We welcome your views and questions regarding Sustainability Report 2019 as well as suggestions on how to make the next report even better.
We contribute to the development of a sustainable economy and society through innovation in the areas of resources and materials.

Sustainability Report 2019

Definitions of Terminology
"The Company" ("JX Nippon Mining & Metals"), the term "the Company" or "JX Nippon Mining & Metals" refer to JX Nippon Mining & Metals Corporation. "The JX Nippon Mining & Metals Group" ("the Group") or "the JX Group" as used herein, refer to JX Nippon Mining & Metals Corporation and its subsidiaries. However, where appropriate, this report will be referred to as "the Group" as defined herein. As an important communication tool, this report is designed to enhance stakeholders understanding of our financial and non-financial performance and our CSR activities.

Boundary of the Report
This report covers JX Nippon Mining & Metals Corporation as well as its overseas Group companies. The companies for which main indicators must be reported are detailed below, according to the corresponding sections of the report.

Corresponding Business
<table>
<thead>
<tr>
<th>Business Overview</th>
<th>Companies included in the consolidated financial statements of JX Nippon Mining &amp; Metals Corporation</th>
<th>Companies covered in this report</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environment</td>
<td>The Company's consolidated financial statements include the financial results of JX Nippon Mining &amp; Metals Corporation and its consolidated subsidiaries.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>The Company, its directly controlled operating companies, and 82 companies in which the Company directly owns an 5% or more.</td>
<td></td>
</tr>
</tbody>
</table>

Reporting Period
The reporting period covered by this report is calendar year 2019.

Over the past few years, the Company has been actively involved in CSR activities. However, it includes certain information regarding important events that occurred prior to or after the period.

Information
Other data relating to CSR is introduced.

Information
Other data relating to CSR is introduced.

Philosophical Framework of the JX Nippon Mining & Metals Group

We contribute to the development of a sustainable economy and society through innovation in the areas of resources and materials.

We contribute to the development of a sustainable economy and society through innovation in the areas of resources and materials.
Message from the President

In keeping with our Long-Term Vision looking ahead to the year 2040, our aim is to be a global corporation that contributes to the sustainable development of society and social innovation.

Seiichi Murayama
President and Chief Executive Officer
JX Nippon Mining & Metals Corporation

Overview

The JX Nippon Mining & Metals Group is a leader in the field of nonferrous metals, and a core member of the JXTG Group, which aims to become one of Asia’s leading energy, resources, and materials business groups. Our mission is to provide copper, rare metals, precious metals, and other nonferrous metal resources, as well as electronic materials and other high added value materials.

The Group is committed to helping achieve the sustainable society targeted by the SDGs, in response to the needs of the social environment and the wishes of our stakeholders, through wide-ranging endeavors from resource extraction to product development and recycling.

Show the way forward for growth with a vision of society and the Group in 20 years

In the fiscal year ended March 31, 2019 (fiscal 2018), the Group managed to recover from the downturn in the previous fiscal year and achieved earnings exceeding targets, thanks to such factors as the shift to profitability of the Caserones Copper Mine in Chile on an operating basis. At the same time, however, there were concerning factors, among them a slowdown in the functional materials and thin film materials businesses that had been strong up to the second quarter, affected by market uncertainties caused by US-China trade friction and other developments.

In my position of steering administration of Group business, I strongly feel that challenging times like this make it all the more necessary to have a clear idea of the kind of corporate group we will grow into, and of how we can go about contributing to society.

The JX Nippon Mining & Metals Group Long-Term Vision 2040 sets out our aim of fostering the development of society’s innovation with advanced materials. It enables us to share a common vision for our future and focus on realizing that vision, taking on issues one at a time and building a firm foundation. This Vision being about the future of the Group, we sought and considered as wide a range of views as possible in drawing it up, including those of younger employees representing the next generation.

SDGs
(Sustainable Development Goals)

The SDGs are the international community’s shared goals and targets for 2030. They were defined in the 2030 Agenda for Sustainable Development, adopted at the United Nations Sustainable Development Summit in September 2015. They consist of 17 goals and 169 targets, as specific action guidelines for achieving a sustainable society.
Contribute to solving society’s problems, drawing on the strength of our value chains

The strength of the Group is the ability to perform a full set of organically connected business operations, from upstream resource development, through midstream operations in the fields of smelting and refining as well as recycling and environmental services, to downstream functional materials, thin film materials, and tantalum and niobium businesses. I believe this makes us an extremely rare business group, possessing supply chains for both technology and management resources.

In Asia and other emerging economies, the growing middle class produced by economic growth is leading to resource shortages. In Japan, meanwhile, the middle class produced by economic growth is leading to resource shortages. In Japan, meanwhile, the middle class produced by economic growth is leading to resource shortages. In Japan, meanwhile, the growing technology and management resources.

We have a high share of the worldwide copper market. Looking ahead, our vision is to help solve environmental issues by building supply chains not just for copper but for rare metals and the advanced materials using them.

In the process of putting this growth strategy into practice, we intend to further enhance the internal organizational structure for technology development while also actively engaging with external resources. We have already begun partnering with start-ups through an accelerator program, and are moving forward with establishing a co-creation-based development organization inside and outside the Group, but we intend to create further added value centering on fields that are logical extensions of existing Group areas or that have high affinity with them, such as by making use of open innovation.

Dealing with nonferrous metals, our businesses relate directly to the issues of the SDGs

As the SDGs become increasingly accepted by society as global values, we are naturally aware that we need to recognize their importance in drawing up our vision. After all, wherever one looks, our business is directly involved in society and the environment. To ensure solid awareness of this involvement, we have laid out 10 Material Issues for CSR Activities. For example, the issues relating to the environment—namely, nonferrous metals resources effectively, establishing a recycling-oriented society, and establishing a low-carbon society—are ones where our midstream smelting and refining business or recycling and environmental services business can contribute directly.

We are strengthening our initiatives for reducing environmental impact, including development of technology to extract metals from low-grade raw materials, and establishment of smelting and refining technologies that reduce energy consumption by effectively processing recycled materials from urban mines. In the downstream functional materials and thin film materials businesses, assuming the electric vehicles that utilize our products come into even wider use, this should contribute to reducing or replacing fossil fuel use.

The recently announced Long-Term Vision reflects our strong awareness of how we can contribute to the SDGs. The fundamental policy of the Vision is to draw on the technologies and expertise we have developed over the years to grow as a technology-based Group providing advanced, high added value products and technologies, and to contribute toward realization of the sustainable society targeted by the SDGs.

Our 10 Material Issues for CSR Activities

- Using Nonferrous Metal Resources Effectively
- Establishing a Recycling-Oriented Society
- Developing Human Resources
- Providing a Rewarding Work Experience
- Establishing a Low-Carbon Society
- Promoting Community Involvement and Development
- Ensuring Occupational Health and Safety
- Respecting Human Rights
- Insisting on Full Compliance
- Assuring Product Quality

What the drafting of the Long-Term Vision has helped to clarify is how the Group will engage with society going forward. Since our business is conducted globally, we inevitably become involved with various stakeholders. In so doing, an important factor determining growth potential is whether or not the business is run with proper attention to such issues as human rights and the environment.

As a first step, we have decided to move our Head Office to the new Okura Prestige Tower in Tokyo’s Minato Ward by around June 2020, thereby seeking to create an organizational structure and new corporate climate for achieving the Long-Term Vision. This move is not just to accommodate future personnel growth, but is aimed also at generating new value creation opportunities by renewing our organizational culture and increasing communication inside and outside the Group. After all, the power of an organization is directly influenced by the extent to which the working environment enables personnel to fulfill their potential. This relocation offers us an opportunity to take up the challenge of transforming the work style itself, making a major break from traditional patterns.

In parallel with this, I would like once again to provide education on the SDGs, taking into consideration the features of each business and workplace. In our downstream operations, as we continue using the leading-edge field of electronic materials to drive business growth, I would like to take initiatives including possible introduction of key performance indicators, so that each employee can be aware of their degree of contribution to the SDGs while they involve themselves in that process.

The roots of the Group go back to the place where JX Nippon Mining & Metals was founded—the Hitachi Mine, opened more than 110 years ago. In an age when there was no technology for recovering sulfur dioxide generated in the smelting process, the Company built a giant smokestack 155.7 meters high to protect the people in the surrounding community by greatly reducing smoke pollution. Care was also taken to create a working environment where employees could work in the mine with peace of mind, as seen in the “Mine as One Big Family” creed by which workers were treated like kin. In this and other ways, an ethos was fostered that was ahead of its time.

This spirit of taking on challenges together with stakeholders is part of our original DNA, making us aware that we ourselves must be leaders for change. As an organization grows larger, there is a tendency to turn more conservative, with the spirit of enterprise beginning to fade. Now, as we establish the Long-Term Vision, I would like the entire Group to redouble this spirit of enterprise, moving forward in a united effort.
Recognizing the Group mission as providing stable supplies of nonferrous metal resources and materials to society, since our founding in 1905 we have worked on creating new value, even while responding to various changes in the business environment. We are determined to continue our challenge, contributing to the development of a sustainable economy and society through innovation in the areas of resources and materials.

The expansion of our business and provided value

<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>1905</td>
<td>Nippon Mining established</td>
</tr>
<tr>
<td>1905</td>
<td>Development into a custom smelter</td>
</tr>
<tr>
<td>1914</td>
<td>Construction of the Hitachi Giant Stack</td>
</tr>
<tr>
<td>1916</td>
<td>Start of operation at the Saganoseki Smelter &amp; Refinery</td>
</tr>
<tr>
<td>1916</td>
<td>Kurami Works launched</td>
</tr>
<tr>
<td>1929</td>
<td>Nippon Mining becomes independent</td>
</tr>
<tr>
<td>1985</td>
<td>Isohara Works launched</td>
</tr>
<tr>
<td>1985</td>
<td>Caserones Copper Mine began production</td>
</tr>
<tr>
<td>2010</td>
<td>Birth of the JX Group</td>
</tr>
<tr>
<td>2016</td>
<td>Nippon Mining Holdings established</td>
</tr>
<tr>
<td>2017</td>
<td>JXTG Holdings born</td>
</tr>
<tr>
<td>2018</td>
<td>H.C. Starck Tantalum and Niobium GmbH shares acquired</td>
</tr>
</tbody>
</table>

### Overview

#### A Long History of Value Creation

The rapid growth of the Hitachi Mine’s business led to a severe smoke pollution problem in the surrounding area. To deal with the pollution, the Company built what was then the world’s tallest stack at 155.7 meters. It began operation in March of the following year.

#### 1914 Construction of the Hitachi Giant Stack

The rapid growth of the Hitachi Mine’s business led to a severe smoke pollution problem in the surrounding area. To deal with the pollution, the Company built what was then the world’s tallest stack at 155.7 meters. It began operation in March of the following year.

#### 1929 Nippon Mining becomes independent

#### 1905 Development into a custom smelter

Resources development business and smelting and refining business were begun by founder Fusanozuke Kuhara at the Hitachi Mine in Ibaraki Prefecture. The Hitachi Mine was a pioneer in development as a full-fledged “custom smelter” that processed not only ores from its own Hitachi Mine, but also ores purchased from other companies. This allowed it to achieve a production capability not restricted by the capacity of its own mine and to provide a stable supply of copper.

#### 1916 Start of operation at the Saganoseki Smelter & Refinery

In order to further expand the mining, smelting and refining segments fundamental to the Company’s diversified businesses, the Saganoseki Smelter & Refinery was built in Oita Prefecture as one of the largest such plants in Japan. It remains even to this day an important center of the JX Nippon Mining & Metals Group, as a leading-edge smelter boasting the world’s top levels of technology and production capacity.

#### 1916 Kurami Works launched

With the startup of the Kurami Works (Karagawa Prefecture), the Company made a strong entry into the metal fabrication business. Introducing the latest rolling mills, it produced phosphor bronze and other rolled copper products. By answering the needs of complex markets for flexible manufacturing of diverse products in small lots and production-to-order, while meeting demands for advanced product technology, the Company established a solid position in the metal fabrication field.

#### 1985 Isohara Works launched

The Company got into the electronic materials business in time for the rise of the electronics industry in the 1980s, making sputtering targets for semiconductors and transparent conductive films for liquid crystal displays, as well as materials for compound semiconductors. By establishing the Isohara Works (Ibaraki Prefecture) as a new main manufacturing center, the Company expanded into development and manufacturing of copper foil and various electronic materials.

#### 1985 Caserones Copper Mine began production

The official opening of the Caserones Copper Mine was celebrated, as a 100% Japan-funded resources development project in Chile, and the shipment of copper concentrate began.

#### 2010 Birth of the JX Group

The JX Group (JX Holdings) was born as one of the world’s leading integrated energy, resources, and materials business groups, conducting business in each of the areas of petroleum refining and sales, oil field development and metals.

#### 2016 Nippon Mining Holdings established

Established by the merger of JX Holdings and Tomon General Sekiyu K.K.

#### 2017 JXTG Holdings born

JXTG Holdings was established with the merger of JX Holdings and Tonen General Sekiyu K.K.

#### 2018 H.C. Starck Tantalum and Niobium GmbH shares acquired

The outstanding shares of H.C. Starck Tantalum and Niobium GmbH, a German manufacturer of metal powders, were acquired with an eye to expanding business areas, in anticipation of dramatic demand growth for electronic components and devices.

### Financial Information

<table>
<thead>
<tr>
<th>Year</th>
<th>Net Sales (bil. yen)</th>
<th>Employees</th>
</tr>
</thead>
<tbody>
<tr>
<td>2019</td>
<td>1,041.8</td>
<td>9,487</td>
</tr>
</tbody>
</table>

*Consolidated*
Overview

The Roots of CSR in the JX Nippon Mining & Metals Group

The history of the Group traces back to the time when founder Fusanosuke Kuhara opened the Hitachi Mine, in 1905. Throughout the process of working to resolve the smoke pollution problem at the mine, the Company maintained its stance of aiming to grow in tandem with the local community, while at the same time fostering an ethos of respect for employees.

This approach, which was ahead of its time, lives on today in the Group’s DNA.

Achieving harmonious coexistence with the local community through the smoke pollution problem

At the time, there was no established technology for effectively recovering sulfur dioxide generated from the smelting process. When the plant went into operation, the smoke it emitted caused widespread damage to the surrounding forests and to agricultural crops. Although it was an era in which Japan had not yet established legal requirements for compensation for damage caused by smoke pollution, Yataro Kado, the first head of general affairs, took the lead in making sure local residents were compensated.

Along with the compensation, the Company sought to minimize smoke pollution. With the technology of that era, however, diffusing and diluting the exhaust smoke proved difficult, as efforts fell short time after time. Kuhara then proposed building what at the time was the world’s tallest stack to disperse the smoke over a wide area. Around 37,000 workers and a massive financial investment were devoted to the construction. After it was completed in 1914 at a height of 155.7 meters, the giant stack succeeded in dramatically reducing smoke pollution. Kuhara further undertook full-scale tree-planting programs to reforest the devastated mountainsides. Smoke-resistant Oshima cherry and other saplings were planted over a total area of around 1,200 hectares.

Creating a workplace where employees can work with peace of mind

Based on his conviction that employees are a company’s assets, Kuhara also took measures to create a workplace where they could work with peace of mind. He accordingly built an entire community, providing not only housing where workers could live with their families, but also schools, hospitals, a railroad, and amusement facilities.

That philosophy was carried on by Kado, who believed in encouraging simplicity and fortitude, as well as simple hard work, while also thinking of the happiness of all employees. His aim was to maintain harmony among workers both in the workplace and in employee housing. In this environment that combined work and home, the Company fostered a climate of respect for employees, while a sense of togetherness took root also among the employees themselves. The philosophy of “the Mine as One Big Family” lives on in the Group even today. Guided by these principles, we maintain an open, supportive workplace environment in which employees feel free to exchange opinions regardless of position, age, or gender.

The Words of Founder Fusanosuke Kuhara

“Pollution problems are ever present. They are like an eternal cross that the human race must bear. As science advances, pollution becomes more diverse.

“How many people have devoted strenuous efforts and pains to stop this problem from growing? . . .

“The same can be said for the Hitachi Mine. Without the pollution problem, the history of the mine could not be told. In December 1914, the Hitachi Mine finished building on its own what is said to have been the world’s tallest stack at the time, marking an end to the problem. This was a valuable experience, through which, over a period of around 10 years, the Company and the local citizens together suffered, anguish, and then came up with a solution on their own.”

From the preface to a 1985 book by Shigeru Oi on the story of Hitachi Mine’s smoke pollution

The Summit: A Chronicle of Stones

How did you get started on this film project?

Matsumura: Around seven years ago, I directed the film Tenshin about the career of Tenshin Okakura, a pioneer in developing modern Japanese art, which was set in Ibaraki Prefecture. When I visited Hitachinaka City for a showing of the film, I was introduced to Jiro Nitta’s novel, A Town and a Tall Chimney. I was very impressed by the film, and I was grateful to respect our wishes.

What were your main considerations when making the film?

Matsumura: The original being a masterpiece, I tried hard not to undermine its appeal. At the same time, I wanted to depict the conflict between people and how a tragic situation was overcome, which is why there are more such scenes in the film than in the original work. It’s a story modeled after an existing company, and I am grateful to you all in the JX Nippon Mining & Metals Group for your support.

Oi: The first time I heard about the making of a film version was when I visited Ibaraki Prefecture to pay New Year visits to business associates. That was a time when, as president, I was seeking to gain management insights by learning from the thoughts of our founder, as well as the history of accomplishments by our early pioneers and the tribulations they overcame. I recall being happy to learn about the film version at that very time.

Shigeru Oi
Executive chairman
JX Nippon Mining & Metals Corporation

Katsuya Matsumura
Director and Screenwriter for A Town and a Tall Chimney

Special interview to commemorate the premiere of the film, A Town and a Tall Chimney

The film A Town and a Tall Chimney, based on the real story surrounding the giant stack that is a symbol of Hitachi City, premiered on June 22, 2019. The novel of the same title on which the film was based was written by Jiro Nitta. It tells the story of a community and company aiming for coexistence and mutual prosperity, while together confronting a smoke pollution problem. To commemorate the film’s premiere, we conducted an interview to address the appeal of the film and the roots of our Group CSR.
The spirit of acting “for the sake of people we love.” The desire to work toward a successful outcome. I want to pass this on as the Group DNA to coming generations.

It would not be proper to get too close. Then Director Matsumura told me it was OK, allowing me to talk with the cast. I was especially grateful when Mr. Nakadai told me how tremendously moved he was by the story, and that he considered it an honor as an actor to be part of the film.

What scenes were especially compelling for the two of you?
Matsumura: My favorite scene is the one where youths Naomasa Musaka, the views of the villagers are divided. Matsumura told me it was OK, allowing me to talk with the youth about the future of the village. From young actors to veterans, the performers joined forces with the assistant directors and put everything they had into this part of the film, going far beyond my direction to create a highly memorable scene.

Oi: The scene with villagers arguing was truly forceful. The opening of the work was also wonderful. The way it starts has the tension of a mystery film, pulling us in as we wonder, “What’s going to happen?” This was really well done by the director.

Matsumura: Thank you.

Oi: What I liked best of all was the last scene, where the narration is playing against the backdrop of today’s Hitachi City. It snapped me to attention, reminding me how, as a business manager, it is necessary to have ideals, that I myself was expected to do so, and that I would also need to convey the ideals of our founder Fusanosuke Kuhara (Kichinosuke Kihara in the film).

Matsumura: In the closing scenes of this work, the remarkable revival of the smoke-ravished mountainsides and town is symbolized by the beautiful cherry blossoms. Here I think a film has an advantage over the printed word in depicting such an image.

Oi: Speaking of the advantages of the film medium, another scene that has to be mentioned is the building of the giant stack.

Matsumura: We did that scene on the site of an abandoned school in a town a little north of Hitachi City, erecting three stories of scaffolding and combining it with computer graphics. When I saw the scene where the scaffolding collapses, I thought, “That was really well done” as if I were viewing someone else’s movie. [laughs]

Oi: I believe the film is compelling also as entertainment. The scene showing the love between Saburo Sekine and Chiho Kaya by no means ruins the story, and clearly reflects the era, while having the effect of keeping the story flowing toward the construction of the giant stack.

What are your thoughts about the film in relation to the CSR of the JX Nippon Mining & Metals Group?
Oi: We know today that a company cannot achieve sustainable growth without being run in a way that is good for society and the environment, but I have renewed pride in knowing the Company was doing this already more than a century ago. For example, even if the Company continued to pay monetary compensation for the smoke pollution, if the local environment was destroyed and people moved away, the businesses could not have been maintained. The sustainable growth of a corporation depends on joining hands with the local residents and together working out a vision for growth, without being obsessed with short-term profit.

Matsumura: Kuhara's mindset was not that it was simply to make money. His sense of values insisted on the happiness of the local community, which I feel was unusual for an entrepreneur of that era. That he sincerely faced up to the issues of the community, battled smoke pollution together with the local residents, and sought growth based on a vision, is all the more reason why the Company got to where it is today. That’s why the giant stack is the pride of Hitachi City and is, I believe, the starting point for CSR within Japan as a whole.

Oi: As is also expressed in the film, another important element is the spirit of acting “for the sake of people we love.” The feeling of wanting to do your best for your family is one that keeps expanding, to “for your colleagues” and “for the community.” And part of being motivated by the setting of targets is the desire to work toward a successful outcome. I feel that this is what defines the DNA passed down since the founder of our Group, and I have a strong desire to pass this on to coming generations.

Matsumura: In fact, that is the theme I wanted to depict most in this work. Difficulties arise in any era, but through this film I came to feel strongly that if you don’t give up, miracles can happen. I also felt that the miracle that occurred from overcoming difficulties still remains 100 years later. This was the feeling I put in one of Saburo Sekine’s lines, who says to Kuhara, “I will never forget you, not in 100 years.”

Oi: This work is one I would very much like new employees in our Company to see. I would like them to learn from this film the spirit of our Group, that our business activities do not end simply with social responsibility, but ultimately are aimed at realizing a sustainable society, that is, working to contribute to the SDGs. As executive chairman, I want to help the youth responsible for the next generation to work hard toward our goals, and in that sense also I am grateful that you have provided us with this good incentive.

Matsumura & Oi: Thank you very much.
Overview

Philosophical Framework of the JX Nippon Mining & Metals Group

The JX Nippon Mining & Metals Group, as a member of the JXTG Group, shares the core values advocated in the JXTG Group Philosophy and practices these in our daily business operations, thereby contributing to the sustainable growth of society.

For a vibrant future through creation and innovation in energy, resources, and materials.

Our Five Core Values

As a member of the community

High ethical standards
Based on our core principles of integrity and fairness, we conduct all of our business activities in accordance with our high ethical standards.

Health, safety, and environment
We give the highest priority to health, safety and environmental initiatives, which are vital to the well-being of all living things.

Supporting day-to-day life

Focus on customers
We strive to meet the expectations and evolving needs of our valued customers and of society as a whole through the stable provision of products and services while creating new value as only we can.

For a vibrant future

Taking on challenges
Taking changes in stride, we rise to the challenge of creating new value while seeking innovative solutions for today and tomorrow.

Moving forward
Looking to the future, we continue to grow, both as individuals and as a company, through the personal and professional development of each and every employee.

JX Nippon Mining & Metals 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 “JXTG Group Philosophy” 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 health, safety and 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 recurrence, disclose information to the public promptly and accurately, and be held accountable for the event.
Overview

Business Portfolio

We see the social mission of our Group as providing stable supplies of nonferrous metal resources and materials to society and also as promoting zero-emission recycling. To fulfill this mission, we regard CSR activities as “nothing more or less than our business activities,” pursuing innovation in the productivity of resources and materials in each of our business areas.

Profit Structure

The Group’s business operations are divided into the following segments: mineral resources, metals, recycling and environmental services, functional materials, thin film materials, and other.

- **Other**: 3.5 bil. yen
  - Titanium business
  - Tantalum and niobium business
  - Other affiliates

- **Recycling and Environmental Services Business**: 6.1 bil. yen

- **Inventory Valuation**: 0.1 bil. yen

- **Functional Materials Business - Thin Film Materials Business**: 28.1 bil. yen

- **Mineral Resources Business**: 17.7 bil. yen

- **Metals Business**: 12.7 bil. yen

*Reported as the electronic materials segment

Fiscal 2018 operating profit

68.2 bil. yen

Business Overview

- **Mineral Resources Business**
  - Mine development starts with exploration activities looking for mineral deposit potential. Mined ores having a copper grade of around 1% are ground, followed by flotation to select the useful contents, resulting in copper concentrate with a grade of around 30%.

- **Metals Business**
  - We produce refined copper (with a purity of 99.99% or higher) from copper concentrate by smelting and electrorefining processes. As by-products of these processes, precious metals, sulfuric acid, and other materials are also manufactured.

- **Recycling and Environmental Services Business**
  - By recovering nonferrous metals from end-of-life appliances, electronic devices, and metal scrap, and also by detoxifying industrial waste, we are contributing to environmentally friendly disposal and recycling.

- **Functional Materials Business**
  - We supply products essential to the leading-edge electronics industry, producing copper foil, copper alloy products, special steel products, and other precision-rolled products, as well as conducting precious metal plating and stamping.

- **Thin Film Materials Business**
  - We supply various types of sputtering targets, along with products for use in highly functional electronics devices, the latest IT gadgets, medical instruments, and electric vehicles.

- **Tantalum and Niobium Business**
  - Our tantalum and niobium business involves the advancement of artificial intelligence (AI) in society through the supply of high-purity tantalum powder, high-purity tantalum and niobium oxides, and additives for superfalloy.

- **Titanium Business**
  - In the Toho Titanium Group, a variety of titanium materials are manufactured from titanium ore and supplied for use in aircraft’s general industry, and electronic materials. In addition, the Group is engaged in the catalysts and chemicals businesses based on titanium tetrachloride and the raw materials obtained from that process.

The Competitive Superiority of Our Businesses (Fiscal 2018)

- **Pan Pacific Copper Co., Ltd.**
  - Refined copper production capacity
  - Approx. 650,000 tons
  - Global market share: 80%
  - Our treated rolled copper foil products, thanks to outstanding production and quality management systems along with the advantage of our integrated production capabilities, boast superior properties including high flexibility, thermal resistance, strength, and conductivity.

- **H.C. Starck Tantalum and Niobium GmbH**
  - High-purity tantalum powder for electronic materials
  - Top global market share
  - H.C. Starck Tantalum and Niobium GmbH contributes to the advancement of artificial intelligence (AI) in society through the supply of products which are high-purity tantalum powder, high-purity tantalum and niobium oxides, and additives for superfalloy.

- **Mitsui Mining & Smelting Co., Ltd.**
  - Titanium sponge production capacity
  - Approx. 25,000 tons per year
  - Toho Titanium Co., Ltd. manufactures titanium sponge by a process that adds its own original technology to the Kroll process, for reducing titanium tetrachloride using metal magnesium.

Approx. 60%
Global Network

JX Nippon Mining & Metals has many production sites and Group companies in Japan and worldwide. Drawing on this network, we are meeting needs that grow more advanced and diverse year by year, and providing new value to customers and society.

**Europe**
- JCN Office
- JX Nippon Mining & Metals Europe GmbH
- JX Metals Deutschland GmbH
- H.C. Starck Tantalum and Niobium GmbH
- Toho Titanium Europe Co., Ltd.

**China**
- Employees: 1,221
- JX Nippon Mining & Metals Korea Co., Ltd.
- JS-Nikko Copper Inc.
- Polysen-Nikko TIN Metal Corporation
- JX Nippon Mining & Metals Shanghai Co., Ltd.
- Pan Pacific Copper (Shanghai) Co., Ltd.
- Nikko Metals Shanghai Co., Ltd.
- Nikko Metal Mining & Metals (Shanghai) Co., Ltd.
- Nikko Fuji Precise (Wuxi) Co., Ltd.
- JX Nippon Mining & Metals Dongguan Co., Ltd.
- Hong Kong Nikko Shoji Co., Ltd.
- Shenheen Nikko Shoji Co., Ltd.
- Nikko Metals Taiwan Co., Ltd.
- Taiwens Office of Pan Pacific Copper Co., Ltd.
- JX Nippon Mining & Metals Philippines, Inc.
- Thai Office of Pan Pacific Copper Co., Ltd.
- Materials Service Complex (Thailand) Co., Ltd.
- JX Nippon Mining & Metals Singapore Pte. Ltd.

**Rest of Asia**
- Employees: 178.8 bil. yen
- Employees: 15.7 bil. yen
- Employees: 178.8 bil. yen

**North America**
- Employees: 120
- JX Nippon Mining & Metals USA, Inc.
- Toho Titanium America Co., Ltd.

**South America**
- Employees: 1,023
- Pan Pacific Copper Exploration Peru, S.A.C.
- Compania Minera Quechua S.A.
- Escondida Mine
- Caserones Copper Mine
- Los Pelambres Mine
- Chile Office
- Chile Office of Pan Pacific Copper Co., Ltd.
- Pan Pacific Copper Chile SpA
- Pan Pacific Copper Exploration Chile Limitada
- SCM Minera Luminia Copper Chile

**Corporate Data**
- Company Name: JX Nippon Mining & Metals Corporation
  - Paid-in Capital: 70.0 billion yen (entirely owned by JXTG Holdings, Inc.)
  - Representative: Seiichi Murayama, President and Chief Executive Officer
  - Revenue: 1,041.8 billion yen (fiscal 2018, consolidated)

**Europe Revenue**
- 10.5 bil. yen

**China Revenue**
- 126.2 bil. yen

**Rest of Asia Revenue**
- 178.8 bil. yen

**Japan Revenue**
- 671.6 bil. yen

**Employees**
- 7,049
- Japan: 7,049
- Rest of Asia: 15.7 bil. yen
- North America: 120
- South America: 1,023
- Middle East: 50
- Rest of Asia: 1,221

**Operating Sites**
- Japan:
  - Tsuruga Plant (Fukui Prefecture)
  - Technology Development Center (Ibaraki Prefecture)
  - Isohara Works (Ibaraki Prefecture)
  - Hitachi Works (Ibaraki Prefecture)
  - Wakamatsu Plant of Toho Titanium Co., Ltd.

- South America:
  - Escondida Mine
  - Caserones Copper Mine
  - Los Pelambres Mine
  - Pan Pacific Copper Chile SpA
  - Pan Pacific Copper Exploration Chile Limitada
  - SCM Minera Luminia Copper Chile
Group Products All Around Us

Nonferrous metals are materials indispensable to contemporary life. Among them, copper with its excellent electrical conductivity and ease of processing is used in a wide variety of fields. Also found in many applications from industrial to everyday goods are rare metals such as light, strong, and corrosion-resistant titanium.

Copper with high conductivity and flexibility plays a key role in the stable supply of electricity.

Electric wire
Copper with its high conductivity and flexibility plays a key role in the stable supply of electricity.

Smartphones
Our treated rolled copper foil is used inside increasingly slim smartphones.

PCs
Excellent heat dissipation is why copper is used in CPU coolers to convey the generated heat effectively to the coolant.

Bullet trains
Copper with its high thermal resistance and durability against wear and abrasion is used in the trolley wires that supply electric power via the pantograph.

Electric Vehicles
Copper foil with its outstanding conductivity is used to compact, lightweight, and fast-charging lithium-ion batteries.

Automobiles
Copper is used in wire harnesses for connecting in-vehicle electric wiring.

Medical cables
Copper is chosen also for medical equipment with its complex wiring, finer than human hair.

Aircraft
Titanium alloy is used in aircraft fuselages, which demand light weight, high strength, and high corrosion resistance.

Urban mines
(end-of-life consumer electronic)
For effective use of limited resources, valuable metals are extracted from end of life consumer electronics and reused.
The Long-Term Vision of the JX Nippon Mining & Metals Group

JX Nippon Mining & Metals Group Long-Term Vision 2040

Moving from a mass production type to a technology-based firm
Becoming high profitability firm as well as contributing to the realization of sustainable society

- Categorizing our businesses as a “Focus Business” or a “Base Business”
- Positioning minor metal business as one of core domains

Base Business
Aim: To make company’s management stable and to support Focus Business through providing beneficial resources [Capital, HR, Technology]
Method: - Carrying out structural reforms
- Improving efficiency
- Timely review of the asset portfolio
Business field: - Mining
- Smelting & Refining
- Recycling related to Smelting & Refining business

Focus Business
Aim: To greatly expand the scale of profits
Method: - Technological differentiation
- Constantly aligns products with variety of cutting-edge product lineups
Business field: - Advanced materials
- Technology-based recycling business

Notable characteristics of social trends

Depletion of resources due to middle-income class expansion
Along with economic growth, limited resources are subject to competition for acquisition.

Shrinking domestic market / Sustainable growth becomes a big challenge
The environmental issues becoming critical for sustainable growth also in emerging countries.

Expanding the demand for advanced materials
Digital data has been widely used in various industries such as healthcare, energy, IT and mobility, in which advanced materials are indispensable.

Future prospect based on social trends
Changes in social trends create not only risks but also great business opportunities in up, middle and down streams.

Upstream (Resources development)
- High profitability due to tight demand
- Wide fluctuations in metal prices
- Decrease in high quality ore, tighter environmental regulations etc. → Increasing the risk and cost of resources development

Midstream (Smelting & Refining, Recycling)
- Stable revenue structure basing on consignment charges for smelting
- More opportunities for environment-conscious recycling business in emerging countries
- Shortage of resources and intense competition with Asian companies

Downstream (Functional Materials, Thin Film Materials, etc.)
- High profitability by Global Niche Top position in new market through technological differentiation
- Short popularity period, economic downturn, alternative materials, prolonged R&D period, etc. → The risk of market loss becomes high
Value Creation Model of the JX Nippon Mining & Metals Group

Social Trends to Be Solved
- Depletion of resources
- Shrinking domestic market / Sustainable growth in emerging countries
- Expanding the demand for advanced materials

Business Areas of the JX Nippon Mining & Metals Group
- Mineral Resources Business
- Metals Business
- Recycling and Environmental Services Business
- Functional Materials Business
- Thin Film Materials Business
- Tantalum and Niobium Business
- Titanium Business

Corporate governance
- JXTG Group Philosophy and JX Nippon Mining & Metals Code of Conduct

Created Value
- Contributions to the advancement of the information society through highly advanced, high added-value products
  - Renewable energy and electricity storage
  - Communications and digital
  - Healthcare
  - Mobility

Created Value
- Provision of high added-value products through technology-based business management
- Diverse elemental technologies supporting advanced materials products
- The comprehensive strengths of the globally competitive JXTG Group
- Consistent business model creation relating to nonferrous metals

Strengths of the Group
- Base Businesses: Businesses with steady profits that maintain the organizational base including Focus Businesses
- Focus Businesses: Businesses where differentiation through technology can achieve a global competitive advantage (core of growth strategy)

Contributions to the sustainability of the information society through highly advanced, high added-value products
Material Issues for CSR Activities and the SDGs

The JX Nippon Mining & Metals Group has identified 10 Material Issues for CSR Activities in view of our changing business environment and the expectations and demands of society, including the SDGs. Recognizing these Material Issues as central to our growth strategy, we are contributing through our businesses to realization of a sustainable society.

<table>
<thead>
<tr>
<th>Material Issues for CSR Activities</th>
<th>Related SDGs</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Using Nonferrous Metal Resources Effectively</td>
<td>8, 9, 11, 12</td>
<td>P39</td>
</tr>
<tr>
<td>Establishing a Recycling-Oriented Society</td>
<td>6, 12, 13</td>
<td>P45</td>
</tr>
<tr>
<td>Establishing a Low-Carbon Society</td>
<td>7</td>
<td>P49</td>
</tr>
<tr>
<td>Ensuring Occupational Health and Safety</td>
<td>3, 8, 12, 13</td>
<td>P57</td>
</tr>
<tr>
<td>Assuring Product Quality</td>
<td>9</td>
<td>P61</td>
</tr>
<tr>
<td>Developing Human Resources</td>
<td>4</td>
<td>P65</td>
</tr>
<tr>
<td>Providing a Rewarding Work Experience</td>
<td>5, 16</td>
<td>P69</td>
</tr>
<tr>
<td>Promoting Community Involvement and Development</td>
<td>11, 12, 13</td>
<td>P77</td>
</tr>
<tr>
<td>Respecting Human Rights</td>
<td>10</td>
<td>P79</td>
</tr>
<tr>
<td>Insisting on Full Compliance</td>
<td>10</td>
<td>P83</td>
</tr>
</tbody>
</table>

CSR Promotion System

The Group has a CSR Committee, an advisory body to the president that formulates basic policies and action plans relating to CSR activities. It also assesses progress in implementing the plans and the Group’s performance. The committee is chaired by the president and consists of the members of the Executive Meeting. The committee meets twice a year in principle. In addition to formulating action plans for CSR activities, it reviews progress in implementing the actions and provides feedback. (Meetings held in fiscal 2018: May 9, November 5) Under the CSR Committee are a Compliance Committee, Safety and Environment Committee, and Citizenship Committee. These committees devise plans and review the status of activities in their respective areas of responsibility.

CSR Promotion Programs

CSR promotion managers are appointed at each of the Group’s operating sites and companies. They are responsible for ensuring that basic policies, promotion systems, and action plans for CSR activities are implemented faithfully in line with the actual conditions at each site and company. They formulate their own individual CSR plans and report on progress at CSR promotion manager meetings held twice a year. These meetings also function as opportunities to exchange information among participants.

Initiatives for Increasing CSR Awareness

The Group is actively engaged in instilling awareness of CSR, such as by providing face-to-face CSR training targeting Group officers and employees and conducting CSR surveys of employees.

Activities Conducted in Fiscal 2018

<table>
<thead>
<tr>
<th>Activity</th>
<th>Timing</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Training Session for CSR Promotion Managers</td>
<td>June 6, 2018</td>
<td>Led by an outside instructor, the event deepened understanding of the true meaning of CSR and the latest trends.</td>
</tr>
<tr>
<td>CSR Survey</td>
<td>December 2018</td>
<td>The survey attained views on the Sustainability Report, and queried employees to determine the extent of awareness of the Code of Conduct and CSR activities.</td>
</tr>
</tbody>
</table>
Progress in Meeting the Medium-Term Management Plan (Fiscal 2017 to 2019)

The JXTG Group has drawn up a Medium-Term Management Plan for fiscal 2017 to 2019, and Group members are now engaged in achieving its goals. In drawing up this plan, the following basic aims were incorporated.

**Basic Aims**

1. In order to contribute to the development of society and economy and the creation of a sustainable and vigorous future, the Group endeavors to enhance its core businesses, promote innovation, and operate business globally.
2. At the same time, the Group will foster human resources with high ethical standards and willingness to take on new challenges, who are essential in promoting the above, to become one of the most prominent and internationally competitive comprehensive energy, resources, and materials company groups in Asia.

**Fundamental Policy of the JX Nippon Mining & Metals Group for the Medium-Term Management Plan**

With the goal of becoming a global resources and materials company centering on copper, the underlying foundation of the Group will be strengthened and made more stable.

Based on this fundamental policy, three indicators have been set.

1. Establish and strengthen the profit base by enhancing the profitability of the resources development segment and promoting growth of technology-based businesses
2. Improve the financial base by practicing strict financial discipline
3. Aggressively implement strategic investment in growth areas for the sake of the future

In the current business climate, the JX Nippon Mining & Metals Group is moving beyond difficult times as resource prices are slowly recovering and moderate growth is continuing in emerging countries. Society is experiencing rapid changes with the emergence of IoT and AI. During the three years of the Medium-Term Management Plan, the Group is called on to establish the kind of profit and financial base that can adapt readily to changes in the business climate.

Planned operating profits (excluding inventory valuation) and key factors

<table>
<thead>
<tr>
<th></th>
<th>FY2017</th>
<th>FY2018</th>
<th>FY2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upper metals (billions of yen)</td>
<td>56.0</td>
<td>12.8</td>
<td>15.0</td>
</tr>
<tr>
<td>Upper metals (billions of yen)</td>
<td>117.7</td>
<td>30.0</td>
<td>30.0</td>
</tr>
<tr>
<td>Midstream and downstream (billions of yen)</td>
<td>35.0</td>
<td>50.0</td>
<td>50.0</td>
</tr>
<tr>
<td>Midstream and downstream (billions of yen)</td>
<td>50.4</td>
<td>80.0</td>
<td>80.0</td>
</tr>
<tr>
<td>Midstream and downstream (billions of yen)</td>
<td>60.0</td>
<td>83.0</td>
<td>83.0</td>
</tr>
<tr>
<td>Key factors:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exchange rate (JPY/USD)</td>
<td>110.1</td>
<td>111.0</td>
<td>111.0</td>
</tr>
<tr>
<td>LME copper price (US cent/pound)</td>
<td>250</td>
<td>292</td>
<td>260</td>
</tr>
</tbody>
</table>

The first means to this end will be to ensure that the profitability of core businesses is strengthened. While paying attention to investment efficiency, the Group will strengthen competitiveness from upstream to downstream businesses and obtain stable revenue sources. The second means will be to develop and strengthen businesses that will be the mainstays of the future, thereby increasing the presence of the JX Nippon Mining & Metals Group and contributing to realization of a sustainable society.

**Business Results in Fiscal 2018 (April 1, 2018 to March 31, 2019)**

During fiscal 2018, the global economy continued to see moderate growth, buoyed by the strength of the US economy, despite negative factors, notably the slowing of Chinese growth impacted by US-China trade friction, and a downturn in Europe. The Japanese economy recovered from the start of the fiscal year through June 2018, reflecting factors such as strong Chinese import and export trends. As uncertainties rose about the Chinese economy, however, with the imposition of retaliatory tariffs on China by the US, in August and thereafter the price dropped below 270 cents on occasion. Subsequently, in response to rising hopes for an easing of US-China trade friction and for Chinese measures to prop up its economy, as well as the shift in US monetary policy toward easing, the copper price rose, ending the fiscal year at 294 cents. As a result, the average price of copper during the fiscal year was 288 cents, a year-on-year decline by just under 5 cents.

The yen-US dollar exchange rate averaged ¥111 for the fiscal year, virtually unchanged from the previous fiscal year.

In this business climate, the consolidated financial results of the JX Nippon Mining & Metals Group saw a 7.6% year-on-year rise in revenue to ¥1,041.8 billion. The Group recorded an operating profit of ¥68.2 billion as the resources development segment became profitable and profits rose in the recycling and environmental services business, among other factors.
Introduction of H.C. Starck Tantalum and Niobium GmbH

On July 1, 2018, JX Nippon Mining & Metals acquired the outstanding shares of German firm H.C. Starck Tantalum and Niobium GmbH ("HCS TaNb") through a Group company. Here we present an overview of HCS TaNb and explain the aims of the acquisition.

Overview of HCS TaNb

HCS TaNb has a history of more than thirty years in the development, manufacture, and sale of tantalum and niobium products. With manufacturing centers in Germany (Goslar and Laufenburg), Thailand (Map Ta Phut), and Japan (Tokyo), the company has a global manufacturing and sales network. The product lineup features high-purity tantalum powders mainly for capacitors and sputtering targets, high-purity tantalum and niobium oxides used in surface acoustic wave (SAW) devices and optical lenses, as well as alloy additives, chlorides, compounds, and metal powders for additive manufacturing ("AMtrinic®").

Aims of the Share Acquisition

A priority for our Group is growth of downstream businesses, essential to the advance of the IoT (IoT) society. We are working to expand those business areas while keeping an eye on M&A and alliances. As part of this strategy, we believe the acquisition of HCS TaNb shares can help us in the areas of (1) strengthening our existing businesses (obtaining stable supplies of materials), (2) expanding our business fields (obtaining new businesses), (3) enhancing our network in Europe (raising our presence in the European market), and (4) achieving synergies (between our Group and HCS TaNb).

Ensuring that HCS TaNb Lives Up to Expectations

Goslar, where HCS TaNb has its base, is located in Lower Saxony. It once thrived as a town in the foothills of a mountain containing mines. The entire town, known for its gorgeous views, has been listed as a World Heritage site. Life here differs from Japan in many ways, such as restaurants and shopping centers not being open on weekends, but at last I have become acclimated to the area.

Besides having a corporate history different from that of JX Nippon Mining & Metals, within HCS TaNb itself there are different ways of thinking among the sites in Germany, Thailand, Japan, and the United States, which sometimes make us confused. Drawing on each other's good points, however, we are aiming to maximize profits and create a new corporate culture, ensuring safety as we do so, in order to live up to what is expected of us as a manufacturer.
**Key Strategies**

- Achieve a continuously high operating rate at the Caserones Copper Mine
- Reinforce competitiveness by achieving thoroughgoing cost reductions at the Caserones Copper Mine

---

**Business Overview**

At the Caserones Copper Mine, which the Group has taken the lead in developing since acquiring a share of the mine in 2006, copper concentrate production began in May 2014. We have also invested in some of the world’s largest copper mines, including Los Pelambres and Escondida. Our equity entitled copper mine production totaled around 200,000 tons in fiscal 2018.

---

**Outline of Mineral Resources Business and Metals Business**

**Smelting and Refining Alliance**

- **Pan Pacific Copper (PPC)**
  - 650,000 tons (Japan)
- **Saganoseki Smelter & Refinery/Mitsui Refinery**
  - 450,000 tons
- **Hibi Kyodo Smelting Co., Ltd.**
  - 200,000 tons*
- **Onsan Smelter**
  - 270,000 tons**

**Overview**

- JX-Iodine Process, a copper leaching method now being employed to resolve technical issues
- Equipment improvements and哥 potentially improving production efficiency have been on going at each production site since November 2018

---

**Review of Fiscal 2018**

- Refer to the chairman’s report on pages 5-10 of this report
- For the fiscal year ending March 31, 2019, the company achieved an operating income of ¥950 billion, up ¥60 billion from the previous year. Net income rose ¥60 billion to ¥430 billion.
- The return on investor capital (ROIC) improved to 3.0% from 2.4% the previous year.

---

**Outlook for Fiscal 2019**

- We anticipate copper concentrate production of 222,000 tons, up 12% from the previous year.
- Copper concentrate sales are expected to amount to 212,000 tons, up 20% from the previous year.
- Copper production will rise 12% to 212,000 tons, with sales increasing 20% to 202,000 tons.
- Copper production is expected to increase substantially.

---

**Mineral Resources Business**

- **Caserones Copper Mine**
  - Located in the Atacama Desert region of northern Chile
  - Construction began in 2011 and commercial production started in May 2014
  - Copper production in fiscal 2018 was 135,000 tons

---

**Operator Training by Japanese Engineers**

Operator training by Japanese engineers is one of the activities contributing to improvement of operational performance at the Caserones Copper Mine. The training sessions aimed at achieving prompt achievement of final profitability through more efficient and integrated management of our mineral resources business, and continuous effort to improve operational performance and costs at the Caserones Copper Mine.

---

**Metals Business**

- We have world-class production capacity for refined copper, supported by our smelting and refining alliances. Our process enables us to produce high-quality refined copper and other metal products efficiently, and we supply stably to Asian markets where high demand is anticipated, chiefly in Japan and China.
**Business Overview**

The Group efficiently recovers copper, precious metals, rare metals, and other resources from recycled materials, harnessing processes that utilize smelting and refining technologies. We also provide zero-emissions treatment of industrial waste materials to render them harmless without producing any secondary waste. We established the Hitachi Metal-recycling Complex (HMC) Department of the Hitachi Works, engaging in the recovery of a wide variety of valuable metals. At the same time, we have been taking steps to strengthen our nationwide network with recyclers and hydrometallurgical refiners for collection and processing of recycled materials.

**Key Strategies**

- Promote differentiation from competitors
- Enhance the global resource collection network
- Establish a global, environmentally viable resource recycling business

**Outlook for Fiscal 2019**

Besides working to expand the volume of recycled materials from overseas through alliances with overseas recyclers, we will seek to carry on stable treatment of recyclable materials by introducing physical sorting equipment and reducing costs, strengthening our business base. To recover rare metals from spent lithium-ion batteries, we are currently constructing a facility that will verify the basic technology for extraction of nickel sulfate and cobalt sulfate from these batteries, targeting a quality that will enable the extracted metals to be used again as lithium-ion battery raw materials. The facility is scheduled to go into operation in fall of 2019.

Further, we are working to expand the treatment of equipment containing low concentrations of PCBs, as well as the treatment of asbestos waste, to establish a global, environmentally viable resource recycling business designed for zero emissions.

**Key Strategies**

- Expand applications of the machine-treated rolled copper foil and precision rolled products, and improve profitability
- Strengthen production capacity to expand business

**Outlook for Fiscal 2019**

To meet growing needs for thinner, more compact smartphones and other IT devices in general, we moved to strengthen our foils and other products, building in quality both for superior properties such as high flexibility and thermal resistance, and for high strength and conductivity. While production increases slowed temporarily as the market for smartphones plateaued in fiscal 2018, the electronic parts using our products enjoyed more extensive use in other IT devices. Our initial step in a new area, machine-treated rolled copper foil, while declining in terms of weight, increased on a length basis. Meanwhile, demand is growing for titanium copper, used in connectors and other parts, as a substitute for other materials due to its high strength and nonmagnetic property. In the growing cloud services market, fields related to servers and data centers continue to grow, resulting in strong sales of advanced foil products.

Production outbacks are expected in fiscal 2019, impacted by slower demand growth for smartphone-related products. In the medium to long term, however, demand is likely to expand especially for products such as treated rolled copper foil, Corcon alloy, and phosphor bronze, as the IoT/AI society advances and companies invest in fifth-generation communications (5G). We are therefore expanding manufacturing facilities at the Kurumi Works and Hitachi Works, among other sites where treated rolled copper foils and high-performance copper alloys are produced. By the time all the equipment is in operation in the first half of fiscal 2020, production capacity is expected to be around 30 percent higher than the fiscal 2017 level (based on area).

Moreover, we partnered with The Japan Steel Works, Ltd. to establish Muroran Copper Alloy Co., Ltd., a joint venture that will undertake melting and casting of copper alloys, mainly titanium copper. Preparations are now underway to start operations in the first half of 2021.

**Establishment of a Venture Company for Copper Alloy Melting and Casting**

Muranon Copper Alloy Co., Ltd. was established in August 2019 jointly with The Japan Steel Works, Ltd., which boasts some of the most advanced melting, casting, and forging technologies in the world. The new company will undertake melting and casting of copper alloys. Supply of high-quality copper alloy ingots from the venture firm will enable expansion of production capacity and more stable provision of titanium copper alloys and other advanced functional materials, which should cement our position as a leading global manufacturer in this field. These materials are expected to see demand growth in a wide range of areas including smartphones, tablet PCs, automobiles, and medical instruments. Preparations are currently under way to start operations in the first half of 2021.
Semiconductor devices today face increasing demands for lower power consumption and faster speed. Meanwhile, after recording strong year-on-year growth in fiscal 2017, the market entered a correction phase from the second half of fiscal 2018, especially in the memory segment. In spite of this temporary slowdown, our Group expects strong demand growth in the medium to long term as the IoT/5G society advances and customers invest in fifth-generation communications (5G). To meet this demand, we are investing in production increases for these products across companies with different cultures, languages, and histories, the top management of both companies visited the five operating sites of the HCS TaNb Group in Germany, Thailand, Japan, and the US, holding Town Hall Meetings. Following on from this, the companies moved to implement the Post-Merger Integration (PMI) plan that had been prepared in advance. Along with consolidating a base for realizing synergies through integration of functions and organizations in the business as a whole, HCS TaNb set about establishing a proper governance structure by promoting mutual understanding and cooperating across companies with different cultures, languages, and target materials.

Applications of Principle Electronic Materials Products

<table>
<thead>
<tr>
<th>Product</th>
<th>Primary applications</th>
<th>End-use applications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sputtering targets for semiconductors</td>
<td>CPUs, memory chips, etc.</td>
<td>Mobile phones, smartphones, Digital appliances, etc.</td>
</tr>
<tr>
<td>ITO targets for flat panel displays</td>
<td>Transparent conductive films</td>
<td></td>
</tr>
<tr>
<td>Sputtering targets for magnetic applications</td>
<td>Hard disks, etc.</td>
<td></td>
</tr>
<tr>
<td>InP compound semiconductors</td>
<td>Optical communication devices, ultrafast ICs</td>
<td></td>
</tr>
</tbody>
</table>

Tantalum and Niobium Business

H.C. Starck Tantalum and Niobium GmbH (Germany; “HCS TaNb”), our Group company, is one of the world’s leading manufacturers of tantalum and niobium materials. HCS TaNb contributes to the advancement of the IoT/5G society through the stable supply of such products as metal powders used in capacitors and semiconductor materials, high-purity oxides for SAW devices and optical lenses, chlorides and compounds, and superalloy additives.

Despite the growing market uncertainties due to US-China trade friction and other factors, expanded demand is seen in the area of electronic parts that use tantalum and niobium materials, with the spread of new technologies such as fifth-generation communications (5G) and advanced driver-assistance systems (ADAS). Under these situations, the Company will pursue synergies with HCS TaNb to provide the support for maintaining and strengthening the competitiveness of its existing businesses, while at the same time aggressively pushing ahead with marketing and new product development targeting new business creation.
Titanium Business

Key Strategies
- Bring the Saudi Arabia project to early commercial operation
- Strengthen and expand melting business and high-purity metals business
- Advance differentiation strategies in the catalysts and chemicals business

Business Overview
Titanium, a light, strong metal resistant to corrosion, has wide-ranging uses, from aircraft to desalination plants, electric power plants, and other applications. Group company Toho Titanium Co., Ltd. is engaged in the manufacture of titanium metals, as well as catalysts and electronic materials, using materials and technologies related to titanium production, such as catalysts for manufacturing polypropylene, and materials for electrodes and dielectrics in multilayer ceramic capacitors.

Review of Fiscal 2018
Thanks to increased demand for use in aircraft, a main end use of its products, as well as for use in plate heat exchangers and for other general industry applications, the titanium business benefited from expanded sales volumes, mainly of titanium sponge.

Outlook for Fiscal 2019
Continued efforts will be made to further reduce costs in the Titanium Business, including greater use of IT and IoT for improved efficiency and productivity. The titanium sponge joint manufacturing venture in Saudi Arabia began operation in September. The focus now will be on the early start of commercial-scale production and achieving stable operation.

Even though the catalysts and chemicals business faces concerns about slowing demand due to US-China trade friction and other factors, the outlook is for increased earnings. Product improvements and new product development to meet customer needs will continue for catalysts. Sales expansion measures for chemical products will focus on high-end ultra-fine nickel.

On the Way to Commercial-level Production Following Successful Reduction and Separation Testing –Titanium Sponge Manufacturing Venture in the Kingdom of Saudi Arabia
At Yanbu Industrial City in the Kingdom of Saudi Arabia, a new titanium sponge plant was completed in May 2017. The plant, which was modeled after the Wakamatsu Plant of Toho Titanium with annual production capacity of 15,600 tons, had been constructed by the new venture company. In August 2018, the first reduction and separation tests using actual production facilities were completed successfully, and operation began in September 2019.

At the new plant, it is planned to produce titanium sponge using a steadily supply of the raw material titanium tetrachloride (TiCl4) from an adjoining titanium oxide plant. Taking advantage of leading-edge technology transferred by Toho Titanium, and the low cost of electricity in Saudi Arabia, the plant is expected to offer world-class cost-competitiveness.

Reports on Each Material Issue for CSR Activities
In order to use its business activities to help solve problems faced by society, the Group conducts these activities with attention to the standpoints represented by the 10 Material Issues selected during the identification process.

For Protecting the Environment
Using Nonferrous Metal Resources Effectively P39
Establishing a Recycling-Oriented Society P45
Establishing a Low-Carbon Society P49
<Environmental Data> P51

For the Peace of Mind of Society
Ensuring Occupational Health and Safety P57
Assuring Product Quality P61
Developing Human Resources P65
Providing a Rewarding Work Experience P69
Promoting Community Involvement and Development P77
Respecting Human Rights P79

For Earning Trust as a Corporation
Insisting on Full Compliance P83
<Corporate Governance> P85
<Risk Management> P87

Note on numerical data in this section: Due to rounding, numbers presented here may not add up precisely to the totals provided.
Initiatives Based on a Collaboration Agreement with Tohoku University

In September 2018, JX Nippon Mining & Metals concluded an organizational collaboration and cooperation agreement with Tohoku University, aiming to foster new open innovation under its policy of Practice-Oriented Research and Education, the goal is to contribute to the development of society as a whole through R&D and human resources development.

Developing Materials in Support of Society 5.0

While it has often been said that steel is the national industry, copper has also been recognized as fundamental to human culture. Used in electrical wires and communication lines, copper is indeed a material indispensable to modern living. The transfer of electricity is essential to the information communications underlying this culture. In smartphones and personal computers, for example, copper and other fine wiring materials play an increasingly important role.

As electronic devices have become smaller and integrated circuits undergo ever more miniaturization, however, the transfer of electricity becomes more difficult. Advanced functional materials are essential for achieving the dramatic increase in information processing capacity our era demands. For the modern society aiming for Society 5.0,* given the crucial importance of R&D leading to solutions, our Group has high expectations for open innovation through industry-academia collaboration.

* Society 5.0. A supersmart society made possible by the latest technologies including IoT and AI, which will be integrated into every industry, as well as public infrastructure, to create a culture in which learning itself is deepened. Through our latest partnership with Tohoku University, we will contribute to the SDGs and other global issues facing society.

Let’s Use Our Partnership to Create Innovation for Transforming Society

Ever since its founding in 1907, Tohoku University has followed the three tenets of Research First, Open Doors, and Practice-Oriented Research and Education. Its research endeavors to date have produced countless important results, including perpendicularly magnetic recording and flash memory, supporting the “data century.” We at Tohoku University believe that industry is the school of learning; in other words, learning is forged in society, giving birth to results that transform society, in the process of which learning itself is deepened.

Through our latest partnership with your company, Tohoku University is committed to working together with you to create innovation that will support and transform society.
In response to heightening environmental awareness worldwide in recent years, the shift from vehicles powered by internal combustion engines to electric cars and other eco-friendly vehicles is accelerating. The batteries used in these vehicles are lithium-ion batteries. As a result, demand for the rare metals that are their raw materials is expanding. One problem with rare metals is the uneven geographic distribution of their deposits. For resource-poor Japan, obtaining these rare metals and recycling them in society is a major issue.

To respond to this, the company has been steadily progressing toward realization of closed-loop recycling. As a key step in achieving this goal, we have largely established the basic technology for extraction of nickel sulfite and cobalt sulfite of a quality that will enable the raw materials extracted from lithium-ion batteries to be used again as lithium-ion battery materials. To conduct tests of their stable mass production, verification equipment is currently being built in Hitachi City, Ibaraki Prefecture, and is expected to go into operation in fall 2019. Today we are conducting joint studies with businesses in and outside Japan related to eco-friendly vehicles, and moving ahead with preparations for an era in which large volumes of end-of-life batteries are discarded, so that we can contribute toward a sustainable society using our advanced recycling technologies.

JX Nippon Mining & Metals will contribute to resource conservation and to the realization of a recycling-oriented society by carrying out Group-wide development across divisions, aimed at further advancing our technology for lithium-ion battery recycling.
Symposium: E-scrap Symposium 2018 (November 2018)

At this symposium, organized by the JX Metals Endowed Unit, nine lecturers from industry, academia, and government were invited to give presentations. With more than 200 persons attending, lively discussions took place not only about technology for recycling of electronic scrap, or e-scrap, but also on such issues as social systems, government policy measures, laws, business, and international standards, as well as their future outlook.

Symposium: Special joint symposium “Frontier of Extraction and Recycling Technology for Precious Metals” (January 2019)

This symposium was held jointly by the JX Metals Endowed Unit, the Integrated Research Center for Sustainable Energy and Materials, and the Rare Metals Workshop. It was the sixth time it had been held. Around 270 attendees gathered, from industry, government, and academia, for a total of eight presentations on such topics as the present state of and outlook for precious metal refining and recycling. Following the presentations, poster sessions took place, also offering a chance for people from the precious metal and nonferrous metal industries to build their network with others from industry, government, and academia.

Activities for Developing the Next Generation of Human Resources

Symposium venue

Poster sessions

Professor Okabe introduces titanium ore.
For Protecting the Environment

Establishing a Recycling-Oriented Society

The JX Nippon Mining & Metals Group seeks to reduce the environmental burden of its business pursuits as much as possible. Our Basic Environmental Policy calls for conserving resources, promoting recycling, and reducing waste materials. We therefore take steps to use recycled resources as raw materials, utilize by-products, and reduce the volume of final disposal by recycling waste materials.

Usage of Recycled Resources as Raw Materials

The ores and other natural resources extracted from nature are finite and must be preserved for future generations. The Group is expanding usage of recycled resources as raw materials.

Usage of Recycled Resources as Raw Materials

Primary raw materials
Recycled raw materials
Fiscal 2017 2,665
Fiscal 2018 2,711
2.407 (95.0%)
2,468 (95.0%)
Material Input

Water Usage

Total of overseas operating sites
Total of domestic operating sites
Fiscal 2018
2018
12.6
121.1
121.5
7.0
22.5
7.3
120.5
115.8

Fiscal 2017
12.6
121.1
121.5
7.0
22.5
7.3
120.5
115.8

Water Discharge Volume

Total of overseas operating sites
Total of domestic operating sites
Fiscal 2018
2018
156.4
151.8

Reuse and Reduction of Waste Materials

Of the total volume of waste and sellable materials the Group generated in fiscal 2018, approximately 85% was reused internally. Of the final total volume of waste materials discharged, the volume of final disposal, excluding the volume recycled externally or otherwise used, was 70 thousand tons, an increase of 1.3 thousand tons from the previous fiscal year. The main cause of this increase was the rise in volume of final disposal at the Caserones Copper Mine.

Use of By-Products

In fiscal 2018, the Group produced 3,654 thousand tons of byproducts. Slag is utilized as a sandblasting material, a cement material, a caisson filler, or as an aggregate for wave-dissipating blocks. Iron concentrate and gypsum are used in cement.

Effective Use of Water Resources

Of the Group’s water usage in fiscal 2018, seawater accounted for approximately 77% of the total. Of the volume of water discharged, approximately 90% was discharged into the sea. Water usage at domestic operating sites in fiscal 2018 decreased 4% year on year. Overseas, increased 4% year on year.
CSR
For Protecting the Environment

Initiatives for Biodiversity Conservation

Activities in Japan

In endeavoring to maintain and improve biodiversity, the Group has been carrying out reforestation activities, especially at the sites of closed mines, with the cooperation of local communities.

Sites of Activities in Japan

Nanyo City, Yamagata (former Yagyu Mine)

Koriyama City, Fukushima (former Toyaoka Mine)

Yoshino City, Nara (former Yoshino Mine)

Takatama Mine (former Kansai Mine)

Sapporo City, Hokkaido (former Kamikita Mine)

Hitachi, Ibaraki (former Hitachi Mining Site)

Hokuriku, Toyoha (former Toyoha Mine)

Kamikita, Hino (former Kamikita Mine)

Mitake, Saitama (former Mitake Mine)

Oya, Saitama (former Oya Mine)

Namariyama, Saitama (former Namariyama Mine)

Kornita, Gunma (former Kornita Mine)

How AMD Occurs

AMD from closed mines consists of pit water rising up from inside the mine and effluent discharged from tailings dams or other mine facilities. It occurs as a result of rainwater and other water coming into contact with materials such as ores remaining after the mine is closed, the nearby altered rock, and flotation tailings that have accumulated in the dams. These ores and altered rock contain iron, zinc, manganese, and other metals in the form of sulfide minerals, as a result of bonding with sulfur. These sulfide minerals are oxidized in the presence of oxygen and dissolve in water in the form of metal ions, hydrogen ions, or sulfuric acid ions, causing the drainage water to become highly acidic.

Management of Closed Mines

From its founding in 1905, the JX Nippon Mining & Metals Group was engaged in mining operations across Japan. By ensuring a steady supply of nonferrous metals and other resources, we contributed to Japan’s economic growth. Today, however, nearly all the mining operations have been stopped due to the depletion of mineral resources. Of the 39 closed mines managed by the Company, acid mine drainage (AMD) treatment is an ongoing obligation at 12 mines, pursuant to the Mine Safety Act. Currently, the Group is working to maintain and restore the natural environment in and around these closed mines, under the management of JX Nippon Mining Econamangement.

The work mainly consists of AMD treatment to detoxify the highly acidic mine drainage generated from the mines and tailings dams, which contain heavy metals, and to maintain and preserve the tailings dams and galleries of the mining sites. Treatment facilities have operated 365 days a year, as AMD is generated continuously after a mine is closed.

How AMD Occurs
Establishing a Low-Carbon Society

Since the Paris Agreement was adopted at the COP21 United Nations Conference on Climate Change, there have been increasing demands on corporations to become actively involved in reducing emissions of greenhouse gases through such means as setting long-term reduction targets. The JX Nippon Mining & Metals Group seeks to reduce its environmental burden of its business pursuits as much as possible. Our Basic Environmental Policy goes beyond compliance with environmental regulations, calling for development of energy-saving technology to help prevent global warming. We make clear our management of environmental targets in our Medium-Term Action Plan and elsewhere, endeavoring to reduce our environmental burden each fiscal year.

Targets for Establishing a Low-Carbon Society

Energy Conservation Initiatives

Reduction in Energy Consumption for Manufacturing Activities

As an example of such measures, at the Saganosaki Smelter & Refinery of Pan Pacific Copper Co., Ltd., fuel use and electricity consumption were reduced by 32 terajoules in terms of calorific value. This was accomplished by increasing the amount of thermal recycling of waste heat from the converter used in the sulfuric acid manufacturing process, and reducing pressure losses by catalyst sieving.

Energy Consumption

<table>
<thead>
<tr>
<th>Year</th>
<th>Domestic</th>
<th>Overseas</th>
</tr>
</thead>
<tbody>
<tr>
<td>2018</td>
<td>2,053</td>
<td>32,715</td>
</tr>
</tbody>
</table>

By fiscal 2030, reduction in CO2 emissions by 18% from fiscal 1990 levels

Cumulative allowable CO2 emissions in Japan of less than 4.07 million tons in total for four years

Performance

- Fiscal 2016/633 thousand tons (Target achieved)
- Fiscal 2017/858 thousand tons (Target achieved)
- Fiscal 2018/960 thousand tons (Target achieved)

CO2 Emissions from Manufacturing Activities

Total of domestic operating sites

Total of overseas operating sites

Breakdown by Fuel Type

Energy Consumption and CO2 Emissions in the Logistics Stage

In fiscal 2018, energy consumption in the logistics stage of applicable Group companies in Japan was 651 terrawatt-hours, and CO2 emissions in that stage were 46.1 thousand tons of CO2.

CO2 Emission Intensity at Smelters and Refineries

Making Use of Renewable Energy

Renewable Power Generation in Fiscal 2018

<table>
<thead>
<tr>
<th>Source of Electricity</th>
<th>Total generated electricity (kWh)</th>
<th>Renewable power share (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydroelectric power</td>
<td>28,775</td>
<td>20</td>
</tr>
<tr>
<td>Photovoltaic power</td>
<td>667</td>
<td>65</td>
</tr>
<tr>
<td>Wind power</td>
<td>91</td>
<td>61</td>
</tr>
</tbody>
</table>
Environmental Data

Well aware of how its business activities can impact the environment, the Group endeavors to mitigate environmental risk at all stages of those activities. To that end, it decided on a Basic Environmental Policy that calls for contribution to environmental protection on a global scale through development of technologies that improve resource and material productivity.

Approach to Environmental Protection

1. Promotion of technology development that will improve productivity of resources and materials
   We will work to utilize resources effectively by developing technologies that will enable higher yield and extraction percentage, quality improvement, shorter process steps, recycling and energy saving, as well as by developing environment-friendly materials and products.

2. Active engagement in environmental conservation
   Going beyond compliance with environmental regulations, we will strive to further reduce the impact of our operations on the environment. To this end, we will work to develop technologies for environmental conservation and work actively and continuously for environmental conservation.

3. Elimination of waste in operations
   We will work to eliminate waste and save resources and energy at every stage of our operations.

4. Enhancement of employees’ awareness of environmental conservation
   We will work to raise each employee’s awareness of environmental conservation through provision of environmental management education.

5. Disclosure of information
   We will disclose the state of our environmental conservation-related operations in an active and fair manner in order to further enhance communication with stakeholders.

Basis Environmental Policy of the JX Nippon Mining & Metals Group

As a comprehensive manufacturer of nonferrous metal resources and materials, the JX Nippon Mining & Metals Group is carrying out the following initiatives in accordance with the basic policy of contributing to environmental conservation on a global scale through innovation in the productivity of resources and materials.

1. Environmentally friendly operations in our overseas business

2. Environmentally friendly importing and exporting

3. Reporting

4. Human Rights Promotion

5. Disclosure of information

Environmental Targets

Along with the management in the 4th Medium-Term Action Plan (fiscal 2016 to 2019), we are carrying out actions to meet the long-term targets for 2030.

<table>
<thead>
<tr>
<th>Long-term targets</th>
<th>(1)</th>
<th>(2)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2019</td>
<td>2020</td>
</tr>
<tr>
<td></td>
<td>2019</td>
<td>2020</td>
</tr>
<tr>
<td></td>
<td>2019</td>
<td>2020</td>
</tr>
<tr>
<td></td>
<td>2019</td>
<td>2020</td>
</tr>
</tbody>
</table>

Results for the 4th Medium-Term Action Plan (fiscal 2016 to 2019)

<table>
<thead>
<tr>
<th>Environmental targets</th>
<th>Performance in fiscal 2016</th>
<th>Performance in fiscal 2017</th>
<th>Performance in fiscal 2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>CO₂ emissions volumes*</td>
<td>858 thousand tons (Target achieved)</td>
<td>853 thousand tons (Target achieved)</td>
<td>840 thousand tons (Target achieved)</td>
</tr>
<tr>
<td>Waste ratio of non-value-bearing waste volume*</td>
<td>0.4% (Target achieved)</td>
<td>0.4% (Target achieved)</td>
<td>0.4% (Target achieved)</td>
</tr>
</tbody>
</table>

Environmental conservation at our overseas businesses

1. Environmentally friendly operations in our overseas business activities

2. Environmentally friendly importing and exporting

3. Reporting

4. Disclosure of information

5. Other

*Due to thoroughgoing separation of waste materials and continuous improvement of resource efficiency, the annual amount and value of non-value-bearing waste volume in fiscal 2018 was 13.2% lower than the target.

As part of the 4th Medium-Term Action Plan, data on energy, CO₂, and waste is collected for the operating sites listed below, where the total annual amount of energy consumption is equivalent to 1,000 megawatts of output or more.
Environmental Management Systems

The JX Nippon Mining & Metals Group has established environmental management systems in line with ISO 14001 standards for ensuring achievement of the Action Plan for Environmental Protection, which was drawn up reflecting the Basic Environmental Policy. A multi-level organizational structure has been created, including various committees and subcommittees, in which everyone, from senior management headed by the president to employees at operating sites and affiliated companies, is working together to promote environmental conservation and avoid environmental risk.

Operating Sites That Have Obtained ISO 14001 Certification

Compliance with Environmental Laws and Regulations

Through the effective operation of environmental management systems, the Group is ensuring compliance with environmental laws and regulations. The Environment & Safety Department in the Head Office monitors and subcommittees, in which everyone, from senior management headed by the president to employees at operating sites and affiliated companies, is working together to promote environmental conservation and avoid environmental risk. The Environment Committee meets once every six months. Periodic education, training, and drills are conducted for each employee level at the Head Office and each operating site, to instill awareness regarding the Basic Environmental Policy, the Action Plan for Environmental Protection, and related laws and regulations.

Transition to ISO 14001:2015

Of the 16 domestic operating sites that have acquired ISO 14001 certification, transition to the 2015 version was completed by six sites in fiscal 2018, so that all 16 sites have now made the transition.

Environmental Accidents

There were no environmental accidents during fiscal 2018. We will continue to take measures to prevent such accidents in the future.

Role of the Safety and Environment Committee

Activities in the areas of health and safety, and environmental protection, are planned, promoted, and reviewed by the Safety and Environment Committee, an organization under the CSR Committee. The Safety and Environment Committee meets once every six months.

<table>
<thead>
<tr>
<th>Principal products</th>
<th>(1,000 tons)</th>
<th>(1,000 tons)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Copper concentrate*</td>
<td>90</td>
<td>10</td>
</tr>
<tr>
<td>Refined copper</td>
<td>707</td>
<td>37</td>
</tr>
<tr>
<td>Gold</td>
<td>37</td>
<td>333</td>
</tr>
<tr>
<td>Silver</td>
<td>295</td>
<td>9</td>
</tr>
<tr>
<td>Platinum</td>
<td>9,320</td>
<td>3,260</td>
</tr>
<tr>
<td>Palladium</td>
<td>640</td>
<td>21</td>
</tr>
<tr>
<td>Titanium sponge</td>
<td>1,800</td>
<td>21</td>
</tr>
</tbody>
</table>

* Not including the Group’s equity share

Emissions

<table>
<thead>
<tr>
<th>SOx (1,000 tons)</th>
<th>NOx (1,000 tons)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total of domestic operating sites</td>
<td>422</td>
</tr>
<tr>
<td>Scope 1</td>
<td>158</td>
</tr>
<tr>
<td>Scope 2</td>
<td>222</td>
</tr>
<tr>
<td>Total of overseas operating sites</td>
<td>789</td>
</tr>
<tr>
<td>Scope 1</td>
<td>422</td>
</tr>
<tr>
<td>Scope 2</td>
<td>158</td>
</tr>
<tr>
<td>Total</td>
<td>271</td>
</tr>
</tbody>
</table>

Final disposal of waste materials (1,000 tons)

<table>
<thead>
<tr>
<th>Waste materials</th>
<th>Domestic operating sites</th>
<th>Overseas operating sites</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>1,791</td>
<td></td>
</tr>
<tr>
<td>Total of domestic operating sites (domestic-only)</td>
<td>0.44</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>151.8</td>
<td></td>
</tr>
</tbody>
</table>
**Environmental Risk Management**

Air and water systems are key influencers of human health and living environments. In carrying out its business operations, the JX Nippon Mining & Metals Group gives top priority to protecting the environment relating to these two systems. In addition to abiding by all relevant laws, regulations, ordinances, and agreements, we have set and monitor our own voluntary standards to reduce environmental impact. At the same time, we implement the plan-do-check-act cycle to reduce environmental risks.

**Preventing Air Pollution**

The Group monitors waste gas emissions at all operating sites in compliance with laws, regulations, ordinances, agreements, and voluntary standards. The COD* and BOD* levels are shown below.

**Chemical Management**

At operating sites with significant release and transfer of chemicals, the Group strictly adheres to the Act on Confirmation, Etc., of Release Amounts of Specific Chemical Substances in the Environment and Promotion of Improvements to the Management Thereof (PRTR Act). Also, as part of our environmental management activities, we are working to reduce our environmental impact by setting targets for decreasing the release and transfer volumes of applicable chemical substances. Regarding the Group’s total release and transfer volumes of chemical substances to be reported in compliance with the PRTR Act, the volume released into the air in fiscal 2018 increased by 1.5 tons from the previous fiscal year. Transfer volume decreased by approximately 24 tons. This was due mainly to a decrease in transfer volume of toluene by Toho Titanium.

**Detoxification of PCB-Containing Equipment**

The Group carried out disposal of equipment containing high levels of polychlorinated biphenyls (PCBs), using the services of Japan Environmental Storage and Safety Corporation. This work was completed in 2018. We have also been executing a systematic program for detoxifying equipment containing low levels of PCBs by entrusting a private-sector facility.

**Compliance with the REACH Regulation**

The European Union’s Regulation on Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH Regulation) came into effect in 2007. It requires producers and importers to manage the risk of chemicals that may have an impact on human health and the environment. The Group respects the intent of the REACH Regulation, and has completed preliminary registration of products that are subject to the regulation.

**Promotion of CSR Purchasing and Green Purchasing**

The Group has drawn up the Green Purchasing Policy, aimed at reducing the environmental burden and other impact on society in procuring materials and equipment. Based on this policy, we have also drawn up Green Purchasing Guidelines setting out specific requirements for choosing suppliers. From fiscal 2019, we began conducting CSR Purchasing Questionnaire surveys to further these initiatives and their objectives.

---

**SOx Emissions**

Total of domestic operating sites Total of overseas operating sites

<table>
<thead>
<tr>
<th>Year</th>
<th>Domestic</th>
<th>Overseas</th>
<th>Total</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>3.4</td>
<td>5.1</td>
<td>6.5</td>
<td>4.5</td>
</tr>
<tr>
<td>2015</td>
<td>3.2</td>
<td>4.5</td>
<td>4.7</td>
<td>4.3</td>
</tr>
<tr>
<td>2016</td>
<td>3.4</td>
<td>4.3</td>
<td>6.7</td>
<td>5.1</td>
</tr>
<tr>
<td>2017</td>
<td>4.1</td>
<td>4.6</td>
<td>8.7</td>
<td>6.4</td>
</tr>
<tr>
<td>2018</td>
<td>5.4</td>
<td>6.4</td>
<td>11.8</td>
<td>7.1</td>
</tr>
</tbody>
</table>

* Totals are for operating sites subject to emissions regulations.

**Preventing Water Pollution**

The Group monitors water discharge at all operating sites in compliance with laws, regulations, ordinances, agreements, and voluntary standards. The COD* and BOD* levels are shown below.

**Chemical Management**

At operating sites with significant release and transfer of chemicals, the Group strictly adheres to the Act on Confirmation, Etc., of Release Amounts of Specific Chemical Substances in the Environment and Promotion of Improvements to the Management Thereof (PRTR Act). Also, as part of our environmental management activities, we are working to reduce our environmental impact by setting targets for decreasing the release and transfer volumes of applicable chemical substances. Regarding the Group’s total release and transfer volumes of chemical substances to be reported in compliance with the PRTR Act, the volume released into the air in fiscal 2018 increased by 1.5 tons from the previous fiscal year. Transfer volume decreased by approximately 24 tons. This was due mainly to a decrease in transfer volume of toluene by Toho Titanium.

**Detoxification of PCB-Containing Equipment**

The Group carried out disposal of equipment containing high levels of polychlorinated biphenyls (PCBs), using the services of Japan Environmental Storage and Safety Corporation. This work was completed in 2018. We have also been executing a systematic program for detoxifying equipment containing low levels of PCBs by entrusting a private-sector facility.

**Compliance with the REACH Regulation**

The European Union’s Regulation on Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH Regulation) came into effect in 2007. It requires producers and importers to manage the risk of chemicals that may have an impact on human health and the environment. The Group respects the intent of the REACH Regulation, and has completed preliminary registration of products that are subject to the regulation.

**Promotion of CSR Purchasing and Green Purchasing**

The Group has drawn up the Green Purchasing Policy, aimed at reducing the environmental burden and other impact on society in procuring materials and equipment. Based on this policy, we have also drawn up Green Purchasing Guidelines setting out specific requirements for choosing suppliers. From fiscal 2019, we began conducting CSR Purchasing Questionnaire surveys to further these initiatives and their objectives.
Ensuring Occupational Health and Safety

From its inception, the Group has always considered the maintenance of occupational health and safety to be an essential condition for the continuation of its business, and it has endeavored to provide an environment where employees can work with peace of mind. The Group drew up the Basic Policy on Health and Safety aimed at the elimination of accidents and illnesses, and strives to foster a culture of safety.

In addition to the equipment safety measures, risk assessments are conducted to identify sources of risks, with the help of an outside consulting service. To prevent occupational accidents, it is crucial that each of the workers understands the sources of risks by thinking about what kinds of risks lie in their own equipment and work, and where. For this purpose, the company is drawing up risk maps that clearly indicate the places where risks are lurking, and everyone participates in voluntary maintenance of equipment. Moreover, “senior management patrols” led by the president provide guidance.

CSR

For the Peace of Mind of Society

Special Feature

Ensuring Occupational Health and Safety

Fundamental Policy

JX Nippon Mining & Metals Corporation Sustainability Report 2019

Safety Measures at JX Nippon Coil Center

JX Nippon Coil Center Co., Ltd., a member of the Functional Materials Division, is responsible for the slitting of copper alloy products and other precision rolled products. The company is taking highly advanced measures to improve work safety including the introduction of engineering safety features in equipment.

Engineering Safety Features for Equipment and Advanced Safety Measures Related to Forklifts

Thin sheets, mainly of copper alloys, produced at the Kurami Works and wound into coils, go to JX Nippon Coil Center for cutting (slitting) to the customer’s designated width, followed by packaging, and shipping. The equipment for these processes has many rotors, which pose a risk of entanglement, among other hazards. Along with order handling and transport operations, there are also logistics operations on the site, raising the risk of collisions with forklifts.

The plant has instituted engineering safety features to protect against such risks. Among the measures are safety fences that clearly show what is inside them, safety systems that stop equipment upon detecting the presence of people nearby, and safety covers to prevent entanglement accidents.

Various advanced safety measures have been introduced for forklifts, which are used frequently and have a high potential for serious accidents. For example, drive recorders are used to assess operation, sensors are attached to people and heavy machinery to detect people approaching and prevent contact (Hiyari Hunter and Herima System), and side loaders have been introduced for safer transport operation.

Conducting Risk Assessments for Identifying Sources of Risks

In addition to the equipment safety measures, risk assessments are conducted to identify sources of risks, with the help of an outside consulting service.

To prevent occupational accidents, it is crucial that each of the workers understands the sources of risks by thinking about what kinds of risks lie in their own equipment and work, and where. For this purpose, the company is drawing up risk maps that clearly indicate the places where risks are lurking, and everyone participates in voluntary maintenance of equipment. Moreover, “senior management patrols” led by the president provide guidance.

Improving Communication with Workers and Fostering Safety Awareness

Lack of communication is a factor in more than a few cases of incidents or accidents on the work floor. That is why JX Nippon Coil Center is striving to deepen communication to enable collection of information and honest opinions from on-site supervisors and workers.

When workers assemble at the start of the day, for example, efforts are made to raise safety awareness throughout the organization. These include worker dialog, in which everybody confirms their work details, and participation in pre-shift stretching programs by everyone in the organization.

Besides these, presentation sessions on safety activities take place four times a year; and to raise worker motivation, the presentations are evaluated and awards are given.

Improved Safety Has Led to Higher Quality and Productivity

With help from a consulting service, we have instituted safety initiatives in our company, such as worker dialog at morning assemblies and risk assessments with everyone involved, to get workers to think and participate. Thanks to these and other such efforts, I feel the risk sensitivity of each individual has improved and their ability to foresee danger has become well established.

In addition, putting in place engineering safety features has raised the desire for on-going improvement, leading not only to greater safety but to higher quality and productivity as well. By continuing with such activities, I hope to achieve efficient production of products with stable quality in a safer workplace.
Information CSR

JX Nippon Mining & Metals Corporation Sustainability Report 2019

Labor-management health and safety visitation is conducted once a year, and workshops are also held twice a year, to raise the level of risk assessment, as noted under its goal of Health and Safety Management System. Audits are being made to prevent accidents and improve their sensitivity for detecting those hazards. Moreover, a new education curriculum has been introduced making use of virtual reality (VR) technology, enabling more realistic experiences of hazardous situations. Through these and other initiatives, ongoing efforts are being made to prevent occupational accidents.

Overview Strategy CSR Information

JXTG Group Safety Education Center

To eliminate occupational accidents, enhancing the sensitivity for detecting hazard, and safety awareness of individual employees is essential. Sensitivity for detecting hazard includes the ability to properly recognize hazard as dangerous. Sharpening this ability leads employees to keep away from dangers. Around half of actual occupational accidents are recurrences of similar accidents in the past. Therefore, the Center provides trainees with simulated experiences of occupational accidents that have occurred in the past so that they can come to recognize the dangers and take measures to prevent them.

Organizations for Occupational Health and Safety

Environment and Safety Audits

Environment and safety audits are conducted periodically by a team under direct supervision of the president to examine operating sites directly run by the Company (including Group companies inside the sites) and major domestic Group companies. Issues discovered in the audits are reported to the president. The team also notifies the operating site of the issues, requesting improvements and following up by monitoring progress. Audits were conducted at 8 sites (including Group companies) in fiscal 2018. No major matters were identified.

Meetings Related to Health and Safety

Labor-management health and safety visitation is conducted once a year, and group safety staff meetings are held twice a year to discuss health and safety management status and measures and to exchange related information. Workshops are also held twice a year, and safety lectures presentation by outside experts are performed. The JXTG Group Safety Education Center provides training with simulated experiences of occupational accidents that have occurred in the past so that they can come to recognize the dangers and take measures to prevent them.

Environment and Safety Audits

Environment and safety audits are conducted periodically by a team under direct supervision of the president to examine operating sites directly run by the Company (including Group companies inside the sites) and major domestic Group companies. Issues discovered in the audits are reported to the president. The team also notifies the operating site of the issues, requesting improvements and following up by monitoring progress. Audits were conducted at 8 sites (including Group companies) in fiscal 2018. No major matters were identified.

Measures for Legal Compliance

To ensure full compliance with the latest revisions to laws and regulations concerning health, safety, and the environment, regular compliance inspections are performed by the Environment & Safety Department and by an outside organization, and a legal compliance monitoring system has been introduced to obtain the latest information on legal revisions on a weekly basis.

Operating Situations That Have Obtained OHSAS 18001

<table>
<thead>
<tr>
<th>Fiscal year certification was acquired</th>
<th>Operating site</th>
</tr>
</thead>
<tbody>
<tr>
<td>FY2009</td>
<td>HB-Smelter, Pan-Pacific Copper Co., Ltd. (including HB-Kyoto Smelting Co., Ltd.), Tenno-Smelter</td>
</tr>
<tr>
<td>FY2010</td>
<td>Hitachi Works (including Technology Development Center), Hitachi Refinery of Pan-Pacific Copper Co., Ltd., JX Nippon Environmental Services Co., Ltd., Hitachi Office of JX Nippon Foundry Co., Ltd., Kurumi Works (including JX Nippon Coll Center Co., Ltd.), Kurumi Office of JX Metals Trading Co., Ltd.</td>
</tr>
<tr>
<td>FY2011</td>
<td>Sagamiwara Smelter &amp; Refinery of Pan-Pacific Copper Co., Ltd. (including Japan Copper Casting Co., Ltd. Nissho Kouun Co., Ltd., PPC Plant Saganoseki Co., Ltd.)</td>
</tr>
<tr>
<td>FY2013</td>
<td>Tohoku works of Japan Copper Casting Co., Ltd., Saganoseki Smelter (including Japan Copper Casting Co., Ltd., Nissho Kouun Co., Ltd., PPC Plant Saganoseki Co., Ltd.)</td>
</tr>
</tbody>
</table>
Assuring Product Quality

Use of AI and IoT is advancing throughout society, causing demands from the customers to whom we supply products to become ever more sophisticated, diverse, and stringent. As it becomes more important than ever to assure product quality and safety, the JX Nippon Mining & Metals Group is working to further enhance its quality management framework.

Special Feature

Initiatives by the Quality Control Department

Introduction of Systems for Automating Product Quality Inspections

The Quality Control Department is introducing systems for automating product quality inspections in order to improve reliability and efficiency, and prevent human error, in quality inspection work for the wide range of products in the Group. This project involves introducing the latest automation-ready inspection equipment, making operational changes to existing inspection equipment, and modifying core information systems so that measurement data from the equipment can be fed automatically to the core information systems. The Company hopes to put the systems into operation during fiscal 2020, including at overseas operating sites.

Some sites have already completed introduction of such systems, and are reporting improved work efficiency as a result. The efforts will continue to be carried out with a view to planned introduction throughout the entire Group.

Development of Human Resources in the Area of Quality

The Group provides quality control education for all employees. Along with raising the level of quality control, the objectives include improving the ability of employees to discover and solve quality issues on their own by logically analyzing the true causes, and raising the quality of operations.

The wide-ranging training program has courses tailored to the level of trainees, from introductory to advanced, and course plans based on skill level and number of years in the Company. It has become a well-established part of overall employee education. Through the training, employees learn the basic thinking in each course, quality control (QC) methodology, and how to analyze data by statistical methods, while engaging in group discussions.

The Group has established a Quality Control Committee, with meetings attended by top management, for reviewing the status of quality improvement activities and drawing up action plans. At recent meetings, the Committee took up such topics as progress achieved in the Groupwide effort to automate inspections, and also discussed advancing from defensive quality control—that is, dealing with issues after they have arisen—to proactive quality control directed at risks and opportunities that may arise in the future.

As venues for sharing information on quality management, quality assurance managers’ meetings are held twice each year. At these meetings, the people in charge of quality at each operating site pursue the common goal of raising quality, learning about the action plans decided by the Quality Control Committee and sharing issues faced and excellent practices implemented at each site.

Review, Planning, and Information Sharing on Quality Improvement Activities

The Group has established a Quality Control Committee, with meetings attended by top management, for reviewing the status of quality improvement activities and drawing up action plans. At recent meetings, the Committee took up such topics as progress achieved in the Groupwide effort to automate inspections, and also discussed advancing from defensive quality control—that is, dealing with issues after they have arisen—to proactive quality control directed at risks and opportunities that may arise in the future.

As venues for sharing information on quality management, quality assurance managers’ meetings are held twice each year. At these meetings, the people in charge of quality at each operating site pursue the common goal of raising quality, learning about the action plans decided by the Quality Control Committee and sharing issues faced and excellent practices implemented at each site.

Aiming for Effective Quality Audits

The Quality Control Department performs quality audits of all operating sites from a standpoint independent of the business. In these audits, we not only assess whether quality control complies with the applicable rules; we also aim to perform effectiveness audits, which identify improvements and good practices, thereby helping to raise the awareness of people involved in on-site quality operations and to energize activities for discovering problems and making improvements.

When operating a quality management system, I believe maintenance and continual improvement of the system through quality audits are especially important activities. The issue I would like to address toward these ends is raising the level of communication, observation, decision-making, and other skills needed in a quality auditor.
Basic Quality Policy

**JX Nippon Mining & Metals Group Basic Quality Policy**

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

1. Grasp the requirements of customers and society correctly in order to offer products and services that customers can trust and that satisfy their needs.
2. Improve and maintain quality in all processes from development, design, and production to delivery, while paying due attention to safety and environmental conservation.
3. Establish a quality management system, carry out continual improvements, and develop human resources.
4. Comply with all pertinent laws and regulations of Japan and other countries, and provide customers and society with accurate information on quality.

Note: The Group's Basic Quality Policy has been formulated in line with the JX Nippon Mining & Metals Code of Conduct.

Quality Management Systems

The Group has developed quality management systems (QMS) that implement as a means of putting the Basic Quality Policy into practice. The plan-do-check-act (PDCA) cycle is faithfully applied to QMS implementation, as continual improvements are made to achieve better quality. Both domestic and overseas operating sites have obtained ISO 9001 certification, the international standard for quality management systems.

Operating Sites That Have Obtained QMS

<table>
<thead>
<tr>
<th>Domestic</th>
<th>Overseas</th>
</tr>
</thead>
<tbody>
<tr>
<td>JX Nippon Mining &amp; Metals (Headquarters/Chigasaki Plant, Hitachi Plant, Yahata Plant)</td>
<td>JX Nippon Mining &amp; Metals USA, Inc.; JX Nippon Mining &amp; Metals Korea Ltd.; Nikko Metals Taiwan Co., Ltd. (Longtan Works, Kuanyin Works); JX Nippon Mining &amp; Metals (Suzhou) Co., Ltd.; Nikko Fuji Precision Casting Co., Ltd.; JX Nippon Mining &amp; Metals Trading Co., Ltd. (Takatsuki Plant); JX Metals Precision Technology Co., Ltd.; H.C. Starck Ltd. (Mito Plant); and Toho Titanium Co., Ltd. (Kawasaki Office); Hitachi Works (Copper Foil Dept.); Ichinoseki Foil Casting Co., Ltd. (Kurami Works), Kurami Works, Kaiyaka Works, Hirokawa Works)</td>
</tr>
</tbody>
</table>

Roles of the Quality Control Department

The Quality Control Department is responsible for planning, proposal, promotion, and oversight of measures for enhancing quality management in the entire Group, in order to maintain and raise Groupwide product quality. As part of these duties, it performs quality audits of all operating sites to confirm whether quality management is being carried out effectively.

Initiatives to Ensure High Quality and Reliability

- **Quality Management of Functional Materials and Thin Film Materials Products**
  - **Product development stage**
    - Quality-evaluation systems have been developed to analyze physical properties, surface conditions, purity, and other characteristics of products, by introducing analytical equipment and establishing evaluation techniques. Only products that have been confirmed to possess the necessary levels of quality can advance to the mass production stage.
  - **Manufacturing process design stage**
    - By introducing systems utilizing trial sheets, statistical process control, and other methods, we have developed a strict quality control regime, covering every stage from the acceptance of raw materials to the shipping of products.
  - **Mass production stage**
    - We have developed analysis systems that enable thorough and continuous inspections of products. We adhere strictly to internal standards developed for each product. Data from inspections is fed back to development and manufacturing divisions through a statistical quality control system to maintain and improve the quality and reliability of our products.

- **Awards Received from Our Customers**
  - Each year, we receive awards from customers in recognition of our stable supply of high-quality products, promotion of business continuity planning, and other efforts. In fiscal 2018, we received the following three awards.

Development of Human Resources in the Area of Quality

The Group carries out human resources development in the area of quality, believing that quality is the responsibility of all employees, not only in departments that contribute directly to profitability, but in back-office departments as well. We therefore have a dedicated department that provides quality control education based on original training manuals throughout the year for all employees, from new hires to senior management.

Quality Control Education System

### Features of Quality Control Education

- An education system enabling training courses to be selected according to employees’ work roles
- Content specially designed to enable use of the quality control methods in actual workplaces
- The use of actual quality improvement activities for learning the problem-solving mindset and approach...
### Developing Human Resources

**Fundamental Policy**

It is essential for the JX Nippon Mining & Metals Group to develop and utilize the employees involved in day-to-day operations if it is to maximize its corporate value. By creating personnel systems that value the diversity of employees working in Japan and abroad, and by enhancing education programs, we are providing a foundation enabling employees to make the most of their abilities.

#### Strengthening the Education System to Support the Energizing of Individuals and Organizations

In line with our human resources development policy, we provide various educational programs in the five key areas of managerial skills, specialist skills, skills for global readiness, self-development, and other skills and awareness. Given expectations for continued constant change in the business climate, we are endeavoring to carry on proper human resources development while providing a flexible education system.

### Overseas Study Programs

Each year, the Company sends a few assistant manager-level engineering staff to overseas graduate schools to enhance their expertise. We also send a few assistant manager-level or manager-level engineering staff and administrative staff to overseas graduate schools to obtain an MBA, aiming to strengthen their managerial skills. With the business environment expected to change, we plan on continuing to send employees abroad for such training, in the hope that this will further deepen the engineering expertise or managerial skills of those responsible for the management of the Company in the next generation.

#### Overseas Study Programs

<table>
<thead>
<tr>
<th>Fiscal year</th>
<th>Course</th>
<th>Destination</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fiscal 2018</td>
<td>Enhancing Engineering Expertise*1</td>
<td>University of Washington</td>
</tr>
<tr>
<td>Fiscal 2018</td>
<td>Enhancing Engineering Expertise*1</td>
<td>University of Queensland</td>
</tr>
<tr>
<td>Fiscal 2019</td>
<td>Enhancing Engineering Expertise*1</td>
<td>University of Illinois</td>
</tr>
<tr>
<td>Fiscal 2019</td>
<td>Strengthening Managerial Skills (EMBA)*2</td>
<td>University of Michigan</td>
</tr>
</tbody>
</table>

*1 Enhancing Engineering Expertise course: Earning a degree (master's or doctoral) at an overseas graduate school (sent for two years in principle)
*2 Strengthening Managerial Skills (EMBA) course: Earning an MBA degree at an overseas graduate school (sent for one year in principle)

---

### Self-Innovation Support

To address the desire of employees for further self-growth, the Company reviewed its existing self-development programs and established the Self-Innovation Support scheme. Employees themselves apply for and take part in their chosen external self-development program. Upon completion, the Company subsidizes half the costs, up to a limit of 500,000 yen. Previously, employees chose from programs readied by the Company in advance. Under the new scheme, employees can choose from a broader range of programs.

A feature that sets this scheme apart from previous self-development programs is that it offers broad latitude, so that employees can make effective use of the private time freed up by improving work-life balance—something the Company is also promoting.

#### Application Process for Self-Innovation Support

1. Employee looks for a self-development program
2. Applies to the Company
3. Undergoes and completes program
4. Applies to the Company for cost subsidy
5. Company pays half the costs (up to 500,000 yen)

### My experience in an overseas study program

I took advantage of the opportunity to attend classes at the University of Washington, studying overall business administration. The topics were wide-ranging, including statistics, economics, accounting, finance, marketing, leadership, and business strategy. For some time, I had been wanting to take a systematic approach to acquiring knowledge that would be useful in my work. On many days there were classes from morning to evening, but I still found time after class to discuss topics and projects with my classmates, or study on my own in the library. Having been chosen as class representative, I also engaged in negotiations with the school administrative office on various issues on behalf of the class. Seattle where the school is located has a great climate, people, natural beauty, and safe environment. A round of golf on the weekend offered a nice change of pace. All in all, it was a good place to concentrate on studies. Taking advantage of this study experience, my wish is to help make the Company even stronger.

---

### Training Programs Implemented in Fiscal 2018

| Training Programs Implemented in Fiscal 2018 (Training for Young Graduates) |
|-----------------|-----------------|-----------------|-----------------|
| **Program** | **Fiscal 2017** | **Fiscal 2018** |
| Fiscal 2017 (Training for Young Graduates) | | |
| 1. Understanding the Company’s organization, the functional work of the business process, and the flow of information | | |
| 2. Acquiring basic skills required for information management | | |
| 3. Enhancing the employee’s own thinking style, and becoming able to take an active role on the management team | | |
| 4. Understanding the conditions and issues for business administration | | |
| 5. Enhancing understanding of the current conditions and issues for business administration | | |
| 6. Understanding the current conditions and issues for business administration | | |
| 7. Enhancing understanding of the current conditions and issues for business administration | | |
| 8. Enhancing understanding of the current conditions and issues for business administration | | |
| 9. Enhancing understanding of the current conditions and issues for business administration | | |
| 10. Enhancing understanding of the current conditions and issues for business administration | | |
| 11. Enhancing understanding of the current conditions and issues for business administration | | |
| 12. Enhancing understanding of the current conditions and issues for business administration | | |
| 13. Enhancing understanding of the current conditions and issues for business administration | | |
| 14. Enhancing understanding of the current conditions and issues for business administration | | |
| 15. Enhancing understanding of the current conditions and issues for business administration | | |
| 16. Enhancing understanding of the current conditions and issues for business administration | | |
| 17. Enhancing understanding of the current conditions and issues for business administration | | |
| 18. Enhancing understanding of the current conditions and issues for business administration | | |
| 19. Enhancing understanding of the current conditions and issues for business administration | | |
| 20. Enhancing understanding of the current conditions and issues for business administration | | |
| 21. Enhancing understanding of the current conditions and issues for business administration | | |
| 22. Enhancing understanding of the current conditions and issues for business administration | | |
| 23. Enhancing understanding of the current conditions and issues for business administration | | |
| 24. Enhancing understanding of the current conditions and issues for business administration | | |
| 25. Enhancing understanding of the current conditions and issues for business administration | | |
| 26. Enhancing understanding of the current conditions and issues for business administration | | |
| 27. Enhancing understanding of the current conditions and issues for business administration | | |
| 28. Enhancing understanding of the current conditions and issues for business administration | | |
| 29. Enhancing understanding of the current conditions and issues for business administration | | |
| 30. Enhancing understanding of the current conditions and issues for business administration | | |
| 31. Enhancing understanding of the current conditions and issues for business administration | | |
| 32. Enhancing understanding of the current conditions and issues for business administration | | |
| 33. Enhancing understanding of the current conditions and issues for business administration | | |
| 34. Enhancing understanding of the current conditions and issues for business administration | | |
| 35. Enhancing understanding of the current conditions and issues for business administration | | |
| 36. Enhancing understanding of the current conditions and issues for business administration | | |
| 37. Enhancing understanding of the current conditions and issues for business administration | | |
| 38. Enhancing understanding of the current conditions and issues for business administration | | |
| 39. Enhancing understanding of the current conditions and issues for business administration | | |
| 40. Enhancing understanding of the current conditions and issues for business administration | | |
| 41. Enhancing understanding of the current conditions and issues for business administration | | |
| 42. Enhancing understanding of the current conditions and issues for business administration | | |
| 43. Enhancing understanding of the current conditions and issues for business administration | | |
| 44. Enhancing understanding of the current conditions and issues for business administration | | |
| 45. Enhancing understanding of the current conditions and issues for business administration | | |
| 46. Enhancing understanding of the current conditions and issues for business administration | | |
| 47. Enhancing understanding of the current conditions and issues for business administration | | |
| 48. Enhancing understanding of the current conditions and issues for business administration | | |
| 49. Enhancing understanding of the current conditions and issues for business administration | | |
| 50. Enhancing understanding of the current conditions and issues for business administration | | |

* Survey scope: Employees of the Company and employees being seconded from the programs (annual)
Initiatives for Developing the Next Generation of Human Resources
The JX Nippon Mining & Metals Group believes it is essential to develop human resources who can ensure the future stable acquisition and supply of indispensable nonferrous metal resources and materials. We are therefore directing efforts at engaging the young, of high school age and below, who will be responsible for carrying on with this mission.

Main Activities in Fiscal 2018
Summer STEM Challenge 2018
During the summer break, the Ioshara Works, the Hitachi Works, the Kurami Works, and Pan Pacific Copper’s Saganoseki Smelter & Refinery held plant tours and experimentation sessions for junior high school students. Engineers active in these factories gave enjoyable presentations to the students about the fascination of copper, a metal without which today’s society would not exist, and about the appeal of science and technology-related occupations.

Nikkei Education Challenge
Sponsor: Nikkei Inc.
A marketing representative in sputtering targets for semiconductors taught a class session titled, “What is the target of target material?” mixing in episodes from his own career. The lecture included such topics as work in B2B (business-to-business) companies and the fascination of marketing, presented in a way that participants could readily understand.

Participation in the University of Tokyo’s Komaba Research Campus Open House 2018
The University of Tokyo’s Komaba Research Campus Open House is held once each year as a regular event introducing the general public to the leading-edge research taking place on the campus, at the Research Center for Advanced Science and Technology and the Institute of Industrial Science. As the Company has established an endowed research unit in collaboration with the Institute of Industrial Science, we took part in the event with a corporate booth exhibit, and demonstrated experiments in thermal conduction and electromagnetic wave shields that clearly showed the properties of copper. In addition, junior high school students tried their hand at a full-fledged experiment for learning about hydro-metallurgical refining of copper.

Copper PR by JX Nippon Mining & Metals Mascot Character “Coppy the Kappa”
Copper is a material essential to the convenient life we enjoy today. Yet it receives little attention, as it is generally covered or used inside devices and is therefore not directly visible. In an attempt to make copper more familiar to the younger generation, we conduct PR using the mascot character Coppy the Kappa via pamphlets and a special website.

Sendai/Miyagi Science Day 2018 at Tohoku University
Sponsor: NPO natural science
Sendai/Miyagi Science Day is an annual event held on the Kawauchi Campus of Tohoku University. With the aim of countering the declining interest among young people in science, the event, on the theme of “What, after all, is science?” provides an opportunity for both children and adults to experience scientific processes with their five senses. The Company, having recently concluded an organization-level partnership agreement for collaboration with Tohoku University, exhibited at the event for the first time in 2018. At the booth, large numbers of children learned about copper in quiz format.

Phase 2 Initiatives of the Endowed Unit for Nonferrous Metal Resource Recovery Engineering (JX Metals Endowed Unit)
In Phase 2 of the JX Metals Endowed Unit, which began in January 2017, public relations efforts touting the appeal of the nonferrous metals field are being directed at the general public, especially young people of high school age and below.

See page 42 for details.
Providing a Rewarding Work Experience

The JX Nippon Mining & Metals Group endeavors to provide a workplace where employees are able to make the most of their abilities—a workplace full of the vitality that comes from maintaining physical and mental health, which we recognize as a strong advantage for ensuring the Company’s sustainable growth. Along with implementing appropriate personnel evaluation systems, we seek to improve these systems so as to allow diverse human resources to choose a variety of work styles.

Fundamental Policy

Strategy

Information

JX Nippon Mining & Metals Corporation Sustainability Report 2019

Overview

Strategy

CSR

Information

Work Style Reform Initiatives of the JX Nippon Mining & Metals Group

Roundtable Discussion on Work Style Reform: Aiming to Energize Individuals and Organizations

Provision of a rewarding work experience requires work style reform from many standpoints, such as enabling work-life balance, raising productivity, and embracing diversity. At this event, people from both the program-design and program-running sides came together to talk about the kind of work style reform the JX Nippon Mining & Metals Group is aiming for.

Please tell us what the JX Nippon Mining & Metals Group is aiming for in work style reform, and give us your own thoughts on work style.

Morii: Work style reform in the Group is based on the Strategy to Energize Individuals and Organizations drawn up in fiscal 2016. To solve the management issues facing each business and grow into the future, it’s essential to create a workplace that draws on the strengths of people with various backgrounds and values, and where people can each have rewarding work experiences.

Nakano: As a recent trend, I sense that the attitude of just doing what needs to be done and then going home is taking root. Still, shorter work hours will not happen unless people are constantly thinking about how to come up with proper answers to the issues confronting them quickly. In that sense, I feel the need for Groupwide education aimed at improving problem-solving skills.

Wakumura: After I took a year off for childcare leave, my thinking on work style changed completely from before the leave. Before going on leave, I would often take on work all by myself, whereas after returning from leave I began to work as part of the organization. I have started to concentrate on achieving results in the limited time available, even if it means passing work on to others occasionally.

Kato: In my job in technical marketing, I sometimes find myself saying, “There must be a better plan than this,” or “This would be another way of tying things together,” feeling motivated to keep on working until I’m satisfied that things are just right. But as I have a small child at home, in reality I tend to wrap it up once the work gets to a certain point.

Kawaguchi: From the human resources standpoint, it’s essential to create a workplace that draws on the strengths of people with various backgrounds and values, and one where they can each have rewarding work experiences.

Morii: A certain amount of time is needed for easing back into the work routine after returning to the job, so employees should not feel rushed when they return. We would like people making use of leave programs to consult often with their supervisor, before taking leave, during the leave, before returning to work, and after returning, so as to maintain motivation and ease concerns. From fiscal 2019 we have revised the way the program is run to ensure proper communication using a consultation sheet.

Kawaguchi: It’s important that people have accurate knowledge about the programs. There are many.

Overview

Strategy

CSR

Information

Roundtable Discussion on Work Style Reform: Aiming to Energize Individuals and Organizations

Work Style Reform Initiatives of the JX Nippon Mining & Metals Group

Please tell us what the JX Nippon Mining & Metals Group is aiming for in work style reform, and give us your own thoughts on work style.

Morii: Work style reform in the Group is based on the Strategy to Energize Individuals and Organizations drawn up in fiscal 2016. To solve the management issues facing each business and grow into the future, it’s essential to create a workplace that draws on the strengths of people with various backgrounds and values, and where people can each have rewarding work experiences.

Nakano: As a recent trend, I sense that the attitude of just doing what needs to be done and then going home is taking root. Still, shorter work hours will not happen unless people are constantly thinking about how to come up with proper answers to the issues confronting them quickly. In that sense, I feel the need for Groupwide education aimed at improving problem-solving skills.

Wakumura: After I took a year off for childcare leave, my thinking on work style changed completely from before the leave. Before going on leave, I would often take on work all by myself, whereas after returning from leave I began to work as part of the organization. I have started to concentrate on achieving results in the limited time available, even if it means passing work on to others occasionally.

Kato: In my job in technical marketing, I sometimes find myself saying, “There must be a better plan than this,” or “This would be another way of tying things together,” feeling motivated to keep on working until I’m satisfied that things are just right. But as I have a small child at home, in reality I tend to wrap it up once the work gets to a certain point.

Kawaguchi: From the human resources standpoint, it’s essential to create a workplace that draws on the strengths of people with various backgrounds and values, and one where they can each have rewarding work experiences.

Morii: A certain amount of time is needed for easing back into the work routine after returning to the job, so employees should not feel rushed when they return. We would like people making use of leave programs to consult often with their supervisor, before taking leave, during the leave, before returning to work, and after returning, so as to maintain motivation and ease concerns. From fiscal 2019 we have revised the way the program is run to ensure proper communication using a consultation sheet.

Kawaguchi: It’s important that people have accurate knowledge about the programs. There are many.

Overview

Strategy

CSR

Information

Roundtable Discussion on Work Style Reform: Aiming to Energize Individuals and Organizations

Work Style Reform Initiatives of the JX Nippon Mining & Metals Group

Please tell us what the JX Nippon Mining & Metals Group is aiming for in work style reform, and give us your own thoughts on work style.

Morii: Work style reform in the Group is based on the Strategy to Energize Individuals and Organizations drawn up in fiscal 2016. To solve the management issues facing each business and grow into the future, it’s essential to create a workplace that draws on the strengths of people with various backgrounds and values, and where people can each have rewarding work experiences.

Nakano: As a recent trend, I sense that the attitude of just doing what needs to be done and then going home is taking root. Still, shorter work hours will not happen unless people are constantly thinking about how to come up with proper answers to the issues confronting them quickly. In that sense, I feel the need for Groupwide education aimed at improving problem-solving skills.

Wakumura: After I took a year off for childcare leave, my thinking on work style changed completely from before the leave. Before going on leave, I would often take on work all by myself, whereas after returning from leave I began to work as part of the organization. I have started to concentrate on achieving results in the limited time available, even if it means passing work on to others occasionally.

Kato: In my job in technical marketing, I sometimes find myself saying, “There must be a better plan than this,” or “This would be another way of tying things together,” feeling motivated to keep on working until I’m satisfied that things are just right. But as I have a small child at home, in reality I tend to wrap it up once the work gets to a certain point.

Kawaguchi: From the human resources standpoint, it’s essential to create a workplace that draws on the strengths of people with various backgrounds and values, and one where they can each have rewarding work experiences.

Morii: A certain amount of time is needed for easing back into the work routine after returning to the job, so employees should not feel rushed when they return. We would like people making use of leave programs to consult often with their supervisor, before taking leave, during the leave, before returning to work, and after returning, so as to maintain motivation and ease concerns. From fiscal 2019 we have revised the way the program is run to ensure proper communication using a consultation sheet.

Kawaguchi: It’s important that people have accurate knowledge about the programs. There are many.

Overview

Strategy

CSR

Information

Roundtable Discussion on Work Style Reform: Aiming to Energize Individuals and Organizations

Work Style Reform Initiatives of the JX Nippon Mining & Metals Group

Please tell us what the JX Nippon Mining & Metals Group is aiming for in work style reform, and give us your own thoughts on work style.

Morii: Work style reform in the Group is based on the Strategy to Energize Individuals and Organizations drawn up in fiscal 2016. To solve the management issues facing each business and grow into the future, it’s essential to create a workplace that draws on the strengths of people with various backgrounds and values, and where people can each have rewarding work experiences.

Nakano: As a recent trend, I sense that the attitude of just doing what needs to be done and then going home is taking root. Still, shorter work hours will not happen unless people are constantly thinking about how to come up with proper answers to the issues confronting them quickly. In that sense, I feel the need for Groupwide education aimed at improving problem-solving skills.

Wakumura: After I took a year off for childcare leave, my thinking on work style changed completely from before the leave. Before going on leave, I would often take on work all by myself, whereas after returning from leave I began to work as part of the organization. I have started to concentrate on achieving results in the limited time available, even if it means passing work on to others occasionally.

Kato: In my job in technical marketing, I sometimes find myself saying, “There must be a better plan than this,” or “This would be another way of tying things together,” feeling motivated to keep on working until I’m satisfied that things are just right. But as I have a small child at home, in reality I tend to wrap it up once the work gets to a certain point.

Kawaguchi: From the human resources standpoint, it’s essential to create a workplace that draws on the strengths of people with various backgrounds and values, and one where they can each have rewarding work experiences.

Morii: A certain amount of time is needed for easing back into the work routine after returning to the job, so employees should not feel rushed when they return. We would like people making use of leave programs to consult often with their supervisor, before taking leave, during the leave, before returning to work, and after returning, so as to maintain motivation and ease concerns. From fiscal 2019 we have revised the way the program is run to ensure proper communication using a consultation sheet.

Kawaguchi: It’s important that people have accurate knowledge about the programs. There are many.
for example, who mistakenly believe that family care leave is for employees to take care of family members on their own. In fact, the care is provided mainly by helpers and third parties; and the leave is intended for employees making the arrangements for such care. To reduce this gap in understanding, the Human Resources Department is preparing handbooks and making them available on the intranet, seeking to make employees aware of the purpose of the programs and how to use them. I would very much appreciate management to take a look at the handbooks as well.

Nakano: If someone working under me says they would like to take childcare leave or family care leave, I would definitely want them to do so as much as necessary. No doubt some employees are afraid their work won’t get done while they are away, but others around them can step in to support, and that will even give those others a chance to learn another job.

Working from home, or telecommuting, is an important option for improving the labor productivity of the organization. What is the Group’s stance on this?

Morii: Regarding working from home or telecommuting, we have been conducting studies about how best to design such a program. I believe that simply transferring the usual work style to home premises presents too many challenges, making it important to review the work style, and exercise ingenuity in transforming it to enable working from home. As it stands currently, people are constantly apologizing to those around them for causing trouble when they make use of the work-from-home option. Rather, it should be something that produces new value.

Kawaguchi: Today there are services like Skype, and it is increasingly easy for people to chat as if they are in the same room. In fact, the care is provided mainly by helpers and other third parties; and the leave is intended for employees making the arrangements for such care. To reduce this gap in understanding, the Human Resources Department is preparing handbooks and making them available on the intranet, seeking to make employees aware of the purpose of the programs and how to use them. I would very much appreciate management to take a look at the handbooks as well.

Nakano: If someone working under me says they would like to take childcare leave or family care leave, I would definitely want them to do so as much as necessary. No doubt some employees are afraid their work won’t get done while they are away, but others around them can step in to support, and that will even give those others a chance to learn another job.

Working from home, or telecommuting, is an important option for improving the labor productivity of the organization. What is the Group’s stance on this?

Morii: Regarding working from home or telecommuting, we have been conducting studies about how best to design such a program. I believe that simply transferring the usual work style to home premises presents too many challenges, making it important to review the work style, and exercise ingenuity in transforming it to enable working from home. As it stands currently, people are constantly apologizing to those around them for causing trouble when they make use of the work-from-home option. Rather, it should be something that produces new value.

Kawaguchi: Today there are services like Skype, and it is increasingly easy for people to chat as if they are in the same room. In fact, the care is provided mainly by helpers and other third parties; and the leave is intended for employees making the arrangements for such care. To reduce this gap in understanding, the Human Resources Department is preparing handbooks and making them available on the intranet, seeking to make employees aware of the purpose of the programs and how to use them. I would very much appreciate management to take a look at the handbooks as well.

Nakano: If someone working under me says they would like to take childcare leave or family care leave, I would definitely want them to do so as much as necessary. No doubt some employees are afraid their work won’t get done while they are away, but others around them can step in to support, and that will even give those others a chance to learn another job.

Working from home, or telecommuting, is an important option for improving the labor productivity of the organization. What is the Group’s stance on this?

Morii: Regarding working from home or telecommuting, we have been conducting studies about how best to design such a program. I believe that simply transferring the usual work style to home premises presents too many challenges, making it important to review the work style, and exercise ingenuity in transforming it to enable working from home. As it stands currently, people are constantly apologizing to those around them for causing trouble when they make use of the work-from-home option. Rather, it should be something that produces new value.

Kawaguchi: Today there are services like Skype, and it is increasingly easy for people to chat as if they are in the same room. In fact, the care is provided mainly by helpers and other third parties; and the leave is intended for employees making the arrangements for such care. To reduce this gap in understanding, the Human Resources Department is preparing handbooks and making them available on the intranet, seeking to make employees aware of the purpose of the programs and how to use them. I would very much appreciate management to take a look at the handbooks as well.

Nakano: If someone working under me says they would like to take childcare leave or family care leave, I would definitely want them to do so as much as necessary. No doubt some employees are afraid their work won’t get done while they are away, but others around them can step in to support, and that will even give those others a chance to learn another job.

Working from home, or telecommuting, is an important option for improving the labor productivity of the organization. What is the Group’s stance on this?

Morii: Regarding working from home or telecommuting, we have been conducting studies about how best to design such a program. I believe that simply transferring the usual work style to home premises presents too many challenges, making it important to review the work style, and exercise ingenuity in transforming it to enable working from home. As it stands currently, people are constantly apologizing to those around them for causing trouble when they make use of the work-from-home option. Rather, it should be something that produces new value.

Kawaguchi: Today there are services like Skype, and it is increasingly easy for people to chat as if they are in the same room. In fact, the care is provided mainly by helpers and other third parties; and the leave is intended for employees making the arrangements for such care. To reduce this gap in understanding, the Human Resources Department is preparing handbooks and making them available on the intranet, seeking to make employees aware of the purpose of the programs and how to use them. I would very much appreciate management to take a look at the handbooks as well.

Nakano: If someone working under me says they would like to take childcare leave or family care leave, I would definitely want them to do so as much as necessary. No doubt some employees are afraid their work won’t get done while they are away, but others around them can step in to support, and that will even give those others a chance to learn another job.

Working from home, or telecommuting, is an important option for improving the labor productivity of the organization. What is the Group’s stance on this?

Morii: Regarding working from home or telecommuting, we have been conducting studies about how best to design such a program. I believe that simply transferring the usual work style to home premises presents too many challenges, making it important to review the work style, and exercise ingenuity in transforming it to enable working from home. As it stands currently, people are constantly apologizing to those around them for causing trouble when they make use of the work-from-home option. Rather, it should be something that produces new value.

Kawaguchi: Today there are services like Skype, and it is increasingly easy for people to chat as if they are in the same room. In fact, the care is provided mainly by helpers and other third parties; and the leave is intended for employees making the arrangements for such care. To reduce this gap in understanding, the Human Resources Department is preparing handbooks and making them available on the intranet, seeking to make employees aware of the purpose of the programs and how to use them. I would very much appreciate management to take a look at the handbooks as well.

Nakano: If someone working under me says they would like to take childcare leave or family care leave, I would definitely want them to do so as much as necessary. No doubt some employees are afraid their work won’t get done while they are away, but others around them can step in to support, and that will even give those others a chance to learn another job.

Working from home, or telecommuting, is an important option for improving the labor productivity of the organization. What is the Group’s stance on this?

Morii: Regarding working from home or telecommuting, we have been conducting studies about how best to design such a program. I believe that simply transferring the usual work style to home premises presents too many challenges, making it important to review the work style, and exercise ingenuity in transforming it to enable working from home. As it stands currently, people are constantly apologizing to those around them for causing trouble when they make use of the work-from-home option. Rather, it should be something that produces new value.

Kawaguchi: Today there are services like Skype, and it is increasingly easy for people to chat as if they are in the same room. In fact, the care is provided mainly by helpers and other third parties; and the leave is intended for employees making the arrangements for such care. To reduce this gap in understanding, the Human Resources Department is preparing handbooks and making them available on the intranet, seeking to make employees aware of the purpose of the programs and how to use them. I would very much appreciate management to take a look at the handbooks as well.

Nakano: If someone working under me says they would like to take childcare leave or family care leave, I would definitely want them to do so as much as necessary. No doubt some employees are afraid their work won’t get done while they are away, but others around them can step in to support, and that will even give those others a chance to learn another job.

Working from home, or telecommuting, is an important option for improving the labor productivity of the organization. What is the Group’s stance on this?

Morii: Regarding working from home or telecommuting, we have been conducting studies about how best to design such a program. I believe that simply transferring the usual work style to home premises presents too many challenges, making it important to review the work style, and exercise ingenuity in transforming it to enable working from home. As it stands currently, people are constantly apologizing to those around them for causing trouble when they make use of the work-from-home option. Rather, it should be something that produces new value.

Kawaguchi: Today there are services like Skype, and it is increasingly easy for people to chat as if they are in the same room. In fact, the care is provided mainly by helpers and other third parties; and the leave is intended for employees making the arrangements for such care. To reduce this gap in understanding, the Human Resources Department is preparing handbooks and making them available on the intranet, seeking to make employees aware of the purpose of the programs and how to use them. I would very much appreciate management to take a look at the handbooks as well.

Nakano: If someone working under me says they would like to take childcare leave or family care leave, I would definitely want them to do so as much as necessary. No doubt some employees are afraid their work won’t get done while they are away, but others around them can step in to support, and that will even give those others a chance to learn another job.

Working from home, or telecommuting, is an important option for improving the labor productivity of the organization. What is the Group’s stance on this?
Initiatives Promoting Diversity

The Group values diversity in both human resources and work style. In compliance with relevant laws and regulations in Japan and overseas, the Group is pursuing initiatives including the continued employment of workers aged 60 and older, hiring of persons with disabilities, and women’s empowerment, and is developing programs with sexual-minority employees in mind. Moreover, we have drawn up and are implementing a plan for the five-year period to fiscal 2020 in accordance with Japan’s Act on Promotion of Women’s Participation and Advancement in the Workplace. As of March 31, 2019, a total of 1,184 female employees were working in the Group worldwide. Of these, 26.4% occupy managerial positions (supervisor class and above). JX Nippon Mining & Metals employs 282 female employees (including part-time employees), of whom approximately 30% are in managerial roles. There are no gender differences in base pay.

Targets
1. Steadily increase the number of female employees, and ensure that at least 30% of newly hired university graduates are women, to cultivate female managers early on.
2. Improve working environments to create workplaces in which all employees including women can do fulfilling work.

Our big mission is giving substance to this. If we are to introduce policy measures so that various people with different backgrounds and values will be able to achieve self-realization while feeling motivated to work and satisfied with their lives, it will also be important to hear frank and unreserved views as we have here today. As we go forward, I would like us to take on the challenge of work style reform in the Group, while keeping our ears attuned to the voices of employees.

Overview of Childcare and Family Care Systems

As part of energizing individuals and organizations, the Company seeks to ensure that the working environment is one where even employees with commitments such as pregnancy, childbirth, childcare, parenting, or family care can make the most of their abilities. To this end, personnel systems undergo regular review to enable assistance from the two aspects of work style support and financial support. Starting in fiscal 2018, we have been taking steps to install a more thorough understanding of these systems, preparing a handbook on the support available for balancing work and childcare or family care. The handbook provides an overview of the systems, shows how to use them, and describes how managers can give assistance. We also revised the systems so that cumulative annual paid time off can be used, in case of hospital visits for illnesses requiring repeated or ongoing treatment, or for infertility treatment.

Creating Appropriate Personnel Evaluation Systems

The Company has introduced a Competency Evaluation System based on competency models and a Performance Evaluation System centered on management of missions and goals. In Competency Evaluation, employees are interviewed by their supervisors based on competency items, and the resulting assessment of whether they have the necessary competency is used in deciding promotions. In Performance Evaluation, employees meet with their supervisors to discuss the extent to which they attained missions and goals agreed on with the supervisor at the beginning of the fiscal year, and the degree of challenge presented by the goals. Their performance is then evaluated, and the results of these evaluations are reflected in employee bonuses. The competency model and performance evaluation items for managerial staff are structured so that 50% of the items evaluated relate to personnel management.

Self-Statement System

A Self-Statement System was introduced to help the Company understand the aspirations of individual employees and reflect them in personnel development and elsewhere. Under this system, employees submit this statement on the specified form once a year, looking back on their work and indicating their ambitions, as well as other matters of relevance, such as any reason why they cannot accept job transfers that would involve moving residence and how long that will remain the case.

Support from social insurance and employment insurance

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maternity leave benefit</td>
<td>Benefit paid by the social insurance fund once a year, regardless of the number of childbirths.</td>
</tr>
<tr>
<td>Childcare leave benefit</td>
<td>Benefit paid by the social insurance fund once a year, regardless of the number of childbirths.</td>
</tr>
<tr>
<td>Retirement allowance</td>
<td>Benefit paid by the social insurance fund once a year, regardless of the number of childbirths.</td>
</tr>
</tbody>
</table>

Support for babysitter use

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Childcare concierge service</td>
<td>Service for arranging childcare and tuition for children under the age of 6</td>
</tr>
<tr>
<td>Support for babysitter user</td>
<td>Benefit paid by the social insurance fund once a year, regardless of the number of childbirths.</td>
</tr>
</tbody>
</table>

Childcare and Family Care Systems

As of March 31, 2019, a total of 1,184 female employees were working in the Group worldwide. Of these, 26.4% occupy managerial positions (supervisor class and above). JX Nippon Mining & Metals employs 282 female employees (including part-time employees), of whom approximately 30% are in managerial roles. There are no gender differences in base pay.

Our big mission is giving substance to this. If we are to introduce policy measures so that various people with different backgrounds and values will be able to achieve self-realization while feeling motivated to work and satisfied with their lives, it will also be important to hear frank and unreserved views as we have here today. As we go forward, I would like us to take on the challenge of work style reform in the Group, while keeping our ears attuned to the voices of employees.

Overview of Childcare and Family Care Systems

As part of energizing individuals and organizations, the Company seeks to ensure that the working environment is one where even employees with commitments such as pregnancy, childbirth, childcare, parenting, or family care can make the most of their abilities. To this end, personnel systems undergo regular review to enable assistance from the two aspects of work style support and financial support. Starting in fiscal 2018, we have been taking steps to install a more thorough understanding of these systems, preparing a handbook on the support available for balancing work and childcare or family care. The handbook provides an overview of the systems, shows how to use them, and describes how managers can give assistance. We also revised the systems so that cumulative annual paid time off can be used, in case of hospital visits for illnesses requiring repeated or ongoing treatment, or for infertility treatment.

Creating Appropriate Personnel Evaluation Systems

The Company has introduced a Competency Evaluation System based on competency models and a Performance Evaluation System centered on management of missions and goals. In Competency Evaluation, employees are interviewed by their supervisors based on competency items, and the resulting assessment of whether they have the necessary competency is used in deciding promotions. In Performance Evaluation, employees meet with their supervisors to discuss the extent to which they attained missions and goals agreed on with the supervisor at the beginning of the fiscal year, and the degree of challenge presented by the goals. Their performance is then evaluated, and the results of these evaluations are reflected in employee bonuses. The competency model and performance evaluation items for managerial staff are structured so that 50% of the items evaluated relate to personnel management.

Self-Statement System

A Self-Statement System was introduced to help the Company understand the aspirations of individual employees and reflect them in personnel development and elsewhere. Under this system, employees submit this statement on the specified form once a year, looking back on their work and indicating their ambitions, as well as other matters of relevance, such as any reason why they cannot accept job transfers that would involve moving residence and how long that will remain the case.

Support from social insurance and employment insurance

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maternity leave benefit</td>
<td>Benefit paid by the social insurance fund once a year, regardless of the number of childbirths.</td>
</tr>
<tr>
<td>Childcare leave benefit</td>
<td>Benefit paid by the social insurance fund once a year, regardless of the number of childbirths.</td>
</tr>
<tr>
<td>Retirement allowance</td>
<td>Benefit paid by the social insurance fund once a year, regardless of the number of childbirths.</td>
</tr>
</tbody>
</table>

Support for babysitter use

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Childcare concierge service</td>
<td>Service for arranging childcare and tuition for children under the age of 6</td>
</tr>
<tr>
<td>Support for babysitter user</td>
<td>Benefit paid by the social insurance fund once a year, regardless of the number of childbirths.</td>
</tr>
</tbody>
</table>

Childcare and Family Care Systems

As of March 31, 2019, a total of 1,184 female employees were working in the Group worldwide. Of these, 26.4% occupy managerial positions (supervisor class and above). JX Nippon Mining & Metals employs 282 female employees (including part-time employees), of whom approximately 30% are in managerial roles. There are no gender differences in base pay.
Maintaining Good Labor-Management Relations

Labor unions have been formed at nearly all Group companies in Japan. At each Group company, good relations built on mutual trust are maintained between management and employees. At regular meetings between representatives of management and the labor union, management discloses details of the company’s business; while at the Health and Safety Committee meetings, causes of accidents and incidents are analyzed thoroughly. In such ways, labor unions play an important role as partners with management, including by conveying information and gathering views within the organization.

Membership in labor unions as of March 31, 2019

<table>
<thead>
<tr>
<th>No. of union members</th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>5,111</td>
<td>534</td>
<td>5,645</td>
<td></td>
</tr>
</tbody>
</table>

Membership rate: 62% 50% 60% 60% 60%

Use of childcare leave program in fiscal 2018

<table>
<thead>
<tr>
<th>No. of employees using program</th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>108</td>
<td>7</td>
<td>115</td>
<td></td>
</tr>
</tbody>
</table>

Usage rate (%): 7% 100% 9%

Retention rate after return from childcare leave (Percentage of those still employed 12 months after return from leave)

<table>
<thead>
<tr>
<th>No. of employees returning to work in fiscal 2017</th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>9</td>
<td>16</td>
<td></td>
</tr>
</tbody>
</table>

Retention rate (%): 86% 100% 96%

Status of rehiring efforts in fiscal 2018

<table>
<thead>
<tr>
<th>No. of age-limit retirees</th>
<th>17</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of reemployed</td>
<td>14</td>
</tr>
</tbody>
</table>

Reemployment rate (%): 82%

Persons with disabilities as a percentage of the workforce in fiscal 2018

| Percentage of employees with disabilities (the legal requirement is 2.2%) | 2.4% |

Survey scope: Companies in which JX Nippon Mining & Metals has 50% or greater voting rights directly or indirectly (excluding H.C. Starck Tantalum and Niobium GmbH)

No. of employees (by employment status and employment contract type; as of March 31, 2019)

<table>
<thead>
<tr>
<th>Full-time</th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Open-ended contract</td>
<td>7,492</td>
<td>195</td>
<td>7,687</td>
</tr>
<tr>
<td>Fixed-term contract</td>
<td>724</td>
<td>140</td>
<td>864</td>
</tr>
<tr>
<td>Subtotal</td>
<td>8,217</td>
<td>1,134</td>
<td>9,351</td>
</tr>
<tr>
<td>Part-time</td>
<td>20</td>
<td>26</td>
<td>46</td>
</tr>
<tr>
<td>Open-ended contract</td>
<td>44</td>
<td>22</td>
<td>66</td>
</tr>
<tr>
<td>Fixed-term contract</td>
<td>18</td>
<td>2</td>
<td>20</td>
</tr>
<tr>
<td>Subtotal</td>
<td>62</td>
<td>24</td>
<td>86</td>
</tr>
<tr>
<td>Total</td>
<td>8,279</td>
<td>1,158</td>
<td>9,437</td>
</tr>
</tbody>
</table>

No. of employees (by region; as of March 31, 2019)

<table>
<thead>
<tr>
<th>Male</th>
<th>Female</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>6,330</td>
<td>95</td>
<td>6,425</td>
</tr>
<tr>
<td>712</td>
<td>25</td>
<td>737</td>
</tr>
<tr>
<td>Total</td>
<td>7,042</td>
<td>1,184</td>
</tr>
</tbody>
</table>

No. of newly hired employees (April 1, 2018 to March 31, 2019)

<table>
<thead>
<tr>
<th>Male</th>
<th>Female</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>793</td>
<td>107</td>
<td>900</td>
</tr>
<tr>
<td>101</td>
<td>11</td>
<td>112</td>
</tr>
<tr>
<td>Total</td>
<td>894</td>
<td>118</td>
</tr>
</tbody>
</table>

No. of employees ending employment (April 1, 2018 to March 31, 2019)

<table>
<thead>
<tr>
<th>Male</th>
<th>Female</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>589</td>
<td>121</td>
<td>710</td>
</tr>
<tr>
<td>110</td>
<td>12</td>
<td>122</td>
</tr>
<tr>
<td>Total</td>
<td>700</td>
<td>133</td>
</tr>
</tbody>
</table>

Data Relating to Diversity (JX Nippon Mining & Metals)

Use of childcare leave program in fiscal 2018

<table>
<thead>
<tr>
<th>No. of employees eligible to use program*</th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>108</td>
<td>7</td>
<td>115</td>
<td></td>
</tr>
</tbody>
</table>

Usage rate (%): 7% 100% 9%

Retention rate after return from childcare leave (Percentage of those still employed 12 months after return from leave)

<table>
<thead>
<tr>
<th>No. of employees still employed 12 months later</th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>9</td>
<td>15</td>
<td></td>
</tr>
</tbody>
</table>

Retention rate (%): 86% 100% 96%

Rate of return from childcare leave (Percentage of employees who took leave and then returned to their jobs)

<table>
<thead>
<tr>
<th>No. of employees returning to work in fiscal 2018</th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>5</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>No. of employees planning to return</td>
<td>2</td>
<td>6</td>
<td>8</td>
</tr>
</tbody>
</table>

Return rate (%): 100% 83% 88%

Persons with disabilities as a percentage of the workforce in fiscal 2018

| Percentage of employees with disabilities (the legal requirement is 2.2%) | 2.4% |

Survey scope: Companies in which JX Nippon Mining & Metals has 50% or greater voting rights directly or indirectly (excluding H.C. Starck Tantalum and Niobium GmbH)

Counting of seconded employees: Includes employees being seconded to and from the companies subject to this survey

Survey scope: Companies in which JX Nippon Mining & Metals has 50% or greater voting rights directly or indirectly (excluding H.C. Starck Tantalum and Niobium GmbH)

Counting of seconded employees: Includes employees being seconded to and from the companies subject to this survey

Survey scope: Companies in which JX Nippon Mining & Metals has 50% or greater voting rights directly or indirectly (excluding H.C. Starck Tantalum and Niobium GmbH)

Counting of seconded employees: Includes employees being seconded to and from the companies subject to this survey

Survey scope: Companies in which JX Nippon Mining & Metals has 50% or greater voting rights directly or indirectly (excluding H.C. Starck Tantalum and Niobium GmbH)

Counting of seconded employees: Includes employees being seconded to and from the companies subject to this survey

Survey scope: Companies in which JX Nippon Mining & Metals has 50% or greater voting rights directly or indirectly (excluding H.C. Starck Tantalum and Niobium GmbH)

Counting of seconded employees: Includes employees being seconded to and from the companies subject to this survey

Survey scope: Companies in which JX Nippon Mining & Metals has 50% or greater voting rights directly or indirectly (excluding H.C. Starck Tantalum and Niobium GmbH)

Counting of seconded employees: Includes employees being seconded to and from the companies subject to this survey

Survey scope: Companies in which JX Nippon Mining & Metals has 50% or greater voting rights directly or indirectly (excluding H.C. Starck Tantalum and Niobium GmbH)

Counting of seconded employees: Includes employees being seconded to and from the companies subject to this survey

Survey scope: Companies in which JX Nippon Mining & Metals has 50% or greater voting rights directly or indirectly (excluding H.C. Starck Tantalum and Niobium GmbH)

Counting of seconded employees: Includes employees being seconded to and from the companies subject to this survey

Survey scope: Companies in which JX Nippon Mining & Metals has 50% or greater voting rights directly or indirectly (excluding H.C. Starck Tantalum and Niobium GmbH)

Counting of seconded employees: Includes employees being seconded to and from the companies subject to this survey

Survey scope: Companies in which JX Nippon Mining & Metals has 50% or greater voting rights directly or indirectly (excluding H.C. Starck Tantalum and Niobium GmbH)

Counting of seconded employees: Includes employees being seconded to and from the companies subject to this survey

Survey scope: Companies in which JX Nippon Mining & Metals has 50% or greater voting rights directly or indirectly (excluding H.C. Starck Tantalum and Niobium GmbH)

Counting of seconded employees: Includes employees being seconded to and from the companies subject to this survey

Survey scope: Companies in which JX Nippon Mining & Metals has 50% or greater voting rights directly or indirectly (excluding H.C. Starck Tantalum and Niobium GmbH)

Counting of seconded employees: Includes employees being seconded to and from the companies subject to this survey

Survey scope: Companies in which JX Nippon Mining & Metals has 50% or greater voting rights directly or indirectly (excluding H.C. Starck Tantalum and Niobium GmbH)

Counting of seconded employees: Includes employees being seconded to and from the companies subject to this survey

Survey scope: Companies in which JX Nippon Mining & Metals has 50% or greater voting rights directly or indirectly (excluding H.C. Starck Tantalum and Niobium GmbH)

Counting of seconded employees: Includes employees being seconded to and from the companies subject to this survey

Survey scope: Companies in which JX Nippon Mining & Metals has 50% or greater voting rights directly or indirectly (excluding H.C. Starck Tantalum and Niobium GmbH)

Counting of seconded employees: Includes employees being seconded to and from the companies subject to this survey
Main Activities in Fiscal 2018

For fiscal 2018, the Group adopted a corporate citizenship to the nature of the Group’s businesses, undertaking social activities and improving relations with the local communities. Throughout the year, Members of the kendo club at the Works taught local children from kindergarten to high school age. Plant tours were held for 22 students and accompanying teachers from Okayama University. In addition, donations were made to local elementary school children to help pay for their tuition and living expenses.

Activity Policies and Activities Undertaken in Fiscal 2018

For fiscal 2018, the Group adopted a corporate citizenship policy of carrying out social contribution activities geared to the nature of the Group’s businesses, undertaking social contribution activities and interchanges rooted in the local Main Activities in Fiscal 2018.
Respecting Human Rights

Fundamental Policy

The JX Nippon Mining & Metals Group Code of Conduct states, “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 culture and customs.” Maintaining sound business practices while respecting the human rights of local residents, customers, employees, business partners and all others involved in the supply chain, is seen as a major premise for the continued operation of the Group. Based on this belief, we aim to conduct our business activities with due consideration for human rights, making use of initiatives such as explanatory meetings for local residents and interviews with employees and business partners. To create a corporate climate where human rights are respected, we are also actively engaged in educational activities.

The JXTG Group Code of Conduct and JXTG Group Human Rights Policy include the following statements on human rights.

JXTG Group Code of Conduct

1. We shall not infringe on human rights through our business activities. We respect internationally accepted human rights standards and dignity, acknowledging the differences pertaining to gender, age, nationality, race, ethnicity, skin color, culture, thought, religion, belief, political opinions, sexual orientation, and the presence or absence of disability.
2. We shall not engage in any type of discrimination or harassment.
3. We shall not engage in any forms of forced labor or child labor.
4. We shall not engage in business transactions which may lead to the prolongation of conflicts, human rights violations, or inhumane acts.

JXTG Group Human Rights Policy

The JXTG Group conducts its business activities under the JXTG Group Philosophy, which states that we will contribute to the development of our communities and help to ensure a vibrant future through creation and innovation in energy, resources, and materials. This policy was formulated as a guideline for promoting respect for human rights across the entire Group and fulfilling related obligations pursuant to the United Nations Guiding Principles on Business and Human Rights.

1. Basic Approach
The JXTG Group fully recognizes that human rights must be respected in all of the countries and regions where it conducts its business activities.

2. Compliance with Applicable Laws and Regulations
The JXTG Group complies with the laws, ordinances and regulations applicable in the countries and regions where it conducts its business activities. In addition, the JXTG Group will pursue a method for respecting internationally accepted human rights and the laws and regulations of each country and region. If there is a contradiction between internationally recognized human rights and the laws and regulations of each country and region, the JXTG Group will establish and continually implement a mechanism for human rights due diligence. Human rights due diligence refers to the continuous process of conducting preventive surveys and investigations, rectifying issues using appropriate means, and disclosing the progress and results of such externally, in order to prevent or mitigate possible adverse impacts on human rights caused by the company.

3. Respect for International Norms on Human Rights
The JXTG Group supports and respects the International Bill of Human Rights (consisting of the Universal Declaration on Human Rights, International Covenant on Civil and Political Rights, and the International Covenant on Economic, Social and Cultural Rights), which stipulates the fundamental human rights of all people, along with international norms on human rights such as the ILO Declaration on the Fundamental Principles and Rights at Work of the International Labor Organization, which sets forth fundamental labor rights, other conventions relating to the human rights of workers on wages and working hours, the Declaration on the Rights of Indigenous Peoples, and the Children’s Rights and Business Principles. As a participant in the UN Global Compact, we support and respect the 10 principles of the UN Global Compact.

4. Fulfillment of Responsibility to Respect Human Rights
The JXTG Group will establish and continually implement a mechanism for human rights due diligence. Human rights due diligence refers to the continuous process of conducting preventive surveys and investigations, rectifying issues using appropriate means, and disclosing the progress and results of such externally, in order to prevent or mitigate possible adverse impacts on human rights caused by the company.

5. Training
The JXTG Group will provide appropriate training to its officers and employees to ensure that this policy is incorporated into the business activities of all companies belonging to the JXTG Group.

6. Information Disclosure
The progress and results of initiatives for respect for human rights under this policy will be disclosed on our website and in reports, among other media.

7. Applicable Scope
This policy applies to all officers and employees of the JXTG Group. All business partners involved in the JXTG Group’s business activities will be asked to cooperate with this policy.

8. Positioning
This policy supplements the provisions of the JXTG Group as a corporate group with global business operations, the Philosophy and the JXTG Group Code of Conduct.

JX Nippon Mining & Metals Group

The JX Nippon Mining & Metals Group Compliance Regulation likewise states explicitly the commitment to prohibiting unjust discrimination, preventing harassment, protecting personal information, and preventing child labor, forced labor, and other abuses.

Prohibition of unjust discrimination
JX Nippon Mining & Metals Group Company and its Officers and Employees etc. shall not discriminate against employees for (including but not limited to) race, nationality, sex, age, religious belief, social status or physical features.

Prevention of harassment
JX Nippon Mining & Metals Group Company and its Officers and Employees etc. shall generally engage themselves in creating a harassment-free environment, and shall refuse to accept sexual harassment (including gender harassment) and/or power harassment.

Protection of personal information
JX Nippon Mining & Metals Group Company and its Officers and Employees etc. shall comply with the Personal Information Protection Law and related regulations and internal rules, adequately protect the personal information of (including but not limited to) customers, business partners and employees, and in situations whereby such personal information needs to be managed, manage it with utmost care.

Prevention of child labor and forced labor
JX Nippon Mining & Metals Group Company and its Officers and Employees etc. shall not associate themselves directly with child labour and/or forced labour, and shall put efforts to contribute to solve such issues.

Raising Employee Awareness

The Company provides and makes known guidelines on human rights including prevention of discrimination, harassment, forced labor, and child labor. Each year, compliance inspections are carried out voluntarily at each workplace to confirm the extent to which these guidelines are upheld. We further endeavor to comply with labor-related laws and regulations in the countries and regions where we conduct business. Regarding employee remuneration in Japan, we conduct regular negotiations with our labor unions on suitable wage levels and labor conditions, and verify the appropriateness of overall wages.

Providing Human Rights Training (e-Learning)

A human rights training program making use of e-learning was provided in fiscal 2018 for all officers and employees of the Group. The training instilled understanding of our thinking on human rights and the importance of accommodating diverse values in conducting global business.

Hours of human rights education given in fiscal 2018

1,479 hours

Note: This figure represents the total hours (hours implemented x number of persons) for the above e-learning program and other human rights-related education.
JS Nippon Mining & Metals Group Basic Procurement Policy

**Basic Policy**

1. Comply with laws, regulations, and social norms in executing business operations.
2. Conduct purchasing activities based on fair evaluations.
3. Maintain appropriate relationships with business partners based on the highest ethical values.
4. Protect intellectual property rights.
5. Strictly control personal information obtained in the course of procurement activities.
6. Do not engage in illegal procurement.
7. Build relationships with business partners based on mutual understanding and trust.
8. Provide business partners with high reliability and satisfaction through accurate, fast, and transparent activities.
9. Endeavor to achieve robust communication with business partners and constantly promote creativity and innovation through advanced ideas.
10. Contribute to the development of a sustainable society by promoting the prevention of environmental destruction and the rational use of energy and machinery.

**Policy for Selecting Procurement Partners**

In the conduct of the JS Nippon Mining & Metals Group’s business operations, it is necessary for not only the Group but also our business partners to supply chain to fulfill their responsibility to society. Therefore, we also require our business partners to operate in accordance with the following:

1. Comply with laws, regulations, and social norms, such as those below, and place priority on human rights and environmental impact.
   - Obey laws and regulations related to manufacturing and sale, etc.
   - Comply with labor-related laws and regulations.
   - Abide by laws and regulations related to safety and health and develop a proper labor environment.
   - Prohibit child labor and forced labor.
   - Prohibit discrimination based on race, gender, etc. and respect the human rights, personality, and individuality of employees.
   - Comply with environmental laws and regulations.
   - Prohibit bribery and other unfair acts.
   - Do not engage in corrupt practices.
   - Preclude all relations with "terrestrial forces" (the term used to refer to organized crime groups in Japan).

2. Engage in sound and fair business management.

3. Based on the JS Nippon Mining & Metals Group’s Green Purchasing Guidelines, build an environmental management system and properly manage specific chemicals substances.

4. Offer stable supply capacity and satisfy the quality, price, delivery, and service requirements of the JS Nippon Mining & Metals Group.

5. Possess technological capabilities that meet the requirements of the JS Nippon Mining & Metals Group.

CSR Purchasing Questionnaire Surveys

In fiscal 2019, the JS Nippon Mining & Metals Group began conducting CSR Purchasing Questionnaire surveys across the entire supply chain to fulfill its responsibility to society in areas including respect for human rights, occupational health and safety, compliance, and environmental protection. The fiscal 2019 surveys targeted 219 business partners that accounted for approximately 80% of the value of the items purchased and accepted in fiscal 2018 by the Company, JS Nippon Environmental Services Co., Ltd., and Pan Pacific Copper Co., Ltd. Responses were received from 218 business partners, for a response rate of 99.5%.

Based on the survey results, we will provide feedback to business partners, devoting our efforts to promoting CSR activities throughout the supply chain.

Confronting the Problem of Conflict Minerals

“Conflict minerals” is the general term for minerals that are mined (illegally, in most cases) in conflict-affected regions, providing a source of funds for local armed groups. The use of these minerals may lead to the prolonging of conflicts and the expansion of human rights abuses and dehumanizing acts. Global moves to restrict trade of conflict minerals began in the late 1990s, and today various organizations have devised rules and programs. In 2011, the Organisation for Economic Co-operation and Development established the Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas, advising corporations and others to manage their operations so as to avoid involvement in the trade of conflict minerals. In the United States, from 2013 the Dodd-Frank Wall Street Reform and Consumer Protection Act obligated companies listed on the U.S. stock exchanges to submit reports on their usage of specific conflict minerals (tin, tantalum, tungsten, and gold) to the Securities and Exchange Commission. The aim of such measures is to stop companies from using conflict minerals through information disclosure and social pressure.

In line with these global trends, industry organizations relevant to the Group (including the LBMA* and RBA*2) have established monitoring programs for eliminating conflict minerals. These programs request that companies cooperate with surveys and undergo external audits by an independent organization.

* LBMA: London Bullion Market Association
* RBA: Responsible Business Alliance

For the Peace of Mind of Society

Overview

Strategy

CSR

Information

Initiatives Relating to Local Residents

Development and operation of mines can have a particularly significant impact on the surrounding environment. It is therefore essential to pay due consideration to the human rights of local residents and implement measures to ensure coexistence and copropyright with local communities.

Today, SCM Minera Lumina Copper Chile, the operator of the Caserones Copper Mine, applies a basic three-point policy for supporting local communities: respect for life, respect for the community and environment, and respect for current law. In keeping with this policy, from the project launch in 2007, the operator began holding explanatory meetings and engaging in dialog with the Collins, indigenous people living in the area around the mine site, endeavoring to build up trust.

In fiscal 2018 there were no cases of violations of the rights of people in local communities.

Initiatives in the Tantalu Supply Chain

H.C. Stark Tantalu and Nobium GmbH (“HCS TaNb”), a producer of tantalum powder, implements a strict program of purchasing checks based on international standards for procuring raw materials from conflict-affected and high-risk areas. For example, HCS TaNb purchases materials with tags that the ITSCI*1 distributes and tracks to guarantee non-involvement in conflicts, child labor, or other human rights violations within conflict-affected areas. HCS TaNb also performs supply chain due diligence to confirm the tags. As a results of these initiatives, HCS TaNb has been included on the RMp Conformant Smelters list in recognition that HCS TaNb is taking proper measures to exclude conflict minerals.

Since June 2019, moreover, HCS TaNb has been implementing a supply chain due diligence system similar to the ITSCI, by means of the Better Sourcng Program (BSP) made available by the RSC Global Group, a global responsible sourcing auditor for the raw materials supply chain.

* ITSCI (ITSL) Supply Chain Initiative

An initiative by the International Trade Research Institute (ITSL), a global industry group for its-Based or OECD Due Diligence, it works to enable due diligence to be implemented in conflict-affected areas that are free of involvement with local armed groups.
Insisting on Full Compliance

The JX Nippon Mining & Metals Group insists that officers and employees comply fully with laws, regulations, and other rules. We are building an organizational structure for compliance, aimed at ensuring corporate activities are conducted fairly, and at increasing public trust in the Group. To those ends, we are implementing a multilayered system of checks, providing relevant rules and regulations, and enhancing education to raise awareness, among other initiatives.

Performance regarding Key Compliance Goals in Fiscal 2018

(1) Checking and improving the implementation of compliance rules
We determined the extent to which compliance rules were being implemented at each Group company, and took steps to rectify organizational or operational issues that were identified.

(2) Taking steps to eliminate association with antisocial forces and implementing anti-bribery measures
Audits were conducted at the Company and Group companies to confirm the extent to which measures for ensuring compliance are in place and being implemented. In fiscal 2018, there were no adverse dispositions from regulatory authorities (license revocation, orders for improvement, fines, etc.) for bribery.

(3) Program for ensuring compliance with laws for prevention of unfair competition
Given the growing trend in countries around the world to make competition laws more rigorous, the JX Nippon Mining & Metals Group established a program to ensure that officers who are in positions to influence pricing and similar decisions ensure that they do not violate laws governing competition.

Organizational Structure for Compliance

Compliance Committee
Measures related to compliance in the Group, including basic policy, priority issues for the fiscal year, and education, are determined at meetings of the Compliance Committee (held twice a year as a rule). The committee consists mainly of the JX Nippon Mining & Metals president and officers in charge of compliance at each department of the Company and at major Group companies in Japan and overseas.

It receives reports on the status of compliance from each department of the Company and from Group companies. Based on these reports, the committee evaluates the risk of fraudulent acts, legal violations, and other misconduct related to business operations, and reflects its conclusions primarily in setting priority issues and formulating educational plans.

Information Management

(1) Protection of Personal Information
We have drawn up the JX Nippon Mining & Metals Group Personal Information Protection Rules and have taken other measures to ensure proper handling of personal information, tailored to the situation at each Group company and the materiality of the information it handles.

(2) Management of Confidential Information
We have drawn up the JX Nippon Mining & Metals Group Basic Policy on Confidential Information Management and endeavor to manage confidential information properly, in accordance with the materiality of the information.

(3) Information Security
We have drawn up the JX Nippon Mining & Metals Group Information Security Regulations and accompanying Information Security Guidelines, and we implement security measures governing company computers and networks.

Enhancing compliance knowledge and awareness among officers and employees
The Group seeks to educate officers and employees fully to increase their knowledge and awareness of compliance, so that they act properly from a compliance standpoint in each of their work processes.

In fiscal 2018, a total of 35 compliance education sessions were provided to approximately 900 persons, including level-specific training, quality control training, and education on laws and legal affairs. Questionnaires administered following the sessions showed that the attendees generally found the education useful.

In fiscal 2018, we conducted inspections of environment-related compliance at 20 of the Group’s operating sites, and the inspections found no major deficiencies. We determined the extent to which compliance rules were appropriately for the most part.

Overall, laws and regulations on the environment and safety were well understood at these sites, and the inspections found no major deficiencies in comprehension. Appropriate measures were taken to address matters identified in the inspections.

In fiscal 2018, the Group conducted inspections at 15 operating sites to check legal compliance regarding human resources and labor, and verified that the relevant laws and regulations were being implemented appropriately for the most part.
Corporate Governance

The JX Nippon Mining & Metals Group recognizes that earning the trust of stakeholders is essential to carrying out its business, and it therefore endeavors to enhance the integrity and transparency of its management through corporate governance.

Corporate Governance Structure of the JX Nippon Mining & Metals Group

Overview

Strategy

CSR

Information

Management of Group Companies

Each Group company is placed under the jurisdiction of the appropriate operating or corporate department of the Company based on its business line, and the execution of its operations is managed and supervised by that department. Important matters pertaining to the management of individual Group companies are communicated to the Company via the supervising department, and these matters are referred and reported to Board of Directors meetings, the Executive Meetings, and other important meetings as necessary.

Internal Control System

The JX Nippon Mining & Metals Group has drawn up a basic policy for the establishment and operation of an internal control system, laying out rules on such matters as corporate governance, compliance, internal auditing, and risk management. Based on this policy, we have established an internal control system that ensures operations are carried out efficiently and properly.

Internal Control Council

To develop and operate the Group’s internal control system, we set up the Internal Control Council as an advisory body to the president, with the role of monitoring the status of internal controls and holding discussions to address issues as necessary. As a rule, the council meets once a year.

Internal Control Promotion Committee

The Internal Control Promotion Committee was set up for advising and assisting with the duties of the Internal Control Council. The committee’s responsibilities include monitoring internal control activities. As a rule, the committee meets twice each fiscal year, once in the first half and once in the second half of the year.

Internal Auditing

Internal auditing is carried out across the entire JX Nippon Mining & Metals Group to investigate, study, and assess the status of business administration, operations, and assets preservation from the standpoints of their legality, efficiency, and effectiveness. The Internal Audit Department is responsible for these functions. The Internal Audit Department draws up a medium-term policy at about three-year intervals and drafts auditing plans for each fiscal year, carrying out internal auditing systematically. Internal auditing of Group companies is conducted with the collaboration and cooperation of auditors sent from the Company to Group companies. Based on the results of the audits, improvements are recommended as needed, and implementation of the recommended measures is tracked. Auditing results and findings are reported to the relevant Group company and to the president of JX Nippon Mining & Metals, as well as being reported as necessary to the Executive Meeting.
## Risk Management

Risk Management Office leads risk management activities based on Risk Management Regulation to identify risks that may threaten Group business management and to prevent them from occurring.

### Risk Management Activities

#### Risk Management Council

The Risk Management Council is in charge of approving the annual plan for risk management framework, selecting significant risks, preparing risk response plans, and evaluating and verifying the performance of those activities. The Council is chaired by President and consists of general managers of each of the divisions, officers in charge of corporate departments, and outside advisors as members. In fiscal 2018, the Council met each quarter for a total of four meetings.

### Board of Directors

<table>
<thead>
<tr>
<th>Members</th>
</tr>
</thead>
<tbody>
<tr>
<td>President</td>
</tr>
<tr>
<td>Risk Management Council</td>
</tr>
<tr>
<td>Secretariat</td>
</tr>
<tr>
<td>Risk Management Office</td>
</tr>
<tr>
<td>Outside Advisors</td>
</tr>
<tr>
<td>Division General Managers and Officers in Charge of Corporate Departments</td>
</tr>
<tr>
<td>Departments in Charge of Risks</td>
</tr>
</tbody>
</table>

#### Selecting Significant Risks

Each fiscal year, all organizations in the Group including affiliated companies, implement a risk assessment to identify risks that may threaten the business management of the Group, based on the impact and likelihood of occurrence. Of these, risks critically affecting on the business management from a Group-wide standpoint are selected as significant risks in the Risk Management Council.

**Examples of significant risks selected in past fiscal years**

- Investment management, credit management, business continuity plan (BCP), information Security, etc.

#### Responding to Significant Risks

The departments in charge of significant risks (see figure on left) draw up the concrete response plan and implement actions for managing significant risks with the Risk Management Office providing support at each step. The respective current risk situation is reported, evaluated, and verified at Risk Management Council, leading to further improvement.

#### Raising Risk Awareness

Risk management training is provided periodically for officers and management personnel, including at Group companies overseas, to raise awareness of risks among them. In fiscal 2018, training was provided for the top management of JX Nippon Mining & Metals and for local (national staff) management personnel in Chinese Group companies.

### BCP (Business Continuity Planning) Initiatives

The Group has drawn up business continuity plans for the Head Office, each operating site, and affiliated companies to minimize damage and quickly recover in the event of a major earthquake or any other incident that could disrupt operations.

#### BCP Training

In fiscal 2018, BCP training was implemented at the JX Nippon Mining & Metals Head Office, Kurami Works, and Isohara Works. The training assumed damage from an earthquake with local seismic intensity of 6+ on the Japanese scale of 0 to 7. The training, conducted based on scenarios not made known to the participants in advance, involved (1) setting up a disaster response headquarters, (2) confirming safety, (3) determining the extent of damage in and outside company premises, and (4) sharing reports on these matters and deliberating and implementing response measures. Since the training made clear the need to update initial response manuals, improvements continue to be made even now.

Through further repeated training, the Group will endeavor to raise BCP effectiveness and employees’ understanding of BCP.

#### Initial response to a major earthquake

The Company has introduced a safety confirmation system to promptly check on the safety of employees and their family members in the case of a major earthquake, as well as checking if employees’ homes have been damaged. Employees can use the system to report damage even when they are at home or otherwise away from Company premises, making use of their mobile phones, PCs, or other devices.

Business transceivers are provided in the homes of disaster response team members as a means of communication in case a major earthquake occurs in the Tokyo area at night or on a holiday and a member is unable to make it to the Head Office. In addition, we have introduced an emergency teleworking system for senior managers and above, as well as employees assigned to critical operations, that connects their home PCs to company computers enabling them to continue their duties from home. These arrangements too are subject to periodic drills in preparation for their use in an actual emergency.

As a measure to support employees who are unable to return home due to a disaster, a minimum of one week’s worth of food, water, and other supplies for employees are stored at each operating site.
Our Relationship with Stakeholders

Taking into consideration the JXTG Group Philosophy, the JX Nippon Mining & Metals Code of Conduct, and the Group supply chain, we have identified the following stakeholders of relevance in undertaking our CSR activities. By accurately grasping the needs of various stakeholders and addressing these sincerely, we seek to gain the trust of society.

Employees
- We strive to promote a rewarding work experience, mainly by improving the working environment and education programs, and to raise the motivation of each individual employee.

Main Initiatives
- Regular communication between labor unions and management
- Enhancement of childcare and family care systems
- Information provision via the internet

Customers, consumers, and the general public
- By improving customer satisfaction and fulfilling our responsibility to society through stable and efficient supply of high-quality products, we will contribute to a more abundant society.

Main Initiatives
- Provision of safe, reliable products and services of real value
- Communication through marketing activities
- Information provision using social media, etc.

Industry-government-academic groups
- Recognizing these groups as important partners for realizing a sustainable nonferrous metals industry, we cooperate with them in developing technologies and human resources.

Main Initiatives
- Organizational tie-up agreement with Tohoku University
- Activities in the JXTG Metals Endowed Unit
- Administration of the Japan Mining Industry Association
- Participation in the International Institute for Mining Technology

Local communities
- In the Group's CSR activities we reflect the JXTG Group, we strive for timely participation in various industry organizations to fulfill our responsibility to society and contribute to the realization of a sustainable society.

Main Initiatives
- Collaboration in activities supporting development of the next generation
- Communication in activities for promotion of biodiversity

Suppliers
- We seek to build relationships of trust with suppliers as partners in carrying out our business, and to realize fair and equitable trading throughout the supply chain.

Main Initiatives
- Communication through purchasing activities
- Provision of contact center for inquiries
- Conducting supplier surveys

NPO/NGO
- In the Group's CSR activities we reflect the JX Nippon Mining & Metals Code of Conduct, and the JX Nippon Mining & Metals Group has formulated its Code of Conduct in accordance with the ICMM 10 Principles for sustainable development, and works to solve the issues described in these principles and the ICMM 10 Principles. Statements that supplement them.

Endowment of and Support for the Extractive Industries Transparency Initiative (EITI)
- The EITI is a multi-stakeholder cooperation framework that seeks greater transparency in the flows of funds from extractive industries, such as oil, natural gas, and metal mining, to the governments of resource-producing countries. The aim is to prevent corruption and conflicts, promoting responsible resource development that will lead to poverty reduction and growth. JX Nippon Mining & Metals, with its involvement in global resources development, endorses the EITI and actively supports its activities.

Participation in the International Council on Mining & Metals (ICMM)
- The ICMM is a global association of companies involved in mining and metal smelting and refining. Its aim is for nonferrous metals industries to help society grow sustainably. As an ICMM member, JX Nippon Mining & Metals supports the ICMM's Code of Conduct and the ICMM 10 Principles for sustainable development, and works to solve the issues described in these principles and the ICMM 10 Principles.

Participation in the United Nations Global Compact
- The United Nations Global Compact is a worldwide framework whereby corporations and other organizations pledge to act as good members of society to achieve sustainable growth. JX Nippon Mining & Metals joined the United Nations Global Compact in August 2008. We support the Ten Principles on human rights, labor, the environment, and anti-corruption, and are committed to realizing these ideals.

Memorandum of Understanding with Industry Organizations
- The JNA represents companies engaged in the resource development and/or smelting and refining of nonferrous metals. With a view to the sound growth of the industry, it conducts surveys and other research on improving technologies, disseminates and publicizes knowledge, and proposes policies to government agencies, with respect to resource development, smelting and refining, and recycling. The JX Nippon Mining & Metals Group is a governing member, serves on various committees, and participates in running the association.

The Sulphuric Acid Association of Japan
- The JSCA is an industry association of companies manufacturing copper alloy products, namely plates, strips, pipes, and wires made by melting and rolling copper and copper alloys. By encouraging contacts and cooperation among members, it promotes the growth and growth of the rolled copper industry as a whole. The Group serves on the Road Map Committee, is involved in developing new demand and improving quality, and as a member of the Statistics Subcommittee, is involved in surveys and reports on market size.

Japan Society of Newer Metals
- The association focuses on new metals that are supporting the advance of high-tech industries. By conducting surveys and research, and collecting and providing information, it aims for the sound growth of the new metals industry and related industries. As a member of the Compound Semiconductors Subcommittee and the Target Subcommittee, the Company is involved in market size surveys and reports and in making proposals to government agencies. The Company also works to improve health and safety as a member of the Safety Committee.

Japan Catalyst Recycling Association
- The association is made up of companies engaged in the reuse of catalysts and aims to promote the recycling of precious metals, rare metals, and other metal resources through the proper treatment of spent precious metals, rare metals, and other metal resources. It conducts surveys and compiles statistics on recycling, and holds regular training sessions to improve technologies and promote friendship among members. The Company provides the chairman of the association, serves on the Public Relations Committee, and is involved in issuing survey reports and organizing general meetings.

Communicating Internationally

Organization/Framework | Overview and activities of the organization
--- | ---
Japan Mining Industry Association (JMA) | Vice chairman, director, etc.
The JMIA represents companies engaged in the resource development and/or smelting and refining of nonferrous metals. With a view to the sound growth of the industry, it conducts surveys and other research on improving technologies, disseminates and publicizes knowledge, and proposes policies to government agencies, with respect to resource development, smelting and refining, and recycling. The JX Nippon Mining & Metals Group is a governing member, serves on various committees, and participates in running the association.
The Sulphuric Acid Association of Japan (JSCA)
Chairman
The JSCA is an industry association of companies manufacturing copper alloy products, namely plates, strips, pipes, and wires made by melting and rolling copper and copper alloys. By encouraging contacts and cooperation among members, it promotes the progress and growth of the rolled copper industry as a whole. The Group serves on the Road Map Committee, is involved in developing new demand and improving quality, and as a member of the Statistics Subcommittee, is involved in surveys and reports on market size.
Japan Copper and Brass Association (JCBA)
Director
The JCBA is an industry association of companies manufacturing copper alloy products, namely plates, strips, pipes, and wires made by melting and rolling copper and copper alloys. By encouraging contacts and cooperation among members, it promotes the progress and growth of the rolled copper industry as a whole. The Group serves on the Road Map Committee, is involved in developing new demand and improving quality, and as a member of the Statistics Subcommittee, is involved in surveys and reports on market size.
Japan Society of Newer Metals
Director
The association focuses on new metals that are supporting the advance of high-tech industries. By conducting surveys and research, and collecting and providing information, it aims for the sound growth of the new metals industry and related industries. As a member of the Compound Semiconductors Subcommittee and the Target Subcommittee, the Company is involved in market size surveys and reports and in making proposals to government agencies. The Company also works to improve health and safety as a member of the Safety Committee.
Japan Catalyst Recycling Association
Chairman
The association is made up of companies engaged in the reuse of catalysts and aims to promote the recycling of precious metals, rare metals, and other metal resources through the proper treatment of spent precious metals, rare metals, and other metal resources. It conducts surveys and compiles statistics on recycling, and holds regular training sessions to improve technologies and promote friendship among members. The Company provides the chairman of the association, serves on the Public Relations Committee, and is involved in issuing survey reports and organizing general meetings.
Ten Principles of the United Nations Global Compact

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; and
- Principle 4: the elimination of all forms of forced and compulsory labour; and
- 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; and
- 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.

The ICMM 10 Principles

1. Apply ethical business practices and sound systems of corporate governance and transparency to support sustainable development.
2. Integrate sustainable development in corporate strategy and decision-making processes.
3. Respect human rights and the interests, cultures, customs and values of employees and communities affected by our activities.
4. Implement effective risk-management strategies and systems based on sound science and which account for stakeholder perceptions of risks.
5. Pursue continual improvement in health and safety performance with the ultimate goal of zero harm.
6. Pursue continual improvement in environmental performance issues, such as water stewardship, energy use and climate change.
7. Contribute to the conservation of biodiversity and integrated approaches to land-use planning.
8. Facilitate and support the knowledge-base and systems for responsible design, use, re-use, recycling and disposal of products containing metals and minerals.
9. Pursue continual improvement in social performance and contribute to the social, economic and institutional development of host countries and communities.

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 interest 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 organisations, financial organisations, investors, and non-governmental organisations.

RESPONSIBLE BUSINESS ALLIANCE CODE OF CONDUCT (excerpt)

A. LABOR
Participants are committed to uphold the human rights of workers, and to treat them with dignity and respect as understood by the international community. This applies to all workers including temporary, migrant, student, contract, direct employees, and any other type of worker.

B. HEALTH and SAFETY
Participants recognize that in addition to minimizing the incidence of work-related injury and illness, a safe and healthy work environment enhances the quality of products and services, consistency of production and worker retention and morale.

C. ENVIRONMENTAL
Participants recognize that environmental responsibility is integral to producing world class products. In manufacturing operations, adverse effects on the community, environment and natural resources are to be minimized while safeguarding the health and safety of the public.

D. ETHICS
Participants adopt or establish a management system whose scope is related to the content of this Code. The management system shall be designed to ensure: (a) compliance with applicable laws, regulations and customer requirements related to the participant’s operations and products; (b) conformance with this Code; and (c) identification and mitigation of operational risks related to this Code. It should also facilitate continual improvement.
Information

CSR Surveys

Surveys of employees were conducted as described below to determine the extent of employee awareness of CSR and involvement in its practice.

Timing
October to December 2018

Survey method: Distribution of a questionnaire with Sustainability Report 2018

Respondents: 5,697 employees at 29 domestic operating sites (94% of the 6,059 employees who received the questionnaire)

(1) Results relating to the JXTG Group Philosophy and JX Nippon Mining & Metals Code of Conduct

Understanding/resonance
(whether respondents felt that they understood the Code of Conduct and it resonated with them)

<table>
<thead>
<tr>
<th>Fiscal 2018</th>
<th>Fiscal 2017**</th>
</tr>
</thead>
<tbody>
<tr>
<td>I understand it, and it resonates. 88%</td>
<td></td>
</tr>
<tr>
<td>I understand it, but it does not resonate. 12%</td>
<td></td>
</tr>
<tr>
<td>I neither understand it nor does it resonate. 2%</td>
<td></td>
</tr>
</tbody>
</table>

Employee awareness
(whether respondents felt that employees were aware of the Code of Conduct in their own organizations and workplaces)

<table>
<thead>
<tr>
<th>Fiscal 2018</th>
<th>Fiscal 2017**</th>
</tr>
</thead>
<tbody>
<tr>
<td>I understand it, and it resonates. 88%</td>
<td></td>
</tr>
<tr>
<td>I understand it, but it does not resonate. 12%</td>
<td></td>
</tr>
<tr>
<td>I neither understand it nor does it resonate. 2%</td>
<td></td>
</tr>
</tbody>
</table>

(2) Results relating to CSR action plans

Employee awareness
(Are you aware of the CSR action plan in your organization and how are you putting it into practice?)

<table>
<thead>
<tr>
<th>Fiscal 2018</th>
<th>Fiscal 2017**</th>
</tr>
</thead>
<tbody>
<tr>
<td>I understand it, and it resonates. 88%</td>
<td></td>
</tr>
<tr>
<td>I understand it, but it does not resonate. 12%</td>
<td></td>
</tr>
<tr>
<td>I neither understand it nor does it resonate. 2%</td>
<td></td>
</tr>
</tbody>
</table>

(3) Requests and suggestions for Sustainability Report 2018

- It would be good to have it in PDF format for viewing on a tablet.
- I would like more information on the web.
- Numbering would help to show clearly how many major themes there are, and how many items there are under them.
- The explanations tend to be text-heavy, making for hard reading in some cases. A bit more use of figures and charts would be helpful.
- I adjusted the report’s composition for easy readability, making use of photos, illustrations, and figures.
- Regarding female work styles, I would like to see features on people who took childcare or maternity leave.
- We have enhanced features on Material Issues and the latest trends in society.

Note: The above terminology was selected based on global trends in the CSR field and includes terms not found in this report.

CSR Glossary

<table>
<thead>
<tr>
<th>Term</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSV</td>
<td>Creating Shared Value. A management approach first introduced in 2011 by US economist Michael E. Porter, by which companies pursue profits and social contribution simultaneously through their core business activities.</td>
</tr>
<tr>
<td>ESG</td>
<td>An acronym of environmental, social, and governance. These are the three elements considered necessary for long-term growth of a company and also gaining attention as criteria for investment decisions.</td>
</tr>
<tr>
<td>FIT</td>
<td>Feed-in Tariff. A system obligating power companies to purchase electricity generated from renewable energy sources at a government-set price and for a fixed time period.</td>
</tr>
<tr>
<td>GRI Standards</td>
<td>Guidelines for preparing sustainability reports, issued in October 2016 by the Global Reporting Initiative (GRI), a nonprofit organization established to formulate international standards on sustainability.</td>
</tr>
<tr>
<td>IRC</td>
<td>International Integrated Reporting Council. An international NGO set up in the UK in 2010, mainly for promoting development of integrated reports that combine both corporate financial reporting and nonfinancial information.</td>
</tr>
<tr>
<td>LGBT</td>
<td>An acronym of lesbian, gay, bisexual, and transgender. However, it is used as an umbrella term that refers to all sexual minorities other than those in this document.</td>
</tr>
<tr>
<td>REACH Regulation</td>
<td>A regulation on management of chemical substances, issued in the EU in 2007. It requires producers and importers to manage the risk of chemicals that may have an impact on human health and the environment.</td>
</tr>
<tr>
<td>RE100</td>
<td>Renewable Energy 100%. A global corporate leadership initiative bringing together businesses committed to using 100% renewable electricity for their operations.</td>
</tr>
<tr>
<td>SDGs</td>
<td>Sustainable Development Goals. International goals adopted at the United Nations Sustainable Development Summit in September 2015, as a successor to the Millennium Development Goals (MDGs) drafted in 2001. They consist of 17 goals and 169 targets for 2030.</td>
</tr>
<tr>
<td>Society 5.0</td>
<td>A “supersmart society” made possible by the latest technologies including the Internet of Things (IoT) and artificial intelligence (AI), which will be integrated into every industry, as well as people’s daily life, to create innovations. The aim is to solve the problems faced by society in ways suitable to the needs of each individual. Society 5.0 represents the fifth stage of human society’s evolution, following upon the hunting society, agricultural society, industrial society, and information society.</td>
</tr>
<tr>
<td>SRI</td>
<td>Socially Responsible Investment. Investment that considers not only corporate profit and growth potential but also ethically and socially responsible activities of companies in making investment choices.</td>
</tr>
<tr>
<td>TCFD Task Force on Climate-Related Financial Disclosures</td>
<td>An organization established by the Financial Stability Board (FSB) with the central banks and financial regulatory authorities of major countries and regions as participating members. It seeks to develop recommendations for voluntary climate-related financial disclosures by corporations.</td>
</tr>
<tr>
<td>Outside-In approach</td>
<td>A strategy that considers what is necessary from global standpoints, sets goals on this basis, and seeks to close the gap between current achievement levels and those required. It contrasts with the Inside-Out approach that starts from an understanding of the impact of one’s own company’s activities on social and environmental issues and responds as needed.</td>
</tr>
<tr>
<td>Open innovation</td>
<td>Going beyond the framework of the organization to gather knowledge and technology widely and bring them together when developing new technologies and products. Typical examples are industry-academia-government projects, and collaborative research by big companies and venture companies.</td>
</tr>
<tr>
<td>Carbon offset</td>
<td>A scheme for offsetting emissions of CO₂ and other greenhouse gases that are unavoidable in daily life or economic activities by purchasing greenhouse gas reduction credits or undertaking reduction activities.</td>
</tr>
<tr>
<td>Circular economy</td>
<td>An economic system where things that were previously discarded or unused are utilized as resources. By designing waste and pollutants out of the system, it aims to reduce waste and help achieve environmental and economical sustainability.</td>
</tr>
<tr>
<td>Thermal recycling</td>
<td>A recycling system that recovers and uses energy generated by burning waste.</td>
</tr>
<tr>
<td>Human rights due diligence</td>
<td>A continuous process of conducting preventive surveys and investigations, taking appropriate corrective actions, and disclosing the progress and results, in order to prevent or mitigate potential adverse impacts on human rights caused by the company.</td>
</tr>
<tr>
<td>Zero emissions</td>
<td>A concept advocated by the United Nations University calling for full use of resources and reduction of waste to as close to zero as possible, with the aim of creating a more sustainable industrial-societal system.</td>
</tr>
<tr>
<td>Diversity &amp; Inclusion</td>
<td>Aiming to foster a workplace climate that welcomes people who ascribe to different values, regardless of gender, nationality, sexual orientation, gender identity, or disabilities, and enables them to make full use of their abilities.</td>
</tr>
<tr>
<td>Paris Agreement</td>
<td>An international framework that went into effect in November 2016 aimed at reducing greenhouse gas emissions from 2020 onward, its goal being to limit the rise in global mean surface temperature to less than 2°C (ideally less than 1.5°C) above pre-industrial levels.</td>
</tr>
</tbody>
</table>
## GRI Standards Content Index (Core Option)

<table>
<thead>
<tr>
<th>No.</th>
<th>Disclosure</th>
<th>Overview</th>
<th>Reporting requirements</th>
<th>Relevant contents</th>
</tr>
</thead>
<tbody>
<tr>
<td>102-2</td>
<td>Activities, brands, products, and services</td>
<td>F12-25</td>
<td>F12-25: Segment Information</td>
<td>JX Nippon Mining &amp; Metals Corporation Sustainability Report 2019</td>
</tr>
<tr>
<td>102-3</td>
<td>Internal initiatives</td>
<td>F12-26</td>
<td>F12-26: CSR Promotion System</td>
<td>JX Nippon Mining &amp; Metals Corporation Sustainability Report 2019</td>
</tr>
<tr>
<td>102-6</td>
<td>Performance</td>
<td>F12-29</td>
<td>F12-29: Risk Management</td>
<td>JX Nippon Mining &amp; Metals Corporation Sustainability Report 2019</td>
</tr>
<tr>
<td>102-7</td>
<td>Strategy</td>
<td>F12-30</td>
<td>F12-30: Communication with Stakeholders</td>
<td>JX Nippon Mining &amp; Metals Corporation Sustainability Report 2019</td>
</tr>
<tr>
<td>102-8</td>
<td>Overview</td>
<td>F12-31</td>
<td>F12-31: Our Relationship with Stakeholders</td>
<td>JX Nippon Mining &amp; Metals Corporation Sustainability Report 2019</td>
</tr>
</tbody>
</table>
### Information

#### GRI Standards Content Index

<table>
<thead>
<tr>
<th>No.</th>
<th>Disclosure</th>
<th>Reporting requirements</th>
<th>Relevant contents</th>
</tr>
</thead>
<tbody>
<tr>
<td>102-1</td>
<td>Entities included in the organization/consolidated financial statements or equivalent documents</td>
<td>A list of all entities included in the organization’s consolidated financial statements or equivalent documents.</td>
<td>P10: Boundary of the Report/Group Comparability Summary (This page)</td>
</tr>
<tr>
<td>102-2</td>
<td>Defining report content and topic boundaries</td>
<td>An explanation of the process for defining the report content and the topic boundaries.</td>
<td>P20: Material Issues for CSR Activities of the Group, and the SDGs.</td>
</tr>
<tr>
<td>102-3</td>
<td>List of material topics</td>
<td>A list of all material topics identified in the process for defining report content.</td>
<td>P55: Materiality Assessment (This page)</td>
</tr>
<tr>
<td>102-4</td>
<td>Reporting cycle</td>
<td>The effect of any restatements of information given in previous reports, and the reason for such restatements.</td>
<td>P83: Environmental Management Systems, P84: Bidding on Full Compliance (This page)</td>
</tr>
<tr>
<td>102-5</td>
<td>Identifying reporting period</td>
<td>Significant changes from previous reporting periods to the list of material topics and topic boundaries</td>
<td>P10: Boundary of the Report/Group Comparability Summary (This page)</td>
</tr>
<tr>
<td>102-6</td>
<td>Content point for questions regarding the report or its contents</td>
<td>Contact point for questions regarding the report or its contents.</td>
<td>Back cover: Address</td>
</tr>
<tr>
<td>102-7</td>
<td>GRI content index</td>
<td>The index of all GRI guidelines used and all disclosures made in the report.</td>
<td>P1: GRI Index (This page)</td>
</tr>
<tr>
<td>102-8</td>
<td>External assurance</td>
<td>A description of the organization’s policy and current practice with respect to seeking external assurance for the report.</td>
<td>P10: Independent Assurance Report (This page)</td>
</tr>
</tbody>
</table>

### Specific Standard Disclosures

#### Establishing a Low-Carbon Society

<table>
<thead>
<tr>
<th>No.</th>
<th>Disclosure</th>
<th>Reporting requirements</th>
<th>Relevant contents</th>
</tr>
</thead>
<tbody>
<tr>
<td>102-1</td>
<td>Energy consumption within the organization</td>
<td>Total fuel consumption within the organization from renewable sources, in joules or multiples, and including fuel types used.</td>
<td>P84: Energy Consumption and CO2 Environment (This page)</td>
</tr>
<tr>
<td>103-1</td>
<td>Energy consumption outside of the organization</td>
<td>Total fuel consumption within the organization from renewable sources, in joules or multiples, and including fuel types used.</td>
<td>P84: Energy Consumption and CO2 Environment (This page)</td>
</tr>
<tr>
<td>102-2</td>
<td>Energy intensity of the organization</td>
<td>Energy consumption intensity of the organization, in joules or multiples.</td>
<td>P84: Energy Consumption and CO2 Environment (This page)</td>
</tr>
<tr>
<td>103-1</td>
<td>Energy consumption within the organization</td>
<td>Total fuel consumption within the organization from renewable sources, in joules or multiples, and including fuel types used.</td>
<td>P84: Energy Consumption and CO2 Environment (This page)</td>
</tr>
<tr>
<td>103-2</td>
<td>Energy consumption outside of the organization</td>
<td>Total fuel consumption within the organization from renewable sources, in joules or multiples, and including fuel types used.</td>
<td>P84: Energy Consumption and CO2 Environment (This page)</td>
</tr>
<tr>
<td>103-3</td>
<td>Energy intensity of the organization</td>
<td>Energy consumption intensity of the organization, in joules or multiples.</td>
<td>P84: Energy Consumption and CO2 Environment (This page)</td>
</tr>
</tbody>
</table>

#### GRI SDG-based environmental management

<table>
<thead>
<tr>
<th>No.</th>
<th>Disclosure</th>
<th>Reporting requirements</th>
<th>Relevant contents</th>
</tr>
</thead>
<tbody>
<tr>
<td>302-1</td>
<td>Energy intensity of the organization</td>
<td>Total fuel consumption within the organization from renewable sources, in joules or multiples, and including fuel types used.</td>
<td>P84: Energy Consumption and CO2 Environment (This page)</td>
</tr>
<tr>
<td>302-2</td>
<td>Energy consumption outside of the organization</td>
<td>Total fuel consumption within the organization from renewable sources, in joules or multiples, and including fuel types used.</td>
<td>P84: Energy Consumption and CO2 Environment (This page)</td>
</tr>
<tr>
<td>302-3</td>
<td>Energy intensity of the organization</td>
<td>Energy consumption intensity of the organization, in joules or multiples.</td>
<td>P84: Energy Consumption and CO2 Environment (This page)</td>
</tr>
</tbody>
</table>

#### GRI 102-52: Reporting Cycle

<table>
<thead>
<tr>
<th>No.</th>
<th>Disclosure</th>
<th>Reporting requirements</th>
<th>Relevant contents</th>
</tr>
</thead>
<tbody>
<tr>
<td>102-1</td>
<td>Energy consumption within the organization</td>
<td>Total fuel consumption within the organization from renewable sources, in joules or multiples, and including fuel types used.</td>
<td>P84: Energy Consumption and CO2 Environment (This page)</td>
</tr>
<tr>
<td>103-1</td>
<td>Energy consumption outside of the organization</td>
<td>Total fuel consumption within the organization from renewable sources, in joules or multiples, and including fuel types used.</td>
<td>P84: Energy Consumption and CO2 Environment (This page)</td>
</tr>
<tr>
<td>102-2</td>
<td>Energy intensity of the organization</td>
<td>Energy consumption intensity of the organization, in joules or multiples.</td>
<td>P84: Energy Consumption and CO2 Environment (This page)</td>
</tr>
</tbody>
</table>
Ensuring Occupational Health and Safety

103-1 Explanation of the material topic and its Boundary — P63: Roles of the Quality Control Department

103-2 The management approach — P63: Roles of the Quality Control Department

103-3 Evaluation of the management approach — P63: Roles of the Quality Control Department

<table>
<thead>
<tr>
<th>GRI Standards</th>
<th>Reporting requirements</th>
<th>Relevant contents</th>
</tr>
</thead>
<tbody>
<tr>
<td>GRI-103-3</td>
<td>Evaluation of the management approach</td>
<td>P63: Roles of the Quality Control Department</td>
</tr>
<tr>
<td>GRI-103-2</td>
<td>The management approach</td>
<td>P63: Roles of the Quality Control Department</td>
</tr>
<tr>
<td>GRI-103-1</td>
<td>Explanation of the material topic and its Boundary</td>
<td>P63: Roles of the Quality Control Department</td>
</tr>
</tbody>
</table>

GRI-401: Employment

104-1 New employee line and employee turnover — P65: Developing Human Resources

104-2 Benefits provided for full-time employees — P65: Developing Human Resources

104-3 Parental leave — P65: Developing Human Resources

104-5 Diversity and Equal Opportunities — P66: Corporate Governance System

<table>
<thead>
<tr>
<th>GRI Standards</th>
<th>Reporting requirements</th>
<th>Relevant contents</th>
</tr>
</thead>
<tbody>
<tr>
<td>GRI-401-1</td>
<td>Assessment of the health and safety impacts of products and services</td>
<td>P65: Developing Human Resources</td>
</tr>
<tr>
<td>GRI-401-2</td>
<td>Incidents of non-compliance concerning the health and safety impacts of products and services</td>
<td>P65: Developing Human Resources</td>
</tr>
<tr>
<td>GRI-401-3</td>
<td>Parental leave</td>
<td>P65: Developing Human Resources</td>
</tr>
<tr>
<td>GRI-401-5</td>
<td>Diversity and Equal Opportunities</td>
<td>P66: Corporate Governance System</td>
</tr>
</tbody>
</table>

Sustainability Report 2019
Independent Assurance Report

To the President and CEO of JX Nippon Mining & Metals Corporation

We were engaged by JX Nippon Mining & Metals Corporation (the “Company”) to undertake a limited assurance engagement of the environmental and social performance indicators covered by the GRI Standards, for the year ended March 31, 2019, in accordance with the Global Reporting Initiative’s (the “GRI”) G4 Sustainability Reporting Standards (the “GRI Standards”).

We conducted our engagement in accordance with the International Standard on Assurance Engagements (ISAE) 3000, Assurance Engagements Other than Audits or Reviews of Historical Financial Information and the ISAE 3400, Assurance Engagements on Greenhouse Gas Statements issued by the International Auditing and Assurance Standards Board. We expressed an assurance opinion on the indicators in the table below.

We were engaged by JX Nippon Mining & Metals Corporation (the “Company”) to undertake a limited assurance engagement of the environmental and social performance indicators covered by the GRI Standards, for the year ended March 31, 2019, in accordance with the Global Reporting Initiative’s (the “GRI”) G4 Sustainability Reporting Standards (the “GRI Standards”).

We conducted our engagement in accordance with the International Standard on Assurance Engagements (ISAE) 3000, Assurance Engagements Other than Audits or Reviews of Historical Financial Information and the ISAE 3400, Assurance Engagements on Greenhouse Gas Statements issued by the International Auditing and Assurance Standards Board. We expressed an assurance opinion on the indicators in the table below.

We were engaged by JX Nippon Mining & Metals Corporation (the “Company”) to undertake a limited assurance engagement of the environmental and social performance indicators covered by the GRI Standards, for the year ended March 31, 2019, in accordance with the Global Reporting Initiative’s (the “GRI”) G4 Sustainability Reporting Standards (the “GRI Standards”).

We conducted our engagement in accordance with the International Standard on Assurance Engagements (ISAE) 3000, Assurance Engagements Other than Audits or Reviews of Historical Financial Information and the ISAE 3400, Assurance Engagements on Greenhouse Gas Statements issued by the International Auditing and Assurance Standards Board. We expressed an assurance opinion on the indicators in the table below.

We were engaged by JX Nippon Mining & Metals Corporation (the “Company”) to undertake a limited assurance engagement of the environmental and social performance indicators covered by the GRI Standards, for the year ended March 31, 2019, in accordance with the Global Reporting Initiative’s (the “GRI”) G4 Sustainability Reporting Standards (the “GRI Standards”).

We conducted our engagement in accordance with the International Standard on Assurance Engagements (ISAE) 3000, Assurance Engagements Other than Audits or Reviews of Historical Financial Information and the ISAE 3400, Assurance Engagements on Greenhouse Gas Statements issued by the International Auditing and Assurance Standards Board. We expressed an assurance opinion on the indicators in the table below.

We were engaged by JX Nippon Mining & Metals Corporation (the “Company”) to undertake a limited assurance engagement of the environmental and social performance indicators covered by the GRI Standards, for the year ended March 31, 2019, in accordance with the Global Reporting Initiative’s (the “GRI”) G4 Sustainability Reporting Standards (the “GRI Standards”).

We conducted our engagement in accordance with the International Standard on Assurance Engagements (ISAE) 3000, Assurance Engagements Other than Audits or Reviews of Historical Financial Information and the ISAE 3400, Assurance Engagements on Greenhouse Gas Statements issued by the International Auditing and Assurance Standards Board. We expressed an assurance opinion on the indicators in the table below.

We were engaged by JX Nippon Mining & Metals Corporation (the “Company”) to undertake a limited assurance engagement of the environmental and social performance indicators covered by the GRI Standards, for the year ended March 31, 2019, in accordance with the Global Reporting Initiative’s (the “GRI”) G4 Sustainability Reporting Standards (the “GRI Standards”).

We conducted our engagement in accordance with the International Standard on Assurance Engagements (ISAE) 3000, Assurance Engagements Other than Audits or Reviews of Historical Financial Information and the ISAE 3400, Assurance Engagements on Greenhouse Gas Statements issued by the International Auditing and Assurance Standards Board. We expressed an assurance opinion on the indicators in the table below.

We were engaged by JX Nippon Mining & Metals Corporation (the “Company”) to undertake a limited assurance engagement of the environmental and social performance indicators covered by the GRI Standards, for the year ended March 31, 2019, in accordance with the Global Reporting Initiative’s (the “GRI”) G4 Sustainability Reporting Standards (the “GRI Standards”).

We conducted our engagement in accordance with the International Standard on Assurance Engagements (ISAE) 3000, Assurance Engagements Other than Audits or Reviews of Historical Financial Information and the ISAE 3400, Assurance Engagements on Greenhouse Gas Statements issued by the International Auditing and Assurance Standards Board. We expressed an assurance opinion on the indicators in the table below.

We were engaged by JX Nippon Mining & Metals Corporation (the “Company”) to undertake a limited assurance engagement of the environmental and social performance indicators covered by the GRI Standards, for the year ended March 31, 2019, in accordance with the Global Reporting Initiative’s (the “GRI”) G4 Sustainability Reporting Standards (the “GRI Standards”).

We conducted our engagement in accordance with the International Standard on Assurance Engagements (ISAE) 3000, Assurance Engagements Other than Audits or Reviews of Historical Financial Information and the ISAE 3400, Assurance Engagements on Greenhouse Gas Statements issued by the International Auditing and Assurance Standards Board. We expressed an assurance opinion on the indicators in the table below.

We were engaged by JX Nippon Mining & Metals Corporation (the “Company”) to undertake a limited assurance engagement of the environmental and social performance indicators covered by the GRI Standards, for the year ended March 31, 2019, in accordance with the Global Reporting Initiative’s (the “GRI”) G4 Sustainability Reporting Standards (the “GRI Standards”).

We conducted our engagement in accordance with the International Standard on Assurance Engagements (ISAE) 3000, Assurance Engagements Other than Audits or Reviews of Historical Financial Information and the ISAE 3400, Assurance Engagements on Greenhouse Gas Statements issued by the International Auditing and Assurance Standards Board. We expressed an assurance opinion on the indicators in the table below.

We were engaged by JX Nippon Mining & Metals Corporation (the “Company”) to undertake a limited assurance engagement of the environmental and social performance indicators covered by the GRI Standards, for the year ended March 31, 2019, in accordance with the Global Reporting Initiative’s (the “GRI”) G4 Sustainability Reporting Standards (the “GRI Standards”).

We conducted our engagement in accordance with the International Standard on Assurance Engagements (ISAE) 3000, Assurance Engagements Other than Audits or Reviews of Historical Financial Information and the ISAE 3400, Assurance Engagements on Greenhouse Gas Statements issued by the International Auditing and Assurance Standards Board. We expressed an assurance opinion on the indicators in the table below.

We were engaged by JX Nippon Mining & Metals Corporation (the “Company”) to undertake a limited assurance engagement of the environmental and social performance indicators covered by the GRI Standards, for the year ended March 31, 2019, in accordance with the Global Reporting Initiative’s (the “GRI”) G4 Sustainability Reporting Standards (the “GRI Standards”).

We conducted our engagement in accordance with the International Standard on Assurance Engagements (ISAE) 3000, Assurance Engagements Other than Audits or Reviews of Historical Financial Information and the ISAE 3400, Assurance Engagements on Greenhouse Gas Statements issued by the International Auditing and Assurance Standards Board. We expressed an assurance opinion on the indicators in the table below.

We were engaged by JX Nippon Mining & Metals Corporation (the “Company”) to undertake a limited assurance engagement of the environmental and social performance indicators covered by the GRI Standards, for the year ended March 31, 2019, in accordance with the Global Reporting Initiative’s (the “GRI”) G4 Sustainability Reporting Standards (the “GRI Standards”).

We conducted our engagement in accordance with the International Standard on Assurance Engagements (ISAE) 3000, Assurance Engagements Other than Audits or Reviews of Historical Financial Information and the ISAE 3400, Assurance Engagements on Greenhouse Gas Statements issued by the International Auditing and Assurance Standards Board. We expressed an assurance opinion on the indicators in the table below.

We were engaged by JX Nippon Mining & Metals Corporation (the “Company”) to undertake a limited assurance engagement of the environmental and social performance indicators covered by the GRI Standards, for the year ended March 31, 2019, in accordance with the Global Reporting Initiative’s (the “GRI”) G4 Sustainability Reporting Standards (the “GRI Standards”).

We conducted our engagement in accordance with the International Standard on Assurance Engagements (ISAE) 3000, Assurance Engagements Other than Audits or Reviews of Historical Financial Information and the ISAE 3400, Assurance Engagements on Greenhouse Gas Statements issued by the International Auditing and Assurance Standards Board. We expressed an assurance opinion on the indicators in the table below.

We were engaged by JX Nippon Mining & Metals Corporation (the “Company”) to undertake a limited assurance engagement of the environmental and social performance indicators covered by the GRI Standards, for the year ended March 31, 2019, in accordance with the Global Reporting Initiative’s (the “GRI”) G4 Sustainability Reporting Standards (the “GRI Standards”).

We conducted our engagement in accordance with the International Standard on Assurance Engagements (ISAE) 3000, Assurance Engagements Other than Audits or Reviews of Historical Financial Information and the ISAE 3400, Assurance Engagements on Greenhouse Gas Statements issued by the International Auditing and Assurance Standards Board. We expressed an assurance opinion on the indicators in the table below.

We were engaged by JX Nippon Mining & Metals Corporation (the “Company”) to undertake a limited assurance engagement of the environmental and social performance indicators covered by the GRI Standards, for the year ended March 31, 2019, in accordance with the Global Reporting Initiative’s (the “GRI”) G4 Sustainability Reporting Standards (the “GRI Standards”).

We conducted our engagement in accordance with the International Standard on Assurance Engagements (ISAE) 3000, Assurance Engagements Other than Audits or Reviews of Historical Financial Information and the ISAE 3400, Assurance Engagements on Greenhouse Gas Statements issued by the International Auditing and Assurance Standards Board. We expressed an assurance opinion on the indicators in the table below.

We were engaged by JX Nippon Mining & Metals Corporation (the “Company”) to undertake a limited assurance engagement of the environmental and social performance indicators covered by the GRI Standards, for the year ended March 31, 2019, in accordance with the Global Reporting Initiative’s (the “GRI”) G4 Sustainability Reporting Standards (the “GRI Standards”).

We conducted our engagement in accordance with the International Standard on Assurance Engagements (ISAE) 3000, Assurance Engagements Other than Audits or Reviews of Historical Financial Information and the ISAE 3400, Assurance Engagements on Greenhouse Gas Statements issued by the International Auditing and Assurance Standards Board. We expressed an assurance opinion on the indicators in the table below.
We welcome your views and questions regarding Sustainability Report 2019 as well as suggestions on how to make the next report even better.