub>2</sub> emissions is one of the core global environment-related issues. However, I feel that Japanese manufacturers have done almost everything with regard to certain subjects of energy conservation such as *monozukuri* (manufacturing) and the exploitation of resources. At Toray Industries, therefore, we are active in evaluating and presenting not only the amounts of CO<sub>2</sub> emissions that are produced in the manufacturing process but also the overall CO<sub>2</sub> amount including that consumed in the usage and abolition stages, using the life cycle assessment (LCA) method.



**Ken-ichiro Oka**

Senior Director  
General Manager, Technology Center  
Global Environment Business Strategic Planning Dept.  
Toray Industries, Inc.



Furthermore, apart from our analysis, we make use of the results in our business operation. I believe that practicing this approach, so-called life cycle management-based environmental management, is essential.

### Q What would be necessary to achieve considerable effects through our environment-friendly technologies?

All the same, it must be "MIERUKA (visualization)." Toray Industries has implemented two issues to evaluate the effects of its activities: one is an original indicator of "Contribution to CO<sub>2</sub> Reduction" and the other is "T-E2A (TORAY-Eco-Efficiency Analysis)," a tool for use in both environmental and monetary terms for the whole life cycle. These key issues are applied to all the products and technologies at Toray Industries, and corporate management, business strategies and research themes are becoming to be determined based on the evaluation results from the effect of the visualization. For example, engineers and researchers are encouraged to think of the LCA as a component of product performance through the T-E2A analysis at the product design stage, as in the case of considering cost, even the cost itself should be the life cycle cost. By complying with the aforementioned methodology, we can predict the overall advantages of finished products and clearly show the strengths of our products. Until we have evaluated actual results, we cannot move forward with our philosophy, can we? Furthermore, it is an objective of LCM-based environmental management to foster a corporate culture in which people can work with a sense of mission that their operations contribute to the coexistence of the two mainstay tasks: solving global environment issues and sustaining the development of corporations and society.

## ② Implementing Initiatives Regarding Climate Change Issues including 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 effect 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 Fourth Assessment Report (AR4) released by the Intergovernmental Panel on Climate Change (IPCC) projects a real and highly likely surge in living costs associated with an increase of 2–3°C in the current global average temperature.

### Activities Undertaken by the Energy Conservation Subcommittee

To ensure that the Group as a whole advances activities that reduce CO<sub>2</sub> emissions, a greenhouse gas, and promote 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 five occasions to follow up on the status of progress, particularly with respect to energy costs and the level of energy conservation improvement. For fiscal 2011 and after, annual reduction goals of 1.0% for energy consumption and CO<sub>2</sub> emission intensities have been identified as measured against the average result for the period from fiscal 2008 to fiscal 2010.

### Introducing Photovoltaic Power Generation at the Hibi Kyodo Smelter, Pan Pacific Copper Co., Ltd.

The Hibi Kyodo Smelter implemented a photovoltaic power generation system in December 2010 for the first time at its premises. Given the rising interest in the environment, the Hibi Kyodo Smelter is focusing on further reduction of CO<sub>2</sub> emissions. One hundred solar panels (each 0.6m vertically and 0.8m horizontally) were installed at the facilities on a slope on the southern side of the smelter, and 20kW of electricity is generated for internal use. The implementation of the photovoltaic power generation system was decided because Okayama Prefecture, in which the smelter is located, is one of the prefectures where sunshine duration is the longest—with about 2,000 hours (including those with traces of sunlight) per annum.

The installation of these solar panels is expected to reduce CO<sub>2</sub> emissions by 13 to 17 tons annually. According to its three-year program, the smelter plans to increase and extend the photovoltaic power generation facilities.



Solar panels

## Initiatives to Develop Geothermal Power Generation as a Clean Energy

It is said that geothermal heat is an inexhaustible energy source provided by the Earth since its initial formation 4.6 billion years ago. Geothermal power generation, which skillfully derives and uses geothermal heat, is an environment-friendly process with fewer CO<sub>2</sub> emissions. Japan is one of the world's best-known volcanic countries and has

the world's third largest geothermal resource. However, only a small percentage of its potential geothermal heat is actually used for power generation. This report introduces geothermal development initiatives at the former Toyoha Mine site of the JX Nippon Mining & Metals Group.

### Necessity of geothermal power generation as an effective use of renewable clean energy

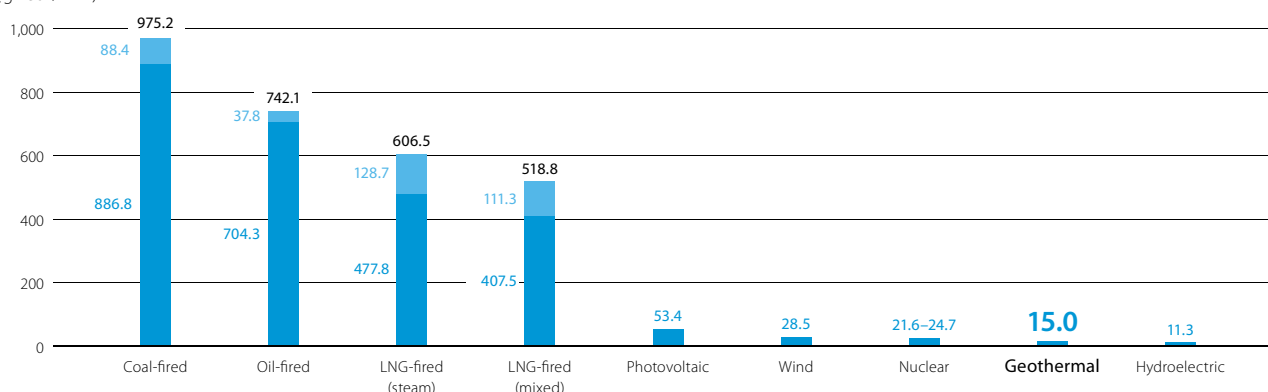
Global warming is one of critical issues which we are facing. The use of clean energy sources has attracted much attention toward the realization of a low-carbon society. As geothermal heat is simply a home-produced, clean energy with fewer CO<sub>2</sub> emissions, its enhanced use as a substitutive energy option instead of nuclear energy is highly expected.

### CO<sub>2</sub> emissions by power generation type

■ Construction of facilities (indirect)

■ Fuel for power generation (direct)

(g-CO<sub>2</sub>/kWh)



Source: "Evaluation of Power Generation Technologies Using Life Cycle CO<sub>2</sub> Emissions" (March 2000) and "Evaluation of Nuclear Power Generation Technologies Using Life Cycle CO<sub>2</sub> Emissions" (August 2001) by the Central Research Institute of Electric Power Industry

### Outline of geothermal power generation

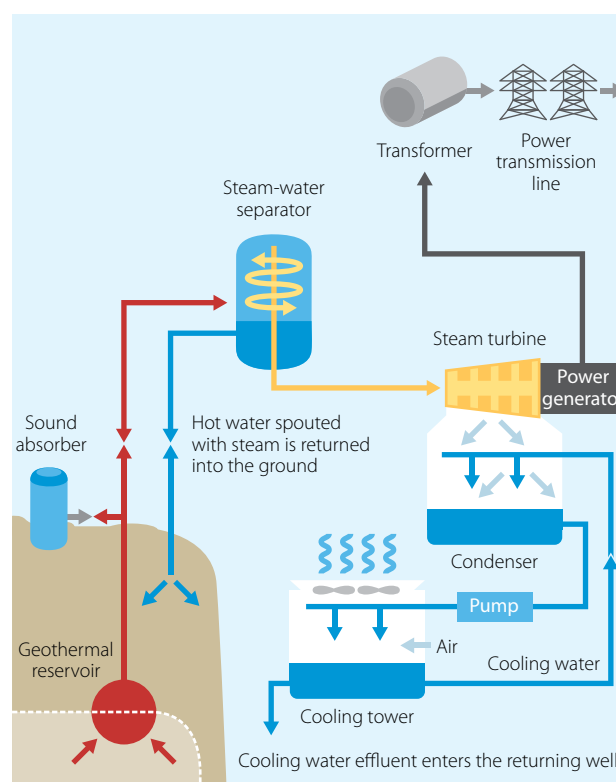
In geothermal power generation, geothermal heat (steam) reserves deep under the soil are taken out through a well and the steam is used to rotate turbines for power generation. Steam is taken out of a geological stratum at 1,000m to 3,000m in depth and returned in its entirety into the ground after being cooled. Geothermal power generation therefore is a renewable clean energy.

### Geothermal power generation development initiative at the Toyoha Mine

The Toyoha Mine (Sapporo City, Hokkaido Prefecture), which is owned by the Group, produced zinc, lead, silver and indium as one of the best mines in Japan. However, in 2006, it ceased operation as its ore reserves had been depleted. Meanwhile, mining workers were annoyed by the high bedrock temperature in the pit during operations, and the dynamite used for mining sometimes combusted spontaneously due to abnormally high bedrock temperatures at the terminal stage. These phenomena suggested an abundant geothermal resource in the vicinity.

In fiscal 2010, the Company conducted a surface survey in the Toyoha District for the purpose of effectively utilizing geothermal heat at the Toyoha Mine site as recyclable, clean energy so that the Group can contribute to restricting global warming. This survey was adopted for fiscal 2010 in the "Geothermal Development Promotion Surveys (Development Feasibility Study)" of the New Energy and Industrial Technology Development Organization (NEDO).

### Geothermal (steam) power generation system



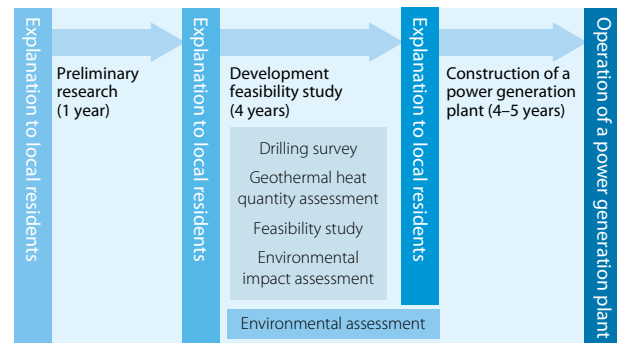


## Results of the Surveys in Fiscal 2010 and Future Plans for Fiscal 2011 and Beyond

As a result of surface surveys conducted in fiscal 2010 (geological/transform fault surveys, electromagnetic sounding, etc.), the possible existence of a promising geothermal reservoir was determined at the Yunosawa Area of the Toyoha District. The Company plans, through consultations with local residents, to confirm the aforementioned geothermal reservoir over the next few years and conduct several drilling surveys to precisely grasp the volume obtainable by geothermal development.

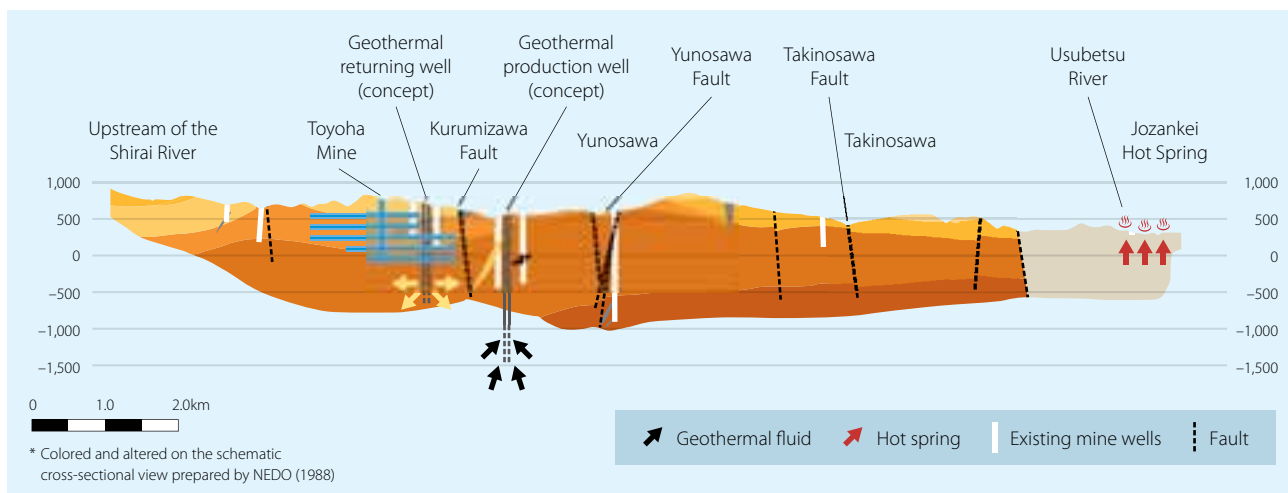
Meanwhile, Jozankei Hot Spring, a well-known and popular hot spring in Hokkaido Prefecture, is located near the planned power generation plant site. Consequently, coexistence with this valuable hot spring resource and our geothermal power generation project will be a priority. We intend to promote geothermal development while endeavoring to obtain the understanding of the local people.

### Flow chart from surveys to the development and construction of plant facilities



### Geology of the Toyoha District

Schematic cross-sectional view



## VOICE Initiatives Taken by JX Nippon Mining & Metals USA



**Steve Kohut**

Director of Operation  
Department  
JX Nippon Mining &  
Metals USA, Inc.

Having a small ecological footprint does not mean that there are not opportunities to increase recycling, eliminate waste, or reduce energy consumption. Over the past few years, the Chandler Plant has identified and implemented a number of incremental improvements. Polyethylene foam and packaging from sputtering target received from Isohara Works and targets returned by customers to Chandler had been sent to landfills for disposal. We were able to identify a local company who would recycle the packaging and reuse the foam in the furniture industry. This first step reduced our landfill waste disposal by over 70% and recycled three tons of polyethylene a month. The next step was to transition to reusable packaging for target shipments between Isohara Works and Chandler. Through a joint effort that project is now complete and it has reduced our consumption of polyethylene products by several tons per month.

Our current project is to look for energy savings in how we manage our facility's air conditioning systems with the recently installed Building Automation System (BAS). The Chandler Plant is located in the Arizona desert. Temperatures routinely reach 45°C in summer and drop below 0°C in winter. While much of the year is dry, we have a very hot and humid summer monsoon as well as winter rains. These extreme weather conditions make controlling facility air quality challenging.

While the primary purpose of the BAS is to control the facility's air quality for production needs, it also provides us for the first time with the ability to fully manage our air conditioning systems with settings appropriate for occupancy status. Our new ability to control localized settings by time of day and day of week will allow us to establish conditions appropriate for production needs and reduce energy consumption when noncritical areas of the plant are unoccupied. We look forward to reducing our facility's energy needs while maintaining a comfortable work environment.

### ③ Establishing a Recycling-Oriented Society



Value-bearing metals are contained in the huge volume of waste that is generated in the lives of humans. In particular, in urban areas with high concentrations of population, there exist so-called urban mines where waste containing value-bearing metals derived from recycled home electronic appliances is collected. We believe that the area in which we can best contribute to the sustainable development of society is the development of technologies and systems to extract the natural resources buried in these urban mines by optimizing proprietary metal extraction technologies.



#### Establishing Rare Metal Recovery Technologies from Used Lithium Ion Batteries

The Group 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.



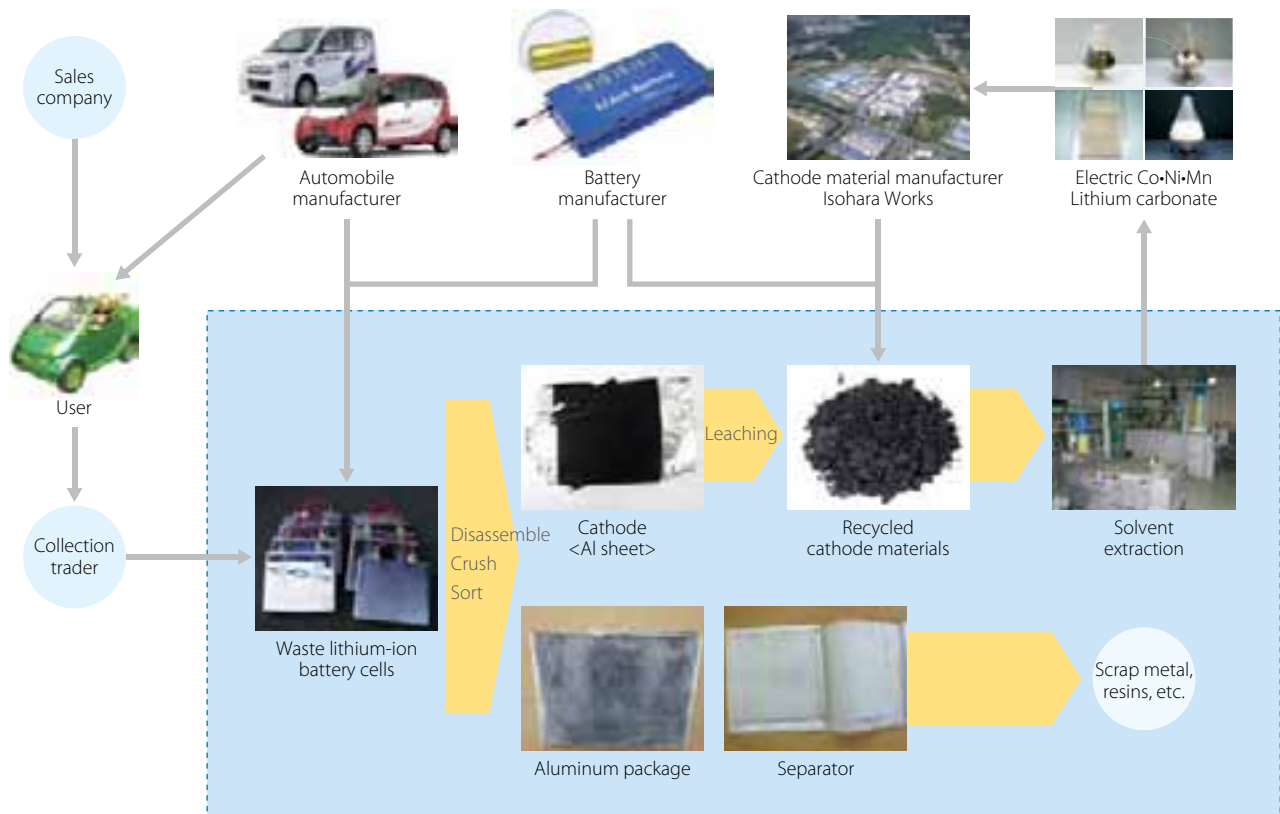
Tsuruga Plant

#### Establishing a Recycling Model for Recovered Metals

Plans are in place to supply value-bearing metals recovered as raw materials for use in the cathode materials of the in-vehicle lithium-ion batteries manufactured by the Group's Isohara Works located in Kitabaraki City, Ibaraki Prefecture, and by other manufacturers. In early 2012, the Isohara Works plans to significantly increase the manufacturing capacity of cathode materials for in-vehicle lithium-ion batteries to 5,000 tons per annum from the current capacity of 300 tons.

The demand for lithium-ion batteries is projected to rise dramatically in the years ahead. The JX Nippon Mining & Metals Group is committed to establishing a recycling-oriented society through appropriate responses to environment-friendly, next-generation automobiles by streamlining the system for stably providing the cathode materials of in-vehicle lithium-ion batteries, in addition to striving for a stable supply of the necessary raw materials for use in lithium-ion batteries.

## Supply system of cathodes for use in lithium-ion batteries



Recycling and Environmental Services Group, JX Nippon Mining & Metals Corporation

Special Feature

## VOICE Message from the Tsuruga Plant



Tsuruga Plant  
General Manager  
**Toshihiko Yoshimi**

Since April 2010, the Group has conducted demonstration trials as part of a project commissioned by the Ministry of Economy, Trade and Industry at the Tsuruga Plant 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. The trials were completed in March 2011.

Through these demonstration trials, we were able to verify the effectiveness of our proprietary technologies regarding the recovery of the rare metals concerned. On the other hand, to realize the commercial application as a recovery business of these rare metals from used lithium-ion batteries and other waste, it will be necessary to improve the quality of the recovered rare metals and pursue better economies in their recycling cost.

To this end, targeting commercialization in October 2012, we are investigating various matters toward further demonstration trials and near-term commercial application by expanding several installations in the Tsuruga Plant, which houses the core facilities used for the demonstration trials.

Although the lithium and manganese recovered from lithium-ion batteries have yet to be recycled, the technologies and processes to do so would represent a world first. The Tsuruga Plant intends to take aggressive initiatives to stably supply raw materials for use in lithium-ion batteries and establish a recycling-oriented society by early realizing the commercial application of rare metal recycling technologies.

# Improvement Activities in Fiscal 2010

## Improvement Activities at Domestic and Overseas Operating Sites

The JX Nippon Mining & Metals Group is conducting NPM activities, as well as other improvement activities, 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 workplace. The cumulative effect of these efforts has brought about significant

results. Furthermore, 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 transform the TPM method beyond its conventional framework. 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 that 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: Saganoseki Smelter & Refinery, Pan Pacific Copper Co., Ltd.

At present, our NPM activities, which are undertaken by seven special-interest groups, have an ideal goal of “making us the copper smelter and refinery boasting the world’s No. 1 quality and cost competitiveness while ensuring safety and environmental friendliness” with Company-wide efforts at improvement via the participation of all employees.

In fiscal 2010, two in-house presentation meetings were held to introduce *kaizen* improvement activities. We endeavored to implement improvement proposals from employees by promoting top management’s diagnosis on autonomous maintenance actions. Meanwhile, we were active during the year under review in taking actions to raise our on-site application capability, as represented by our exhibits at the Karakuri Kaizen Exposition, which received an award for effort. Consequently, the number of improvement proposals increased 1.7 times compared with the previous fiscal year.

The introduction of examples of *kaizen* improvement activities served to horizontally disseminate them to other business units. In addition to the Synergy Investigative & Debriefing Session with the Oita Refinery of JX Nippon Oil & Energy Corporation, which was held twice in fiscal 2010, an exchange forum of the three smelting companies was held with the Saganoseki Smelter & Refinery of Pan Pacific Copper Co., Ltd., the Hibi Smelter of Hibi Kyodo Smelting Co., Ltd., and Onsan Refinery of LS-Nikko Copper Co., Ltd., to share relevant examples.



NPM activities presentation meeting



Exchange forum with three companies



## Examples of Activities at Overseas Operating Sites: Gould Electronics GmbH (Germany)

Gould Electronics GmbH has been actively engaged in improving productivity and efficiency over the past few years. In cooperation with Hitachi and Philippine electrodeposited copper foil experts, its initiative has resulted in a tremendous yield increase, reduced electricity consumption and a general reduction of losses (*muda*).

During 2010, these improvements ensured stable on-time product supply to customers with better business economics.

Introduced in March 2010 and supported by JX Nippon Mining & Metals' long-term TPM partner, TPM activities implemented at Gould (G-TPM) have been a main contributor to enhanced employee involvement, motivation and process understanding—the basis for all improvements. "The One to Win" is our slogan to further strengthen individual skills and organizational strength.



Meeting for improvement activities at Gould Electronics

## VOICE NPM Activities at the Kurami Works



TPM Consultant  
JIPM-Solutions Co., Ltd.  
**Taisuke Yamada**

**We heard comments from Mr. Taisuke Yamada of JIPM-Solutions Co., Ltd., who has guided the NPM activities at the Kurami Works since 1994, on his impression of the Company and its NPM activities.**

### **Q What is your primary impression of the Company?**

I have been in contact with the Kurami Works since the TPM method was implemented there. I believe that the initiatives carefully followed by both onsite workers and managerial staff brought about the present operating system that is capable of efficiently providing highly functional materials. The founder's spirit of respecting communications with stakeholders has been firmly inherited and this factor has led to an unshakeable labor-management relationship of trust despite the harsh business climate that changed drastically after the so-called Lehman Shock.

### **Q Could you explain more about the NPM activities?**

Previously, companies were usually committed to the task of how to reduce the difference between targets and actual results. But don't you think we should assume the ideal outcome from the beginning? For example, with electrical energy, it would be necessary to analyze and completely minimize the resulting losses based on the idea that the difference between theoretical value and actual result means a loss. Accordingly, in the PDCA cycle, we should start with the "check (C)" process followed by the "plan (P)" process.

Next, *kaizen* improvement actions should be roughly deliberated for three groups: onsite workers, staff and managerial staff. According to this categorization of related personnel, onsite workers would engage in improvements of daily operations such as the detection of the source of problems and short-term disruptions to the production line (*chokotei*). Staff would work to improve the manufacturing processes or energy replacement, and core executives would engage in improvements at the factory level after doing market research from a macroscopic perspective. Thus, in addition to the appropriate role-sharing operations among the relevant personnel, it is important to thoroughly check and point out all losses for each process from the procurement of raw materials to the end user sale.



# 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.

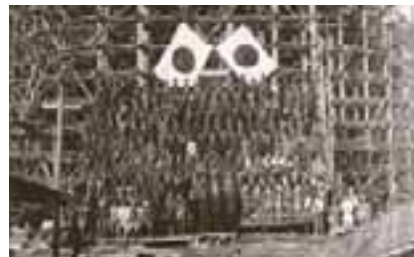
Meanwhile, the Company was responsible for creating smoke damage due to the emission of sulfur dioxide from its smokestacks, which is said to be the fate of the copper smelting business. Smoke containing sulfur dioxide spread extensively to neighboring areas resulting in substantial damage to local agricultural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



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

35

# Corporate Governance

## Corporate Governance

### 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 nonferrous 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

A total of six corporate 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 Council for the purpose of developing and promoting basic policy related to CSR. The following three committees have been created under the JX Group CSR Council 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.

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

#### Board of Directors

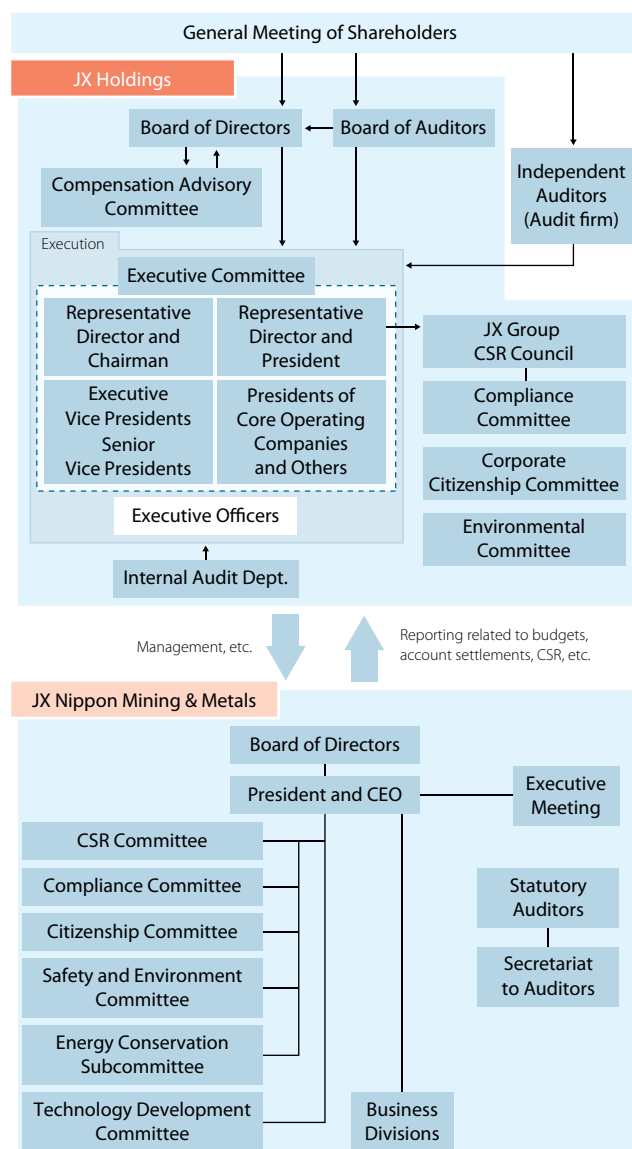
The Company has established the Board of Directors\*1 to discuss issues defined by laws, regulations, and the Articles of Incorporation, as well as other important management issues. The Board is composed of the president and eight other directors, as well as three auditors.

\*1. All nine directors are inside directors and serve concurrently as executive officers.

#### Executive Meeting

The Company has established the Executive Meeting 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.

#### Corporate Governance Structure of the JX Group



## Internal Control System

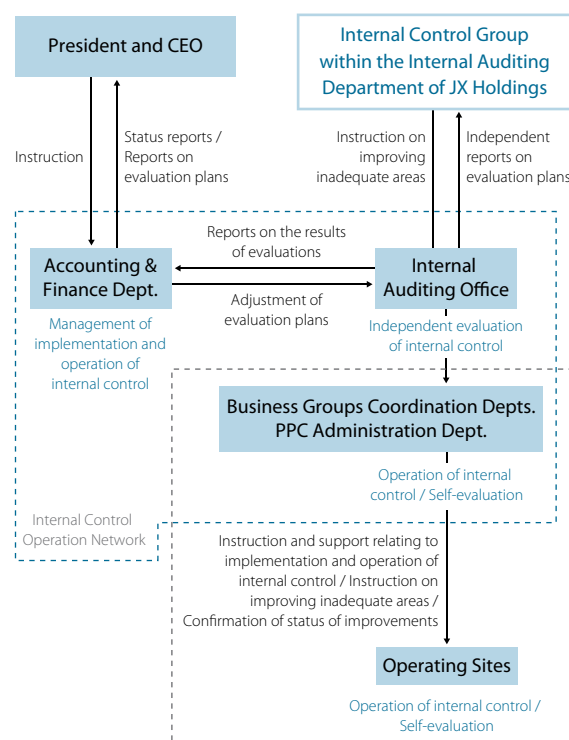
The Internal Control Group within the Internal Auditing Department of JX Holdings comprehensively manages compliance with the Financial Instruments and Exchange Act of Japan and Groupwide internal control systems.

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



Management

## 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	<b>Period for introducing CSR activities</b> <ul style="list-style-type: none"> <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 Guideline</u> were compiled.</li> <li>CSR activities were implemented at 24 operating sites.</li> </ul>
Fiscal 2007	<b>Period for promoting CSR activities at overseas operating sites</b> <ul style="list-style-type: none"> <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	<b>Period for expanding and spreading awareness of CSR activities</b> <ul style="list-style-type: none"> <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	<b>Period for spreading and integrating awareness of CSR activities</b> <ul style="list-style-type: none"> <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	<b>Period for spreading and integrating awareness of CSR activities—a continuation from fiscal 2009</b> <ul style="list-style-type: none"> <li>The Code of Conduct was revised and re-established based on the JX Group Mission Statement.</li> </ul>
Fiscal 2011	<b>Period for spreading and integrating awareness of CSR activities—a continuation from fiscal 2009</b> <ul style="list-style-type: none"> <li>The Group reviewed its CSR promotion system from the standpoint of consistency with that of the overall JX Group.</li> <li>The Basic Policy on Procurement was compiled.</li> <li>The Green Purchase Guideline was revised.</li> </ul>

## CSR Promotion

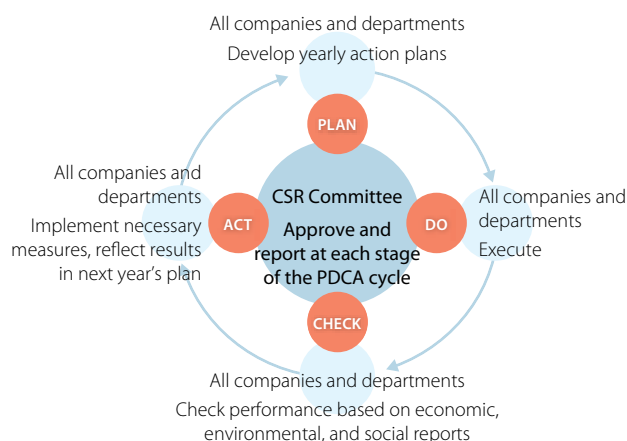
With the three committees and a subcommittee established under the control of the CSR Committee, an advisory body to the president, the Group is striving to upgrade the quality of its CSR activities. In pursuit of this goal, the Group engages in CSR activities based on the CSR Action Policy, evaluates performance against the policy and sets new annual goals. At the same time, the Group confirms whether business activities are in compliance with the Group's Code of Conduct by implementing the PDCA cycle (see the diagram at right). (For further details regarding the goals and performance in fiscal 2010, please see pages 19 and 20.)

Meanwhile, as of April 1, 2011, the Group reviewed its CSR promotion system from the standpoint of consistency with that of the overall JX Group.

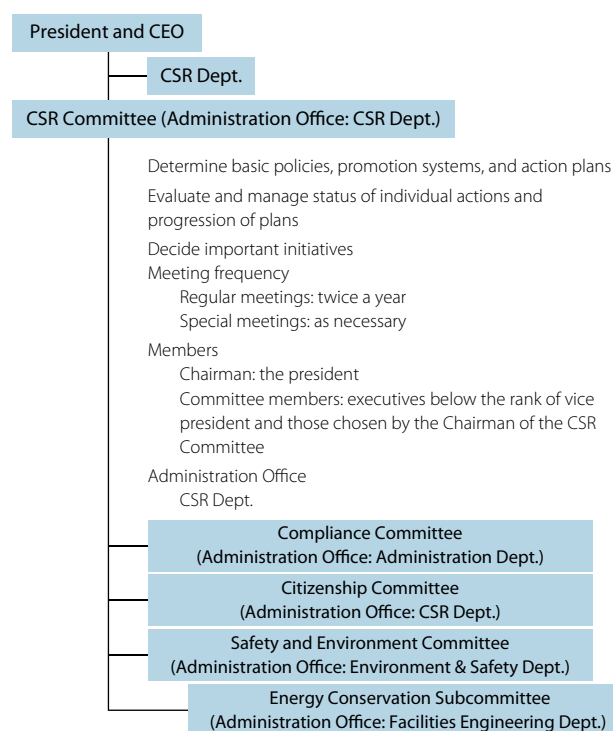
Specific changes are described below.

- The previous Compliance Subcommittee was renamed the Compliance Committee.
- The Safety and Environment Committee and the Citizenship Committee were newly established.
- The Risk Management Subcommittee was dissolved with the compliance-related matters to be handled by the Compliance Committee and the safety- and environment-related matters to be handled by the Safety and Environment Committee.

## PDCA Cycle



## CSR Promotion System



## Spreading Awareness of CSR Activities in Fiscal 2010

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 2010

Both a full and digest version of Sustainability Report 2010 were published in Japanese, while the full version was published in English. The Japanese and English full report attained the Application Level A+ as defined in the Sustainability Reporting Guidelines 2006 of the Global Reporting Initiative (GRI).

### Conducting CSR briefing sessions and roundtable discussions

In fiscal 2010, we held CSR briefing sessions for our employees on 45 occasions to explain the reality of the Group's CSR activities, and we held 43 in-house roundtable discussions to exchange opinions related to our CSR activities with employees. At the briefing sessions held at our major operating sites, the staff of the CSR Dept. of JX Holdings directly provided the participants with a deeper understanding of the harmony with the JX Group Mission Statement.

### Carrying out an employee survey on our CSR activities

An employee survey on Sustainability Report 2010 and the Group's CSR activities was carried out, targeting executive officers and employees. With a response rate of 95.1% 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 formulating goals and action plans, as well as monitoring the activities implemented, assessing the progress and summarizing data related to energy consumption.

#### Conducting roundtable discussions

With the theme of "JX Nippon Mining & Metal's Corporate DNA and CSR: Roles to Be Carried Out by the JX Nippon Mining & Metals Group toward the Development of a Sustainable Economy and Society," a roundtable meeting was held between several members of the Company's management team and the employees responsible for the day-to-day business at each operating site to discuss and ascertain the Group's DNA, which has been nurtured for more than 100 years, and the CSR activities to be tackled by each and every employee. (For further details, please see pages 7 to 10.)

## Compliance

### Compliance Committee

Basic policies, priority issues for each fiscal year, education, and other issues regarding compliance are managed by the Compliance Committee. The members of this committee consist of executive officers in charge of divisions of the head office and managers responsible. The Compliance Committee 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 Committee 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 Committee assesses the risks of fraud and law violations, identifies priority issues, and incorporates this information into future education programs.

Inspection on the status of compliance is conducted through a combination of diverse methods, including interviews with employees for performance/behavioral assessments and employee self-assessments.

### 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 2010, 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 78 employees working in the sales department at the head office and in 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 80 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 65.) Meanwhile, the Group has been employing the Occupational Health and Safety Assessment Series (OHSAS) 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 82.)

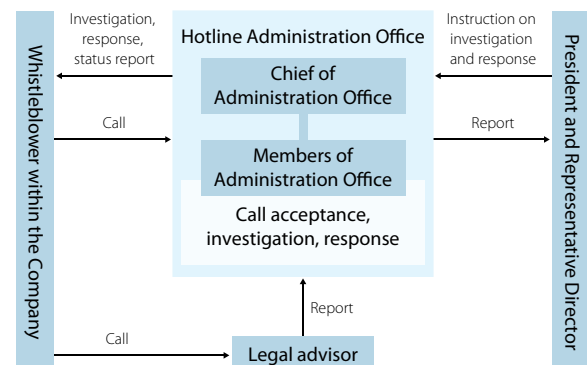
### Compliance Guidebook

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 2010, there were no reports of compliance violations, including mistreatment and discrimination.



## Risk Management

We endeavor to enhance and strengthen risk management by establishing a risk management system based on substantial data.

### Initiatives of the Risk Management Subcommittee

Risk management issues were handled primarily by the Risk Management Subcommittee. This subcommittee met twice a year and identified and evaluated risks at major operating sites and divisions of the Group based on basic risk management policies and action plans.

Effective from April 2011, the Risk Management Subcommittee was dissolved with the compliance-related matters to be handled by the Compliance Committee and the safety- and environment-related matters to be handled by the Safety and Environment Committee.

### Protection of Personal Information

The Company strives to properly manage personal information by setting forth the Personal Information Protection Rules based on the Personal Information Protection Policy stipulated below.

#### Personal Information Protection Policy

- ❶ Compliance with laws and the establishment and continual improvement of internal rules
- ❷ Proper collection, use, and provision of personal information
- ❸ Implementation of security measures
- ❹ Respect for the rights of individuals
- ❺ Personal information training for executive officers and employees

### Information Security

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 affiliated companies to enhance our management systems and standards. Furthermore, we are systematically strengthening our IT-related security, management and use of

computers, intra-company networks and USB memory devices.

In line with the management integration of the Nippon Mining Holdings Group and Nippon Oil Corporation in fiscal 2010, the JX Group IT Security Manual was stipulated as the Groupwide resource for security-related rules. The Group intends to promote future internal educational activity based on the Manual.

### Risk Management of Large-Scale Natural Disasters

The JX Group designated September 10–17, 2010, as “JX Group Disaster Prevention Week” with the aim of raising people’s awareness and improving knowledge of disaster prevention and conducted various preparedness drills in line with the prescribed countermeasures.

Consequently, the Group also conducted various disaster preparedness drills during the week 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 large-scale disaster.

On September 16, 2010, on the assumption of a large earthquake with an epicenter in the northern part of Tokyo Bay occurring in the Tokyo metropolitan area, evacuation drills from the JX Building and initial response drills of the Disaster Prevention Headquarters were conducted. Executive officers and employees of the Group, who work at the offices in the JX Building, participated in these drills, and the Disaster Prevention Headquarters was established in the Company with President Masanori Okada as Chief of the Headquarters to take appropriate responses such as confirmation of the safety of employees and their families and gaining a precise understanding of the disaster-affected circumstances at major operating sites.

## At the Occurrence of the Great East Japan Earthquake

After the occurrence of the Great East Japan Earthquake on March 11, 2011, the Disaster Prevention Headquarters was quickly established at the head office of the Company with President Masanori Okada as Chief of the Headquarters. Within the Group, the six operating sites shown on the accompanying map were damaged. The Disaster Prevention Headquarters immediately started initiatives to confirm the disaster-affected circumstances of major operating sites, the safety of employees and their families and the extent of the devastation and restorative needs of the peripheral infrastructure.

As an outline of the devastated circumstances at the affected operating sites was prepared two days after the earthquake, the respective operating sites of the Group in Japan and South Korea started transporting supporting goods (water, foodstuffs and other daily necessities) bound for the devastated operating sites.



Loading operation of supporting goods at the head office



#### Esashi Works, Sanyu Electronic Industry Co., Ltd. (Oshu City, Iwate Prefecture)

- Precision Fabricated Materials
- Plant operation was suspended due to adverse effects such as direct damage to equipment, installations and/or buildings, electric power failure and disrupted water supply.
- Plant operation was resumed by the end of March.

#### Ichinoseki Foil Manufacturing Co., Ltd. (Ichinoseki City, Iwate Prefecture)

- Copper foil related products
- Plant operation was suspended due to adverse effects such as direct damage to equipment, installations and/or buildings, electric power failure and disrupted water supply.
- Plant operation was resumed by the end of March.

#### Isohara Works (Kitaibaraki City, Ibaraki Prefecture)

- Sputtering target
- Plant operation was suspended due to adverse effects such as direct damage to equipment, installations and/or buildings, electric power failure and disrupted water supply.
- Normal plant operation was resumed at the end of July.

#### Oya Mine (Mesennuma City, Miyagi Prefecture)

- Closure mine (Processing of mine drainage)
- Tailings were discharged due to the liquefaction of soil.
- Residences and fields downstream were damaged.
- The outflow of slag was almost wholly removed by the end of June.

#### Takatama Mine (Koriyama City, Fukushima Prefecture)

- Closure mine
- Tailings discharged due to a landslide were almost wholly removed.

#### Hitachi Works (Hitachi City, Ibaraki Prefecture)

- Copper Foil, Metallic Powder, Precision Fabricated Materials, Refined Copper
- Recycling and Environmental Services Business
- Plant operation was suspended due to adverse effects such as direct damage to equipment, installations and/or buildings, electric power failure and disrupted water supply.
- Normal plant operation was resumed except for several facilities.



# Economic Activities Report

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

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

With regard to the Caserones Copper and Molybdenum Deposit Development Project (the “Caserones Project”), the JX Nippon Mining & Metals Group conducted a feasibility study and an environmental impact assessment after acquiring the mining concession in May 2006. After environmental approval to develop the Caserones Project was granted by the Environmental Committee of Region III of Chile, the Company decided to advance the Caserones Project into the full-fledged development stage and began construction of the necessary facilities in April 2010. In this Report, we outline the progress of this project, as well as our initiatives in response to environmental issues and toward the local community, which SCM Minera Lumina Copper Chile (“MLCC”), an affiliated company in Chile, is managing.



Camps at the Caserones Project



View of operation in the construction field at the project site

### Progress of the Caserones Project

The chart below shows the planned layout of the major facilities. The photo above shows the construction field as of the end of April 2011.

The camps, which will accommodate more than 8,000 workers at its peak, have already been completed, and construction workers have started living there in the boarding houses.

#### Major facilities to be laid out under the Caserones Project



- ① Primary Crusher
- ② Crusher
- ③ Water Storage Pond
- ④ Mills and Flotation Plant
- ⑤ Substation
- ⑥ Office and Warehouse
- ⑦ Cu, Mo Filtering Plant
- ⑧ Truck Repair Shop

### Initiatives Regarding Biodiversity



Transplantation of the vega plant



Vega plant rooted at the transplanted site

MLCC has set aside 0.87km<sup>2</sup> of the overall owned area of 385km<sup>2</sup> as a protection area for animals and plants inhabiting the area.

We are in compliance with the following local regulations: 1) “In case trees are cut in a certain area, trees must be planted for an area 1.6 times larger than the trimmed forest area,” and 2) “In case any protected plant is cut out of necessity, 10 times the number of the same species of plant must be planted.” In November 2010, under experts’ guidance, plants in a wetland vegetation zone (9,400m<sup>2</sup>) of the Caserones Valley, in which valuable wetland plants are distributed and which is the planned construction site of our production facilities, were wholly transplanted to La Ollita Valley, the nearest place with an appropriate habitat. The vega plant, a rare plant that thrives in wetlands under arid climates, is subject to legal protection.

At the site of the Caserones Project, MLCC has confirmed the existence of 13 orders, 26 families and 52 species of animals. Eleven of these species, including condors and llamas, are classified as endangered. As a result, MLCC is monitoring these endangered species and taking measures to protect them.





## Initiatives toward the Local Community

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.

MLCC hired 17% of all workers engaged in the Caserones Project in the local community (Region III) as of June 30, 2011.

To raise the ratio to the targeted requirement of 20%, MLCC has set up training programs to promote local employment in cooperation with Tierra Amarilla City and other municipalities.

Also, MLCC focused on preparing an Environmental Social Management Plan for completion. This plan will be used to evaluate and manage the diverse effects of the Caserones Project on neighboring communities.

## Water Management

In the Caserones Project, MLCC plans to achieve water use of 518L/sec at its full-scale operation. This corresponds to water use intensity of 0.3 m<sup>3</sup> of water per ton of processed ore, the lowest level compared with other copper mines in the world. This innovation was achieved by establishing a system to reuse approximately 80% of the wastewater by increasing the volume of repeatedly used water in the ore processing.

In the lower reaches of the Copiapó riverine system, in which the Caserones deposits are located, a water shortage has become conspicuous due to the flourishing viniculture. MLCC takes various initiatives to keep a good balance with the water used for its mining business. MLCC's initiatives in this regard include 1) discontinuing alfalfa cultivation by purchasing agricultural lands and mowing weeds at riversides to restrict the large loss of water incurred through evaporation in the mid- and upstream areas of the Copiapó River, and 2) providing desalinated seawater for irrigation to communities downstream along the Copiapó River.

## Transportation Safety Measures

Copper and molybdenum concentrates and refined copper produced from the Caserones Project will be transported by trucks to the port of Totalillo 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.

Meanwhile, Highway C35, which will be used for the transportation of materials and shipment of products regarding the Caserones Project, passes through Los Loros, a small urban community with a population of approximately 1,000 residents. A bypass of 2.2km in length is under construction by MLCC to ensure safe transportation around Los Loros.



Firefighting vehicle donated to a local fire company



Power generator donated to the Los Loros urban community



Christmas party with local children



Lecture under a training program



Driving lesson using heavy equipment



Copiapó River (after mowing weeds and taking preventive measures for wastewater penetration)



Rendering of bypass after completion





## 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 610 thousand tons (a combined 450 thousand tons at the Saganoseki and Hitachi plants and 160 thousand tons at the Tamano Smelter<sup>\*1</sup>), which is the largest in Japan and top-rated globally. PPC stably supplies high-quality refined copper.

<sup>\*1</sup>. Pro rata share of PPC's equity

### 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 resource 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.

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

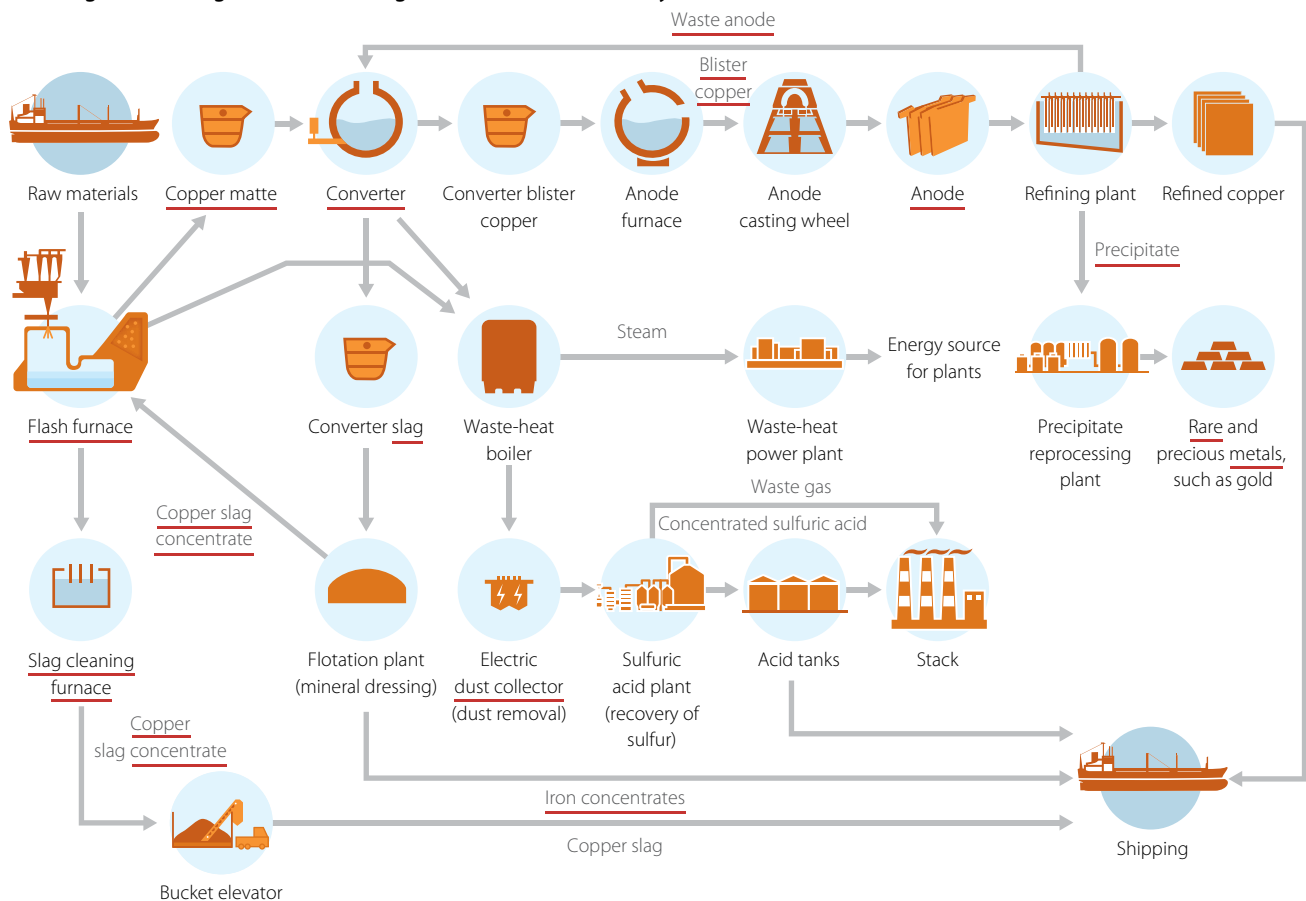


Saganoseki Smelter & Refinery



Tamano Smelter

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



## Initiatives 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 their 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 the copper concentrate that produces sulfuric acid creates high-temperature gas, with temperatures ranging from 300°C 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 allow us to reduce electricity costs by ¥700 million to ¥800 million a year and lower CO<sub>2</sub> emissions by approximately 20 thousand tons per annum.

## Responding to the Deteriorating Grade of Copper Concentrate

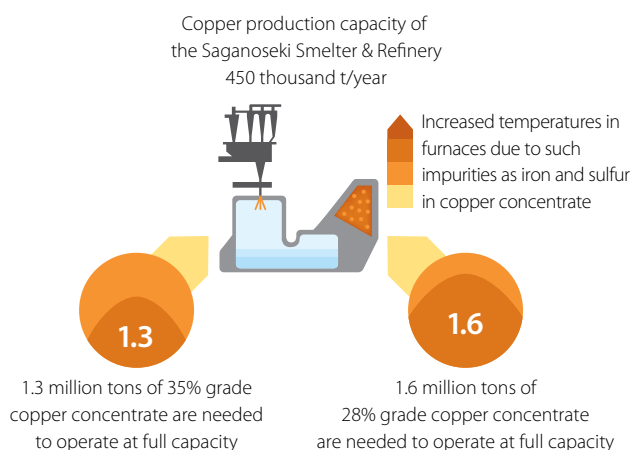
The number of quality mines that produce high-quality copper ore is continually decreasing around the world. Consequently, the grade of copper found in ore is declining. The grade of copper concentrate (the percentage of copper contained in ore) being used in the Saganoseki Smelter & Refinery, which 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. 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

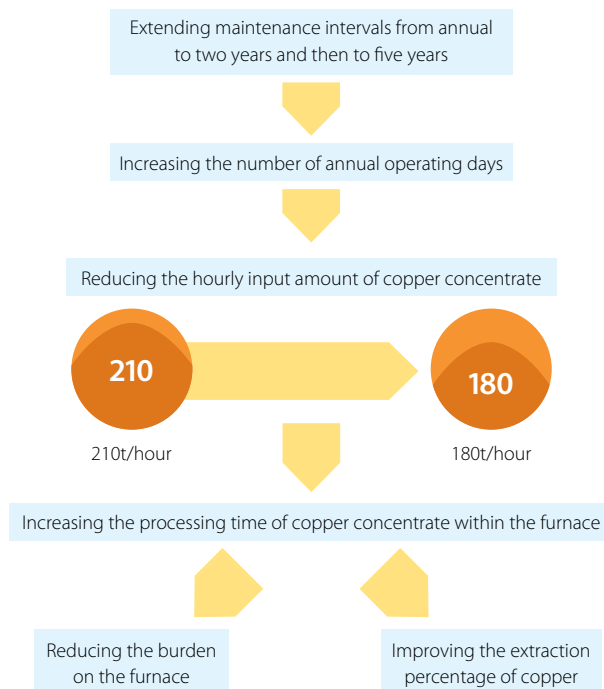
the refractory materials used as the walls of the furnace from melting and depleting. Furthermore, the prevention of melting and depleting allows us to extend the intervals between regular maintenance operations. With this measure, we plan to conduct regular maintenance once every two years—we have conducted yearly maintenance to date. Going forward, we will extend the interval between maintenance operations to five years.

Although the extension of the interval between maintenance operations 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.

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



### Efficient Copper Production at the Saganoseki Smelter & Refinery



## At the Occurrence of the Great East Japan Earthquake

PPC produces refined copper via electrolytic copper refining at the Hitachi Works, located in Hitachi City, Ibaraki Prefecture. Although its production was partly suspended because part of its production facilities were damaged by the Great East Japan Earthquake, the Works resumed production on April 19, 2011, as a result of concerted efforts to recover.



## 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.



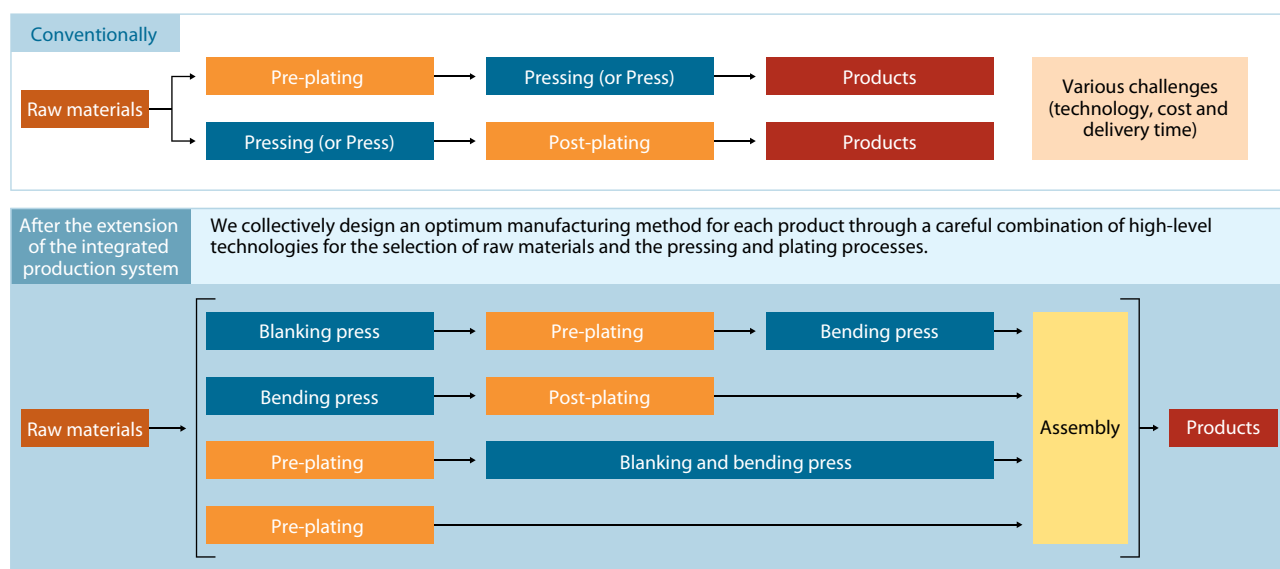
### Responding to Diversifying Needs by Extending the Integrated Production System

In April 2010, the Company consolidated Nikko Fuji Electronics Co., Ltd. (which had been wholly owned by JX Nippon Mining & Metals Corporation), which had played a central role in the Group's precision processing business, to establish a unified operating system that would allow the Company to become more proactive and timely in utilizing Groupwide management resources in the pre-plating field (precision plating on base materials before pressing operations).

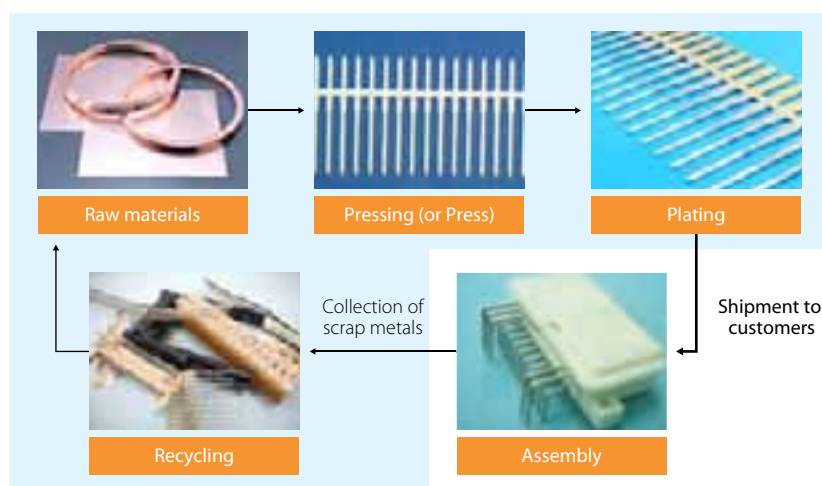
Also in April 2010, the Company acquired all the shares of Sanyu Electronic Industry Co., Ltd., a leading, dedicated company for industrial-use electroplating, and in February 2011, those of Suzuki Manufacturing Co., Ltd., of which the major business was precision pressing. Sanyu Electronic Industry had superior engineering capability in the post-plating business field (precision plating on pressed

components after pressing operations), whereas Suzuki Manufacturing excelled in high-speed, microfabrication pressing, as well as the design and manufacture of precision dies/molds.

In implementing these measures, the Company has further extended its integrated production system covering from raw materials to precision rolling, pressing and plating. Consequently, the Company is now prepared to respond to diversifying customer needs in every aspect of development, quality, delivery time and cost, including the Eco-Car (see the next page) and IT applications for which rapid computerization is in progress. At the same time, the Company will endeavor to contribute to establishing a recycling-oriented society by promoting its recycling operations.



### Establishing a Recycling-Oriented Society



## Developing the Business for Next-generation, Environment-friendly Vehicles (Eco-Cars)

High growth potential is expected for the market of next-generation, environment-friendly vehicles (Eco-Cars), which include electric vehicles (EVs), plug-in hybrid electric vehicles (PHEVs) and hybrid electric vehicles (HEVs). In the Group's electronic materials business, aggressive business development focusing on the Eco-Car field is planned. In the following segment of this report, we introduce the Group's new business development plans for Eco-Cars.

### Major Expansion of Production Capacity for Cathode Materials for Automotive Lithium-Ion Batteries

The Isohara Works plans to significantly increase the manufacturing capacity of cathode materials for in-vehicle lithium-ion batteries to 5,000 tons per annum from the current capacity of 300 tons. The above reinforcement of equipment and facilities was adopted as a "Fiscal 2010 Low-Carbon-Type, Employment-Creating Industrial Location Promoting Business" sponsored by the Ministry of Economy, Trade and Industry. Demand for lithium-ion batteries is rapidly increasing for the in-vehicle power supplies that are indispensable in the next-generation, environment-friendly vehicles.

For in-vehicle lithium-ion batteries used in car electronic parts, a good balance among high capacity, safety and the product's life is essential and cathode materials for automotive lithium-ion batteries therefore must have the quality and character to adequately meet these demanding requirements. The Company endeavors to establish a sophisticated production system to stably supply high-purity and homogeneous cathode materials that sufficiently meet the aforementioned quality requirements by reinforcing the production capacity of the facilities for which its original, integrated processes are adopted.



Groundbreaking ceremony of the new plant



Cathode materials

### Establishing a Manufacturer of In-vehicle Electronic Components and Materials and Constructing a Plant for Pressing and Plating

JX Nippon Mining & Metals has decided to establish JX Metals Precision Technology Co., Ltd., a manufacturer of precision components and materials (pressed and plated precision rolled products) for use in car electronic parts, and to build a new plant in Kakegawa City, Shizuoka Prefecture, to perform the pressing and plating of precision components and materials. The new company was set up in April 2011, and the new plant is to start operation in April 2013.

An increase in demand for precision rolled products and precision components and materials, which are used in environment-friendly vehicles (Eco-Cars), is anticipated. At present, the Kurami Works manufactures precision rolled products and plants located in the Hitachi and Isohara areas primarily perform the pressing and plating thereof.

The establishment of a new company and the construction of a new plant as described above derive from the policy of strengthening and expanding the current supply system of precision components and materials. We can therefore expect the reinforcement and expansion of this integrated supply system covering the raw materials, pressing and plating processes—the Company's core strength—to contribute much to the future growth of the Eco-Car market.



Planned construction site of the new plant

## At the Occurrence of the Great East Japan Earthquake

Five operating sites in the electronic materials business were affected by the earthquake. Operations at these sites were suspended due to the damage to buildings or facilities and such adverse effects as the power failure and disrupted water supply just after its occurrence. All of the operating sites, however, immediately ensured the safety of their employees and their families, as well as the security of plant buildings, equipment and facilities. Consequently, the operating sites generally resumed operation after these recovery operations.



Cracks on a road in Hitachi City



Evacuating to take refuge outdoors (Isohara Works)

### Resumed operation by mid-April 2011 except for several products

- Shirogane Works (at present, Copper Foil Dept.) in Hitachi Works and Hitachi Fabricating Works (at present, Precision Plating Dept.), Hitachi City, Ibaraki Prefecture
- Isohara Works and Isohara Fabricating Works, Kitaibaraki City, Ibaraki Prefecture

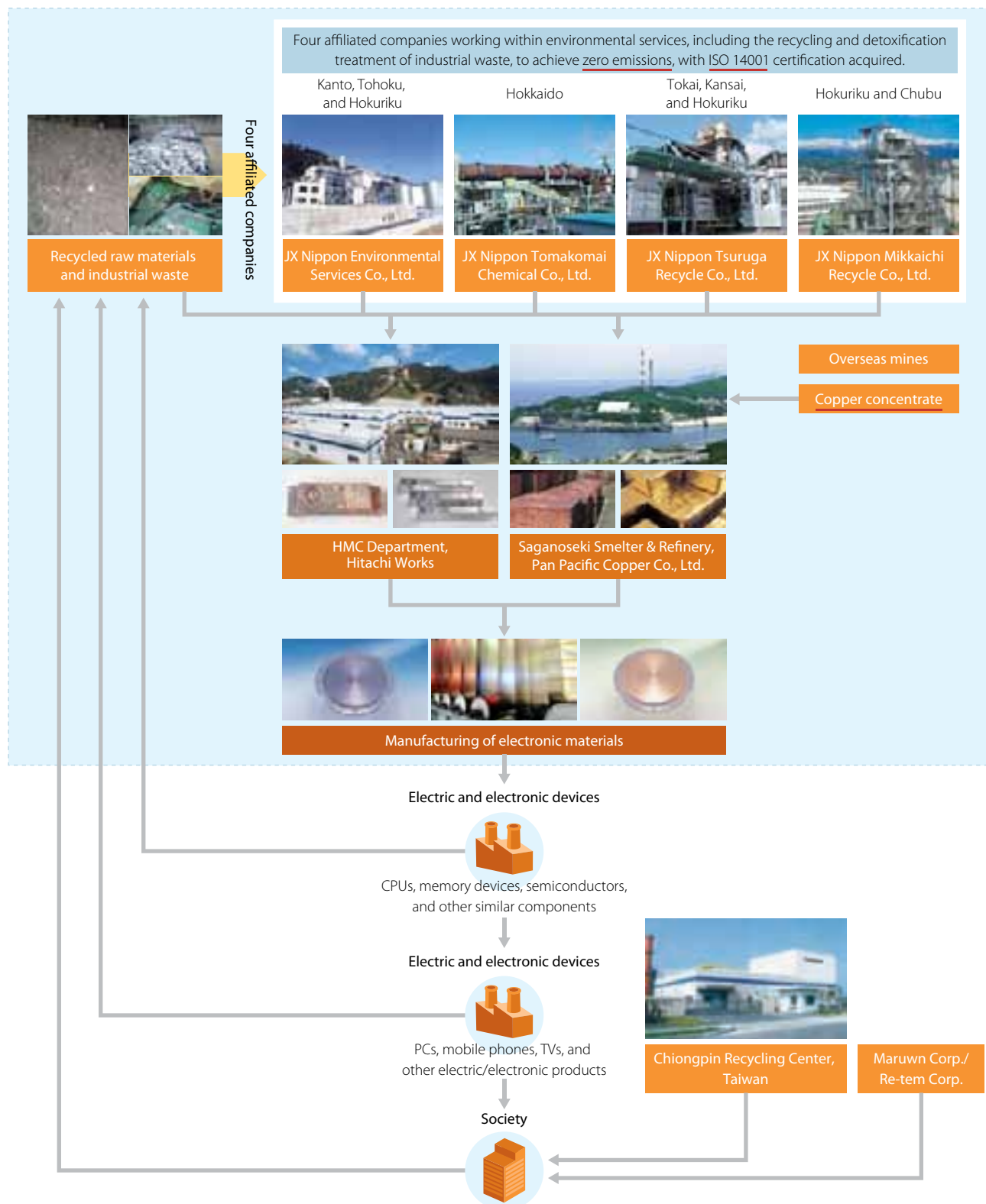
### Resumed operation in late March 2011

- Ichinoseki Foil Manufacturing Co., Ltd., Ichinoseki City, Iwate Prefecture
- Esashi Works, Sanyu Electronic Industry Co., Ltd., Oshu City, Iwate Prefecture

## 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) Department of the Hitachi 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.

### Outline of Recycling and Environmental Services Business

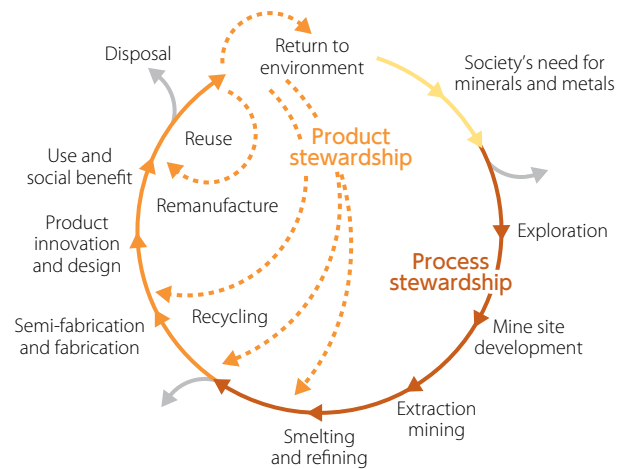




## What is Materials Stewardship?

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 nonferrous 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



## Improving Analysis Capability to Support the Recycling Business

The capabilities and technologies to precisely and rapidly measure the volumes of value-bearing metals, which are contained in recycled materials, are essential to firmly support the recycling business by ensuring fair trading with the purchasers of the recycled materials. The Group has determined to install a state-of-the-art analytical instrument, as well as pulverizing and automatic sampling equipment, at the Saganoseki Smelter & Refinery of Pan Pacific Copper Co., Ltd., for swifter analysis of recycled materials. The implementation of this equipment should contribute to increasing the volumes of recycled materials such as substrates and electronic components collected from used small household appliances, etc., and the recovered volumes of value-bearing metals. In addition, as the analytical instrument is capable of detecting rare earth minerals, its combined use in the rare earth recovery process from recycled materials is under review as a promising future task.



Pulverized recycled materials

## At the Occurrence of the Great East Japan Earthquake

As for operating sites in the recycling and environmental services business, the HMC Department of the Hitachi Works and JX Nippon Environmental Services Co., Ltd. (both in Hitachi City, Ibaraki Prefecture), were affected by the earthquake. Fortunately, however, the buildings and facilities of these operating sites suffered no serious damage. Consequently, both the HMC Department and JX Nippon Environmental Services resumed operation after the holiday weekend in May 2011.

### Cooperation with a local municipal body

Hitachi City also suffered damage from the tsunami generated by the earthquake. In response to a request from Hitachi City, JX Nippon Environmental Services disposed of the wreckage caused by the tsunami and has carried out disposals at the rate of approximately 50 tons per month since May 2011.



Wreckage produced from the tsunami damage

# Technology Development

## The Group's High-Purity Metals Lead the World

The Group is promoting diverse technology developments for future business deployment by taking advantage of various elemental technologies that it has nurtured through mine development, smelting and refining and the development of electronic materials. In particular, the Group has produced high-purity metals by focusing on the development of purification technologies for various metals to create highly functional electronic materials. In this Report, we would like to introduce some of the Company's technology developments regarding purification technologies.

## Characteristics of High-Purity Metals

Metals often have unprecedented characteristics when their purity level is increased. Commercially available metals usually have a purity level of 2N (99%)–4N (99.99%). If the purity level is increased by one grade or more to 5N (99.999%) or higher, they are called "high-purity metals." Compared to metals with conventional purities, these high-purity metals have such characteristics as:

- Improvement in corrosion resistance;
- Improvement in ductility (processing characteristics);
- A decline in recrystallization temperature;
- The coarsening of crystal grains; and
- A change in magnetic properties.

## Production of High-Purity Metals

The Group has developed and produced the high-purity metals enumerated below, mainly for metals that have been subject to research or used for semiconductors (including compound semiconductors).

1A	2A	3A	4A	5A	6A	7A	8A			1B	2B	3B	4B	5B	6B	7B	
H																	He
Li	Be											B	C	N	O	F	Ne
Na	Mg											Al	Si	P	S	Cl	Ar
K	Ca	Sc	Ti	V	Cr	Mn	Fe	Co	Ni	Cu	Zn	Ga	Ge	As	Se	Br	Kr
Rb	Sr	Y	Zr	Nb	Mo	Tc	Ru	Rh	Pd	Ag	Cd	In	Sn	Sb	Te	I	Xe
Cs	Ba	La	Hf	Ta	W	Re	Os	Ir	Pt	Au	Hg	Tl	Pb	Bi	Po	At	Rn
Fr	Ra	Ac															
			La	Ce	Pr	Nd	Pm	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu
			Ac	Th	Pa	U	Np	Pu	Am	Cm	Bk	Cf	Es	Fm	Md	No	Lr

	23 elements currently in production
	11 elements previously produced
	Elements currently under development or under trial production

The Group has enabled the purification of the following metals by taking full advantage of its original hydrometallurgical refining processes such as electrolysis, selective precipitation, ion exchange and solvent extraction, as well as pyrometallurgical refining processes, including distillation, zone melting, solid-state electrolysis and vacuum melting.

Silicon	Titanium	Vanadium	Chromium	Manganese	Iron	Cobalt	Nickel	Copper	Zinc	Zirconium	Niobium
5N	4N5 5N 5N5	4N	4N	4N 5N	5N	5N	5N 5N5	6N 9N	6N	4N 4N5	5N
Molybdenum	Ruthenium	Silver	Cadmium	Indium	Tin	Antimony	Tellurium	Hafnium	Tantalum	Tungsten	
6N	5N	6N	6N	6N 7N	6N	5N	6N	5N 6N	4N5 6N	5N 6N	

Metals

Purities

\* Zirconium: excluding hafnium; Hafnium: excluding zirconium;

Niobium: excluding tantalum

\* All the metals exclusive of gas constituents (O,C,N,H,S)

## Development of Ultra-High-Purity Copper

The Group covers operations from the mining exploitation of copper ore to the smelting of refined copper (4N) and the production of high-purity copper (6N) for sputtering targets for semiconductors. In addition, the Group has established a production process for the world's highest-purity copper (9N-Cu). This ultra-high-purity 9N-Cu scarcely rusts even if exposed to air and contains large crystal grains with a clear pink color. Its recrystallization temperature is remarkably less than that of ordinary copper, and it gradually softens in room temperature even

after having been subject to plastic forming. The ultra-high-purity 9N-Cu has been adopted as a standard substance in the analysis field and is used as a standard substance for temperature measurement. It is therefore acclaimed as the world's highest-purity standard substance. Furthermore, it is used in the basic research domain on the distortion action of substances, which takes advantage of the velocity of dislocation (or the linear lattice defect).

### Examples of the Analysis of Impurities Contained in Copper with Various Purities

(Unit: ppm)

	Iron	Nickel	Silver	Aluminum	Selenium	Silicon	Antimony	Arsenic	Lead	Sulfur
4N	2.1	0.3	7.8	0.1	0.8	1.0	2.1	1.7	0.6	3.1
6N	0.002–0.03	0.001–0.01	0.1–0.3	0.004–0.06	<0.01–0.2	0.05	<0.02	<0.005	<0.001	0.01
9N	<0.005	<0.001	<0.005	<0.001	<0.005	<0.005	<0.005	<0.005	<0.001	<0.005

## Development of Purification Technologies

When the purity level of metals is increased, new solid-state properties, which are completely different from those of ordinary pure metals, are seen. In other words, the characteristics of ordinary pure metals are unlike the attributes of high-purity metals in nature. Until recently, high-purity metals were mainly used in the semiconductor field, whereas purification technologies have been primarily applied to the recycling of value-bearing metals and analysis techniques. Their enhanced application in the future is foreseen in the field of nano-materials that have new functions or properties. More specifically, highly functional materials are expected to be produced by enabling the manufacture of materials and components that require more sophisticated processing precision by using nano-metals to be produced by drawing fully on the strength of the purification technologies.



Appearance of 9N-Cu

# Business Results in Fiscal 2010 (From April 1, 2010, to March 31, 2011)

## Economic Activities of the JX Nippon Mining & Metals Group: Business Performance and Details of Operations

In fiscal 2010, the global economy gradually recovered, on the whole, driven by high growth rates of the emerging countries including China due to expanded exports and domestic demand, in addition to the upward momentum of the U.S. economy, which was sustained by the favorable effects of governmental stimulus policies. However, Japan's situation became harsh as a slumping economy is feared in the aftermath of the Great East Japan Earthquake although the Japanese economy primarily sustained by steady exports had earlier picked up after a temporary stalemate due to the effect of the appreciation of the yen.

The international copper price followed an upward trend against a background of the global recovery of demand. Consequently, the copper price on the London Metal Exchange (LME) rose to a record high above US\$10 thousand per ton in February 2011. On the other hand, in the foreign exchange market, the appreciation of the yen against the U.S. dollar moved from ¥93 to the U.S. dollar at the beginning of the fiscal year to less than ¥80 to the U.S. dollar in March 2011.

The global demand for copper was strong primarily in China, where high economic growth continues. The demand for electronic materials (functional materials consisting of copper foil, precision rolled products and precision fabricated products, as well as thin film materials) was favorable in the first half of the fiscal year under review against a backdrop of production expansion overseas for finished products. However, affected by the inventory adjustment for some finished products, demand for related electronic materials remained flat in the second half.

In these circumstances, the Group carried out the following policies in the metal business pursuant to the basic strategy in the medium-term management plan.

In the copper business, to raise the 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) in the resources development field, the Group additionally acquired the mining rights for the Escondida Copper Mine (Chile) and promoted relevant construction works at the Caserones Copper and Molybdenum Deposit Development Project in Chile toward the targeted start of production during fiscal 2013. The Group also advanced research and evaluation on the Quechua Copper Deposit (Peru) to determine whether to

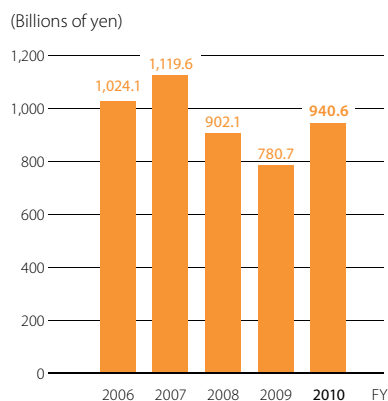
develop the deposit. Meanwhile, in the smelting and manufacturing fields, operation remained steady at the Saganoseki Smelter & Refinery, the Tamano Smelter and a smelting company jointly owned with the LS Group of South Korea. A manufacturer of arabikisen in China became operational in March 2010 after the completion of state-of-the-art facilities with annual production capacity of 300 thousand tons.

In the recycling and environmental services business, a plant at the Hitachi Metal Recycling Complex (HMC) Works started operation on a full-fledged basis to reinforce our operating base for collecting diverse kinds of nonferrous materials from a wide variety of recycled materials. In addition, to raise the collecting capacity of recycled materials, the Saganoseki Works started receiving recycled materials collected by a Taiwanese subsidiary to recover value-bearing metals. Furthermore, the effectiveness of our recycling technologies for rare metals contained in used automotive lithium-ion batteries has been confirmed through demonstration trials. We intend to have further demonstration tests and conduct various reviews to enhance the commercial application of our recovery technologies.

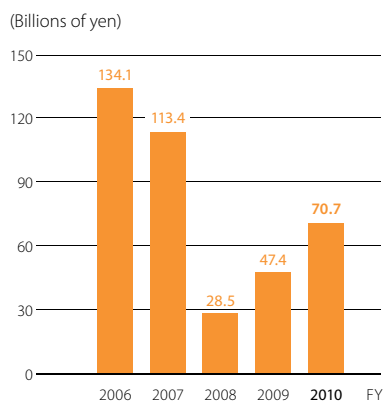
In the electronic materials business, the Company acquired all the shares of Sanyu Electronic Industry Co., Ltd., a dedicated company for industrial-use electroplating, to strengthen its capability in the post-plating process and converted Suzuki Manufacturing Co., Ltd., a precision press pressing company, into a wholly owned subsidiary, thereby establishing an integrated production system covering precision rolling to pressing and plating. Moreover, the Group started building a new plant of precision components and materials (pressed and plated precision rolled products) for use in car electronic parts in Kakegawa City, Shizuoka Prefecture. In the future, the Group aims to strengthen its supply system of precision components and materials. The Group also started constructing relevant equipment that will allow the Isohara Works to carry out mass production of high-quality cathode materials used in automotive lithium-ion batteries, which are indispensable in the next-generation, environment-friendly vehicles (Eco-Cars).

Consequently, the JX Nippon Mining & Metals Group's consolidated net sales amounted to ¥940.6 billion. Consolidated ordinary income was ¥70.7 billion.

### Consolidated Net Sales

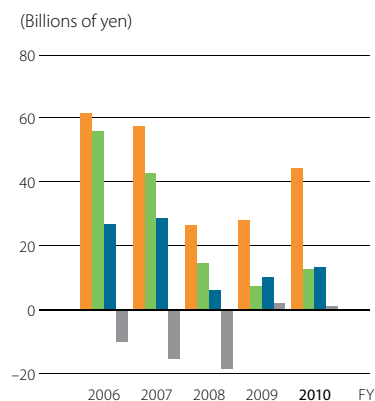


### Consolidated Ordinary Income



### Consolidated Ordinary Income by Business Segment

- Upstream (Resources Development)
- Midstream (Copper Smelting, etc.)
- Downstream (Recycling and Environmental Services, Electronic Materials, etc.)
- Inventory-related income and expenses\*1



\*1. Inventory-related income and expenses, which were included in the midstream and downstream fields, are separately reported retroactively for prior years.

# Economic Effects on Stakeholders

The JX Nippon Mining & Metals Group develops its business activities by getting involved in the businesses of various stakeholders. The economic effects can be identified by stakeholder in the form of financial flows that represent how much the economic value, which is created through such operation as sales of products to customers, will be distributed to each stakeholder.

## 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 ¥940.6 billion, over 78% 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 ¥18.4 billion. The breakdown of this included dividends received from investments, interest received from financial institutions and grants from public institutions.

We paid ¥880.2 billion for the services rendered by suppliers, including materials procurement.

Personnel expenses, including legal welfare expenses, totaled ¥36.6 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 ¥16.8 billion for the severance indemnity plans and ¥2.5 billion for the defined benefit plans (turned over by different funds from the Group). Of the total of ¥19.3 billion, ¥2.5 billion was contributed to funds outside the Group as pension assets. As a result of deducting ¥0.2 billion in an unrecognized actuarial gain or loss, the remaining ¥16.7 billion was recognized as accrued retirement benefits for employees. The projected benefit obligation is calculated as of the end of the fiscal year, and the estimated pension benefit was allocated over the period of the pension plan with a discount rate of 2.0% for the most part.

Dividends paid to shareholders totaled ¥0.6 billion. And ¥4.4 billion was interest on loans paid to creditors.

The Group recorded income taxes of ¥3.4 billion in fiscal 2010 on the financial statements. Additionally, we posted ¥3.0 billion as other taxes and public charges, which we included as an expense. In total, we recognized ¥6.4 billion as distributions to government administrations.

An amount of ¥0.12 billion was donated to society as a part of our social contribution program.

Revenue from national and regional governments (grants, tax credits, etc.) amounted to approximately ¥0.6 billion centering on the revenue from entrusted operations as a result of the Company being chosen for “a development project for a recycling technology to extract rare metals from used lithium-ion batteries,” for which public subscription was offered as an industrial technology development business of the Ministry of Economy, Trade and Industry.

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

(Billions of yen)

	IN		OUT						Value Retained (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	735.1	18.2	683.5	32.1	0.4	2.7	5.9	0.05	28.7
Asia (excl. Japan)	189.0	0.2	183.1	2.1	0.2	1.6	0.3	–	1.9
North America	8.4	0	7.6	0.4	–	–	0.1	–	0.3
Europe	8.1	0	6.4	1.2	–	0.1	0	–	0.4
South and Central Americas	–	0	(0.4)	0.8	–	–	0.1	0.07	(0.6)
Total	940.6	18.4	880.2	36.6	0.6	4.4	6.4	0.12	30.7

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



# Topics in Fiscal 2010

April 2010	JX Holdings, Inc., was established by the management integration of Nippon Mining Holdings, Inc., and Nippon Oil Corporation. ❶ Jointly with Mitsubishi Corporation and Mitsubishi Materials Corporation, Nippon Mining & Metals Co., Ltd., acquired 2.5% of the mining rights of the Escondida Copper Mine in Chile from International Finance Corporation (IFC). ❷
May	Nikko Metals Taiwan Co., Ltd., held an opening ceremony for its Chiongpin Recycling Center. Nippon Mining & Metals held the "Forest of Ryuju Satoyama" memorial tree-planting festival in Nanyo City, Yamagata Prefecture. ❸
June	Head office was moved from the Shin Nikko Building to the JX Building. Construction of new facilities was completed at Changzhou Jinyuan Copper Co., Ltd. ❹
July	JX Nippon Mining & Metals Corporation was established as a core operating company of the JX Group (change of the Company's name). ❺ JX Nippon Mining & Metals established its Code of Conduct based on the JX Group Mission Statement.
September	Sustainability Report 2010 was published. ❻ Mar Camino, a dual-purpose carrier of <u>copper concentrate</u> and sulfuric acid, which had been constructed by Nippon Marine Co., Ltd., started operation. ❼
November	Nikko Tsuruga Recycle Co., Ltd. (the name at that time), celebrated its 15th anniversary. JX Nippon Mining & Metals held factory tours for trainees of the International Institute for Mining Technology at the Hitachi Area Coordination Center. An agreement was concluded with Imabari Shipbuilding Co., Ltd., regarding the shipbuilding of a dual-purpose carrier of copper concentrate and sulfuric acid.
December	JX Nippon Mining & Metals decided to renew the scalping line in the precision rolling process at the Kurami Works.
January 2011	Pan Pacific Copper Co., Ltd. celebrated its 10th anniversary. JX Nippon Mining & Metals decided to significantly expand the manufacturing capacity of cathode materials for automotive lithium-ion batteries at the Isohara Works. JX Nippon Mining & Metals decided to significantly increase the number of <u>electroless Ni/(Pd)/Au UBM plating lines</u> at the Isohara Works. ❸
February	JX Nippon Mining & Metals decided to establish a manufacturer of precision components for use in car electronic parts, and to build a new plant in Kakegawa City, Shizuoka Prefecture, to perform the pressing and plating of precision components and materials. JX Nippon Mining & Metals acquired all the shares of Suzuki Manufacturing Co., Ltd., a precision press pressing company. ❹
March	Operating sites of JX Nippon Mining & Metals in Tohoku and Kita-Kanto were affected by the Great East Japan Earthquake.





# 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, in light of the structure of its environmental management system and its development of environment-friendly technologies.

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# Basic Environmental Policy

As a global manufacturer of nonferrous 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.



## Numerical Data of the Environmental Activities Report

Please note that in certain instances the numerical data of Sustainability Report 2011 differs from the equivalent numerical data of Sustainability Report 2010. This is because the Company retroactively added the numerical data for past fiscal years of Hitachi Fabricating Works (currently Precision Plating Department, Hitachi Works), and Isohara Fabricating Works, which became operating sites under the Company's direct control; and the operating sites of Sanyu Electronic Industrial Co., Ltd., which became a member of the Group. In addition, the Company retroactively removed the numerical data for the past fiscal years of Nikko Coil Center Co., Ltd. (currently JX Nippon Coil Center Co., Ltd.), which were included in previous reports up to and including Sustainability Report 2010, because it is not an operating site under the direct control of the Company and it is not classified as a Type 1 Designated Energy Management Factory under the Energy Saving Act.

In some tables, summations of individual figures and figures in total columns differ due to rounding.

# 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. Based on the conviction that personnel on-site should be responsible for ensuring environmental protection, the top managers at each operating site serve as supervisory environmental managers. At the same time, we will further invigorate the Environment Measures Committee and advance mutual understanding between labor and management in relation to environmental protection.

#### 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.

Fiscal 2010 was the final year of the plan. Despite the impact of the Great East Japan Earthquake at the end of the fiscal year, we reached all of the targets identified in the plan.

The rate of reduction is measured against the average value for the fiscal 2003–2005\*1 period.

Item		2006	2007	2008	2009	2010	Approach
Reduction in energy consumption intensity*2	Goal	1%	2%	3%	4%	5%	Reducing 1% per year
	Achievement*4	3.0%	5.0%	2.7%	3.0%	5.4%	
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*3,4	5.0%	6.8%	5.4%	6.1%	8.1%	
Reduction in final waste disposal intensity*2	Initial 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	39%	63%	60%	73%	78%	

Boundary

Domestic:

All domestic operating sites under the Company's direct control and domestic affiliated companies classified as a Type 1 Designated Energy Management Factory under the Energy Saving Act.

Operating sites covered are as follows:

Shirogane Works (currently Copper Foil Dept., Hitachi Works); Isohara Works; Toda Works; Kurami Works; HMC Works (currently HMC Dept., Hitachi Works); Pan Pacific Copper Co., Ltd. (Saganoseki Smelter & Refinery, Hitachi Works); Tamano Smelter, Hibi Kyodo Smelting Co., Ltd.; Japan Copper Casting Co., Ltd.; Nikko Environmental Services Co., Ltd. (currently JX Nippon Environmental Services Co., Ltd.); Tomakomai Chemical Co., Ltd. (currently JX Nippon Tomakomai Chemical Co., Ltd.); Nikko Mikkaichi Recycle Co., Ltd. (currently JX Nippon Mikkaichi Recycle Co., Ltd.); and Nikko Tsuruga Recycle Co., Ltd. (currently JX Nippon Tsuruga Recycle Co., Ltd.)

Overseas:

Changzhou Jinyuan Copper Co., Ltd.; Nikko Metals Philippines, Inc. (currently JX Nippon Mining & 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 coefficient for electric power of 0.555 tons of CO<sub>2</sub>/MWh, which was initially established, is uniformly used.

\*4. Some operating sites' energy usage volumes for fiscal 2009 were revised. As a result, reduction results differ from those shown in Sustainability Report 2010.

# 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 and photovoltaic power generation.

Under the medium-term plan that was revised in fiscal 2008, the Group set its fiscal 2010 reduction goals for energy consumption intensity and CO<sub>2</sub> emission intensity as 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 could achieve these goals by monitoring progress each year. (For further details, please see page 56.)

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 2010, the Group's overall energy consumption in terms of its calorific value was 17,464 TJ, compared with 16,782 TJ in fiscal 1990, the base year of the Kyoto Protocol.\*1

Currently, energy consumed at its smelters and refineries accounts for approximately 50% 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, we are making every effort to use energy more efficiently. Our efforts, which include improvement of current efficiency by introducing the permanent cathode method into the refining process, resulted in reduction of energy consumption. Consequently, although the energy consumption intensity at smelters and refineries deteriorated in comparison with that of fiscal 2009 due to a decline in production that reflected the prolonged economic downturn following the Lehman Shock, it has decreased to 67% of the intensity of fiscal 1990.

Other domestic operating sites are also striving to reduce energy consumption by continuing to introduce cogeneration units, improve

product yield rates, streamline production processes, improve facilities, and review operating conditions.

Additionally, although higher production volumes cause additional energy usage volume, 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 efficient cooling systems.

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

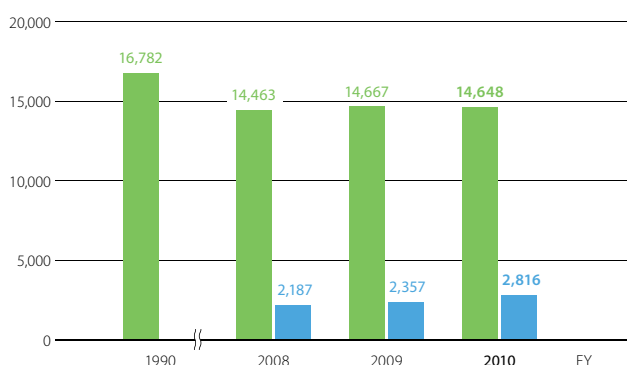


Anode furnace at Saganoseki Smelter & Refinery

### Energy Consumption (fuel + electricity) \*2

- Total of domestic operating sites
- Total of overseas operating sites

(Calorific value in TJ)



\*1. 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.)

A breakdown of energy consumption is shown below.

Fiscal 1990 (domestic only): Fuel (direct) 6,862 TJ;

Electricity (indirect) 9,919 TJ

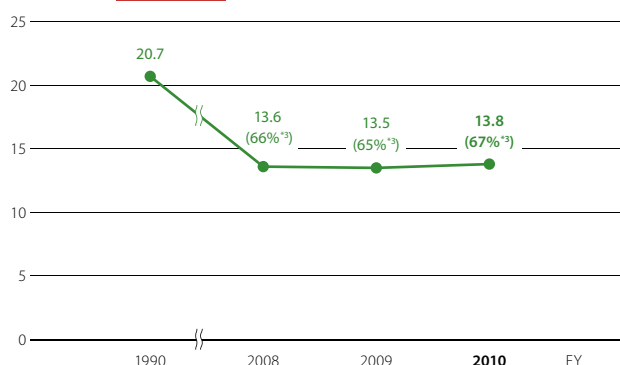
Fiscal 2010: Fuel (direct) domestic 3,847 TJ, overseas 984 TJ;

Electricity (indirect) domestic 10,801 TJ, overseas 1,832 TJ

TJ (tera joule): 10<sup>12</sup> J

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

(GJ per ton of refined copper produced)



\*2. Some operating sites' energy usage volumes for fiscal 2009 were revised.

\*3. These percentage figures are calculated in comparison with the intensity of fiscal 1990.



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

In fiscal 2010, the Group's total CO<sub>2</sub> emissions from energy consumption in Japan and overseas was 933 thousand tons.

Energy consumed at smelters and refineries accounts for approximately 50% of the energy the entire Group consumes. The Group has reduced the CO<sub>2</sub> emission intensity to 56% of the fiscal 1990 level as a result of energy conservation measures, such as conducting smelting operations with a single flash furnace, and reductions in the emission coefficients of respective electric power companies.

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 further

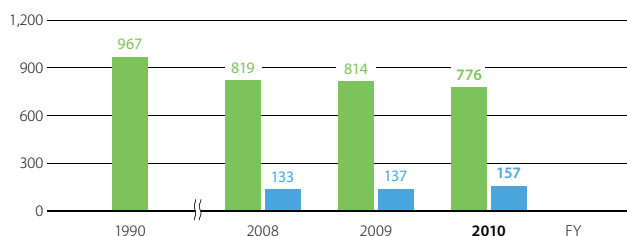
promoting the shift from in-house power generation to purchasing electric power from electric power companies at these sites. This has resulted in a decrease of CO<sub>2</sub> emissions by about 10% (approximately 10 thousand tons), despite an 18% increase in production volume. Also, these operating sites have shown an approximately 25% improvement in CO<sub>2</sub> emission intensity.

<sup>\*1</sup>. The emissions are calculated using emission coefficients in correspondence with the Act on Promotion of Global Warming Countermeasures. Coefficients that individual electric power companies made public and statistical data released by the International Energy Agency (IEA) are used to calculate amounts of emissions from electric power consumption of domestic and overseas operating sites, respectively. At the same time, using the latest publicly released data from the IEA, data of fiscal 2008 and fiscal 2009 were recalculated.

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

■ Total of domestic operating sites  
■ Total of overseas operating sites

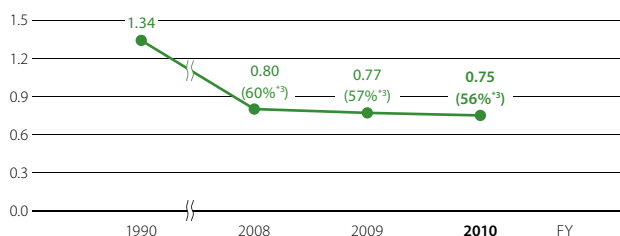
(Thousand tons of CO<sub>2</sub>)



<sup>\*2</sup>. Due to recalculation of energy usage volumes for fiscal 2009 at some operating sites, the CO<sub>2</sub> emission volume was revised.

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

(Tons of CO<sub>2</sub> per ton of refined copper produced)



<sup>\*3</sup>. These percentage figures are calculated in comparison with the intensity of fiscal 1990.

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

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

Calculated on a CO<sub>2</sub> equivalent basis, emissions of these gases in fiscal 2010 were approximately 74 thousand tons, of which approximately 3 thousand tons was N<sub>2</sub>O related.

<sup>\*1</sup>. Emissions are calculated using emission coefficients in correspondence with the Act on Promotion of Global Warming Countermeasures.

<sup>\*2</sup>. Emitted during the incineration of waste oil, plastic, and rubber tires.

<sup>\*3</sup>. Emitted during the incineration of sludge, waste oil, plastic, and rubber tires as well as during fuel consumption.

## Logistics Stage ✓

In fiscal 2010, the Group's<sup>\*1</sup> energy consumption in Japan was 542 TJ, and CO<sub>2</sub> emissions were 38.3 thousand tons, compared with 608 TJ and 42.9 thousand tons, respectively, in fiscal 2009. In fiscal 2010, the CO<sub>2</sub> emission volume decreased 11% year-on-year. This was due to a decline in transport volume among operating sites caused by reduction in output of refined copper and the occurrence of the earthquake disaster. At the same time, an increase in the number of large-scale civil engineering works, which reduced transport requirements of slag to interim storage sites, was another factor to decrease the emissions.

Further, in international transportation, Nippon Marine Co., Ltd. has commissioned the *Mar Camino*, a dual-purpose carrier since

September 2010. (For further details, please see page 53.) The *Mar Camino* is the world's only vessel transporting sulfuric acid on its outward voyage and copper concentrate on its homeward journey and the ship helps further raise the logistical efficiency of the Group.

The Group is making every effort to increase transport efficiency by reducing the environmental impact on domestic and overseas transportation, while further improving the loading ratio.

<sup>\*1</sup>. Figures are the sums of energy consumption and CO<sub>2</sub> emissions of two logistics companies that are subject to the Act on the Rational Use of Energy. The number of Group companies decreased from three in the last fiscal year to two during fiscal 2010 due to a merger between Nikko Smelting & Refining Co., Ltd., and PPC.

## 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 of JX Nippon Mining & Metals. Currently, we generate hydroelectric power in Fukushima Prefecture, and sell the energy generated to a

power producer and supplier (PPS). Hydroelectric power generation totaled about 27 GWh in fiscal 2010, compared with approximately 28 GWh in fiscal 2009.

While the occurrence of an aftershock of the Great East Japan Earthquake in April has forced the hydroelectric power plant to suspend its operation, the Group is speeding up reconstruction efforts to restart in early fiscal 2012.

# 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.

In particular, we strive to reduce the volume of waste materials for final disposal. In 2008, we revised our goals for final waste disposal intensity (final disposal volume / production volume or treatment volume). We subsequently established the 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 actively monitored operations in order to achieve this goal. (For further details, please see page 56.)

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.

## Conserving Resources (Water Usage and Water Discharge Volumes) ☒

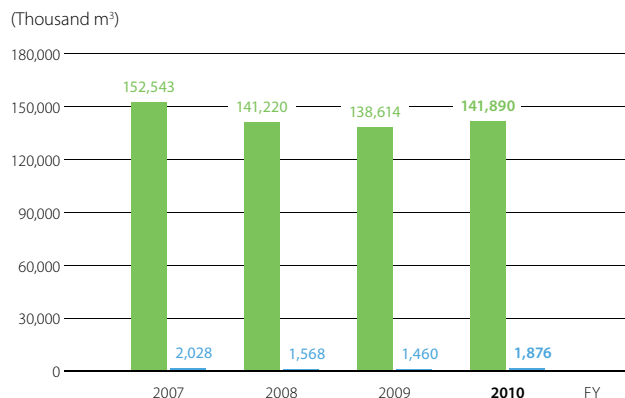
The Group's water usage in fiscal 2010 amounted to 143,766 thousand m<sup>3</sup>, of which 86% was sea water. The volume of water discharge was 160,947 thousand m<sup>3</sup>, of which 91% was discharged into the sea.

The water usage intensity at smelters and refineries, which accounts for 89% of the Group's total water usage, is trending slightly upward.

On a long-term basis, however, it has remained at almost the same level. Also, water discharge intensity appears to be trending upward. However, this is because some smelters and refineries have changed measurement methods in order to seek for more accurate data.

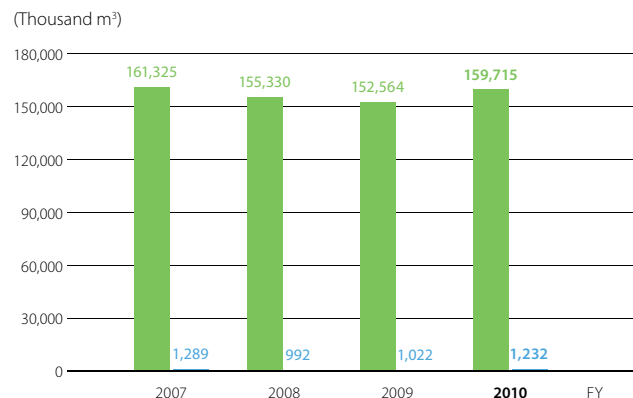
### Water Usage

■ Total of domestic operating sites  
■ Total of overseas operating sites



### Discharge Volumes

■ Total of domestic operating sites  
■ Total of overseas operating sites



### Water Usage (domestic and overseas)

(Thousand m<sup>3</sup>)

	2007	2008	2009	2010
Sea water	132,306	121,138	118,685	123,128
Ground water / Industrial water	20,080	19,584	19,408	18,478
Waterworks	2,091	1,964	1,885	2,080
Rainwater	95	103	96	81
Total	154,572	142,789	140,074	143,766

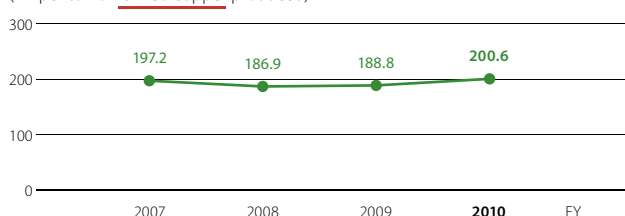
### Discharge Volumes (domestic and overseas)

(Thousand m<sup>3</sup>)

	2007	2008	2009	2010
Ocean	146,327	140,748	138,598	145,975
River	15,919	15,217	14,648	14,569
Drainage systems	368	357	340	404
Total	162,615	156,322	153,586	160,947

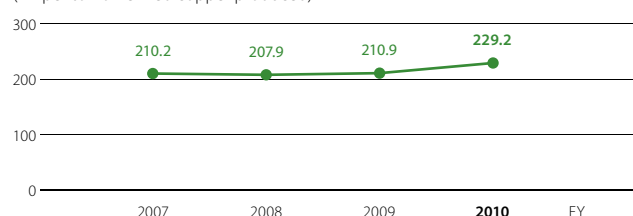
### Water Usage Intensity at Smelters and Refineries

(m<sup>3</sup> per ton of refined copper produced)



### Discharge Intensity at Smelters and Refineries

(m<sup>3</sup> per ton of refined copper produced)



## 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, minimizing resources that are extracted directly from the nature by effectively utilizing recycled resources has become a pressing issue.

In fiscal 2010, the Group's total material input was 2,836 thousand tons. Of this, recycled resources accounted for 292 thousand tons, or 10% of the total material input.

(Thousand tons)

	Product	Input volume
Primary resources	<u>Copper concentrate</u> , <u>silicate ore</u> , <u>copper shot</u> , iron and copper elements (bare strips), nickel, zinc, other metals, etc.	2,544
Recycled resources	<u>Copper and copper alloy scraps</u> , <u>silver and gold residual slag</u> , <u>copper scraps</u> , etc.	292
Total		2,836

## By-products ☒

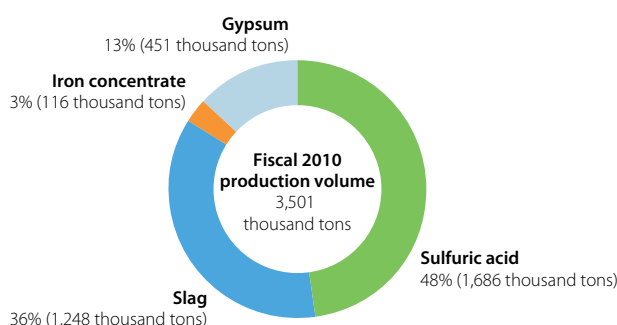
In fiscal 2010, the Group produced 3,501 thousand tons of by-products, including 1,686 thousand tons of sulfuric acid, 1,248 thousand tons of slag, 116 thousand tons of iron concentrate, and 451 thousand tons of gypsum.

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.



Filling a caisson with copper slag

### By-product Production Volume



## Gross Generation of Waste Materials and Final Gross Discharge ☒

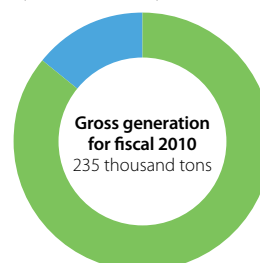
The gross generation of waste materials in fiscal 2010 was 235 thousand tons, of which 86%, or 202 thousand tons, was reused within the Group. As a result, final gross discharge, including sales of non-value-bearing waste, was 33 thousand tons. The volume of landfill disposal\*, excluding the volume recycled externally and others, was approximately 1.8 thousand tons in fiscal 2010, down significantly compared to that of fiscal 2005. 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.

\*1. Defined as the volume of materials disposed of in landfills by the Group, as well as those materials for which the purpose of use could not be clearly identified as either recycling, heat recovery, or incineration before being discharged outside of the Group

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

#### Volume discharged outside the Group

14% (33 thousand tons)



Volume recycled within the Group  
86% (202 thousand tons)

### Discharge Outside the Group

(Thousand tons)

Purpose of discharge	2010
Recycling	
Sales of value-bearing metals	23.1
Waste	6.5
Heat recovery	0.9
Incineration	0.4
Final disposal	1.8
Total waste	9.6
Total	32.8

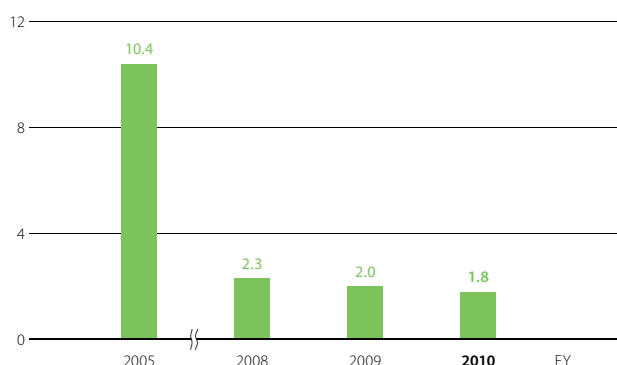
### Type of Waste

(Thousand tons)

Type	2010
Sludge	2.8
Cinder	1.6
Waste acid / Waste alkaline	1.6
Glass / Concrete / Ceramics / Porcelain	0.2
Waste plastic	0.9
Others	2.4
Total	9.6

### Volume of Final Landfill Disposal

(Thousand tons)



# 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 ☒

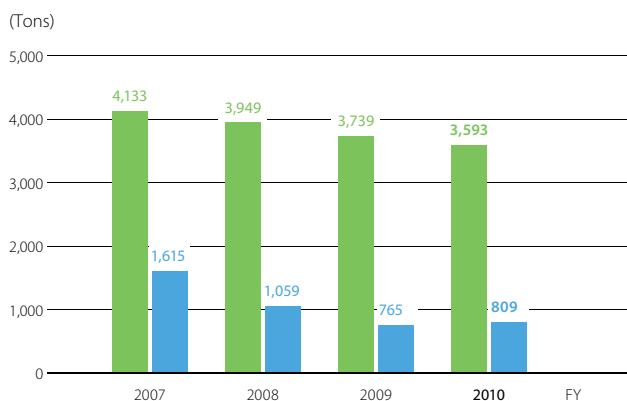
The Group monitors waste gas emissions at all operating sites in compliance with laws, regulations, and other ordinances, as well as its own voluntary standards. Emission volumes of sulfur oxides (SOx) and nitrogen oxides (NOx) in fiscal 2010 are described in the graphs below. Smelters and refineries have improved inversion rates from SO<sub>2</sub> to SO<sub>3</sub> 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. The total of SOx and NOx emission

volumes at domestic operating sites decreased 146 tons and 28 tons, respectively, compared with those of the previous fiscal year. In addition, the SOx and NOx emission intensities of smelters and refineries remained at approximately the same level as those of fiscal 2008.

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 promoting a steady shift from in-house power generation to purchased power since fiscal 2008. In fiscal 2010, it approximately halved the SOx emission volume compared with that of fiscal 2007.

### SOx Emission Volume\*1,2

■ Total of domestic operating sites  
■ Total of overseas operating sites

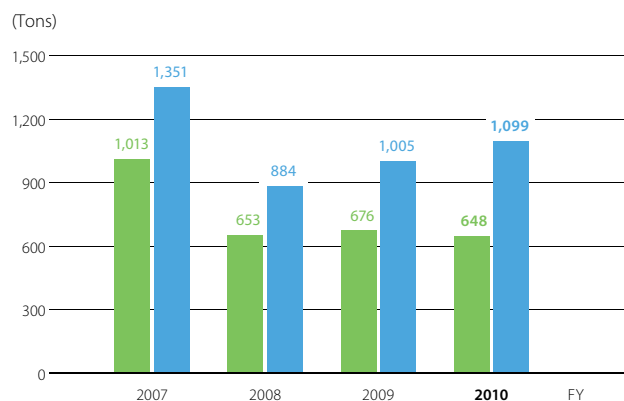


\*1. Total of volumes from operating sites subject to legal requirements

\*2. Figures of domestic operating sites from the prior fiscal year were retrospectively revised.

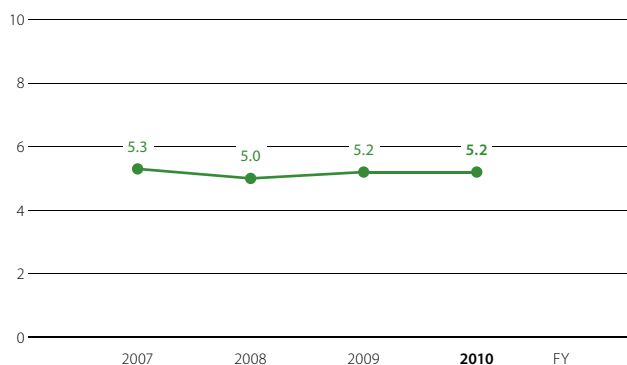
### NOx Emission Volume\*1

■ Total of domestic operating sites  
■ Total of overseas operating sites



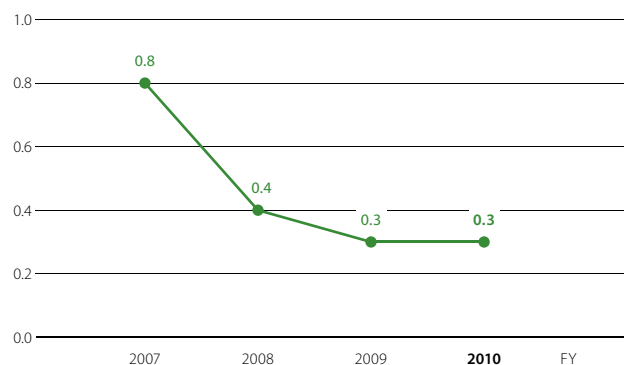
### SOx Emission Intensity of Smelters and Refineries

(Kg of SOx per ton of refined copper produced)



### NOx Emission Intensity of Smelters and Refineries

(Kg of NOx per ton of refined copper produced)

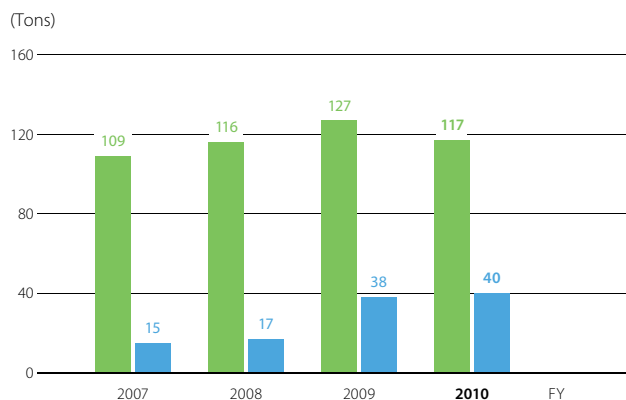


## Preventing Water Pollution

The Group monitors water discharge at all operating sites in compliance with laws, regulations, and other ordinances, as well as its own voluntary standards. The amounts of chemical oxygen demand (COD) and biochemical oxygen demand (BOD) are outlined in the graphs below.

### COD\*1

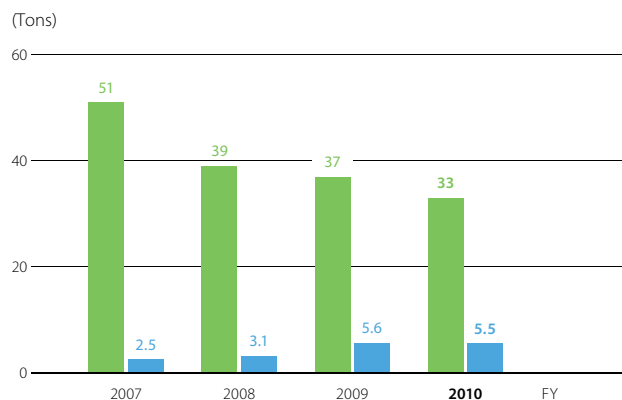
■ Total of domestic operating sites  
■ Total of overseas operating sites



\*1. Total of volumes from operating sites subject to legal requirements

### BOD\*1

■ Total of domestic operating sites  
■ Total of overseas operating sites



## Chemical Management

### Identifying Quantities of Specific Chemical Substances Released into the Environment and Improving Controls

In 2008, the Act prescribing Pollutant Release and Transfer Register (PRTR) System was revised to increase items classified as Class I Designated Chemical Substances from 354 to 462 and Class II Designated Chemical Substances, which do not require registration but require issuance of Material Safety Data Sheets (MSDS), from 81 to 100.

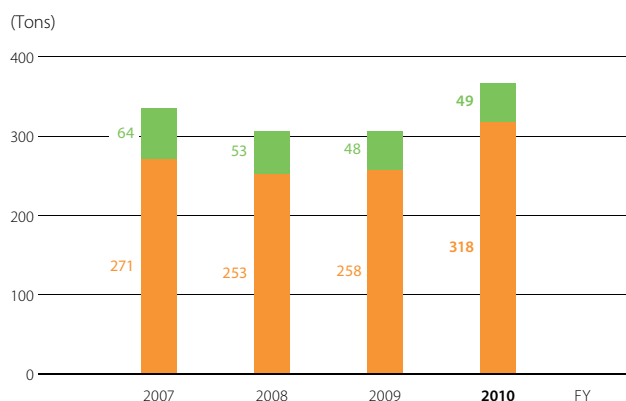
The Group strictly adheres to the Act. Also, as part of its environmental management activities, the Group is working hard to reduce its environmental impact by setting each operational site and affiliated company targets for decreasing the use and release of specific chemical substances into the environment.

Further, the Group applies 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 2010, the Group released and transferred approximately 367 tons of chemicals that are required to be reported by the PRTR. This represented a 61 ton increase from the previous fiscal year. The volume of chemicals released slightly increased by 1 ton. On the other hand, the addition of substances requiring registration under the PRTR resulted in an approximately 60 ton increase in the transfer of chemicals.

### Volume of Release / Transfer\*2

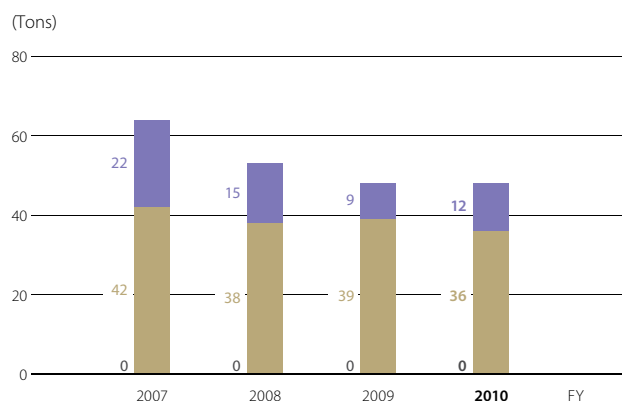
■ Total release volume  
■ Total transfer volume



\*2. Total volumes of chemicals released into water for fiscal 2008 and fiscal 2009 were revised.

### Breakdown of Release Volumes\*2

■ Air  
■ Water  
■ Group landfills





## Release and Transfer Volumes of Chemicals

(Tons)

No.	Material number	Chemical	Release volume			Transfer volume	
			Air	Water	Group landfills	Waste materials	Drainage systems
1	1	Zinc compounds (water soluble)	0.8	2.7	0	47	0
2	31	Antimony and its compounds	0.3	1.1	0	4.1	0
3	44	Indium and its compounds	0	0.2	0	5.5	0
4	71	Ferric chloride	0	0	0	71	0
5	75	Cadmium and its compounds	0.6	0.1	0	11	0
6	80	Xylene	0.1	0	0	0	0
7	82	Silver and its water-soluble compounds	0	0.8	0	0	0
8	87	Chromium and trivalent chromium compounds	0	0.1	0	0.4	0
9	132	Cobalt and its compounds	0	0	0	4.6	0
10	144	Inorganic cyanide compounds (except complex salts and cyanates)	0.1	0.2	0	0.6	0
11	242	Selenium and its compounds	0.1	0.9	0	0	0
12	272	Copper salts (water soluble, except complex salts)	1.4	3.1	0	94	0
13	279	1,1,1-trichloroethane	0	0.6	0	0	0
14	281	Trichloroethylene	3.7	0.1	0	5.9	0
15	296	1,2,4-trimethylbenzene (pseudocumene)	0.1	0	0	0	0
16	305	Lead compounds	2.1	0.9	0	0.2	0
17	309	Nickel compounds	0.5	1.4	0	67	0
18	332	Arsenic and its inorganic compounds	1.5	2.0	0	0	0
19	374	Hydrogen fluoride and its water-soluble salts	0	12	0	3.5	0.3
20	405	Boron compounds	0	9.0	0	5.0	0
21	412	Manganese and its compounds	0	1.4	0	9.2	0
22	438	Methylnaphthalene	0.8	0	0	0	0
23	243	Dioxins	0.41	0.0045	0	2.8	0

(g-TEQ)

\* There are 45 chemicals that are required to be reported.

\* Except dioxins, all chemicals reported have a total release and transfer volume of over 0.1 tons.

\* There is no discharge into Group landfills or the soil.

### Detoxification of Products Containing PCBs

Utilizing the early registration system of the Japan Environmental Safety Corporation (JESCO)\*<sup>1</sup>, 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.

\*1. 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

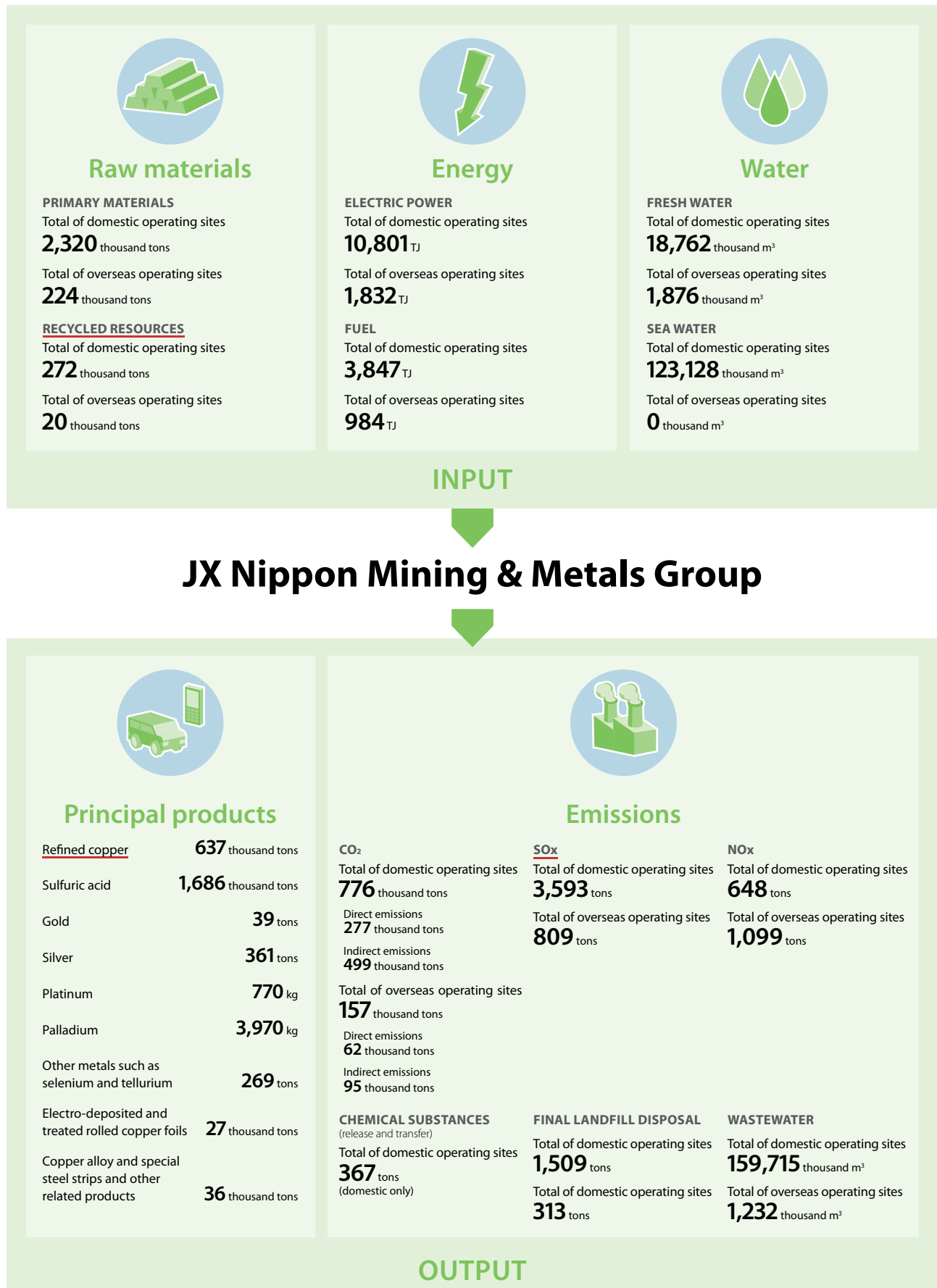
The European Union (EU)'s REACH Regulation, which applies precautionary principle, came into effect in June 2007. The purpose of this regulation is to harmonize the management of chemicals that are released and transported within the region, and to clarify risks that the chemicals bear and their impacts 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 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 the Autonomous Action Plan for Environmental Protection. 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	3	First Grade Mining Pollution Control Manager	77
EMS Internal Auditor (Outside training completed)	279	Certified Environmental Measurer	20
EMS Internal Auditor (In-house training completed)	243	Waste Disposal Facilities Engineering Manager	46
First Grade Air Pollution Control Manager	91	Qualified Managers of Specially Controlled Industrial Wastes	64
First Grade Water Pollution Control Manager	132	Registered Energy Manager (Heat)	15
Noise Abatement Manager	21	Registered Energy Manager (Electricity)	3
Vibration Abatement Manager	12	Registered Energy Manager (New system)	78
Chief Manager of Pollution Control	4	Operation Chief Handling Specified Chemical Substances, etc.	1,194
Dioxins Pollution Control Manager	9		

\* Includes affiliated companies under the control of the Corporate divisions (as of April 1, 2011)

## Obtaining ISO 14001 Certification

### Operating Sites That Have Obtained ISO 14001 Certification

Domestic	Isohara Works; Copper Foil Dept., Hitachi Works (including Ichinoseki Foil Manufacturing Co., Ltd.); Hitachi Works (including Hitachi Works, Pan Pacific Copper Co., Ltd.; JX Nippon Environmental Services Co., Ltd.); Isohara Fabricating Works; Kurami Works (including Kurami Office, JX Nippon Coil Center Co., Ltd.); Saganoseki Smelter & Refinery, Pan Pacific Copper Co., Ltd. (including Japan Copper Casting Co., Ltd., Nissho Ko-un Co., Ltd.); Hibi Smelter, Pan Pacific Copper Co., Ltd. (including Hibi Kyodo Smelting Co., Ltd., Sankin Hibi Harbor Transportation Co., Ltd.); Headquarters, Pan Pacific Copper Co., Ltd. (including Osaka Office, Nagoya Office, Fukuoka Office); JX Nippon Tomakomai Chemical Co., Ltd.; JX Nippon Tsuruga Recycle Co., Ltd.; JX Nippon Mikkaichi Recycle Co., Ltd.; JX Nippon Kurobe Galva Co., Ltd.; Esashi Works, Sanyu Electronic Industry Co., Ltd.; Tatebayashi Works, Sanyu Electronic Industry Co., Ltd.; Meguro Works, Sanyu Electronic Industry Co., Ltd.; Suzuki Manufacturing Co., Ltd.; JX Metals Trading Co., Ltd.
Overseas	JX Nippon Mining & Metals Philippines, Inc.; Gould Electronics GmbH; JX Nippon Mining & Metals Korea Co., Ltd.; Nikko Fuji Electronics Dongguan Co., Ltd.; Nikko Fuji Precision (Wuxi) Co., Ltd.; JX Nippon Mining & Metals Singapore Pte. Ltd.; Nikko Metals Shanghai Co., Ltd.; Bade Works, Nikko Metals Taiwan Co., Ltd.

## 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.

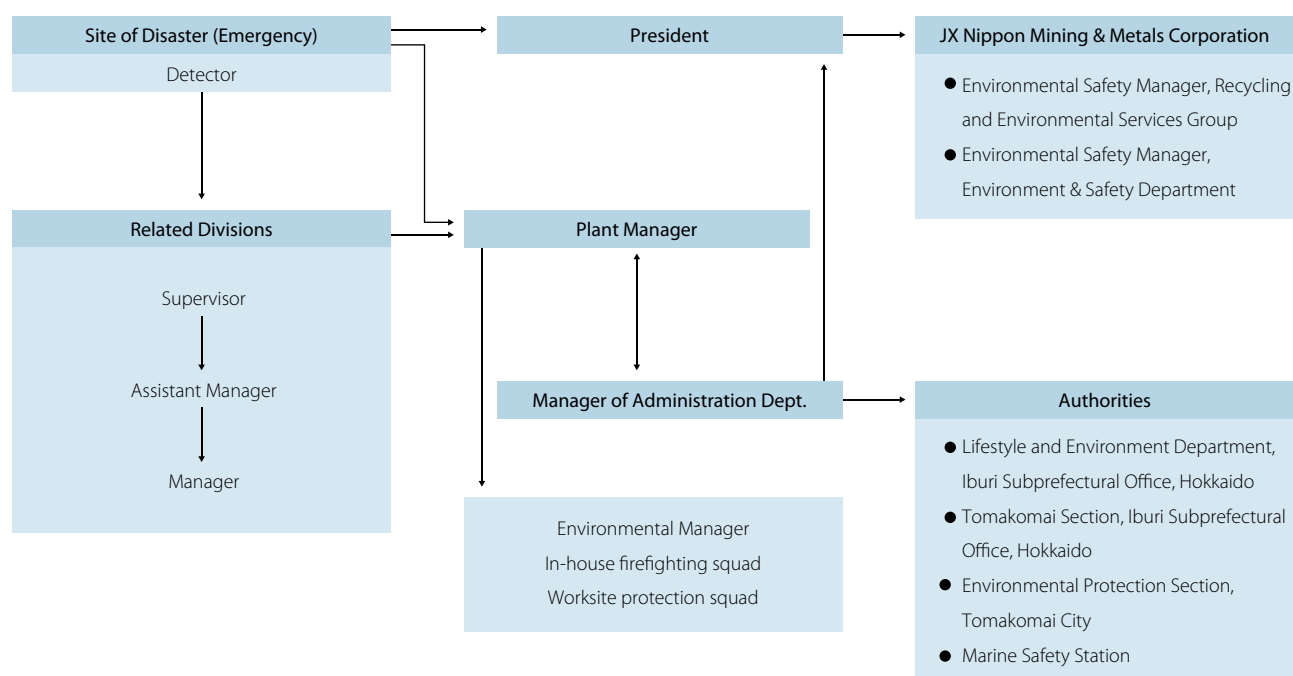
Moreover, we conduct comprehensive disaster prevention drills and training with our own fire fighting squads in order to prevent accidents and disasters from exacerbating.



Fire fighting squad training

## Emergency Procedures

An example of JX Nippon Tomakomai Chemical Co., Ltd.



## 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 2010, 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 2010, there were no accidents, including spill incidents.

# Initiatives for Closure Mines

The Company formerly engaged in resource exploitation of copper, gold, zinc and other metals domestically at several dozen mines including the Hitachi Mine, the birthplace of the Company. However, all of these mines finished their roles and have been closed. The Company continues to maintain and manage these closure mines as required from the viewpoint of environmental preservation.

## Current Status and Issues of Closure Mines

Of the 39 closure mines that are held by the Company, 12 are currently under obligation to continue processing their mine drainage in accordance with the Mine Safety Law. JX Nippon Mining Ecomanagement, Inc., a Group company, is in charge of processing the mine drainage and managing former mining sites including the impoundments at the relevant closure mines.

One of the indispensable maintenance and management operations for closure mines is to properly process the acid mine drainage that goes out from pit mouths and other places by removing the pollutant heavy metals to alter and improve the water quality. As the acid mine drainage is discharged semipermanently and continually (with heavy rainfall or melting snow, the drainage volume increases two to six times compared to that during a drought), we have to process the acid mine drainage every day. JX Nippon Mining Ecomanagement has established an emergency contact system under which staff at the management facilities immediately inform the concerned parties in case abnormal pH values are recorded or problems are detected. Furthermore, emergency water storage and/or privately owned power generators are also installed so that the staff can swiftly address any problem.

The water quality of the drainage discharged after being processed complies with predetermined wastewater quality standards at lower measurements than those set forth in the national wastewater standards. Meanwhile, sludge separately produced during the course of the mine drainage processing is disposed of after appropriate treatment.

In addition to the renovation of the drainage processing facilities at the closure mines, the Group focuses on implementing environmental countermeasure works in view of various kinds of natural disasters. Taking into account the site conditions of the closure mines, we plan and execute environmental countermeasure works to prepare for possible natural disasters such as torrential rains or landslides. At the same time, we have launched countermeasures to reinforce the impoundments in the aftermath of the recent Great East Japan Earthquake (see page 69 for details).

The Group intends to upgrade and reinforce its management system for the closure mines to further reduce the environmental impact.



Drainage processing facilities at the Kamikita Mine

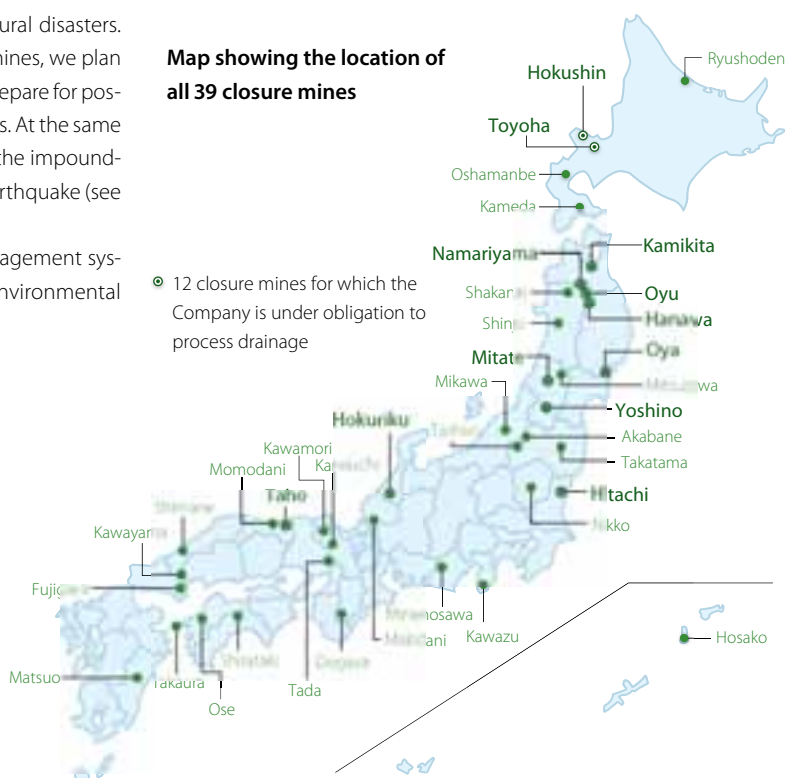


Safety measure at the Mitate Mine (avalanche prevention fence)



Thickener (a kind of drainage processing facility) at the Oya Mine

### Map showing the location of all 39 closure mines





## Initiatives at the Site of the Yoshino Mine (Nannyo City, Yamagata Prefecture)

The Yoshino Mine produced approximately 2.05 million tons of coarse ore (copper grade of 0.83%, zinc grade of 2.86%) from 1929 when the Company (Nippon Mining Co., Ltd., at that time) purchased the mine until 1974 when the mine was shut down due to the depletion of ore volume.

Subsequently, the mine has been subject to the Group's closure mine management operations such as environmental countermeasure works and the processing of mine drainage.

In recent years, we have promoted steps to automate and rationalize the mine drainage processing systems. As a result, in fiscal 2008 and 2009, the onsite installations were renovated at the two drainage processing facilities and pumps and pipes located on the premises were renewed or newly installed.

The mine drainage discharged from the former mining site is neutralized at the renovated treatment facilities and the processed wastewater is discharged to an adjacent river after the metal ingredients are removed and the pH is adjusted. In fiscal 2010, the mine drainage was processed at a rate of 0.469 m<sup>3</sup>/min., and the water quality passed the relevant environmental standards at the wastewater discharge point.



Shinmotoyama neutralization room



Neutralization processing facility



Water pipe for the processed drainage



Panel for managing the drainage processing facilities



Former rest area inside the Yoshino Mine from the era of its operation

## Initiatives at the Site of the Takatama Mine (Koriyama City, Fukushima Prefecture)

The Takatama Mine, which had been known as a promising gold mine since the early 17th century, was purchased by the Company (Nippon Mining Co., Ltd., at that time) in 1932. After affiliating with the JX Nippon Mining & Metals Group, the mine produced approximately 2.83 million tons of gold-bearing silicate ore before the mine was shut down in 1976 due to the depletion of ore volume.

Subsequently, the mine has been subject to the Group's closure mine management operations with environmental countermeasure works. Since fiscal 2005, the Group has conducted forest maintenance such as thinning operations for an area of approximately 80 hectares out of the total area of 113.14 hectares as part of its environmental countermeasures project. In fiscal 2010, the maintenance operations continued similarly for an area of 7.66 hectares.



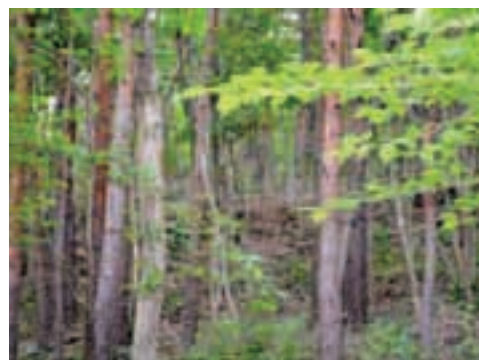
Former smelting site



Thinning operation at the Takatama Mine



Forests before maintenance operations



Forests after maintenance operations

## At the Occurrence of the Great East Japan Earthquake

### Casualties Caused by the Great East Japan Earthquake and Responses at the Oya Mine

Generally speaking, tailings, that is, residue such as sand and slime that remain after the recovery of value-bearing metals, are produced as a result of mining activities. The Group stores the tailings in the impoundment located near the former mine sites. The Great East Japan Earthquake that occurred in March 2011 devastated the former Oya Mine (located in Kesennuma City, Miyagi Prefecture), thereby causing a shutdown of drainage treatment operations due to a power outage at the facilities and an outflow of tailings from the impoundment via liquefaction. Fortunately, no human casualties occurred, but several private houses, agricultural fields and roads in the downstream area were damaged by the outflow of tailings.

After the earthquake, the Company immediately strove to maintain the drainage processing function using its privately owned power generators. The Company also conducted an actual conditions survey to get precise information on the damage of the tailings outflow and then appropriately provided explanations on the intended responses to residents living in the vicinity and related parties of administrative bodies. Subsequently, in early April, we held a briefing session for local residents to explain the analysis of the tailings outflow conditions and the planned operations toward the recovery and restoration of the impoundment, for which necessary measures were taken.

The discharged tailings were removed by the end of June 2011, and we plan to take restoration measures to confirm the completion



View of the briefing session for local residents

of removal operation of tailings and dirt and soil inspection in the presence of residents (as of July 31, 2011). As for damages to local residents because of the outflow of tailings, we are striving to provide explanations on an individual basis. The restoration work of the impoundment is planned to start in October 2011.

Although the impoundment of the Oya Mine was designed in compliance with the relevant national standards, the tailings outflow was caused by the unprecedented scale of the earthquake. We intend to take necessary countermeasures to promote the restoration of the impoundment in close consultation with the concerned parties such as the relevant administrative organizations.



Tailings outflow conditions just after the Great East Japan Earthquake (March 2011)



Site view after the outflow of tailings was recovered (June 2011)

## VOICE JX Nippon Mining Ecomanagement, Inc.



President & CEO  
JX Nippon Mining  
Ecomanagement, Inc.  
**Toshikazu Hayashi**

The Company advocates the "Prevention of disasters and accidents" as one of the basic guidelines for its business operations. The Company has long been active in systematically executing environmental countermeasure works to prepare for natural disasters such as earthquakes, torrential rains, avalanches and landslides. Nevertheless, when the Great East Japan Earthquake occurred, tailings flowed out of the impoundment at two mine sites (the Oya Mine and the Takatama Mine).

We have again become acutely aware of the importance of communication with local residents relative to the restoration measures at these mines. In the future, the Company will carry out restoration and perpetual countermeasures without delay while receiving instructions from related parties such as the government, prefectures, cities and the relevant administrative organizations.



# 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 Supplier	71
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Involvement with Local Communities	84

# Earning the Trust of Our Customers and Supplier

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 Groupwide quality control system.

In fiscal 2010, 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

- ❶ Established the Basic Quality Policy on October 1, 2009
- ❷ Established the Quality Management Rule on October 1, 2009

#### 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 nonferrous 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.

\* The Nippon Mining & Metals Co., Ltd. Basic Quality Policy, which was established in October 2009, was reestablished as the JX Nippon Mining & Metals Corporation Basic Quality Policy, in line with the change of the Company's name to JX Nippon Mining & Metals Corporation in July 2010.

### 2. Sharing of Quality-related Information throughout Operating Sites

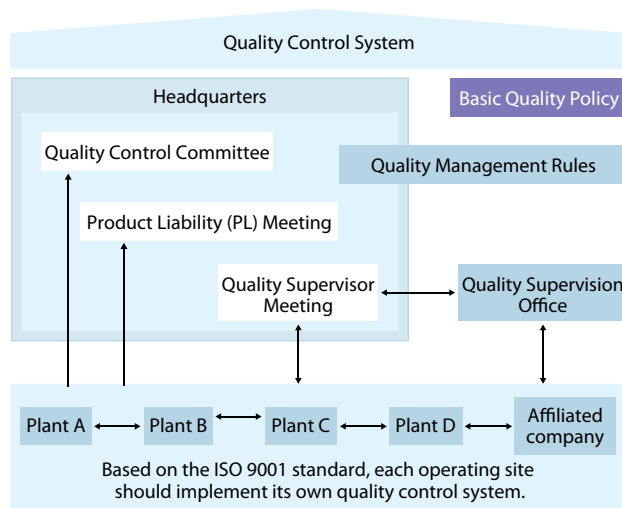
The Quality Supervisor Meetings (presided over by the General Manager of the Technology Development Group) were held in May and October 2010 for the purpose of reporting on the audited status of compliance with the ISO 9001 standard, quality losses and quality-related complaints at operating sites under the direct control of the Company and the affiliated companies. In fiscal 2011, the fourth meeting was held in June 2011 with themes including “Feedback from the Earthquake Disaster.” The fifth meeting is scheduled to be held in November 2011.

### 3. Reconstruction of Quality-related Education Programs

Quality-related education programs were previously handled independently by each operating site and entrusted to the educational institution of the Group. We reviewed and reorganized these programs into a Companywide educational system by incorporating newly compiled quality control and problem resolution methods. The resulting new educational system became operationally effective from fiscal 2011.

Based on the aforementioned Basic Quality Policy, we will promote the sharing of in-house information, knowledge and experience 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 management 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 management 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 management system, principally based on the ISO 9001 standard, and conducting TPM and other improvement activities.

Taking into consideration the specific characteristics of the businesses that each operating site engages in, 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.

Furthermore, several domestic and overseas operating sites have obtained ISO 9001 certification, the international standard for quality control systems. (Refer to page 31 for details regarding TPM.)

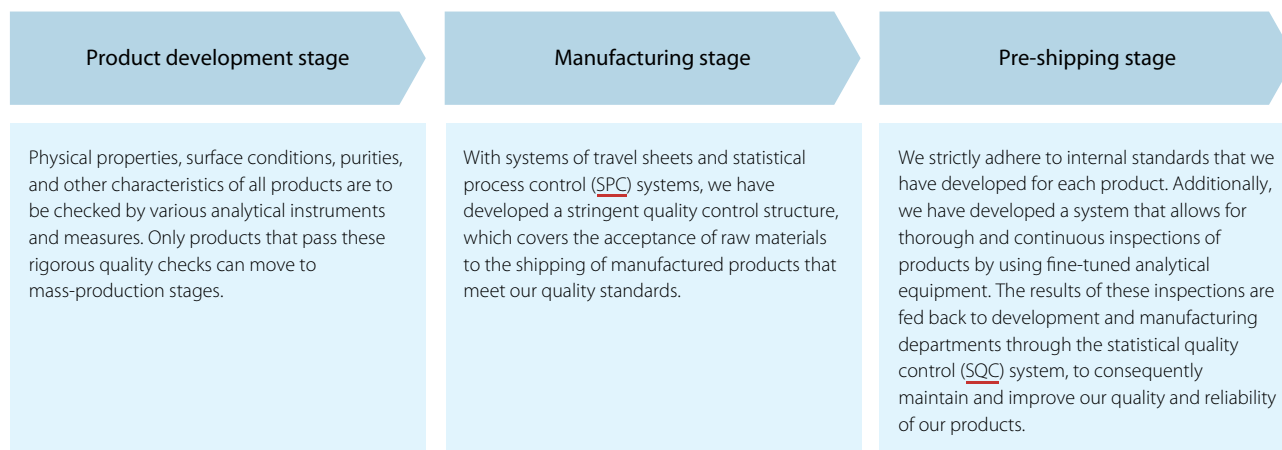
### Operating Sites that Have Obtained ISO 9001 Certification

Domestic	Hitachi Works (Precision Plating Dept., Copper Foil Dept.), Isohara Works, Kurami Works, Isohara Fabricating Works, JX Nippon Exploration and Development Co., Ltd., Pan Pacific Copper Co., Ltd. (Hibi Smelter, Saganoseki Smelter & Refinery, Hitachi Works), Hibi Kyodo Smelting Co., Ltd., Japan Copper Casting Co., Ltd., JX Nippon Coil Center Co., Ltd., JX Metals Trading Co., Ltd. (Takatsuki Plant), Ichinoseki Foil Manufacturing Co., Ltd.
Overseas	JX Nippon Mining & 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., JX Nippon Mining & Metals Philippines, Inc., JX Nippon Mining & 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 and 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.



## Product Safety Initiatives

To provide safe products, the Group thoroughly complies with applicable laws and regulations. For the purpose of developing a preventive 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 the manufacturing and sales stages.

Moreover, Pan Pacific Copper Co., Ltd.—handling 2 million tons of sulfuric acid annually (fiscal 2010)—is making every effort to improve its education training programs designed for its logistics departments, as well as partnering logistics companies, which are responsible for carefully handling chemical substances by employing the aforementioned material safety data sheets (MSDS). In fiscal 2010, there were no violations of any laws or regulations with regard to product safety or the provision of products and services reported.

### 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 MSDS
- Implementing education and training programs regarding product safety activities
- Necessary quality control to ensure 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.)

## Awards Received from Customers

In fiscal 2010, thanks to our highly acclaimed technological capabilities and product qualities, the Group received an award from a customer. Going forward, we will continue to work tirelessly to respond accurately to the demands of our customers.

Customer	Award	Receiving company	Background
Hitachi Electronic Devices (Wujiang) Co., Ltd.	Superior vendor in fiscal 2010	Nikko Fuji Electronics Dongguan Co., Ltd.	Stable quality, observance of delivery schedules, etc.

\* Company name is as of fiscal 2010.

## VOICE Jada Electronics Limited



### Eddy Tam

Business Development  
Manager  
Jada Electronics Limited

Jada Electronics markets electro-deposited copper foils, rolled copper foils, and sputtering targets for FPDs and semiconductors, all of which are manufactured by the JX Nippon Mining & Metals Group, primarily in China. I am mainly in charge of electro-deposited copper foils and therefore import such copper foils at the rate of 400 tons/month from JX Nippon Mining & Metals Philippines, Inc., and 200 tons/month from Gould Electronics GmbH for sale in the Chinese market.

As for marketing in the Chinese market, human connections are extremely important, whereas the business environment surrounding the IT industry is changing rapidly and on a global scale. In other words, as the supply chain of the IT industry is structured globally, it is no longer sufficient to evaluate marketing only within the Chinese market. To address such changes in the business climate on a global basis, we should take risks hand-in-hand with our customers.

In China, there is a long tradition of fostering relationships of mutual trust in the business community. The Group has benefited together with customers when the business environment was favorable and shared the pain under unfavorable conditions. In doing so, we have established and developed “win-win” relationships with our customers.

In China, demand for highly adhesive copper foil, which features close adhesion to substrate resin via a low-roughening treatment to cope with high frequencies, is forecast to increase sharply. Consequently, it is no wonder that the requirements imposed by Chinese customers will become more and more demanding. We thus intend to grow and develop ourselves together with customers by firmly incorporating requests from customers into the electro-deposited copper foils of the Group.

## 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 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 Basic Purchasing Policy

JX Nippon Procurement is committed to pursuing purchasing operations based on the JX Group Values (EARTH) to develop good partnerships with business partners and to fulfill its corporate responsibility to society.

#### Ethics

- Respect for the letter and spirit of relevant laws and social norms in execution of business operations.
- Select business partners based on fair and honest evaluation of their compliance with laws and social norms, concern for the environment, and track record in areas such as quality, price and delivery.
- Maintain appropriate relationships with business partners based on the highest ethical values.

#### Advanced ideas

- Consistently promote creativity and innovation through advanced ideas, and strive to adopt new products and services.

#### Relationship with society

- Endeavor to achieve robust communication with business partners, and work together diligently to contribute to society through relationships of mutual trust.

#### Trustworthy products/services

- Provide JX Group companies with high reliability and satisfaction through fast, accurate and highly transparent activities.

#### Harmony with the environment

- Work persistently to create a sustainable society by promoting the purchase of equipment and services with low environmental impact.

## VOICE Nikko Metals Shanghai Co., Ltd.



**Li Bei**

Sales Department  
Nikko Metals Shanghai Co., Ltd.

Nikko Metals Shanghai, which has 17 employees, engages in a variety of businesses primarily related to sales of precision rolled products and plating liquids and the collection of scrap metals mainly in the East China region centering on Shanghai. I am personally in charge of sales of plating and cleaning liquids.

China has achieved remarkable economic development in recent years. In the course of such development, many corporations have faced significant challenges for CSR including such issues as the reduction of greenhouse gas emissions, resource conservation and energy conservation.

The Company's businesses are recycling-oriented ones ranging from proposals of optimum materials for customers to the collection of scrap metals. Our business activities, therefore, assume an important role from a CSR perspective, not to mention our contribution to the development of customers.

We intend to meet customers' expectations with sincerity in the course of further exploiting the Chinese market while receiving appropriate guidance.

# 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 many 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 also 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.



Fusanosuke Kuhara,  
the Company's founder

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 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 the 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.



Company's office in the Motoyama District



Company residential district in the Daioin District

## Breakdown of Employees (As of March 31, 2011) <sup>☑</sup>

(People)

	Full-time			Other			Total	Temporary employees	Total workforce
	A	B	Total	A	B	Total			
Domestic companies (38)	3,766	522	4,288	19	62	81	4,369	168	4,537
Overseas companies (16)	1,176	537	1,713	6	2	8	1,721	12	1,733
Total	4,942	1,059	6,001	25	64	89	6,090	180	6,270

\* 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, 2011.

\* The "domestic companies" category includes the Company.

## 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 10 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 or forced labor. An investigation into child labor conducted by the International Labour Organization (ILO) shows that over 96 million 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 1,500 employees work, has implemented strict control on employee age, especially through pre-employment examinations. As a result, no issues regarding child labor have been reported.

The Group also rigorously inhibits forced labor, and no occurrences of this issue have been found.

Going forward, we will globally expand our operations. We aim to build a workplace where employees can be involved in their 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, 2011) <sup>☑</sup>

(People)

Local employees	Of which, managers
1,713	126

\* Local employees are those employees who work full-time at our overseas operating sites.

\* Approximately 97% of local employees possess citizenship of the country in which they are employed.

\* Managers are those employees positioned as a manager or higher.

## Description of the Group's Workforce ☒

The tables below describe the workforce of JX Nippon Mining & Metals and its 53 affiliated companies (38 domestic, 16 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 11 years.

### Composition of Managerial-level Employees by Region (As of March 31, 2011)

(People)

		Managerial-level employees			Others			Total		
		Men	Women	Total	Men	Women	Total	Men	Women	Total
Domestic companies (38)	Japan	1,499	36	1,535	2,307	346	2,653	3,806	382	4,188
	North America	11	0	11	0	0	0	11	0	11
	South America	31	0	31	1	0	1	32	0	32
	Asia	47	0	47	3	1	4	50	1	51
	Europe	1	0	1	0	0	0	1	0	1
	Oceania	4	1	5	0	0	0	4	1	5
Subtotal		1,593	37	1,630	2,311	347	2,658	3,904	384	4,288
Overseas companies (16)	North America	15	1	16	37	13	50	52	14	66
	Asia	184	105	289	821	383	1,204	1,005	488	1,493
	Europe	16	1	17	128	9	137	144	10	154
Subtotal		215	107	322	986	405	1,391	1,201	512	1,713
Total		1,808	144	1,952	3,297	752	4,049	5,105	896	6,001

\* The figures stipulated in the table above represent the number of full-time employees. The managerial-level employee encompasses general managers, managers, assistant managers, and supervisors.

\* Number of companies as of April 1, 2011.

\* The "domestic companies" category includes the Company.

### Composition of Managerial-level Employees by Age (As of March 31, 2011)

(People)

		Managerial-level employees			Others			Total		
		Men	Women	Total	Men	Women	Total	Men	Women	Total
Domestic companies (38)	Below 29 years of age	165	11	176	610	67	677	775	78	853
	30–49 years of age	873	21	894	1,181	208	1,389	2,054	229	2,283
	Above 50 years of age	555	5	560	520	72	592	1,075	77	1,152
Subtotal		1,593	37	1,630	2,311	347	2,658	3,904	384	4,288
Overseas companies (16)	Below 29 years of age	43	45	88	373	230	603	416	275	691
	30–49 years of age	129	57	186	481	152	633	610	209	819
	Above 50 years of age	43	5	48	132	23	155	175	28	203
Subtotal		215	107	322	986	405	1,391	1,201	512	1,713
Total		1,808	144	1,952	3,297	752	4,049	5,105	896	6,001

\* The figures stipulated in the table above represent the number of full-time employees. The managerial-level employee encompasses general managers, managers, assistant managers, and supervisors.

\* Number of companies as of April 1, 2011.

\* The "domestic companies" category includes the Company.

### Average Age and Average Number of Years of Service (As of March 31, 2011)

	Age (years)			Years of service (years)		
	Men	Women	Total	Men	Women	Total
Domestic companies (38)	41.5	39.4	41.4	13.4	10.5	13.1
Overseas companies (16)	36.0	31.3	34.6	7.3	5.1	6.6
Average	40.2	34.8	39.4	11.9	7.4	11.3

\* Number of companies as of April 1, 2011.

\* The "domestic companies" category includes the Company.

## Number of Employees Recruited (April 1, 2010 to March 31, 2011) (People)

	Men	Women	Total
Domestic companies (38)	329	61	390
Overseas companies (16)	192	94	286
Total	521	155	676

\* Number of companies as of April 1, 2011.

\* The "domestic companies" category includes the Company.

## Number of Employees that Left the Companies (April 1, 2010 to March 31, 2011)

		Number of employees that left the companies (people)			Rate of employees leaving the companies (%)		
		Men	Women	Total	Men	Women	Total
Domestic companies (38)	Below 29 years of age	31	6	37	4	7	4
	30–49 years of age	47	13	60	2	5	3
	Above 50 years of age	79	3	82	7	4	7
Subtotal		157	22	179	4	5	4
Overseas companies (16)	Below 29 years of age	216	316	532	34	53	43
	30–49 years of age	51	29	80	8	12	9
	Above 50 years of age	5	2	7	3	7	3
Subtotal		272	347	619	18	40	27
Total		429	369	798	8	29	12

\* The number of employees that left the companies includes the number of those who left the companies due to age-limit retirement, personal circumstances, death, and involuntary retirement.

\* Rate of employees leaving the companies is the percentage of the number of full-time employees who left the companies to the total number of employees.

\* Number of companies as of April 1, 2011.

\* 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 creating workplaces where women can play significant roles. We have set up an environment that supports various types of workers which includes systems for child rearing, elderly care, and international volunteering.

### 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, 2010 to March 31, 2011)

The number of age-limit retirees (people)	The number of those reemployed (people)	Reemployment ratio (%)
54	38	70

### Creating Workplaces where Women Can Play Significant Roles

The Company aims to create workplaces that empower female employees to play active and significant roles.

As of March 31, 2011, a total of 896 female employees were working at domestic and overseas operating sites in the Group. Of this, approximately 16% occupy managerial positions. JX Nippon Mining & Metals employed 179 female employees, of whom approximately 15% 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 2010, eight employees used maternity leave and child rearing systems.



### Initiatives to Employ the Physically Challenged

Viewing the creation of a society in which each person can participate in accordance with their aptitudes and capabilities as one of our missions, we are actively increasing the percentage of the physically challenged in our workforce.

Consequently, as of March 31, 2011, the physically challenged accounted for 1.94% of the Company's employees, satisfying the 1.8% legal requirement.



## 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 companies 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 2010, 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 2010, there were no strikes or lockouts.



### Labor Union Members (As of March 31, 2011) <sup>☑</sup>

		The number of union members (people)			Percentage of labor union members (%)		
		Men	Women	Total	Men	Women	Total
Domestic companies (38)	Below 29 years of age	567	41	608	73	53	71
	30–49 years of age	1,460	161	1,621	71	70	71
	Above 50 years of age	379	21	400	35	27	35
Total		2,406	223	2,629	62	58	61

\* The percentage of labor union members is the ratio of union members to the number of full-time employees.

\* The number of companies as of April 1, 2011.

\* The "domestic companies" category includes the Company.

## 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 Company-wide 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 System, 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.

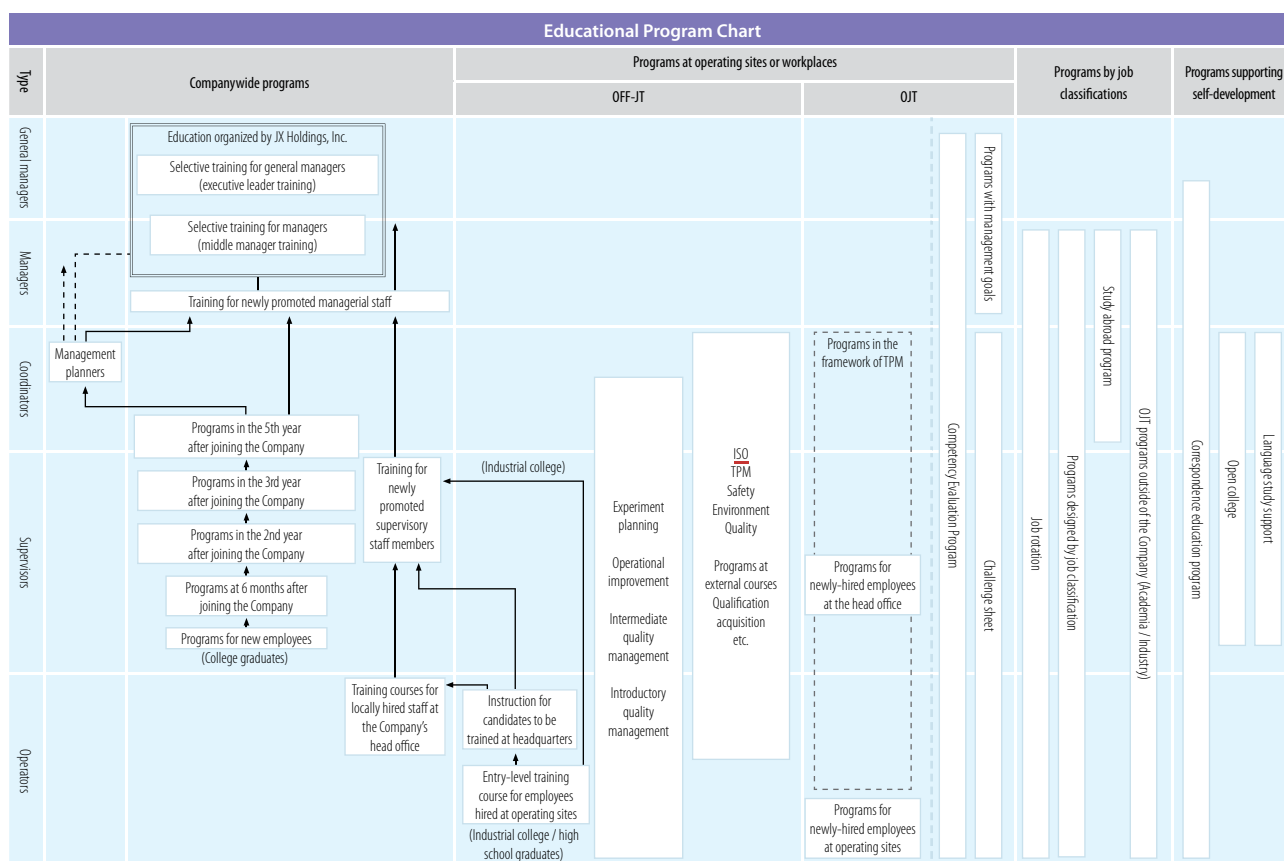
### Education and Training Programs Undertaken in Fiscal 2010 <sup>☑</sup>

(Hours)

	Managerial staff	General employees	Total
Total hours of programs	7,923	48,467	56,390
Average hours per employee	20.16	27.08	25.83

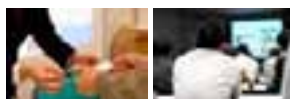
Boundary: JX Nippon Mining & Metals Co., Ltd., JX Nippon Environmental Services Co., Ltd., and Pan Pacific Copper Co., Ltd. (Saganoseki Smelter & Refinery, Hitachi Works).

## Our Educational Program in Fiscal 2010



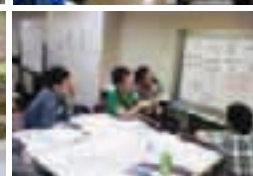
## Systematic Education and Training for College Graduates

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 2010

Programs for new employees	<ol style="list-style-type: none"> <li>1 Understanding the current business conditions and management issues of the Company and its corporate social responsibility.</li> <li>2 Acquiring basic skills requisite to a business person, including business manners, English conversation, financial accounting, etc.</li> <li>3 Developing a sense of cooperation and community among employees entering the Company at the same time.</li> </ol>
Programs at 6 months after joining the Company	<ol style="list-style-type: none"> <li>1 Looking back on their lives as members of society after entering the Company and examining current issues.</li> <li>2 Strengthening basic skills requisite to a business person such as communication and presentation.</li> </ol>
Programs in the 2nd year after joining the Company	<ol style="list-style-type: none"> <li>1 Deepening understanding of the Company's social responsibility in relation to operational management and its initiatives through the study tour of the Toyoha Mine and other activities.</li> <li>2 Deepening understanding of the Company's corporate philosophy and its corporate DNA, and at the same time encouraging to be pride of the Company's employees.</li> </ol>
Programs in the 3rd year after joining the Company	<ol style="list-style-type: none"> <li>1 Deepening understanding of the current business conditions and management issues of the Company.</li> <li>2 Acquiring additional business skills such as logical thinking.</li> <li>3 Understanding role expectations and enhancing motivation.</li> </ol>
Programs in the 5th year after joining the Company	<ol style="list-style-type: none"> <li>1 Enhancing self-advancement problem-solving ability.</li> <li>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.</li> <li>3 Logically and systematically implementing issues found in actual operations, and practicing business skills acquired in the programs into actual operations.</li> </ol>



## 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 training are implemented in line with the program by job classification. In this program, individual job rotations are also planned. Periodically revising the content 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 Company'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.

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.

By properly managing the employee evaluation system, we are trying to build a sense of fairness and understanding through a long-term view of treatment of employees and development of abilities.

## Self-Statement System

The aim of this system is for the Company to identify each employee's career interests and aspirations, and reflect 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.



## 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 an important factor in creating a happy life for each employee and his or her family as well as heightening productivity and creating lively workplaces. Taking a broad sense of mental health care, 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.

#### Principal Measures

- ① Face-to-face counseling
- ② Counseling by means of telephone
- ③ Online counseling
- ④ Mental health training
- ⑤ Workplace stress checks



### 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: reporting feedback 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.

#### Management Policy on Health and Safety for Fiscal 2010

##### Goals

- ① Significant accidents: zero
- ② Occurrences of accidents: reduction of 10% or more relative to the least number of accidents in the past
- ③ Explosions, fires: zero
- ④ Occupational diseases: zero

##### Examples of focal measures

- ① Promoting elimination of significant accidents
- ② Promotion of health and safety management activities in response to the actual situation at each operating site
- ③ Reinforcing specialized education by job grade

### Health and Safety Related Performance in the Current Year\*1

In 2010, a fatal accident occurred although the overall occurrences of accidents decreased.

Category		2008	2009	2010
Safety performance at domestic operating sites*2	Instances of accidents with lost work days and fatal accidents (people)	15	15*4	13*5
	Instances of accidents without lost work days (people)	17	22	16
	Total (people)	32	37	29
	Frequency rate of industrial accidents*3	0.61	0.61	1.36
	Accident severity rate*3	0.09	0.01	0.02
Health performance at domestic operating sites	Explosions and fires (occurrences)	0	0	1*6
	Occupational diseases (people)	0	0	0
(Reference) Safety performance at overseas operating sites	Instances of accidents with lost work days (people)	17	9	8
	Instances of accidents without lost work days (people)	9	10	6
	Total (people)	26	19	14

\*1. Data on health and safety performance is counted on a calendar year basis.

\*2. The figures include the performances of affiliated and cooperative companies.

\*3. Both the frequency rate of industrial accidents (the number of casualties caused by occupational accidents per million hours of total actual work) and the accident severity rate (the number of work days lost per thousand hours of total actual work) were calculated on the basis of performances of the Company's employees.

(Reference) From January through December 2010, the frequency rate of industrial accidents and the accident severity rate of all businesses in Japan were 1.61 and 0.09, respectively. (Industrial Accident Trend Survey by the Ministry of Health, Labour and Welfare)

\*4. The three fatalities related to the accident that occurred on June 13, 2009, are included.

\*5. The fatality related to the accident that occurred on September 19, 2010, is included.

\*6. There was no physical injury due to fire.

### Significant Accidents Related to Forklift Operation

On September 19, 2010, a fatal accident occurred at the Hitachi Works. According to the accident investigation, the cargo handling device of a forklift fell on the head of a person while he was apparently inspecting oil leakage under a cargo handling device. The casualty was an employee of a cooperative company that contracts for premises transport operation on behalf of JX Nippon Environmental Services Co., Ltd. Another fatal accident occurred at the Kurami Works on February 7, 2011. An operator's inappropriate steering of a forklift resulted in a collision with an employee of a contracted company who was preparing

to start his shift. In reaction to a fatal accident in June 2009, the JX Nippon Mining & Metals Group advocated "promoting elimination of significant accidents" in the Management Policy on Health and Safety for fiscal 2010 and 2011 and all the Group companies have addressed its achievement. Recognizing the grave occurrence of these significant accidents during fiscal 2010, the Group is endeavoring to prevent the recurrence of similar accidents while carefully reviewing activities to eliminate significant accidents.



## Activities to strengthen management and education related to forklifts

Activity	Description
Thorough check of compliance with forklift-related laws and regulations	Check whether the forklift-related laws and regulations are clearly specified in the work standards and observed at each operating site and rectify immediately in case of ill-preparedness or deficiency.
Thorough check of the hydraulic systems	Check whether each hydraulic system is operating properly and repair immediately in case of abnormality.
Improving forklift-related education for operators, managers and supervisors	Prepare the texts for repeated use in education programs, in which relevant laws and regulations, management items on safety and cases of forklift accidents are summarized, to deepen employees' understanding of forklift-related laws and regulations and management items on safety (for which instruction is provided on such occasions as skills training).

### Promoting the activity toward creating and ensuring a culture of safety across the Group

The activity, which means that "Each operating site will thoroughly address activities that are independently selected to help ensure a culture of safety," started with the president's directive issued in February 2010. Also advocated in the Management Policy on Health and Safety for fiscal 2011 is the cooperation of all the Group companies in tackling this activity.

### Promoting elimination of significant accidents

The Group has prepared and published a collection of cases regarding significant accidents for review to address preventive measures. All the

Group companies use the collection in their respective education programs to employees on a regular and systemic basis.

Thorough inspections are conducted based on the Group-wide standards classified by cause. In fiscal 2010, we focused on the "Prevention of Pinching Accidents by or between Automatic Operation Equipment" and the "Prevention of Falling/Tumble Accidents." In fiscal 2011 and beyond, we will completely check the "Prevention of Accidents Caused by Contact with Harmful Substances" and the "Prevention of Explosion Accidents" to prevent the recurrence of significant accidents.

## Health and Safety Management Activities

### Health and safety management organizations

Apart from the Health and Safety Committees at each of our domestic operating sites, we hold meetings of the Central Health and Safety Committee (once per annum) and the Central Health and Safety Standing Committee (five occasions per annum) at the head office to review the health and safety performance in the fiscal year under review, discuss health and safety management policies for the next fiscal year and discuss countermeasures associated with identifying the causes of disasters and preventing recurrence. Moreover, we monitor the status of health and safety management at the operating sites, review measures for health and safety and exchange opinions at the Labor-Management Joint Monitoring on Health and Safety (once per annum) and the Corporate Supervisors' Meeting on Health and Safety (twice per annum).

### Reinforcing specialized education by job grade

The Group offers safety education to not only operators but also managers, supervisors and management executives in an effort to raise their awareness of safety issues. To this end, the Group endeavors to provide managers and supervisors with specialized education programs under the policy of ensuring their participation in training sessions to choose safety managers and the training for forepersons, as well as guidance or follow-up programs to help them understand the occupational duties of subordinates thereof (e.g., forepersons and operation chiefs). Meanwhile, workshops on safety are regularly held for management executives with invited external lecturers. In February 2010, a lecture titled "Safety Depends on Top Management's Way of Life" was given by Michio Niwa (non-regular staff of Toray Industries, Inc.; former



Special safety lecture

president of Toray Plastic Films Co., Ltd.). Furthermore, in June 2010, a lecture titled "Enhance the Layers of Safety—From a New Perspective" was given by Kunio Yanagita, a nonfiction writer, as part of our safety education program.

### 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 and principal affiliated companies have obtained OHSAS 18001 certification. The Tatebayashi Works of Sanyu Electronic Industry Co., Ltd., obtained the certification in fiscal 2010.

### Environment & Safety Audits

The Group aims to eliminate disasters and accidents through audits conducted by the Environment & Safety Audits Team, working directly under the President and CEO. Operating sites and principal affiliated companies are subject to the audit. The problems identified are reported to top management and then passed on to each operating site to elicit improvement. The subsequent status of implementation is reviewed later.

### 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 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.



## Operating sites that have obtained OHSAS 18001

Fiscal year certification obtained	Operating site <sup>*1</sup>
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 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, Nikko Smelting & Refining 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., Nikko Fuji Electronics Co., Ltd. (Isohara Works), Gould Electronics GmbH
Fiscal 2010	Tatebayashi Works, Sanyu Electronic Industry Co., Ltd.

\*1. The names of the operating sites listed in the above table are as of their obtaining OHSAS 18001.

## Health and Safety Management of the Group

### 1. Basic concept

JX Nippon Mining & Metals Basic Policy on Health and Safety was formulated in 2006 (for further details, please see page 81) and continued in place without change after the Company joined the JX Group. An underlying spirit of the basic policy is the respect of human dignity, as well as the “safety-first” concept for ensuring the health and safety for all persons working at the JX Nippon Mining & Metals Group. Furthermore, note that all the Basic Policy sentences start with “we” as the subject. In other words, as for issues related to health and safety, all employees working at the Group are leading players and therefore every person in any position must pursue the goal through his/her own behavior.

### 2. About “safety first”

It's easy to say “safety first.” But having the knowledge is clearly different from practical action. For example, frontline operators are often requested to eliminate unreasonableness (*muri*), waste (*muda*) and lack of uniformity (*mura*) at the point of production. Waste and the lack of uniformity are indicators of efficiency and variation in quality. As these factors can be seen with numerical data and the defects thereof are conspicuous, we can positively improve them. However, unreasonableness is a concept related to unnatural behavior that involves certain risks. As a result, defects that result from unreasonableness are difficult to identify and problems tend to escape notice. Yet, we must prioritize addressing unreasonableness. *Kaizen* to ensure true safety requires the elimination of waste, lack of uniformity and unreasonableness, and this way of thinking must be pursued as a core concept of our safety.

On the other hand, whether to engage in unreasonable behavior largely depends on each employee's mind-set. In the past, there might have been a general acceptance of unreasonable behavior if certain efficiency levels were achieved. Today, however, we prefer safety-first behavior. To that end, as stated earlier, we will need to identify key issues and address them through the *kaizen* to ensure true safety despite a possible temporary decline in efficiency.

Taking into account the aforementioned factors, we will need to shift the priority of our values so that safety is placed above efficiency to realize safety-first workplaces.



**Jun Ogata**  
General Manager, Environment &  
Safety Department

### 3. Current performance and problems

The number of casualties of the Group caused by disasters or accidents totaled 29 in 2010. Although this figure decreased compared with the previous calendar year, the instances of accidents with lost work days and fatal accidents were about the same. Moreover, significant accidents (for further details, please see page 81) continued to occur. It is regrettable that our initiative to eliminate significant accidents, which has been in effect since a fatal accident in 2009, has yet to deliver improved results.

### 4. Future activities and goals to be pursued

We inevitably get good results by carefully conducting previously implemented safety activities on a step-by-step basis rather than committing ourselves to new ones. It is important that all the related people working on the premises share the same values. To that end, it is indispensable for top management at each operating site to motivate itself to achieve the goal of zero accidents and lead all other employees. It is often said that there is no silver bullet for safety. Of course, this proverb might be correct if it means that safety cannot be achieved rapidly with remarkable effects. However, it is top management's responsibility to change our organizational values, indicate future orientation and get everyone working in concert. Accordingly, I believe that the unshakable belief from the top management that the goal of zero accidents must be achieved would be an alternative to the silver bullet and an expression of the respect of human dignity.

# Involvement with Local Communities

## Regional

The Group's domestic and overseas operating sites are regularly communicating with local and regional authorities, local chambers of commerce and other organizations, to build relationships of trust with them. Also, we actively promote exchanges with local communities by conducting summer festivals and other events.

## Communication with Local Communities

In this section, we will introduce examples of communication with local communities in fiscal 2010.

### Participation in regional organizations (Fiscal 2010)

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, Tatebayashi, Oshu, the Philippines, Freiburg in Germany,

etc.). Further, the Company 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)	JX Nippon Tomakomai Chemical Co., Ltd. (Executive Secretary), JX Nippon Mikkaichi Recycle Co., Ltd., JX Nippon Environmental Services Co., Ltd., JX Nippon Tsuruga Recycle Co., Ltd. (Director), JX Metals Trading Co., Ltd.
The Foundation For The Advancement of Industrial Technology In Dohoh Area	JX Nippon Tomakomai Chemical Co., Ltd. (Councilor)
Kitaibaraki-shi Association for Safety of Hazardous Materials	Isohara Works (Director), Isohara Fabricating Works (Director)
Kitaibaraki-shi Boka-Kanri-Kyogikai (Fire Protection and Control Council of Kitaibaraki)	Isohara Works (Director), Isohara Fabricating 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 Works, Isohara Works (Director)
Hitachi Traffic Safety Association	Hitachi Works
Kurobe Water Resource Management Committee	JX Nippon Mikkaichi Recycle Co., Ltd. (Director)
Kurobe Industrial District Support Organization	JX Nippon Kurobe Galva Co., Ltd.
Reinan Environmental Conservation Organization	JX Nippon Tsuruga Recycle Co., Ltd. (Chairman)
Tsuruga Mikata Association for Safety of Hazardous Materials	JX Nippon 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)

Organization (Other)	Participating operating site /Group company (Position with the organization)
Tamano Traffic Safety Association	Hibi Kyodo Smelting Co., Ltd. (Director)
Saganoseki Machidukuri Kyogikai (NPO Council for Revitalization of Saganoseki)	Saganoseki Smelter & Refinery, Pan Pacific Copper Co., Ltd. (Vice Director)
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.
Association for Safety of Hazardous Materials (Meguro, Tatebayashi, Esashi)	Sanyu Electronic Industry 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. (Director)
The Japanese Association, Manila, Inc.	JX Nippon Mining & Metals Philippines, Inc.
Laguna Industrial District Organization	JX Nippon Mining & Metals Philippines, Inc.
Japan Business Association of Arizona	Nikko Metals USA, Inc. (President)
Copiapo River Water Utilization Management Association	SCM Minera Lumina Copper Chile
Copiapo Valley Traffic Safety Association	SCM Minera Lumina Copper Chile

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

### Responding to complaints

The Company responds earnestly to any complaints it receives from local communities. 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 2010 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.
Hibi Kyodo Smelting Co., Ltd.	Dispersal of iron rust from the painted surface of a chimney	Completed painting the external surface of the chimney at the end of November 2010	
	Dispersal of dust when loading	Suspended loading in strong wind, provided verbal and written instruction about initiatives to sprinkle water and treat drain water to prevent dust from dispersing to those who made the complaint	Rigorously instruct operators to maintain dispersal countermeasures.
Hitachi Works	Noise generation	Gas extraction fans generate the noise. Covered the fans with a two-ply soundproof sheet, inspected the fans, fine-tuned the frequency of inverters, etc.	
Pan Pacific Copper Co., Ltd., Saganoseki Smelter & Refinery	"Burning-motor" odor generation	Smoke leakage caused by an increase in gas emission volume resulting from raw material of the kiln furnace getting wet generated the odor. Immediately suspended its operation, and explained eradication of the smoke leakage and abnormal odor to the general public living in the vicinity	Prepare a manual for leakages of gas emissions from the kiln furnace. Prevent recurrence by strengthening control.
SMC Minera Lumina Copper Chile	Cutting off electric cables when transporting heavy equipment	Investigated damage situations and assessed compensation	Agreed to raise average height of electric cables to 7 meters.
	Complaints about the speed of vehicles passing through from the site of the Caserones project	Made a rule for road safety	Rigorously instruct drivers engaged in the Caserones project to comply with the rule.

## Examples of communication with local communities

### Implementation of Plant Tours, Etc. (Fiscal 2010)

Operating site	Initiative	Participants (Organization)	Period of implementation (Fiscal 2010)	Number of participants
Hitachi Works	Interns	Hitachi Technical High School	Second half of October 2010	6
Hitachi Works (HMC Dept.)	Plant tour	Trainees of the International Institute for Mining Technology	Second half of November, 2010	13
Kurami Works	Plant tour	Samukawa Junior High School	February 2011	20
Kasuga Mines Co., Ltd.	Plant tour	Bounotsu Welfare Center	May 2010	15
		Tategami Elementary School	July 2010	54
		Bounotsu Gakuen	August 2010	10
JX Nippon Kurobe Galva Co., Ltd.	Plant tour	Program organized by the city in which children visit local companies	August 2010	16
		Company study tour project aimed at facilitating youth employment	August 2010	25
JX Nippon Tsuruga Recycle Co., Ltd.	Plant tour	Kinki Shikoku Mining Association	October 2010	34
		Saganoseki Chamber of Commerce and Industry	February 2011	10
Hibi Kyodo Smelter, Pan Pacific Copper Co., Ltd., Hibi Kyodo Smelting Co., Ltd.	Plant tour	Tamano Lions Club	April 2010	19
		JOGMEC	July 2010	4
Saganoseki Smelter & Refinery, Pan Pacific Copper Co., Ltd.	Plant tour	Former Australian soldiers	March 2011	3
		Securities analysts	February 2011	20
		Individuals involved with the Esperanza Mine	March 2011	10
		Tanzania Minerals Audit Agency	January 2011	6
Head Office, Meguro Works, Sanyu Electronic Industry Co., Ltd.	Workplace experience	Meguro Chuo Junior High School	January 19–21, 2011	2
SCM Minera Lumina Copper Chile	Plant tour	Education for holders of heavy machinery operation licenses	November 2010	20
		On-site inspection by labor bureau	July 2010	3
		Inspection by Atacama public corporation for public-private sector development	November 2010	10



Samukawa Junior High School  
Plant tour  
Kurami Works



Program organized by the city in  
which children visit local  
companies  
Plant tour  
JX Nippon Kurobe Galva Co., Ltd.



Company study tour project  
aimed at facilitating youth  
employment  
Plant tour  
JX Nippon Kurobe Galva Co., Ltd.



Kinki Shikoku Mining Association  
Plant tour  
JX Nippon Tsuruga Recycle Co.,  
Ltd.



Saganoseki Chamber of  
Commerce and Industry  
Plant tour  
JX Nippon Tsuruga Recycle Co.,  
Ltd.

### Convivial Events (Summer festivals and other events to which members of the community were invited, fiscal 2010)

Operating site	Event details, number of participants, etc.
Isohara Fabricating Works, Isohara Works	Held JX Isohara Summer Festival 2010, August, location: Isohara Processing Works, 1,000 participants.
Hitachi Works	Conducted an outdoor event held as a part of the "Sanjin-sai" summer festival held on the 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 grounds (Held annually in August, approx. 7,000 participants). Participated in the "Shinko-sai" festival (Held annually in September, approx. 200 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 <i>mikoshi</i> , a traditional Japanese festival event.
JX Nippon Tsuruga Recycle Co., Ltd.	Held firefly viewing event in cooperation with the local NPO Aqua Sangha (June, approx. 20 participants).
Hibi Kyodo 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. 160 participants).
Saganoseki Smelter & Refinery, Pan Pacific Copper Co., Ltd.	Participated in the "Seki no Tai-tsuru Odori Taikai" festival (Held annually in September, approx. 30 participants).
Kasuga Mines Co., Ltd.	Held the "Sanjin-sai" festival (Held annually in October, approx. 30 participants).
JX Nippon Kurobe Galva Co., Ltd.	Participated in the Kurobe New Year's Party in January 2011, in Kurobe, 200 participants.
	Participated in sand borer fishing contest, July 2010, in Kurobe, 20 participants.
Nikko Metals USA, Inc.	Participated in the Japan Business Association of Arizona's New Year's Party (January 2011, approx. 120 participants).
	Participated in Japanese speech contest, 200 participants.
JX Nippon Mining & Metals Korea Co., Ltd.	Held roundtable conference with prefectural governor of Gyeonggi-do at local office, March 2010, 30 participants.
SCM Minera Lumina Copper Chile	Held year-end social gathering with representatives of residents of the Copiapo area at local restaurant, December 2010, 50 participants.
	Held signing ceremony for cooperation agreement with Tierra Amarilla, June 2010, 70 participants, August, 60 participants.
	Held signing ceremony for fund cooperation agreement, "With Your Contribution, We Grow," October 2010, 60 participants.



"Hazuki-sai" summer festival  
Kurami Works



"Hazuki-sai" summer festival  
Kurami Works



"Shinko-sai" festival  
Kurami Works



"Shinko-sai" festival  
Kurami Works



Roundtable conference with  
prefectural governor of  
Gyeonggi-do  
JX Nippon Mining & Metals  
Korea 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 2010 toward local communities in areas where Group operations are located are listed in the table below.

### Local Cleanup Activities (Fiscal 2010)

Operating site	Activity details
Isohara Works, Isohara Fabricating 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. 300 participants).
Isohara Fabricating Works	Organized a beautification campaign and cleaned the area around the plant (Conducted 2 times in fiscal 2010, approx. 65 participants).
Hitachi Works	Participated in cleanup activities of the Miyadagawa River in Hitachi City (June and December, approx. 100 participants). Personnel of all operating sites comprehensively clean up the area surrounding operational sites at the beginning of every month.
Kurami Works	Participated in the Sagami River Clean Campaign (May, approx. 60 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.
JX Nippon Tomakomai Chemical Co., Ltd.	Participated in cleanup activities sponsored by Tomakomai City (April and October). Conducted autonomous cleanup activities around the plant (August).
JX Nippon Tsuruga Recycle Co., Ltd.	Participated in "Operation Cleanup Fukui" sponsored by Tsuruga City in Fukui Prefecture (4 times a year, approx. 20 participants each time). Participated in various cleanup activities including the cleanup of the Kehi-No-Matsubara Beach, approx. 50 participants. Undertook 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.
Hibi Kyodo Smelter, Pan Pacific Copper Co., Ltd., Hibi Kyodo Smelting Co., Ltd.	Conducted bi-monthly cleanup activities on the roads and sidewalks around the plant (Approx. 20 participants each time). Participated in cleanup activities of the coast of Shibukawa (June, approx. 10 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 789,517m <sup>2</sup> .
Saganoseki Smelter & Refinery, Pan Pacific Copper Co., Ltd.	Conducted cleanup activities of the public roads adjacent to the smelter (Once a month, approx. 25 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).
Head Office, Meguro Works, Sanyu Electronic Industry Co., Ltd.	Cleaned the area near the works early in the morning (1 participant every morning in rotation).
Esashi Works, Sanyu Electronic Industry Co., Ltd.	Participated in the business council clean campaign (June, October, more than 4 participants).
Nippon Mining & Metals (Suzhou) Co., Ltd.	Conducted monthly cleanup activities of the area around the plant (Approx. 200 participants each time).
JX Nippon Mining & Metals Philippines, Inc.	Participated in cleanup activities along the shore of Laguna de Bay (April).



Cleaning up the riverbed of the Sagami River  
Kurami Works



Cleaning up the area around the works  
JX Nippon Tomakomai Chemical Co., Ltd.



Helping clean the Kehi-No-Matsubara Beach  
JX Nippon Tsuruga Recycle Co., Ltd.



Cleaning up the Fukagawa River within the grounds of the company  
JX Nippon Tsuruga Recycle Co., Ltd.



Cleaning up the Nikkori River  
JX Nippon Tsuruga Recycle Co., Ltd.

### Crime Prevention and Disaster Preparedness Drills (Fiscal 2010)

Operating site	Activity details
Kurami Works	Conducted disaster preparedness drills (October, approx. 200 participants).
JX Nippon Tomakomai Chemical Co., Ltd.	Conducted disaster preparedness drills (November).
JX Nippon Tsuruga Recycle Co., Ltd.	Conducted emergency response drills (July, approx. all company personnel participated). Held self-defense firefighting squad contest August, 7 participants Attended meeting of Tsuruga business council for advancing the creation of a safe, reliable city, September, February, 2 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 (June, approx. 150 participants).
Tatebayashi Works, Sanyu Electronic Industry Co., Ltd.	Conducted autonomous gate-front high-pressure gas training (February 2011, approx. 30 participants). Conducted self-defense firefighting squad firefighting drills (for personnel), November 2011, 80 participants
Esashi Works, Sanyu Electronic Industry Co., Ltd.	Conducted evacuation drills (for personnel), April 2010, 57 participants.
Nikko Fuji Electronics Dongguan Co., Ltd.	Conducted a firefighting education and training program for employees (November, 223 participants).
Nippon Mining & Metals (Suzhou) Co., Ltd.	Conducted training on how to use fire extinguishers and fire hydrants, October 2010, 50 participants (organization managers and upward)
Nikko Fuji Precision (Wuxi) Co., Ltd.	Conducted firefighting and disaster preparedness drills.
SCM Minera Lumina Copper Chile	Held educational seminars for the prevention of alcohol and drug use, October 2010, 40 participants



Disaster preparedness drills  
Kurami Works



Disaster preparedness drills  
Kurami Works



Disaster preparedness drills  
JX Nippon Tomakomai Chemical Co., Ltd.



Emergency response drills  
JX Nippon Tsuruga Recycle Co., Ltd.



Self-defense firefighting contest  
JX Nippon Tsuruga Recycle Co., Ltd.



## Traffic Safety and Blood Drive Activities (Fiscal 2010)

Operating site	Activity details
Isohara Works	Conducted monthly traffic safety activities (More than 750 participants). Conducted blood drives (November, 64 participants).
Hitachi Works	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 (March, September, 100 participants).
Kurami Works	Conducted road traffic safety lectures (December, approx. 80 participants). Conducted blood drives (November, approx. 30 participants).
JX Nippon Tomakomai Chemical Co., Ltd.	Participated in road traffic safety lectures conducted by local municipal bodies responsible for traffic safety and the police (April).
JX Nippon 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 Kyodo Smelter, Pan Pacific Copper Co., Ltd., Hibi Kyodo Smelting Co., Ltd.	Participated in events of the Tamano area safe driving control council as a member (Several times each year, 1 participant)
Saganoseki Smelter & Refinery, Pan Pacific Copper Co., Ltd.	Conducted monthly JX Nippon Mining & Metals Group "Yamabiko Undo" traffic safety awareness activities (Approx. 15 participants each time). Conducted blood drives (2 times a year, approx. 94 participants).
Esashi Works, Sanyu Electronic Industry Co., Ltd.	Participated in a safe driving control contest (February 2011, 150 participants). Conducted blood drive, March 2010, 20 participants.
JX Nippon Mining & Metals Philippines, Inc.	Conducted blood drives (4 times a year).
SCM Minera Lumina Copper Chile	Cooperated with pilgrimage to Potro village, April 2010, 150 participants.



A road traffic safety lecture  
Kurami Works



Blood drive  
JX Nippon Mining & Metals Philippines, Inc.

## 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	Employee club	Provided an area for children's events to be held.
Hitachi Works	Nikko Shido Kan	Provided a place for children as well as junior high school and high school <i>kyudo</i> (Japanese archery) and <i>kendo</i> (Japanese fencing) teams for practice and games.
Kurami Works	Company grounds	Provided an area for baseball tournaments to be held.
Hibi Kyodo Smelter, Pan Pacific Copper Co., Ltd., Hibi Kyodo Smelting Co., Ltd.	E-No-Hara Grounds	Provided an area for baseball practice and games (Used by 1,920 people per year, including local youth baseball groups and police station personnel).
	Kyohi Gymnasium	Provided an area for volleyball, badminton, <i>kendo</i> and other sports tournaments to be held (Used by 13,680 local residents per year).
	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 (Used by 1,922 people during the year).
Saganoseki Smelter & Refinery, Pan Pacific Copper Co., Ltd.	Osuiki Baseball Field	Provided an area for baseball tournaments and practice 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.
Nikko Metals USA, Inc.	Meeting room	Japan Business Association of Arizona, council (10 people).
SCM Minera Lumina Copper Chile	MLCC Los Loros office	Opened the office and held exchange events between MLCC personnel and local residents, 200 participants every month.
	Copiapo branch	Opened the branch to provide venue for employment briefings and education for local residents, 45 hours per week.



### 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 Works, 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 Works have been regularly volunteering in these activities.

In fiscal 2010, the reforestation activities were conducted in the fall with approximately 100 people participating in them. These activities included cleaning the hiking tracks, removing and chopping up fallen wood, and cutting 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 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.



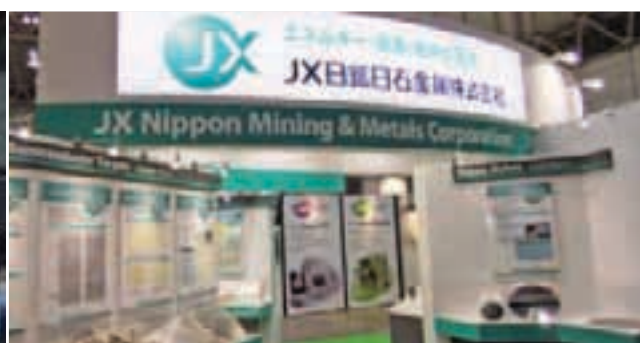
Reforestation activities at Kurakake Mountain

### Principal Displays in Exhibitions (Fiscal 2010) \*Company names are those used during fiscal 2010.

Related Group company	Activity details
Head Office, JX Nippon Mining & Metals Corporation	<p>Displayed various manufactured products such as treated rolled copper foil, electro-deposited copper foil, and copper foil for lithium-ion batteries at JPCA Show 2010 (June).</p> <p>Displayed treated rolled copper foil, electro-deposited copper foil, surface treatment agents, etc. at TPCA Show 2010, sponsored by the Taiwan Printed Circuit Association (October).</p> <p>Displayed <u>ITO targets</u> and <u>IGZO targets</u> at <u>FPD International 2010</u> (October).</p> <p>Displayed various <u>sputtering targets</u> for semiconductors, 450mm-diameter polycrystalline silicon wafers, the <u>electroless Under Bump Metallurgy (UBM) plating service</u>, super high-purity copper sulfate, etc., at SEMICON Japan 2010 (December).</p> <p>Participated in NEPCON WORLD JAPAN 2010 (January 2011).</p> <p>① IC Packaging Technology Expo: Displayed the electroless tin-plating process, super high-purity copper sulfate, functional surface treatment agents, etc.</p> <p>② EV &amp; HEV Drive System Technology Expo: Displayed NMC cathode materials, the world's thinnest treated rolled copper foil (6μm), materials for automotive connectors, etc.</p> <p>Displayed various sputtering targets, etc., at SEMICON Korea 2011 (February 2011).</p>
JX Nippon Tomakomai Chemical Co., Ltd.	Participated in the Hokkaido Technical Information & Business Exchange Fair (Business EXPO) (November).
JX Nippon Mikkaichi Recycle Co., Ltd.	Participated in "Kurobe Fair 2010," hosted by Kurobe City and the Kurobe City Chamber of Commerce and Industry (August), (30,000 visitors over two days).
JX Nippon Kurobe Galva Co., Ltd.	
JX Nippon Tsuruga Recycle Co., Ltd.	<p>Participated in the "Tsuruga City Environmental Forum," hosted by the Tsuruga Kankyo Mirai Network of Tsuruga City (February 2011).</p> <p>Displayed at the "Tsuruga City Environmental Fair" (February, 20 people).</p>
JX 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.	<p>Displayed ITO sputtering targets at Display Taiwan 2010 and introduced the <u>newly developed UHD-IV grade targets</u> (June).</p> <p>Displayed various sputtering targets, 450mm-diameter polycrystalline silicon wafers and wafers for handling tests, etc., at SEMICON Taiwan 2010 (September and October).</p>



FPD International 2010



SEMICON JAPAN 2010



Kurobe Fair 2010  
JX Nippon Kurobe Galva Co., Ltd.



Tsuruga City Environmental Forum  
JX Nippon Tsuruga Recycle Co., Ltd.



Tsuruga City Environmental Fair  
JX Nippon Tsuruga Recycle Co., Ltd.

## Awards received from external organizations

In fiscal 2010, 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.

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.

### 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-roudoukijunkuyokai (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 Works	Hitachi-roudoukijunkuyokai (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-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.
Kurami Works	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)
JX Nippon 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)
JX Nippon Tsuruga Recycle Co., Ltd.	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
	Fukui Industrial Waste Association	Superior Employee Award for the Appropriate Disposal of Industrial Waste	Received by employees who have performed duties diligently for many years and whose work has produced outstanding results
	Fukui Industrial Accident Prevention Groups Liaison Council, etc.	Fukui Labour Standards Association Chairman's Award	Received for contributing significantly to raising health and safety standards
Saganoseki Smelter & Refinery, Pan Pacific Copper Co., Ltd.	Japan Boiler Association	Japan Boiler Association Branch Head's Award	Received for the stable and safe operation of boilers
	Japan Association for Safety of Hazardous Materials	Japan Association for Safety of Hazardous Materials Director's Award	Received for controlling the safety of hazardous materials, promoting disaster preparedness, and establishing and maintaining safety systems
	The High Pressure Gas Safety Institute of Japan, Oita	Superior Employee Award (individual)	Received for initiatives for the safety of high-pressure gas facilities and safety instruction
Changzhou Jinyuan Copper Co., Ltd.	Changzhou Municipal People's Government	Three-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 employment maintenance	Received for employment maintenance
Nippon Mining & Metals (Suzhou) Co., Ltd.	Suzhou Municipal People's Government	Corporation for Harmonious Labor Relations	Received for concluding and terminating labor contracts pursuant to labor law regulations, paying salaries, and paying for overtime work
Nikko Fuji Electronics Dongguan Co., Ltd.	Dongguan Foreign Trade & Economic Cooperation Bureau	20,000 yuan subsidy	Received for being one of Hongmei Town's leading-edge technology companies
	Hongmei Town Promotion Department	4th Zheng Teng Feng Ze Yuan Cup Basketball Tournament	Received for outstanding play during matches

### Environmental

Operating site	Organization	Award details	Reason
JX Nippon Tomakomai Chemical Co., Ltd.	Tomakomai 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

## Awards from Customers

Operating site	Organization	Award details	Reason
JX Nippon Tsuruga Recycle Co., Ltd.	Fukui Prison	Letter of Appreciation	Received for supporting prison work as a contract company for many years
Nikko Fuji Electronics Dongguan Co., Ltd.	Hitachi Electronic Devices (Wujiang) Co., Ltd.	Fiscal 2010 superior vendor	Received for stable quality, meeting delivery periods, etc.

## Donations to Local Communities, Etc. (Fiscal 2010) ☒

Receiving organization	Number of donations	Amount (thousand yen)
1. Local public organizations (including colleges and hospitals)	18	42,541
2. Other regional organizations (festivals, events, municipal councils, etc.)	50	39,506
3. Nonprofit foundations, corporations, charities, etc.	17	8,100
Total	85	90,147

\* The Group as a whole donated ¥0.12 billion (please see page 52).

\* Donations from overseas affiliated companies have been denominated in yen by using the average exchange rate for fiscal 2010.

## Industry Organizations Participated in by Group Companies (Abbreviated List for Fiscal 2010)

Organization	Participating Group company (Position with the organization)
Japan Mining Industry Association	JX Nippon Mining & Metals Corporation (Council Member), Kasuga Mines Co., Ltd., JX Nippon 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 and Metals (ICMM)	JX Nippon Mining & Metals Corporation
International Copper Association (ICA)	Pan Pacific Copper Co., Ltd.
Mining Safety and Health Association, Japan	Kasuga Mines Co., Ltd.
SHIGEN SOZAI GAKKAI	JX Nippon Mining & Metals Corporation, Hibi Kyodo Smelting Co., Ltd. (Regular Member)
Japan Society of Newer Metals	JX Nippon Mining & Metals Corporation
The Japan Institute of Metals	JX Nippon Mining & Metals Corporation
The Japan Society of Applied Physics	JX Nippon Mining & Metals Corporation
Japan Institute of Electronics Packaging	JX Nippon Mining & Metals Corporation
Copper Foil Industries Associations	JX Nippon Mining & Metals Corporation
Japan Powder Metallurgy Association	JX Nippon Mining & Metals Corporation
The Japan Society for Analytical Chemistry	JX Nippon Mining & Metals Corporation
Japan Copper and Brass Association	JX Nippon Mining & Metals Corporation
Japan Catalyst Recovering Association	JX Nippon Mining & Metals Corporation
The Society of Resource Geology	JX Nippon Mining & Metals Corporation, JX Nippon Exploration and Development Co., Ltd.
Sulfuric Acid Association of Japan	Pan Pacific Copper Co., Ltd. (Vice Chairman), JX Nippon Tomakomai Chemical Co., Ltd. (Director), Hibi Kyodo Smelting Co., Ltd. (Director)
Hokuriku Electric Association	JX Nippon Mikkaichi Recycle Co., Ltd.
Japan Galvanizers Association	JX Nippon Kurobe Galva Co., Ltd.
Japan Plating Suppliers Association	JX Metals Trading 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. (Coastal Shipping Committee Member, etc.)
Japan Coastal Cargo Ship-operators Association	Nippon Marine Co., Ltd. (Standing Director, etc.)
Japan-Peru Business Committee	Pan Pacific Copper Co., Ltd.
Korea Display Industry Association	JX Nippon Mining & Metals Korea Co., Ltd.
China Nonferrous Metals Industry Association	Changzhou Jinyuan Copper Co., Ltd.
Association of German PCB Manufacturers	Gould Electronics GmbH
ZVEI (German electrical and electronic manufacturers' association)	Gould Electronics GmbH
WWIB (Association of Industrial Companies Baden eV)	Gould Electronics GmbH

## Social Contribution

### Memorial Tree-planting Festival for the "Ryuju Satoyama" Reforestation Project

On May 2010, a memorial tree-planting festival was held in Nanyo City, Yamagata Prefecture, to commemorate the "Ryuju Satoyama" Reforestation Project. At the opening ceremony, local residents gave a performance of Ryuju drums and Hideo Shiota, Mayor of Nanyo City, and Nobuyuki



Yamaki, Senior Executive Officer of the Company, gave congratulatory speeches. After reforestation actions were demonstrated by a local forestry union, 1,000 trees were planted by local elementary school pupils in addition to the planting of *oyamazakura* cherry trees by some representatives of the event co-organizers.

In 2009, the Company concluded an agreement with Nanyo City in Yamagata Prefecture to participate in the Ryuju Satoyama Reforestation Project. 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 will be conducted over a 13-hectare area located south of Takehara Public Park, between the park and Ryuju Mountain, at an elevation of 376 meters. The area is home to a diverse range of wildlife including wild deer (*Cervus nippon yezoensis*).

### Afforestation and Reforestation Activities at the Sites of Closure Mines

With the aim of protecting the environment and preserving biodiversity, the Group is conducting afforestation and reforestation activities at closure mines in cooperation with local forestry unions. In fiscal 2010, 2,500 *Buna* (*Fagus crenata*) and 2,500 *Mizunara* (*Quercus crispula*) trees were planted at the site (approximately 3.0 hectares) of the closed Kameda Mine in Hakodate City, Hokkaido, and 2,100 *Akaezo* (*Picea glehnii*) trees were planted at the site (approximately 5.0 hectares) of the closed Oe Mine in Yoichi County, Hokkaido.

Furthermore, reforestation activities were conducted at the site (approximately 7.7 hectares) of the Takatama Mine, in Koriyama, Fukushima Prefecture, to remove and chop up fallen wood and cut long grass in the forest of *Akamatsu* (*Pinus densiflora*) and other vegetation.



Akaezo (*Picea glehnii*) planted at the site of the closed Oe Mine



Buna (*Fagus crenata*) rooted on the site of the closed Kameda Mine

## VOICE CSR Activities of the JX Nippon Mining & Metals Group



**Katsuhide Kitatani**  
Chairman, NPO 2050

The Group's CSR activity to support the Niko Niko Scholarship operated by NPO 2050, an NPO that offers a program providing educational support to women in developing countries, significantly contributes to increasing the status and quality of life of women in developing countries.

The Niko Niko Scholarship of NPO 2050 currently covers projects in five Asian regions (Pakistan, India, Nepal, Bangladesh and Guizhou Province in China), which are entangled with such global problems as overpopulation, poverty and the poor status of women. NPO 2050 chooses trustworthy local women's organizations, which select qualified scholarship students and autonomously operate scholarship funds. The selected students are subject to the following terms and conditions to receive the scholarship: 1) must study and graduate from high school and/or college, 2) must not marry or get employed while in school, 3) must participate in a social contribution program after graduating, and so forth. NPO 2050 requests that the relevant organizations in the respective regions submit a list of former and new students and a simple report at the beginning of a new school term. NPO 2050's staff visits the organizations every three years to verify that the scholarship funds are used for the intended purpose through direct interviews with the directors, teachers and scholarship students. Neither local organizations nor NPO 2050 receive management fees and commissions so that the supported funds can be fully used to support women in poor families. An annual amount of US\$4,000–US\$5,000 per person is provided to approximately 15 students in each country.

When the project was established in 1994, NPO 2050 primarily selected elementary school pupils to persuade them to study at middle school or high school and then college or university. As a result, many graduates have come to play an active role in society as teachers, governmental or NGO staff, nurses, entrepreneurs or employees. They also have a glow from their participation in social contribution programs. Their unanimous desire is to do something to increase the status of women and contribute to the creation of a peaceful society.

The beneficiaries' existence and success have been strongly promoting changes in people's consciousness in developing countries.



### ICMM Activities in Fiscal 2010

In fiscal 2010, the first year of the Strategy and Action Plan 2010–2012, the International Council on Mining and Metals (ICMM) focused on reviewing the principles on climate change and promoting several projects under the ICMM Council's initiative, based on the recognition that climate change is one of the most challenging topics aimed at conserving the global environment. Furthermore, the ICMM has proactively addressed global tasks regarding the environment, human rights, control of chemical substances, health and safety, indigenous people and involvement with local communities by attending at the World Economic Forum (WEF) roundtable meeting and the 3rd Materials Stewardship roundtable meeting; holding workshops in Japan with the Japanese government on the control of chemical substances; attending various kinds of international conferences regarding sustainable development; and creating partnerships with external organizations such as the IFC.

Meanwhile, 15 member companies prepared their sustainability reports in accordance with the Assurance Procedure, which outlines ICMM's members' commitment to obtain independent external assurance of their sustainability performance, including their implementation of the 10 ICMM Principles and public reporting of performance in line with the Global Reporting Initiative (GRI) guidelines and their Mining and Metals Sector Supplement (MMSS), from the standpoint of ensuring transparency of business activities. All of the sustainability reports attained the Application Level A+ as defined in the Sustainability Reporting Guidelines 2006 of the GRI.

As a member of the ICMM, JX Nippon Mining & Metals has developed its Code of Conduct in accordance with the 10 ICMM Principles. Moreover, the CSR Committee deliberated the contents of the following Position Statements and has determined our commitment thereto.

- Mining and Protected Areas
- Mining and Indigenous Peoples
- Implementing a Global Solution to Managing a Low Emissions Economy: Policy on Climate Change
- Transparency of Mineral Revenues
- Mining: Partnerships for Development

#### ICMM Principles

01. Implement and maintain ethical business practices and sound systems of corporate governance.
02. Integrate sustainable development considerations within the corporate decision-making process.
03. Uphold fundamental human rights and respect cultures, customs and values in dealings with employees and others who are affected by our activities.
04. Implement risk management strategies based on valid data and sound science.
05. Seek continual improvement of our health and safety performance.
06. Seek continual improvement of our environmental performance.
07. Contribute to conservation of biodiversity and integrated approaches to land use planning.
08. Facilitate and encourage responsible product design, use, re-use, recycling and disposal of our products.
09. Contribute to the social, economic and institutional development of the communities in which we operate.
10. Implement effective and transparent engagement, communication and independently verified reporting arrangements with our stakeholders.



**WEB** ICMM website <http://www.icmm.com/>



## 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.

**WEB** EITI website <http://www.eiti.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 10 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, 2011

## Resources Development

- **Kasuga Mines Co., Ltd.**  
Extraction of gold-bearing silicate ore  
¥10 million (100%)  
Makurazaki, Kagoshima Prefecture
- **JX Nippon Exploration and Development Co., Ltd.**  
Geological surveys, test drilling  
¥90 million (100%)  
Minato-ku, Tokyo
- **JX Nippon Drilling Co., Ltd.**  
Test drilling  
¥10 million (100%)  
Minato-ku, Tokyo
- **SCM Minera Lumina Copper Chile**  
Ownership and development of equity interests in deposits at Caserones  
US\$380,001 thousand (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%)  
Colina, 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%)  
Chiyoda-ku, Tokyo
- **Hibi Kyodo Smelting Co., Ltd.**  
Smelting and refining of refined copper  
¥4,700 million (63.5%)  
Chiyoda-ku, Tokyo
- **Japan Copper Casting Co., Ltd.**  
Manufacturing of mold copper  
¥200 million (65%)  
Chiyoda-ku, Tokyo
- **Nissho Ko-un Co., Ltd.**  
Cargo handling, trucking  
¥135 million (100%)  
Oita, Oita Prefecture

- **PPC 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 thousand (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  
W283,204 million (49.9%)  
Ulsan, Republic of Korea
- **Changzhou Jinyuan Copper Co., Ltd.**  
Manufacturing and sales of copper wire rods (arabikisen)  
CNY282.4 million (61.4%)  
Changzhou, Jiangsu Province, People's Republic of China



## Electronic Materials

- **JX Nippon Mining & Metals USA, Inc.**  
Processing and sales of sputtering targets, purchasing and sales of compound semiconductor materials  
US\$5 million (100%)  
Chandler, Arizona, United States
- **JX Nippon Mining & Metals Europe GmbH**  
Importing and sales of sputtering targets  
€50 thousand (100%)  
Frankfurt, Federal Republic of Germany
- **JX Nippon Mining & 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



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



- **JX Nippon Mining & Metals Korea Co., Ltd.**  
Processing and sales of indium tin oxide (ITO) targets  
W2,000 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
- **JX Nippon 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

Business lines

Capital (percentage of voting rights held directly or indirectly)

Location

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

- **Nippon Mining & Metals (Suzhou) Co., Ltd.**  
Manufacturing and sales of precision rolled products and precision pressed products  
CNY492 million (100%)  
Suzhou, Jiangsu Province, People's Republic of China



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



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



- **Poonsan-Nikko Tin Plating Corp.**  
Plating of copper strips  
W2,000 million (40%)  
Ulsan, Republic of Korea

- **JX Nippon Mining & Metals Singapore Pte. Ltd.**  
Import and sales of various electronic materials  
US\$700 thousand (100%)  
Singapore, Republic of Singapore

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



- **Suzuki Manufacturing Co., Ltd.**  
Precision plating  
¥61.5 million (100%)  
Nasushiobara, Tochigi Prefecture



### Recycling and Environmental Services

- **JX Nippon Environmental Services Co., Ltd.**  
Processing of industrial waste  
¥200 million (100%)  
Hitachi, Ibaraki Prefecture

- **JX Nippon Tomakomai Chemical Co., Ltd.**  
Processing of industrial waste  
¥100 million (100%)  
Tomakomai, Hokkaido

- **JX Nippon Tsuruga Recycle Co., Ltd.**  
Processing of industrial waste  
¥50 million (100%)  
Tsuruga, Fukui Prefecture

- **JX Nippon Mikkaichi Recycle Co., Ltd.**  
Processing of industrial waste  
¥50 million (100%)  
Kurobe, Toyama Prefecture

- **JX Nippon Kurobe Galva Co., Ltd.**  
Hot-dip zinc-plating  
¥150 million (93.4%)  
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

- **JX Metals Trading Co., Ltd.**  
Wholesale sales of nonferrous 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

- **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%)  
Chiyoda-ku, Tokyo

- **JX Nippon Mining Ecomanagement, Inc.**  
Management of closure mines  
¥10 million (100%)  
Chiyoda-ku, Tokyo

- **Toyoha Mine Co., Ltd.**  
Processing of the mine drainage  
¥450 million (100%)  
Sapporo, Hokkaido

- **JX Nikko Art & Craft Co., Ltd.**  
Sales of arts and crafts  
¥20 million (100%)  
Chiyoda-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 copper and copper alloy 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

# Glossary

Term	Explanation	Page(s)
annealing	A kind of heat treatment for precision rolled products; the process to increase the extendability of precision rolled products by removing internal distortions via work hardening and recrystallizing the metallographic structure.	19
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 <u>copper concentrate</u> .	43, 57, 99, 100
<i>arabikisen</i>	A kind of precision rolled product; it is a solid-core, intermediate expanded material that has an even cross-section over the whole length and is provided as lines in a coiled shape. The lines of 6mm or more in diameter have a cross-section in a round, triangular or polygonal form.	51, 95
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.	56
biodiversity/ biological diversity	The variation of life forms within a given ecosystem, biome, or on the earth. Covering biodiversities of genes, species, and ecosystems of a region.	6, 17, 18, 41, 56, 91, 92, 103, 104
bio-leaching	Leaching that takes advantage of a bioengineering technique. In this report, it refers to drawing on the efficacy of microorganisms with the aim of accelerating the leaching speed out of the low-grade <u>copper ore</u> when the copper constituent is made to leach out of the copper ore.	23, 97
bio-mining	Mining that takes advantage of a bioengineering technique; the same as " <u>bio-leaching</u> ."	15
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 <u>flash furnace</u> and a <u>converter</u> .	43, 97
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 organic river pollution.	62
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.	60
CCL	Copper Clad Laminates: laminates with resin and copper foil used for printed circuit boards.	96
<i>chokotei</i>	Short-term disruptions to the production line mainly due to machine failure.	32
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.	62
cogene (cogeneration)	Efficient utilization of energy becomes available by feeding not only electric power but also heat through the active use of waste heat when electric power is generated. "Cogene" is an abbreviation.	57
compound semiconductor	A semiconductor that consists of two or more elements.	39, 49, 95
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 <u>copper matte</u> , into <u>blister copper</u> .	43, 97, 98
copper and copper alloy scraps	A collective term for high-quality copper and copper alloy scraps.	60, 96
copper concentrate	20–40% purity raw copper after concentration and separation of copper through breaking, crushing, and floatation processing of copper ore.	12, 15, 42, 43, 44, 47, 51, 53, 58, 60, 97, 98, 99, 100
copper matte	An intermediate product in the copper smelting and refining process, sulfides containing chiefly copper.	43, 97
copper ore	Copper-containing ore classified into three categories according to the length from the ground surface: copper oxide ore, secondary copper sulfide ore and primary copper sulfide ore. Primary copper sulfide ore (of high grade) and secondary copper sulfide ore are processed by pyrometallurgy, whereas copper oxide ore and secondary copper sulfide ore are processed by <u>hydro-metallurgy</u> . A smelting method for primary copper sulfide ore of low grade has not yet been established. Copper grade has tended to decline in recent years to about a 1% level currently.	33, 44, 50, 97
copper slag concentrate	Powdered materials with high-copper content, obtained from the treatment of converter <u>slag</u> .	43
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 receives as a pension benefit is not fixed as it reflects any losses or gains recognized as a result of fund management.	52
dust collector	Equipment for separating and collecting dust contained in the air flow.	43
ecological footprint	The ecological footprint, an indicator of environmental sustainability, is a standardized measure of human demand on nature expressed by area. It measures how much biologically productive land, water and forest areas a human population requires to produce the resources it consumes and absorb its carbon dioxide emissions.	28



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.	4, 36, 93
electroless plating	A plating method that <u>precipitates</u> a uniform thin metal film without using electricity.	23, 53, 88
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 <u>copper concentrate</u> or in recycled materials.	44, 55, 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 <u>slag</u> while recovering sulfur in the form of sulfur oxide gas.	43, 44, 57, 58, 61, 97, 99
FPD	Flat Panel Display: liquid crystal, plasma, and other types of planar displays.	9, 12, 73, 88, 98, 100
GaN	Gallium Nitride: a semiconductor mainly used as a material for a blue light-emitting diode (LED).	23
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.	62
Global Compact	A program regarding autonomous codes of conduct 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.	4, 18, 36, 75, 93
green purchasing/purchase	Purchase of products and services with the smallest possible environmental impact, with reference to suppliers dedicated to reducing the environmental impact.	16, 36, 56
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. Its secretariat is located in Amsterdam, the Netherlands.	1, 2, 4, 21, 37, 92, 94, 100, 101, 102
GRI Mining and Metals Sector Supplement	A guideline supplementing the <u>Sustainability Reporting Guidelines 2006</u> with issues that it does not cover.	1, 4
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.	15, 97, 99
ICA	International Copper Association	90
ICMM	International Council on Mining and Metals	1, 4, 16, 48, 90, 92, 93, 99
IFC	International Finance Corporation: an organ of the World Bank Group established in 1956 to make investments and loans to private-sector corporations in developing countries; its front office is located in Washington, D.C., in the United States.	53, 92
IGZO	Indium Gallium Zinc Oxide: a kind of transparent, conductive material used in <u>FPDs</u> .	88
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.	19, 20, 26, 56, 57, 58, 59, 61
iron concentrate	Powdered materials with high-ferrous content, obtained from the treatment of <u>converter slag</u> .	43, 60
ISO	International Organization for Standardization: a nonprofit organization in the civic sector established to draft international standards that apply to industrial fields, except for the field of electrical equipment. Its headquarters is located in Geneva, Switzerland.	19, 20, 79, 98
ISO 14001	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.	19, 38, 47, 56, 65
ISO 26000	An international standard to guide social responsibility. The standard established by the <u>ISO</u> (see above) is stipulated with a view to social responsibility of a wide variety of organizations and entities other than corporations; it only provides guidelines and does not aim to certify.	18, 22
ISO 9001	An international standard, which provides quality control guidelines implemented by the International Organization for Standardization, with the aim of improving customer satisfaction.	71, 72, 98
ISO/TS 16949	A standard that adds specific requirements in the automobile industry in addition to <u>ISO 9001</u> , an international standard for quality control.	72
ITO	Indium Tin Oxide: a kind of transparent, conductive material used in FPDs.	88, 95, 99
LME	London Metal Exchange: established in 1877, the world's largest futures exchange specializing in nonferrous metals, listing seven metals including copper, nickel, lead, zinc, and aluminum.	51
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.	78, 104
LSI	Large Scale Integration: a sole substrate containing numerous circuits, on which many functions that correspond to a cluster of numerous integrated circuits (ICs) are integrated.	7

Term	Explanation	Page(s)
materials stewardship	The range of activities required to ensure the optimal and appropriate use of minerals and metals in society promoted by <u>ICMM</u> .	12, 22, 47, 48, 92, 105
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.	62, 73
N-Chlo Process	Nikko Chloride Process: a <u>hydro-metallurgical</u> technology that efficiently extracts copper and gold, silver, and other precious metals from low-grade <u>copper concentrates</u> .	15, 23
neutralized slag	Waste produced by a neutralization reaction in the smelting process.	60
newly developed UHD-IV grade targets	A series of <u>ITO targets</u> supplied by the Company; features an improved <u>yield</u> compared with conventional target products.	88
NPO 2050	A nonprofit corporation in Japan; an organization that has the aim to hand over this beautiful planet to the next generation as a safe and peaceful place by getting concerned with global issues such as population, the environment and poverty and the improvement of women's status through educational activities, surveys and research and international cooperation.	19, 91
OHSAS	Occupational Health and Safety Assessment Series: 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.	19, 20, 38, 82, 83
PCB	Polychlorinated Biphenyl: a collective term that denotes biphenyl compounds having two connected phenyl groups, to which numerous chlorines are added. This chemical compound is chemically stable and has been widely used as insulating oil, a heating medium, a plasticizer and lubricating oil but is currently forbidden to be used because its accumulation inside the body is harmful to living organisms.	15, 19, 20, 63, 90
PDCA cycle	The "Plan," "Do," "Check," and "Act" cycle: a management method to continuously improve quality and business through repetition of this process.	15, 31, 32, 37, 61, 72
permanent cathode method	A method for producing <u>refined copper</u> 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.	57
phosphor bronze	A copper alloy added with tin and a minute amount of phosphorus.	12
powder metallurgy	A method to produce metal products by pressurizing, casting, and sintering metal powder.	90
precipitate	Concentrates of gold, silver, and other value-bearing metals that precipitate at the bottom of refining tanks during copper refining.	43, 98
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.	1, 62
rare earth	A collective term for 17 elements including scandium and yttrium, both of which belong to the third family on the periodic table, and 15 lanthanide series elements (atomic numbers 57 through 71).	15, 48
rare metal	This term denotes metals of which the volume that exists in nature is considered rare, but there is no absolute definition of <i>rare</i> . Generally speaking, it denotes nickel, cobalt, chrome, manganese, titanium and so on.	15, 19, 29, 30, 43, 47, 51, 52
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.	51
REACH	Registration, Evaluation, Authorization and Restriction of Chemicals: 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.	19, 20, 63
recycled (raw) resources	Waste, etc., containing copper-recycling materials, gold, silver and other value-bearing metals.	59, 60, 64, 100
refined copper	Copper of over 99.99% purity after refining with an <u>anode</u> as a positive plate.	39, 42, 43, 44, 50, 57, 58, 59, 61, 64, 95, 99
RoHS	Restriction of Hazardous Substances directive: a directive of the EU regarding restrictions on the use of certain hazardous substances in electrical and electronic equipment.	73
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.	60
shot	A granulated metal product.	60
silicate ore	Ore that consists of quartz and other silicates, containing a minute amount of gold.	60, 68, 95
silver and gold slag	Industrial waste that contains gold and silver.	60
slag	Compound ferrous, silicate, and other oxides generated by various production processes.	4, 7, 19, 39, 43, 58, 60, 97, 98, 99
slag cleaning furnace	A furnace that retains <u>slag</u> generated from a <u>flash furnace</u> for recovering copper from slag.	43
slitting	Longitudinally slitting rolled copper, copper alloy, and special steel strips, as well as electro-deposited copper foil, by the product width.	96

Term	Explanation	Page(s)
sludge	Sediment containing putrescible organic matter, which is produced in sewage or industrial effluent treatment processes.	19, 58, 60, 67, 104
SOx	Sulfur Oxide: a chemical substance in which SO <sub>2</sub> and SO <sub>3</sub> coexist in a mixed status; SOx is one of the major causative agents of air pollution together with nitrogen oxide (NOx).	15, 61, 64, 103
SPC	Statistical Process Control: a statistical method to evaluate performance of production lines and project a significant deviation on occurrences of rejected products.	72
sputtering	A method in which inert gas ions collide with metal and other <u>targets</u> to form an even high-quality thin film consisting of ejected metal and other substances on the surface of the object.	12, 28, 39, 50, 72, 73, 88, 95, 100
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.	72
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.	73
Sustainability Reporting Guidelines 2006	Version 3 of the <u>GRI</u> (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.	1, 4, 21, 37, 92, 98, 101
tailing	Residual dross that remains after the recovery of value-bearing metals out of ore.	4, 39, 69, 104
target	A material put in a <u>sputtering</u> machine to form a thin film; used in semiconductors, <u>FPDs</u> , and other applications.	12, 28, 39, 50, 72, 73, 88, 95, 99, 100
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.	95
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.	12
total material input	Total amount of <u>recycled resources</u> and primary raw materials such as <u>copper concentrate</u> , input into the smelting process.	60
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).	1, 55, 56
UBM	Under Bump Metallurgy: underlying metals of solder bumps, which are solder balls used to bond flip chips and substrates.	23, 53, 88
urban mine	A collective term that denotes all the metals able to be recycled and classified from among the nonferrous 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.	8, 15, 22, 23, 29
visualization ("MIERUKA")	An initiative to clarify problems in a company's operations by examining them based on numerical results for objective assessments.	25
wafer	A thin plate cut from a single semiconductor crystal, used as a substrate of integral circuits.	7, 88
waste anode	<u>Anode</u> after use in copper refining process.	43
yield	The ratio of non-defective products to all products that have been manufactured; the fewer the defective products, the higher the yield rate.	32, 55, 57, 59, 99
zero emission	A structure where no waste subject to landfill disposal is discharged.	6, 15, 47, 59

# GRI Content Index

This report has an A+ application level as defined by the Sustainability Reporting Guidelines 2006.

		C	C+	B	B+	A	A+
Standard Disclosures	G3 Profile Disclosures	Report on: 1.1 2.1–2.10 3.1–3.8, 3.10–3.12 4.1–4.4, 4.14–4.15	Report Externally Assured	Report on all criteria listed for Level C plus: 1.2 3.9, 3.13 4.5–4.13, 4.16–4.17	Report Externally Assured	Same as requirement for Level B	Report Externally Assured
	G3 Management Approach Disclosures	Not required		Management Approach Disclosures for each Indicator Category		Management Approach Disclosures for each Indicator Category	
	G3 Performance Indicators & Sector Supplement Performance Indicators	Report on a minimum of 10 Performance Indicators, including at least one from each of social, economic, and environment		Report on a minimum of 20 Performance Indicators, at least one from each of economic, environment, human rights, labor, society, and product responsibility		Respond on each core G3 and Sector Supplement* indicator with due regard to the materiality principle by either (a) reporting on the indicator or (b) explaining the reason for its omission	

\* Sector supplement in final version

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Strategy and Analysis			
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2.2		Primary brands, products, and/or services	12
2.3		Operational structure of the organization, including main divisions, operating companies, subsidiaries, and joint ventures	2, 11
2.4		Location of organization's headquarters	11
2.5		Number of countries where the organization operates, and names of countries with either major operations or that are specifically relevant to the sustainability issues covered in the report	11, 13
2.6		Nature of ownership and legal form	11
2.7		Markets served (including geographic breakdown, sectors served, and types of customers/beneficiaries)	11-12, 52
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2.9		Significant changes during the reporting period regarding size, structure, or ownership including: ● The location of, or changes in operations, including facility openings, closings, and expansions; and ● Changes in the share capital structure and other capital formation, maintenance, and alteration operations (for private sector organizations)	11, 45, 53
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3.2		Date of most recent previous report (if any)	1
3.3		Reporting cycle (annual, biennial, etc.)	1
3.4		Contact point for questions regarding the report or its contents	Back cover
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3.6		Boundary of the report (e.g., countries, divisions, subsidiaries, leased facilities, joint ventures, suppliers)	1-2
3.7		State any specific limitations on the scope or boundary of the report	1
3.8		Basis for reporting on joint ventures, subsidiaries, leased facilities, outsourced operations, and other entities that can significantly affect comparability from period to period and/or between organizations	1
3.9		Data measurement techniques and the bases of calculations, including assumptions and techniques underlying estimations applied to the compilation of the Indicators and other information in the report	52, 56-58, 60-63, 75-78, 81, 90
3.10		Explanation of the effect of any re-statements of information provided in earlier reports, and the reasons for such re-statement (e.g., mergers/acquisitions, change of base years/periods, nature of business, measurement methods)	51, 55-58, 62
3.11		Significant changes from previous reporting periods in the scope, boundary, or measurement methods applied in the report	1, 55
3.12	GRI Content Index	Table identifying the location of the Standard Disclosures in the report	101-105
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4.2		Indicate whether the Chair of the highest governance body is also an executive officer (and, if so, their function within the organization's management and the reasons for this arrangement)	35
4.3		For organizations that have a unitary board structure, state the number of members of the highest governance body that are independent and/or non-executive members	35
4.4		Mechanisms for shareholders and employees to provide recommendations or direction to the highest governance body	35, 78
4.5		Linkage between compensation for members of the highest governance body, senior managers, and executives (including departure arrangements), and the organization's performance (including social and environmental performance)	36
4.6		Processes in place for the highest governance body to ensure conflicts of interest are avoided	Based on laws and statutory regulations and the articles of incorporation, for transactions in which there is a conflict of interest between a director and the Company, approval is sought from the General Meeting of Shareholders, which in the Company's case is JX Holdings, Inc.
4.7		Process for determining the qualifications and expertise of the members of the highest governance body for guiding the organization's strategy on economic, environmental, and social topics	This has not been included because the Company does not have a process in writing for electing directors.
4.8		Internally developed statements of mission or values, codes of conduct, and principles relevant to economic, environmental, and social performance and the status of their implementation	5-6



Number	Item	Content to be included	Page(s)
4.9	Governance	Procedures of the highest governance body for overseeing the organization's identification and management of economic, environmental, and social performance	22, 36-37
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4.11	Commitments to External Initiatives	Explanation of whether and how the precautionary approach or principle is addressed by the organization	63
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4.13		Memberships in associations (such as industry associations) and/or national/ international advocacy organizations	90
4.14	Stakeholder Engagement	List of stakeholder groups engaged by the organization	16
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4.16		Approaches to stakeholder engagement, including frequency of engagement by type and by stakeholder group	16-18, 24-25
4.17		Key topics and concerns that have been raised through stakeholder engagement, and how the organization has responded to those key topics and concerns, including through its reporting	17-18, 24-25
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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	52
EC2		Financial implications and other risks and opportunities for the organization's activities due to climate change	22, 26
EC3		Coverage of the organization's defined benefit plan obligations	52
EC4		Significant financial assistance received from government	52
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	42, 75
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	42, 87-88
Environment			
Disclosure on Management Approach			5-6, 15, 55-57, 59, 61, 65-66
EN1	Materials	Materials used by weight or volume	60
EN2		Percentage of materials used that are recycled input materials	60
EN3	Energy	Direct energy consumption by primary energy source	57
EN4		Indirect energy consumption by primary energy source	57
EN8	Water	Total water withdrawal by source	59
EN11	<u>Biodiversity</u>	Location and size of land owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	33, 41, 86
EN12		Description of significant impacts of activities, products, and services on biodiversity in protected areas and areas of high biodiversity value outside protected areas	41
EN14		Strategies, current actions, and future plans for managing impacts on biodiversity	41
EN16	Emissions, Effluents, and Waste	Total direct and indirect greenhouse gas emissions by weight	58
EN17		Other relevant indirect greenhouse gas emissions by weight	58
EN19		Emissions of ozone-depleting substances by weight	Not applicable
EN20		NO <sub>x</sub> , <u>SO<sub>x</sub></u> , and other significant air emissions by type and weight	61
EN21		Total water discharge by quality and destination	59
EN22		Total weight of waste by type and disposal method	60
EN23		Total number and volume of significant spills	66, 69

Number	Item	Content to be included	Page(s)
EN26	Products and Services	Initiatives to mitigate environmental impacts of products and services, and extent of impact mitigation	46
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	66
MM1	<u>Biodiversity</u>	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 (The operation at the Caserones copper and molybdenum deposit is scheduled to begin in 2013.)
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	41
MM3	Emissions, Effluents, and Waste	Total amounts of overburden, rock, <u>tailings</u> , and <u>sludges</u> and their associated risks	67, 69
Labor Practices & Decent Work			
Disclosure on Management Approach			6, 15, 75, 77-78, 81-83
LA1	Employment	Total workforce by employment type, employment contract, and region	75-76
LA2		Total number and rate of employee turnover by age group, gender, and region	77
LA4	Labor/Management Relations	Percentage of employees covered by collective bargaining agreements	78
LA5		Minimum notice period(s) regarding significant operational changes, including whether it is specified in collective agreements	78
LA7	Occupational Health and Safety	Rates of injury, occupational diseases, lost days, and absenteeism, and total number of work-related fatalities by region	81
LA8		Education, training, counseling, prevention, and risk-control programs in place to assist workforce members and their families or community members regarding serious diseases	80
LA10	Training and Education	Average hours of training per year per employee by employee category	78
LA11		Programs for skills management and lifelong learning that support the continued employability of employees and assist them in managing career endings	78-80
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	76-78
LA14		Ratio of basic salary of men to women by employee category	77
MM4	Labor/Management Relations	Number of strikes and <u>lockouts</u> exceeding one week's duration, by country	78
Human Rights			
Disclosure on Management Approach			6, 15, 75
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	Not applicable
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	38
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 78.
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	75
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	75

Number	Item	Content to be included	Page(s)
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			5-6, 15, 38, 84, 86
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	42, 84-88, 90
SO2	Corruption	Percentage and total number of business units analyzed for risks related to corruption	38
SO3		Percentage of employees trained in organization's anti-corruption policies and procedures	38
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	92-93
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.
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	Community	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 Caserone copper and molybdenum deposit will be proposed at the beginning of its operation.)
Product Responsibility			
Disclosure on Management Approach			5-6, 15, 71-73
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	73
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	73
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	73
MM11	<u>Materials Stewardship</u>	Programs and progress relating to materials stewardship	29-30, 48

# Independent Assurance Report



## 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 2011 (the "Report") for the fiscal year ended March 31, 2011. 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 marked with ☒ (the "Indicators") for the period from April 1, 2010 to March 31, 2011 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 (A+) 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 and the applicable mandatory requirements set out in ICMM position statements as described on page 92;
- the Company has identified and prioritized its material issues as described on page 21; and
- the Company has approached and managed its material issues as described on page 22.

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 version 3.0 of the GRI. 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.
  - Inquiries about the design of the systems and methods used to collect and process the Indicators.
  - Analytical reviews of the Indicators.
  - 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 JX Nippon Tomakomai Chemical Co., Ltd. selected on the basis of a risk analysis.
  - 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 the ICMM's 10 SD Principles and the applicable mandatory requirements set out in ICMM position statements 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 procedures performed, as described above, nothing has come to our attention that causes us to believe that:

- 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 stipulated by the GRI;
- the Company's policies are not aligned to the ICMM's 10 SD Principles and the applicable mandatory requirements set out in ICMM position statements as described on page 92;
- the Company has not identified and prioritized its material issues as described on page 21; and
- the Company has not approached and managed its material issues as described on page 22.

We have no conflict of interest relationships with the Company that are specified in the Code of Ethics of J-SUS. We conducted our engagement with a team with expertise in environmental and social aspects as well as assurance engagements.

*KPMG AZSA Sustainability Co., Ltd.*

KPMG AZSA Sustainability Co., Ltd.  
Tokyo, Japan  
November 30, 2011

Please feel free to give us your frank opinions about Sustainability Report 2011 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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