

JX Report

for a Sustainable Future 2015

Highlights

The Future of Energy, Resources and Materials



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Cautionary Statement regarding Forward-Looking Statements

This notice contains certain forward-looking statements, however, actual results may differ materially from those reflected in any forward-looking statement, due to various factors, including but not limited to the following:

- (1) macroeconomic conditions and changes in the competitive environment in the energy, resources, and materials industries;
- (2) changes in laws and regulations; and
- (3) risks related to litigation and other legal proceedings.

Editorial Policy

This report was prepared by JX Holdings, Inc. based on the JX Group CSR Basic Policy* to introduce the JX Group's ideas and initiatives on corporate social responsibility (CSR). From this year onwards, the report will comprise two parts: a "Highlights" booklet which aims to deepen communications with our stakeholders—including shareholders, investors, customers, employees, business partners and local communities—and deepen their understanding about the JX Group, and a "Performance Report" (PDF) which aims to fulfill our accountability to all stakeholders.

The "Highlights" will introduce activities centered on solving the CSR issues faced by the JX Group. In the Performance Report, the JX Group Values section reports on several representative activities we are conducting in accordance with the Group's five EARTH values. (The Performance Report can be found on the website of JX Holdings, Inc.)

The JX Group companies, including JX Holdings and the three core operating subsidiaries, disclose information on various CSR activities on their company websites. Please take time to visit these websites. (See page 26)

* We will steadily fulfill our responsibility to society through faithful implementation of the JX Group Mission Statement by every officer and employee in order to establish a corporate group worthy of the trust of our stakeholders

Scope of Report

- JX Holdings, Inc. and its 11 main Group companies
- JX Nippon Oil & Energy Corporation and its 20 main Group companies
- JX Nippon Oil & Gas Exploration Corporation and its 32 main Group companies
- JX Nippon Mining & Metals Corporation and its 68 main Group companies

Reporting Period

In principle, the report covers the period from April 2014 to March 2015. However, some information from April 2015 onwards is also included, as necessary.

Publication Date

December 2015
(Previous issue: December 2014; Next issue: December 2016)

Guidelines Used as Reference

- The Sustainability Reporting Guidelines, Version 3.1, Global Reporting Initiative (GRI)
- The Environmental Reporting Guidelines (2012 Edition), Ministry of the Environment, Japan
- The GRI Mining and Metals Sector Supplement

Inquiries

JX Holdings, Inc.
6-3 Otemachi 2-chome, Chiyoda-ku, Tokyo 100-8161, Japan

From January 1, 2016, it will shift to this new address.
1-2 Otemachi 1-chome, Chiyoda-ku, Tokyo 100-8161, Japan
<http://www.hd.jx-group.co.jp/english/>

General Administration Department
Email: csr@hd.jx-group.co.jp

JX Group Mission Statement

JX Group Slogan

The Future of Energy, Resources and Materials

JX Group Mission Statement

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

JX Group Values

Our actions will respect the **EARTH**.

Ethics

Advanced ideas

Relationship with society

Trustworthy products/services

Harmony with the environment

About JX

The name “JX” is the brand that symbolizes the JX Group’s existence and presence. The letter “J” represents our position as one of the world’s largest integrated energy, resources and materials business groups from Japan, while the letter “X” represents our willingness to pioneer new frontiers, our future growth and development potential, and our pursuit of creativity and innovation.

About the JX Corporate Brand Mark

The JX corporate brand mark symbolizes the continuity of the global environment and the JX Group based on the JX Group’s mission statement. The design, in which the “JX” logo overlaps with a sphere, represents the JX Group’s commitment to a green earth—i.e., our contribution to the development of a sustainable economy and society, through innovation in the areas of energy, resources and materials.

* The JX corporate brand mark is common to JX Holdings, Inc., JX Nippon Oil & Energy Corporation, JX Nippon Oil & Gas Exploration Corporation and JX Nippon Mining & Metals Corporation



Management Message



Yasushi Kimura
Representative Director,
Chairman

Yukio Uchida
Representative Director,
President

Fulfilling Our Social Responsibilities through Our Business Activities

Five years have passed since the establishment of the JX Group. During this time, we have moved steadily forward under the slogan “The Future of Energy, Resources and Materials.”

In recent times, the marketing environment in which we operate our Group businesses has experienced significant fluctuations, including price drops for oil and copper and the changing supply structure for domestic energy. However, we believe it is our mission to play a role in supporting people’s lives and the foundation of our industry while considering the global environment, and to “contribute to the development of a sustainable economy and society” in whatever situation.

Continuing Our CSR Activities with an Awareness of Priority Issues for the Whole JX Group

The JX Group conducts its CSR activities under the JX Group’s Basic Approach to CSR, and we prioritize compliance, environment and safety, and social contribution in particular as we conduct these activities through each committee.

From the legal compliance inspections conducted by the whole Group every year, to the various types of training we conduct, we are working to achieve

penetration of compliance-awareness. We are also focusing on environmental conservation and ensuring safety, including safe and efficient operation of each supply chain and the development of environmentally friendly products. Additionally, we are conducting volunteer activities and ongoing community-based social contribution activities in many places under the theme, “providing support for children who are our future.”

In parallel with these activities, the JX Group also implemented the 3rd CSR Survey in July 2015 for the purpose of surveying the awareness of executives, employees and others concerning CSR. We will analyze the results of the survey this year and utilize them to further enhance and invigorate CSR activities for the whole Group.

Hand-in-Hand with Our Stakeholders

Going forward, the JX Group will execute its business operations while continuing to earnestly listen to the opinions and requests of various stakeholders.

We ask you for your continual understanding and support for the JX Group as we move forward.

Message from Senior Management of the JX Group's Core Operating Subsidiaries

JX Nippon Oil & Energy Corporation



Tsutomu Sugimori

Representative Director,
President
JX Nippon Oil & Energy Corporation

Responding to Diversifying Energy Needs as a Comprehensive Energy Company

The JX Nippon Oil & Energy Group, as a comprehensive energy company, delivers petroleum products, gas, electricity and other energy requirements of our customers, converted from various energy resources, while ensuring consideration of the environment and safety.

To this end, in addition to building optimal value chains to respond to diverse needs, we also are working to further enhance our supply structure to ensure stable delivery even during times of disaster. Our leading product is precious fossil

energy. We are actively promoting energy-saving and technological advancement at our refineries, and offering eco-friendly products. Moreover, we hope to contribute to the realization of a low-carbon society through measures such as the supply of hydrogen using our service station network.

We will continue to implement measures for the future of energy giving priority to compliance and safety, while further solidifying our relationship of trust with all stakeholders through dialogue.

JX Nippon Oil & Gas Exploration Corporation



Shunsaku Miyake

Representative Director,
President and CEO
JX Nippon Oil & Gas Exploration Corporation

Conducting Exploration and Production Business of Oil and Gas While Always Taking Account of the Environment, Safety and Society

The JX Nippon Oil & Gas Exploration Group conducts exploration and production business of oil and gas in 14 countries around the world. In particular, we have the operatorships of projects in Vietnam, Malaysia, and Qatar.

Under globally expanding intense competition to acquire resources, companies cannot maximize their corporate value without establishing technical advantages. In light of this recognition, we work on advanced efforts, such as a project that

enhances oil recovery by injecting CO₂, a greenhouse gas emitted into the atmosphere, into oil fields, and exploration and development of deep-water oil and gas fields, which require sophisticated technologies.

We will engage ourselves in contribution to the development of a sustainable economy and society through these daily business activities by development of good relationships with society, putting environment, safety and compliance above anything else.

JX Nippon Mining & Metals Corporation



Shigeru Oi

Representative Director,
President and CEO
JX Nippon Mining & Metals Corporation

Contributing to the Sustainable Development of the Global Society through the Stable Supply and Efficient Use of Non-Ferrous Metal Resources

The JX Nippon Mining & Metals Group makes full use of the technology and knowledge, accumulated over more than a century, in the pursuit of "innovation in the productivity of resources and materials." In this way, we are fulfilling our social responsibility of stably and efficiently supplying non-ferrous metal resources such as copper, which is widely used in our daily lives and is essential for the future development of society.

In carrying out our business operations, we pay all due care to minimize any negative impact on society. We endeavor to deepen communication with relevant stakeholders in order to ensure especially that we protect the environment, maintain occupational health and safety, enhance compliance, coexist and prosper along with local communities, and respect human rights.

For the Future of Society

The JX Group as a whole will undertake initiatives to contribute to the development of a sustainable economy and society.

2020 Vision

Become a world leading “integrated energy, resources and materials business group”

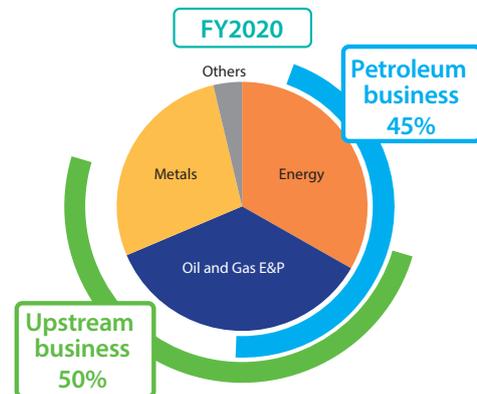
Corporate group that possesses competitive business as evaluated by global standards



Business portfolio with a balance between petroleum and non-petroleum businesses and between upstream and midstream/downstream businesses

Balance of Ordinary Income Excluding Inventory Valuation Factors

■ Energy ■ Metals ■ Upstream business
■ Oil and Gas E&P ■ Others ■ Petroleum business



Upstream Business

Energy	Coal
E&P	All
Metals	Resources development

Non-Petroleum Business

Energy	Electric power generation, gas, coal, solar power generation, fuel cells, specialty chemicals & materials
E&P	LNG projects (Malaysia, Indonesia, Papua New Guinea)
Metals	All

Basic Policy of the 2nd Medium-Term Management Plan

On the premise of establishing both proper governance backed by thorough compliance and CSR implementation structure

Profitability

- Securing stable profitability in existing business by realizing overwhelming competitiveness through continuous restructuring and stable operation
- Realizing return from invested projects

Growth

- Allocating management resources to highly profitable and developing operations on a priority basis

Flexibility

- Structuring a stronger balance sheet in line with business environment change

Realizing high profit and high ROE continuously

Strengthening risk tolerance

JX Group Overview

Holding Company Overview

JX Holdings, Inc.

Representatives: Yasushi Kimura, Representative Director, Chairman
Yukio Uchida, Representative Director, President
Head Office Location: 6-3 Otemachi 2-chome, Chiyoda-ku, Tokyo
100-8162, Japan

Established: April 1, 2010

Capital: ¥100 billion

Principal Group Businesses: Energy Business, Oil and Natural Gas E&P Business,
and Metals Business



Overview of Core Operating Subsidiaries

JX Nippon Oil & Energy Corporation

Representative: Tsutomu Sugimori, Representative Director, President
Head Office Location: 6-3 Otemachi 2-chome, Chiyoda-ku, Tokyo
100-8162, Japan

Capital: ¥139.4 billion (100% investment of JX Holdings, Inc.)

Principal Business: Manufacture and marketing of petroleum products (gasoline, kerosene,
lubricants, etc.)
Manufacture and marketing of petrochemical products
Import and marketing of gas (LPG and LNG) and coal
Electric power sales



JX Nippon Oil & Gas Exploration Corporation

Representative: Shunsaku Miyake, Representative Director, President and CEO
Head Office Location: 6-3 Otemachi 2-chome, Chiyoda-ku, Tokyo
100-8163, Japan

Capital: ¥9.8 billion (100% investment of JX Holdings, Inc.)

Principal Business: Exploration for and development of petroleum, natural gas, and other mineral resources
Extraction, processing, storage, sale, and shipment of petroleum, natural gas,
and other mineral resources and their secondary products



JX Nippon Mining & Metals Corporation

Representative: Shigeru Oi, Representative Director, President and CEO
Head Office Location: 6-3 Otemachi 2-chome, Chiyoda-ku, Tokyo 100-8164,
Japan

Capital: ¥40 billion (100% investment of JX Holdings, Inc.)

Principal Business: Development and mining of non-ferrous metal resources, smelting
and refining, and marketing of non-ferrous metals (copper, gold, silver, etc.);
manufacture and marketing of electronic materials
Recycling of non-ferrous metal materials; treatment of industrial waste for reuse



From January 1, 2016, all of the four companies will shift to this new address.
1-2 Otemachi 1-chome, Chiyoda-ku, Tokyo

Overview of Listed Subsidiaries

Consolidated Subsidiaries: 2

NIPPO CORPORATION

Representative: Hiromi Iwata, Representative Director, President
Head Office Location: 2-16 Yaesu 1-chome, Chuo-ku, Tokyo 103-0028, Japan
Capital: ¥15.3 billion (57% investment of JX Holdings, Inc.)
Principal Business: Civil engineering works such as construction of roads and paving
work; building work; manufacturing and sale of asphalt mixture

Toho Titanium Co., Ltd.

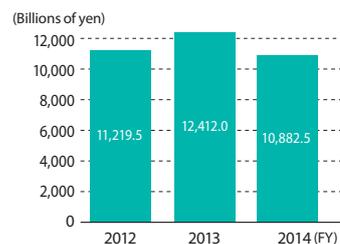
Representative: Kazuo Kagami, Representative Director, President
Head Office Location: 3-5 Chigasaki 3-chome, Chigasaki City, Kanagawa Prefecture 253-
8510, Japan
Capital: ¥12 billion (50.4% investment of JX Holdings, Inc.)
Principal Business: Refining, melting and sale of titanium metals

Equity-Method Affiliates: 5

Financial Highlights

(JX Holdings and Consolidated Subsidiaries)

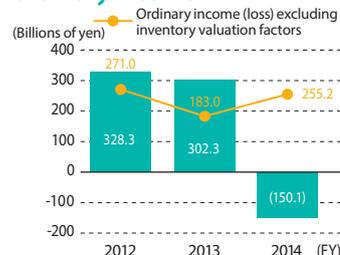
Net Sales



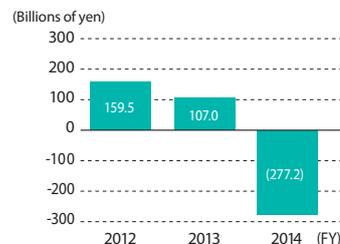
Operating Income



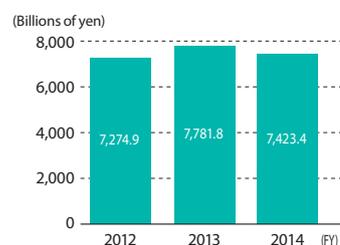
Ordinary Income



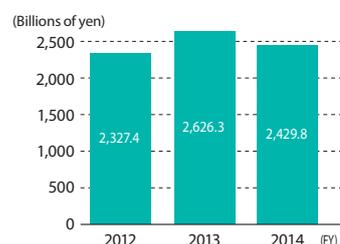
Net Income



Total Assets

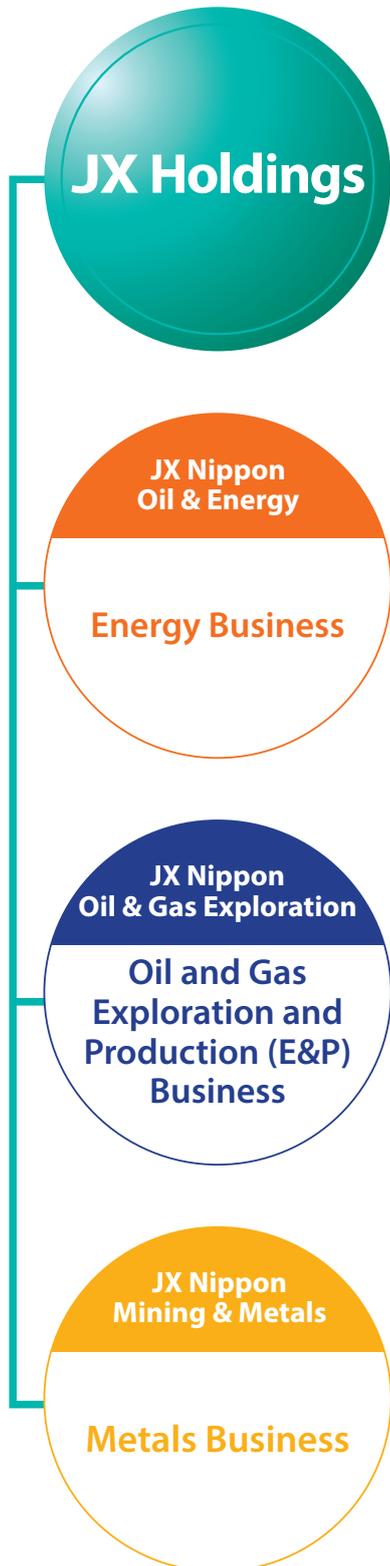


Net Assets



JX Group's Business Activities and CSR Issues

The JX Group engages in a broad range of business domains, from upstream to downstream operations, primarily in the areas of petroleum and copper. Our major responsibility is ensuring a stable supply of energy, resources, and materials. As a corporate group that supports people's lives, the JX Group is determined to contribute to society, with consideration to CSR when carrying out its business activities.



Resources Development

Oil and Gas E&P

We have businesses producing oil and gas at 110 thousand barrels of oil equivalent per day (BOE/D) in 14 countries around the world. We are working on increase of reserves and production mainly through exploration, in order to maintain and increase our production in the medium to long term.

Main CSR Issues

- Reducing environmental impact
- Occupational safety and health
- Anti-bribery, etc.

Copper Resources Development

Given the rising global demand for copper, we are expanding our mining rights to secure long-term and stable sources of copper ore. The Caserones Copper Mine (Chile) which underwent development, commenced production of copper concentrate starting May 2014.

Main CSR Issues

- Relationship with local communities
- Reducing environmental impact
- Occupational safety and health, etc.

Production, Processing,

Procurement, Transportation, and Storage

For a stable supply of energy, there needs to be uninterrupted transportation between Japan and oil-producing countries. The JX Group currently operates 23 crude oil tankers (all double hull tankers) owned or long-term chartered by ourselves for the purpose of supplying crude oil. Meanwhile, JX Nippon Oil & Energy Staging Terminal Corporation's Kiire Terminal has a crude oil storage capacity equivalent to the amount of crude oil consumed in Japan in approximately two weeks.

Main CSR Issues

- Safe and stable transportation
- Reducing environmental impact
- Business Continuity Plan (BCP) during disasters, etc.

Smelting & Refining

Pan Pacific Copper Co., Ltd. and LS-Nikko Copper Inc. combined boast a total refined copper production capacity of 1.33 million tons a year, making the entire group a global leader. We are stably supplying high quality refined copper from smelting and refining facilities with advanced technologies and cost competitiveness.

Main CSR Issues

- Effective resource utilization
- Reducing environmental impact
- Occupational safety and health, etc.

Group Governance



JX Holdings is determined to conduct all business activities based on the JX Group Mission Statement, which encapsulates the Group's purpose and values shared by all employees.

Main CSR Issues

- Thoroughness of compliance
- Enhancing risk management
- Respect for human rights, etc.

Marketing

Refining and Production



In Japan, we have seven refineries and four plants. We have put in place a system for ensuring efficient and stable supply of products. We strive to secure safe operations to ensure the prevention of accidents and disasters, and to be fully prepared to deal with such an event should it occur.

Main CSR Issues

- Accident and disaster prevention
- Reducing environmental impact
- Occupational safety and health, etc.

Distribution and Sales



The ENEOS brand has a domestic network of around 10.8 thousand service stations. In Japan, we sell around 64 million kiloliters of fuel annually, giving us a high market share of around 35%.

Main CSR Issues

- Safe and stable supply
- Business Continuity Plan (BCP) during disasters
- Eco-friendly and safe products and services, etc.

Electronic Materials



The JX Group has a high share of the global market in this product group, which leverages technologies such as high-purity refining, high-density sintering, and surface treatment. Highly functional, high value-added "functional materials" and "thin film materials," are the two pillars in this segment.

Main CSR Issues

- Improving customer satisfaction
- CSR procurement
- Occupational safety and health, etc.

Customers

Recycling

Recycling and Environmental Services



This business utilizes the technologies and achievements we cultivated at mines and smelting and refining facilities over many years. It consists of two fields: the "recycling business," which recovers copper, precious metals, and other valuable metals from recycled materials; and the "environmental services business," which detoxify industrial waste and recovers valuable metals.

Main CSR Issues

- Effective resource utilization
- Reducing environmental impact
- Occupational safety and health, etc.

Securing Resources and Ensuring a Stable Supply

The JX Group is focused on building stable supply systems, from development and production through to sales of energy, resources and materials, which are indispensable to industries, economies and people's everyday lives.

Initiatives

Increase reserves and production mainly through exploration

Establish superiority by focusing core business area and technology

Strengthen response capabilities for emergency oil supply

Expand copper mining rights and interests

Maintain and increase world-leading share of the electronic materials market

Key Initiatives and Achievements in FY2014

Discovered oil and gas (Vietnam, UK and Australia)
Filed Development Plan Approved for an oil and gas field (Malaysia)
Commenced production at oil and gas fields (Papua New Guinea and UK)

Exploration at a deep water project (Malaysia)
Launched an enhanced oil recovery (EOR) project by injecting CO₂ into an oil field (US)

Implemented Business Continuity Plan (BCP) training
Started production of copper concentrate at the Caserones copper mine

Overseas expansion and continued development of cutting edge materials



Oil and Gas Development in Malaysia

Akira Tanaka

Executive Officer, General Manager of Corporate Planning Department (Former Managing Director of Miri Office)
JX Nippon Oil & Gas Exploration Corporation



In Business for Over a Quarter of a Century

In Block SK10 offshore Sarawak in Malaysia, since our acquisition of the block in 1987, we have been conducting one of our key projects where we have the operatorship for exploration, development and production.

Natural gas has been produced at Helang Gas Field in SK10 since 2003. It is transported through pipeline together with natural gas produced at the neighboring Block SK8 of which operator is Royal Dutch Shell; we also obtained working interest in SK8 in 1991. The transported gas reached the liquefaction plant operated by Malaysia LNG Tiga Sdn. Bhd., which is partly owned by JX Nippon Oil & Energy and exported after liquefaction as Liquefied Natural Gas (LNG) to Japan and other countries.

Miri Office

Miri Office, which is responsible for this project, has approximately 300 staff, most of whom are Malaysian nationals. Having worked at this office



Installing offshore platform and topsides (2003)

from July 2010 through June 2015, I have done my daily business assignment, giving safety first priority, while engaged in maintaining and developing

the relationships of trust that have been forged with PETRONAS, Malaysia's state oil company, other project partners, contractors and local communities over the 28 years since the acquisition of SK10.

Further Challenges

In 2014, JX Nippon Oil & Gas Exploration made the final investment decision to develop Layang Oil and Gas Field, located eight kilometers to the east of Helang Gas Field in SK10, for which we received approval of our field development plan from PETRONAS.

For the development of the field, a new dedicated platform and the Floating Production, Storage and Offloading system (FPSO) are planned to be installed, and we are currently in the middle of work in an effort to commence commercial production in 2016. The condensate and oil is planned to be shipped from the FPSO.

We consider Malaysia to be one of the core countries for our business operations, and intend to improve and strengthen our natural-gas supply chain by development and production of Layang Oil and Gas Field in addition to the Helang Gas Field. We are also conducting exploration at other locations including the Deep Water Block R, offshore Sabah in Malaysia, administered by our Kuala Lumpur Office, and will continue working actively on our oil and gas development in Malaysia.

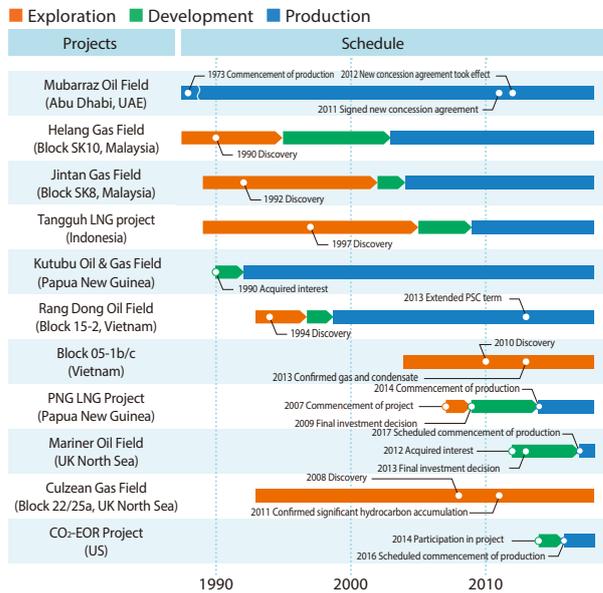
PROJECT HISTORY



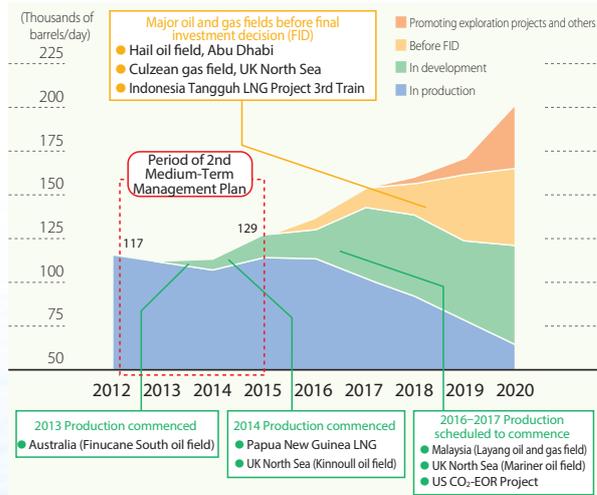
Feature 1

Securing Resources and Ensuring a Stable Supply

Exploration and Development Schedule for Principal Projects



Production Schedule (Oil Equivalent)



Enhance Oil and Gas Development

Intense competition for natural resources has been continuing due to the firm growth in oil and gas demand for medium-to-long term despite some temporary sluggishness. Moreover, in recent years, with the increasing percentage of oil and gas discoveries in severe conditions of natural environment, such as remote area or deep water, sophisticated technologies and considerable financial strength are imperative. Under this tough business climate, JX Nippon Oil & Gas Exploration is working to increase reserves and production, mainly through exploration activities. We will capitalize on the knowledge we have obtained thus far and on our favorable relationships with state-owned oil companies as well as oil-producing countries and regions, while prioritizing the allocation of management resources by focusing on core regions and technologies, and establish our advantage by accumulating technologies, primarily through our activities as an operator.

E&P activities progress in four stages: exploration, development, production and abandonment. Each stage involves risks of injuries and illness, accidents, and impacts on the environment. Giving top priority to managing risks related to health, safety and environment (HSE) in carrying out our business activities, JX Nippon Oil & Gas Exploration has established and is implementing systematic approaches to manage those risks (HSE management system or HSE-MS). As part of the HSE-MS, we have established a corporate emergency response plan and a structure based on site specific emergency status, and an oil spill response plan. We also continually confirm the effectiveness of the system by conducting emergency response drills on a regular basis and discussing any necessary improvements.

We are promoting the following projects towards an increase of reserves and production.

Advancing projects under development to production stage as well as projects before FID to development

Production commenced	● Papua New Guinea LNG ● Kinnoull oil field in the UK North Sea
Under development	● Mariner oil field in the UK North Sea ● CO ₂ -EOR project in the US
Before final investment decision	● Culzean gas field in the UK North Sea ● 3rd train of the Tangguh LNG Project in Indonesia

Promoting Large Exploration Operator Projects

- Deep Water Block R offshore Sabah in Malaysia
- Block A in Qatar

Commencement of Production at Caserones Copper Mine

The Caserones Copper Mine in Chile commenced production of copper concentrate starting May 2014.

Going forward, this will contribute to ensuring stability of copper resources for Japan.

Establishing Business Continuity Plan (BCP) and Training towards Stable Supply of Petroleum Products

The Great East Japan Earthquake of March 2011 reconfirmed in Japan the importance of oil and its strength as independent, distributed energy. National and local governments have therefore been working to

develop laws and strengthen systems to ensure energy supplies in the event of disasters. To fulfill our role as an energy supplier supporting our social infrastructure under these circumstances, JX Nippon Oil & Energy established its Crisis Management Department in October 2014 for the purpose of strengthening the functions, authorities and scale of the Crisis Management Group in the General Administration Department. It also established a BCP Group tasked with the office procedures of establishing and reviewing business continuity plans for use in the event of a huge earthquake or other disaster.

At the time of the Great East Japan Earthquake, JX Nippon Oil & Energy's three refineries in Tohoku and Kanto stopped operations and approximately 40% of service stations in the Tohoku and Kanto areas were forced to suspend trade. This was a valuable experience that we must never forget. In this dire circumstance,

employees and other people concerned worked together to recover and return the energy supply to normal as quickly as possible in disaster-affected and other areas.

With this experience also in mind, we established BCPs, which we revised in January 2015 to enhance its effectiveness, for use in the event of a huge earthquake. For BCPs, it is important to continually work on improving the plan's effectiveness and strengthening related systems to cope in the event of a huge earthquake or other actual disaster. That is why we are working to establish systems for continuity and prompt recovery of key operations by defining supply recovery targets for petroleum products in the event of specific huge earthquake scenarios—the Nankai Trough Giant Earthquake and Inland Earthquake in Tokyo.

In addition, we are also continually conducting training to improve the effectiveness of the plan by identifying issues and promoting solutions.

In 2014, we conducted training based on the scenario of the Nankai Trough Giant Earthquake, establishing a Disaster Response Headquarters with the president as the head, for the purpose of (1) confirming the flow of actions and information sharing during a disaster; (2) confirming cooperation between head office and disaster-affected sites; and (3) establishing policies and plans towards recover of supply of petroleum products. At the same time, we were able to confirm a plan for cooperation in oil supply during a disaster, which was established to maintain supply through mutual cooperation between petroleum refiners and others in the case of a large-scale earthquake causing oil supply shortages in specified regions. As an energy supplier that supports our social infrastructure, we will continue to conduct ongoing training and review our BCPs in order to increase their effectiveness, achieve stable supply of petroleum products and achieve disaster prevention and natural disaster reduction.

■ Participation in “Michinoku Alert” Oil Supply and Transportation Training

JX Nippon Oil & Energy participated in the “Michinoku Alert 2014” disaster preparedness training conducted for the purpose of enabling smooth supply of oil to Self-Defense Forces employed in lifesaving operations, and enhancing systems for oil transportation for civilian use in locations such as emergency shelters, in the event of a large-scale earthquake or tsunami.

During these joint training exercises conducted with private sector oil refineries and oil depots by the Japan Ground Self-Defense Forces North Eastern Army and the Tohoku Bureau of Economy, Trade and Industry, our role was to load diesel fuel into Self-Defense Forces oil tank trucks at the on-shore loading facility within our Sendai Refinery. Concurrently with this training, we simulated the establishment of disaster response headquarters at our head office and Sendai Refinery, and conducted various training exercises including confirming disaster status, handling shipping demands and implementing shipping procedures.

This was the first time Self-Defense Forces oil tank trucks had entered the premises of a private sector oil refinery, so we plan to use the knowledge acquired through this training to create systems that enable fuel loading of Self-Defense Forces oil tank trucks at any oil refinery, plant or oil depot.



Loading diesel fuel

Development and Supply of Cutting-Edge Electronic Materials That Support Our Society

High quality and high functionality are essential for electronic materials in order to realize a more fruitful society and improve the performance of familiar products that support the lifestyles of modern society, such as smartphones, tablets, personal computers, digital consumer electronics and automobiles.

The electronic materials business of JX Nippon Mining & Metals has been utilizing its non-ferrous metal processing technologies and know-how, built up over many years, for the timely development of cutting-edge electronic materials that meet the needs of society, and for the stable supply of those materials. With the popularity of these products, we currently boast the top global market share for many of them.

■ Main Products of the Electronic Materials Business

Main electronic materials	Global market share (As of 2014)	Primary applications	End use					
			Personal computers	Mobile phones and smartphones	Digital appliances and audio-visual	Communications infrastructure and datacenters	Automobiles	
 Treated rolled copper foil	70% No. 1	Flexible printed circuit boards	○	◎	◎	—	○	
 Sputtering targets for semiconductors	60% No. 1	CPUs, memory chips, etc.	◎	◎	◎	○	○	
 ITO targets for LCDs	30% No. 1	Transparent conductive films	◎	◎	◎	—	○	
 Sputtering targets for magnetic materials	55% No. 1	Hard disks, etc.	◎	—	○	○	—	
 Phosphor bronze	20% No. 1	Connectors, springs for electronic parts	○	◎	○	—	○	
 Corson alloy (C7025)	45% No. 1	Lead frames, connectors	◎	○	○	○	○	
 Titanium copper	65% No. 1	High grade connectors, etc.	○	◎	○	—	○	
 In-P compound semiconductors	50% No. 1	Optical communication devices, ultrafast ICs	—	—	○	◎	○	

With 60% of global market share, our sputtering targets for semiconductors are used for such things as forming the fine elements and wiring in integrated circuits (ICs). As smartphones and other end-use products become smaller and more functional, there is also a need for the conflicting specifications of miniaturization and high functionality (to form even more elements and wiring) in development of next-generation integrated circuits used as parts for these products. JX Nippon Mining & Metals' semiconductor targets enable formation of even finer elements and wiring through the pursuit of such characteristics as high purity, high density, uniformity and surface smoothness. We maintain close communications with our IC manufacturer customers to ascertain their needs as quickly as possible, and continue to develop and supply new materials in a timely manner.

Going forward, we will continue to contribute to the development of society through similar initiatives for all our products.

Responding to Diverse Energy Demands

As a comprehensive energy business group underpinning Japan, the JX Group not only supplies efficient and stable energy in various facets of our lives and society, but also drives further expansion in the new and renewable energy business to reduce environmental impact.

Initiatives

Enhance business as an “Energy Conversion Company”

Key Initiatives and Achievements in FY2014

Expanded mega solar power generation (commenced operation from mega solar power plants in seven new locations)

Completed construction of Hachinohe and Kushiro LNG terminals and expanded the natural gas supply system

Opened commercial hydrogen stations in 12 new locations

Resolved to enter household-use electric power retail business



Changing Future Energy through the Hydrogen Business

Katsuyuki Sasaki

General Manager
Hydrogen Business Promotion Department
New & Renewable Energy Company
JX Nippon Oil & Energy Corporation

Responsible for Entire Supply Chain for Hydrogen Business

In addition to hydrogen being a clean energy that does not emit CO₂ during use, it is also a highly significant energy from the perspective of energy security because it can be manufactured by a number of methods from a diverse range of primary energy sources. When used in fuel cells in particular, the energy can be utilized with high efficiency due to there being no heat loss during combustion.

In the commercialization of hydrogen, which has the potential to play an important role in the future, I am engaged in building, developing and operating the entire supply chain from manufacture to transportation and sales, in addition to investigating and establishing medium- to long-term commercialization plans.

Rewarding Work to Create the Future

Fuel cell vehicles were launched on the market in December 2014 but the development of a hydrogen station network is essential for widespread use. At JX Nippon Oil & Energy, we are developing hydrogen stations in an integrated manner with normal service stations. Because this is a new business, we are experiencing difficulties including unexpected steps required for its development. However, with the advice of related persons inside and outside the company, we could open hydrogen stations in 12 locations during fiscal 2014, which exceeded our target.



I find the work rewarding despite these and others challenges, and I am grateful for the valuable experience of being able to start up a new business from scratch.

Working on Future Energy, Because We Can

As a company that has long been a supplier of energy for cars, our first role now is to work mainly on developing hydrogen supply systems for fuel cell cars. There are still unresolved issues in the hydrogen business, but nevertheless I believe that our work is playing a part in change for the future.

As both a comprehensive energy and an “energy conversion company,” JX Nippon Oil & Energy converts naturally occurring primary energy to deliver the energy requirements of our customers. Our top management policy is that a company such as ours, whose main products are precious fossil energies, must work to reduce environmental impact through its businesses. In response to this, we plan to work toward the future with a focus on such issues as utilizing hydrogen in areas other than fuel cell vehicles, carbon dioxide capture and storage (CCS)* and manufacturing hydrogen from renewable energies.



At a hydrogen station with ENEOS mascot Enegori-kun

* Technologies for separation and recovery of carbon dioxide, and storage underground

PROJECT HISTORY

2011
Resolved to commence initiatives to develop hydrogen supply infrastructure

The Basic Energy Plan of June 2010 included plans to build social systems that utilize hydrogen energy. In response, 13 private sector companies jointly announced targets to adopt fuel cell vehicles in 2015 and to develop a hydrogen supply infrastructure.

2013
Commenced demonstration trials for hydrogen stations combined with service stations

Demonstration trials for Japan's first combined hydrogen station and service station were commenced at the Ebina Chuo Branch in Kanagawa Prefecture. Technology verifications conducted included shipping and transportation of hydrogen, which enabled the accumulation of operational expertise for hydrogen stations.

2014
Opened commercial hydrogen station

The first commercial hydrogen station was opened at Ebina Chuo Branch in December 2014. Hydrogen retail prices were made public at the same time. Also in December 2014, Toyota Motor Corporation launched its fuel cell vehicles. Note: A total of 12 hydrogen stations were opened during fiscal 2014

2015
Building network of 40 hydrogen stations

Including mobile hydrogen stations and the development of a further 16 stationary hydrogen stations, the development of a network of around 40 hydrogen stations in total is being planned for four major metropolitan cities during fiscal 2015.



Feature 2

Responding to Diverse Energy Demands

Initiatives as an “Energy Conversion Company”

JX Nippon Oil & Energy Corporation is taking initiatives as an “energy conversion company” to efficiently convert naturally occurring primary energy, such as crude oil, natural gas, coal and solar, into the best energy source for customers, and to deliver stable supplies of this energy. We are taking steps to enhance our core business of petroleum refining and marketing as well

as to expand our electricity and gas businesses, and increase sales of coal in Japan. We are also promoting the ENEOS New & Renewable Energy Business and focusing on other areas such as the mega solar power generation business.

Expanding Our Natural Gas Business

There is a wealth of natural gas reserves located around the world in comparison with crude oil. It is gaining attention as a form of clean energy that enables stable supply and emits little carbon dioxide or sulfur oxides. To respond to this rising demand of gas, in addition to engaging in the exploration of gas fields overseas, the JX Group is working to secure LNG through long-term contracts with US and European majors as well as Malaysian LNG suppliers, and is in talks with several potential suppliers, including companies producing LNG from shale gas.

Meanwhile, we are building and reinforcing our supply system in Japan via coastal tankers, tank trucks and pipeline at our own LNG terminals at Mizushima in Okayama Prefecture and Hachinohe in Aomori Prefecture.*

At Hachinohe, we commenced operations of the Hachinohe LNG Satellite Terminal for coastal tankers in March 2007, but in order to meet further increases in demand, we also commenced operations of the Hachinohe LNG Import Terminal in April 2015 to enhance our gas and LNG supply systems at Tohoku. We also began coastal tanker shipments to the Kushiro LNG Satellite Terminal, which was opened in April 2015, and developed our supply systems in the eastern Hokkaido region.

* The Mizushima LNG Terminal is a joint investment with The Chugoku Electric Power Co., Inc.



Hachinohe LNG Import Terminal

The JX Group's Natural Gas/LNG Supply Chain



New & Renewable Energy Business

JX Nippon Oil & Energy is promoting the ENEOS New & Renewable Energy Business to realize a low-carbon society. We are aiming to realize an independent and distributed energy society by promoting new & renewable energy products such as ENE-FARM, a

residential-use fuel cell, and photovoltaic (PV) power systems. Moreover, we are promoting our mega solar power generation business, which takes advantage of idle land, to promote the use of renewable energy.

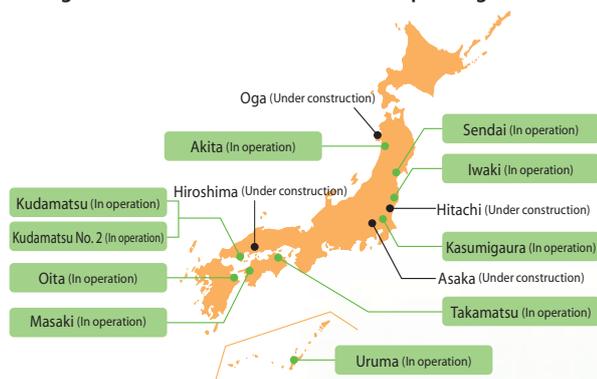
Expansion of the Mega Solar Power Generation Business

Since February 2013, JX Nippon Oil & Energy has been promoting our mega solar power generation business, which uses the JX Group's idle land, with the aim of expanding renewable energy application.

Mega solar facilities installed at former Group sites including Onahama Depot (Fukushima Prefecture), Kudamatsu Refinery (Yamaguchi Prefecture), Akita Refinery (Akita Prefecture), Matsuyama Depot (Ehime Prefecture), Takamatsu Depot (Kagawa Prefecture), Saganoseki Smelter & Refinery of Pan Pacific Copper Co., Ltd.'s company housing (Oita Prefecture), and our facility at Okinawa CTS Corporation (Okinawa Prefecture) came on line in fiscal 2014. All combined, we will have a total of ten mega solar power generation facilities that output around 28 megawatts. From fiscal 2015, we are planning construction at a further four locations with plans to achieve output of around 35 megawatts.

As an "energy conversion company" that provides a stable supply of energy by efficiently converting power into optimal energy to suit customer needs, we aim to expand the supply of renewable energy.

Mega Solar Power Generation Business Expanding Nationwide



Further Reduction of Household Environmental Impact

As we aim to realize a low-carbon society, the reduction of energy consumption in the home is a major challenge. "Dr. Ouchino Energy," a household energy consulting service for reducing household energy consumption, is free of charge. An ENEOS-certificated household energy consultant visits and proposes optimal plan for energy usage to those residences wanting an inspection to diagnose the way energy is being used by their household. Energy conservation performance of energy equipment, household appliances, and the home is assessed using around 60 diagnostic categories and interviews. Tips on daily actions and home appliance use are provided for energy conservation. JX Nippon Oil & Energy had 922 household energy consultants throughout the Group carrying out this service nationwide as of the end of fiscal 2014. In fiscal 2014, JX Nippon Oil & Energy was once again recognized for this activity and certified by the Ministry of the Environment as a home eco assessment operator for the Uchi-Eco Shindan Project, making this the third year running since receiving this certification in fiscal 2012 and 2013. Going forward, we will continue to propose energy conservation solutions to households through our household energy consultants.

Dr. Ouchino Energy—ENEOS Household Energy Consulting Service

Step 1

Assessment

Self-assessment of current actions and awareness related to energy conservation

Fill out Ouchino Energy Self-Assessment Sheet with details on the household's energy usage and energy conservation awareness.

Step 2

Consultation

Household energy consultation conducted by household energy consultant

A household energy consultant visits the home for comprehensive energy-related checks including the household's electricity and gas usage, energy conservation performance of electrical goods, hot water systems and other products, and thermal insulation performance of the home. Questions and requests related to energy conservation are also discussed.

Step 3

Report

Advice on necessary energy conservation solutions given to household

From the results of the household energy consultation, advice is provided for effective energy conservation and electricity saving solutions.

Also, the Government's policy is to aim for the spread of residential-use fuel cells to 1.4 million homes by 2020 and JX Nippon Oil & Energy is working to realize this by promoting the residential-use fuel cell ENE-FARM. Fuel cells form a part of the high-efficiency gas cogeneration system that not only generates power but also uses the heat generated from a chemical reaction between hydrogen from LP gas (or town gas) and oxygen in the air to heat water. Energy waste is minimized, and household energy efficiency can be greatly improved, resulting in the ability to greatly reduce CO₂ emission.

Towards Full Deregulation of Electricity Retail Business

The Amended Electricity Business Act in Japan is currently planned as part of a review of the country's energy policies, with full deregulation of the electricity retail business for households and other users planned for April 2016. Based on this background, JX Nippon Oil & Energy decided in October 2014 to enter the household-use electric power retail business and take on the challenge of a new electricity supply business as an "energy conversion company." We aim to further expand this business together with the commercial electricity retail business we have been operating since July 2003. We already have power plants in five locations around Japan that serve as power producer and suppliers (PPS) fueled by natural gas, biomass and other fuels, but we have also commenced full-scale investigations into enlarging facilities at Kawasaki Natural Gas Power Generation Co., Ltd.,* which will be central to the business expansion.

Also, in addition to being a participant in the Organization for Cross-Regional Coordination of Transmission Operators, Japan, which was established in April 2015, we are also promoting such initiatives as building a sales scheme that includes alliances, and in-house development of a customer information management system, for the development of our household electricity retail business. Ahead of the April 2016 commencement of our household electricity retail business, we will establish a system able to provide detailed support for the diverse needs of our customers.

* Jointly owned with Tokyo Gas Co., Ltd.

Efficient Utilization of Resources

The JX Group is working to build a recycling-oriented society and reduce environmental impact through its businesses, by utilizing the technological strengths cultivated over many years, in order to realize effective use of precious resources.

Initiatives

Develop a zero emission, eco-friendly global resource recycling business

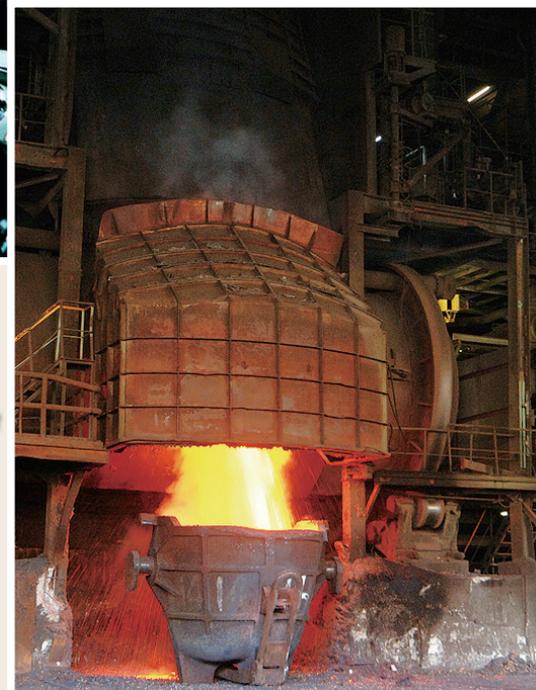
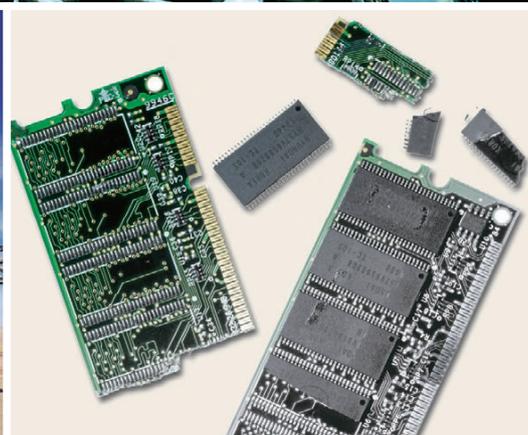
Create added value based on proprietary technologies

Key Initiatives and Achievements in FY2014

Expanded overseas collection in recycling and environmental services business

Commenced commercial application of biomining technologies

Practical application of next-generation FCC: high severity fluid catalytic cracking (HS-FCC)



Towards Overseas Expansion of Recycling Business

Sadaharu Koshitani

Recycle Business Manager
JX Nippon Mining and Metals USA, Inc.

Proud to Contribute to Recycling-Oriented Society

The JX Nippon Mining & Metals Group has been recycling non-ferrous metals since the 1970s, using smelting and refining, processing and analytical technologies cultivated over many years in the smelting and refining business. With the uneven distribution of mineral resources around the world and growing resource nationalism, supplies and prices are in a state of instability. For this reason, recycling of non-ferrous metals is expected to become more and more important for resource-poor Japan.

As a member of the JX Nippon Mining & Metals Group, I am proud of my involvement in the socially significant business of securing resources and building a recycling-oriented society.

Targeting Further Business Opportunities in North America

JX Nippon Mining & Metals set up an operating site in Arizona, in 2014 to target the North American market, where the volume of recycled non-ferrous metals is expected to grow in the future given the development of recycling laws and an increase in environmental awareness.

As one of the founding members of our US site targeting this huge market, I am currently working hard every day on collecting activities for these recycled materials.

Going forward, we aim to further expand this business by deepening the level of communication with customers and building strong and long-term relationships.



At the same time, our policy is not only to focus on the recycled materials from used electronic components that we are currently collecting, but to also discover new recycling opportunities.

Medium- to Long-Term Businesses Contribute to Society

With stricter global environmental regulations and greater environmental awareness, even emerging economies, that are forecast to experience high economic growth in the future, are expected to see a growing need for recycling. For this reason, in addition to North America, we are conducting market research in Mexico and Eastern Europe in parallel. By researching and understanding changing conditions in real time, and then proposing and delivering solutions that meet the market needs, we hope to build medium- to long-term business relationships in these frontiers. In this way, we hope to fulfill our mission in the hope that this will lead to solving social issues, including environmental issues and building a global recycling-oriented society.



Recycled materials collected at Saganoseki Smelter & Refinery, Pan Pacific Copper Co., Ltd.

PROJECT HISTORY

1993
Full-scale start of recycling and environmental services business

Full-scale business activity started with the commencement of operation of a Clean Z furnace at the Hitachi Works (current JX Nippon Environment Services Co., Ltd.) followed by the establishment in 1994 of the Recycling and Environmental Services Group. After that, a nationwide collection and processing network was built at Hitachi, Saganoseki, Tomakomai, Mikkaichi and Tsuruga.

2009
Construction completed at Hitachi Metal-Recycling Complex (HMC) Department of Hitachi Works

The nationwide network was further enhanced through the establishment of a new metal recovery site located within the Tokyo metropolitan area, which generates large volumes of recycled materials.

2010
Recycled material collection base opened in Taiwan

A collection base was opened because of the reduced generation of recycled materials in Japan and to meet the increasing need for recycling in Taiwan, which is a hub for electronics and related industries.



2014
Operating site established in the US for collection of recycled materials

An operating site was opened to meet the increasing need for recycling electronic scraps generated in the United States. The aim was to build a global resource recycling business using our technological strengths.

Feature 3

Efficient Utilization of Resources



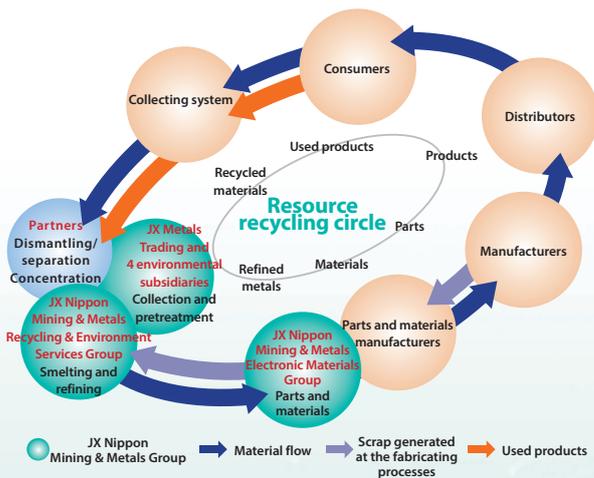
Hitachi Metal-Recycling Complex (HMC) Department of Hitachi Works

Achieving a Recycling-Oriented Society through Our Recycling and Environmental Services Business

The JX Nippon Mining & Metals Group engages in an integrated range of businesses related to non-ferrous metals, centering on copper, which encompass resource development, metals smelting and refining, electronic materials, and recycling and environmental services. The recycling and environmental services business, which is the “vein” of this value chain, consists of environmental services for detoxifying industrial waste and the recycling of recycled materials containing non-ferrous metals into refined metals. The Group contributes significantly to the development of a sustainable, recycling-oriented society by utilizing the key features and strengths of this business—zero emissions, proprietary treatment processes based on smelting and refining technologies, and a global collection network.

Key Features and Strengths of the Recycling and Environmental Services Business

Resource Recycling Initiatives to Pursue Zero Emissions



(1) Zero Emissions

In the processes for detoxification of industrial waste and conversion of recycled materials into reusable resources as refined metals, we are pursuing zero emissions, where no secondary waste which would require landfill disposal is produced. All iron, excluding non-ferrous metals, are recovered as slag and used for such purposes as cement material. By preventing the generation of secondary waste, we are reducing the environmental impact for our next generation.

(2) Proprietary Treatment Processes Based on Smelting and Refining Technologies

The recycling of non-ferrous metals in the business is carried out using uniquely developed efficient and reliable treatment processes which are based on the technologies we have fostered over many years through operations at mines, smelters and refineries. In particular, at the Saganoseki Smelter & Refinery of Pan Pacific Copper Co., Ltd.—owned by JX Nippon Mining & Metals and boasting Asia’s largest treatment capacity for recycled materials—energy conservation is achieved by using the excess heat generated from copper concentrate smelting for melting recycled materials.

(3) Global Collection Network

At Tomakomai (Hokkaido), Hitachi (Ibaraki Prefecture), Mikkaichi (Toyama Prefecture), Tsuruga (Fukui Prefecture), and Saganoseki (Oita Prefecture), we are recycling and detoxifying the recycled materials and industrial waste collected through the nationwide collection network we have built. Also, with reduced generation of scrap in Japan, we are enhancing our collection operations overseas and have established a collection and pre-treatment site in Taichung (Taiwan) and an operating site in Arizona (US).



Biomining Test Heaps at Radomiro Tomic Mine

Effective Use of Resources through Biomining Technologies

Copper plays an essential role in people’s lives, with demand expected to grow, in particular in emerging economies that are continuing to develop. However, as copper mines continue to be developed around the world, the number of mines that produce high-grade ore is decreasing. In response, biomining technologies have been developed

as a method for effectively using low-grade ore.

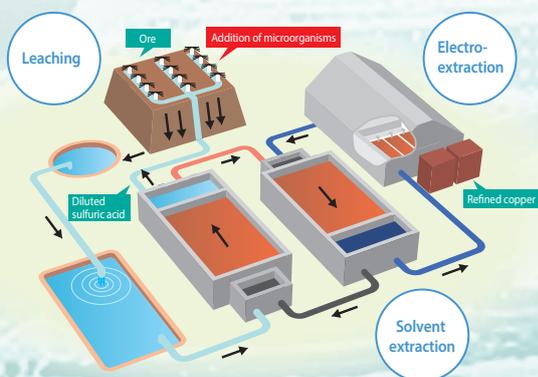
JX Nippon Mining & Metals established BioSigma S.A. in Santiago, Chile in 2002, a company jointly owned with Corporación Nacional del Cobre de Chile (Codelco), where it is conducting research into biomining. BioSigma has developed a technology to effectively recover copper from low-grade ore, which was difficult with conventional hydrometallurgical technologies (a method where sulfuric acid or other solution is sprayed over the ore and then electrolysis is used to recover the dissolved copper) by adding specific microorganisms into the process. The results of one year of demonstration trials, conducted at the Codelco-operated Radomiro Tomic mine in Chile's Antofagasta region, show 30 to 50% more leached copper than can be achieved by conventional methods. This has enabled recovery of copper from the low-grade primary copper sulfide ores that were left untouched at this mine, and commercial application commenced from 2015.

Applying biomining technologies at other mines as well, and recovering copper from currently wasted low-grade ores, will increase efficient and sustainable use of resources. JX Nippon Mining & Metals aims to continue contributing to the future of resource development through new technology research.



Bioreactor (microorganism culture equipment) established at Radomiro Tomic mine

Copper Recovery Process (Hydrometallurgical Process) Using Biomining Technologies



Efficient Production of Petrochemical Products from Limited Resources

As essential elements of people's lives, petrochemical products are used in many settings from familiar items such as clothes and daily necessities to cars, buildings and other structures. JX Nippon Oil & Energy is supplying petrochemical products that maximize the value added from oil through effective use of limited resources and by employing the extensive technologies and expertise acquired through all processes from crude oil procurement to petroleum refining and petrochemical product manufacturing.

What we have focused on throughout this is the development and practical application of next-generation high severity fluid catalytic cracking (HS-FCC), which is used to crack the low value-added residue produced during the oil refining process, and efficiently produce high value-added propylene and other petrochemical raw materials. The conventional fluid catalytic cracking (FCC) process is mainly used for producing gasoline raw materials by cracking residue and other oils in a high-temperature reaction with catalysts. HS-FCC on the other hand is a technology that enables high yield production of propylene and other products through the world's first practical application of a reactor vessel to efficiently crack residue in a higher-temperature, quicker reaction with catalysts.

We started developing the HS-FCC technology in the 1990s, and then through joint global research works conducted with Saudi Arabia in the 2000s, we built and operated a 30 barrel-per-day pilot plant in Saudi Arabia. After investigating the scaling up of the reactor, we built a 3,000 barrel-per-day semi-commercial plant at the Mizushima refinery. After three years of operation from fiscal 2011 through fiscal 2013, and achieving results that met our targets, we established it as a commercial technology. We are making great inroads towards practical application of this next-generation "Bottom to Chemical" technology that efficiently produces petrochemical raw materials from residue.



HS-FCC semi-commercial plant (approximately 70 meters high)

Feature 4



Provision of relief supplies by the Caserones Copper Mine to victims of torrential rains in Chile



Presentation of inventory of relief supplies to Miguel Vargas, Intendant of the Atacama Region (center right) by Keiichi Goto, Deputy Chief Executive Officer of JX Nippon Mining & Metals and General Manager of its Chile Office (center left)

Communication with Stakeholders

The JX Group actively creates opportunities for social contribution activities and conversations with shareholders and experts so as to enhance communications with our stakeholders.

Community Contribution Activities at the Caserones Copper Mine in Chile

The Caserones Copper Mine (Chile), owned and operated by JX Nippon Mining & Metals, commenced production of copper concentrate starting May 2014. With the expected global increase in copper demand, it will continue to contribute in the long term to ensuring a stable supply of copper resources for Japan and economic development of Chile.

In operating large scale businesses such as mining, besides working on ensuring safety and preserving the environment, building deep trusting relationships with the local communities is a crucial corporate responsibility. To date, at the Caserones Copper Mine, we have put effort into improving the lives of neighboring residents, such as putting in place various types of infrastructure, and youth education targeted at improving employment of local residents.

The record torrential rains that hit Northern Chile at the end of March 2015, last seen 80 years ago, was a major disaster that caused floods in Atacama Region where the Caserones Copper Mine is located, resulting

in 31 dead, 23 missing, and about 7,000 residential homes damaged or destroyed. At the Mine, besides ensuring the safety of employees at the onset of the torrential rains, together with the local government, we supported in many forms to help the neighboring residents recover as early as possible, such as repairing of roads, supplies of food and water, removal of debris, and recovery of electricity, water supply and sewage facilities. In addition, JX Nippon Mining & Metals presented the Atacama Regional Government with about 500 thousand US dollars in household goods and other emergency supplies.

We aim to continue to be a good neighbor in our local communities, and contribute to the development of regions where our businesses are located through various activities.

Organizing the “Symposium on Energy in the 21st Century”

JX Nippon Oil & Energy organized the 19th “Symposium on Energy in the 21st Century” in November 2014 to confer with various stakeholders on energy sources in the future. Using the theme “Unveiling Hydrogen Energy—Supply Infrastructure and the New Energy Society,” opinions were sought from government officials, academic scholars, private enterprises, and consumers, and discussions were carried out.

During the symposium, issues and solutions for the stages of hydrogen production, transportation, storage and utilization needed to realize a full-scale hydrogen society were discussed, and a common understanding of the future of hydrogen energy was achieved. We will continue to contribute to building a new energy society

by driving the development of infrastructure to supply hydrogen.



The 19th “Symposium on Energy in the 21st Century”



Completion Ceremony of Building at Nguyen Truong To Elementary School



School Building at Nguyen Truong To Elementary School

Contributing to the Local Society in Vietnam

JX Nippon Oil & Gas Exploration contributes to the local communities in the various countries where we conduct our business. In Vietnam, one of our core business countries, with a view to providing education support for children for the future, we have been offering scholarships as well as donations for school building projects jointly with JX Nippon Oil & Energy. In addition, to assist youths suffering from disabilities due to defoliants spread during the Vietnam War to participate in society, we made donations covering the construction costs of rehabilitation facilities, and in 2014 received a commendation from the Vietnam Association for Victims of Agent Orange.



PC training at the rehabilitation facility

Schools and Rehabilitation Facilities Established (construction costs fully covered by our donations)

2002	Muong Phang Elementary School in Dien Bien Province
2005	Rehabilitation facility for children in Gio Linh, Quang Tri Province
2007	Thanh Tuyen Junior High School in Ha Nam Province
2008	Binh An Junior High School in Ha Tinh Province
2009	Trieu Dai Elementary School in Quang Tri Province
2011	Rehabilitation facility providing vocational training to youths in Cam Xuyen, Ha Tinh Province
2012	Nguyen Binh Khiem High School in Hai Phong City
2013	Nguyen Truong To Elementary School in Ba Ria Vung Tau Province
2014	Trieu Dai Elementary School in Quang Tri Province (expansion of a school building)



Communication with Shareholders and Investors

JX Holdings aims to strengthen its communication with its shareholders and investors, which are important stakeholders. We conduct a comprehensive set of investor relations (IR) activities to deepen understanding of our Group, such as facility tours of refineries and smelters for institutional investors and analysts, and meetings for individual investors.

As recognition of our attitude towards IR activities, JX Holdings was awarded the "2014 Awards for Excellence in Corporate Disclosure" in the categories of "Petroleum/Mining" and "Disclosure to Individual Investors" by the Corporate Disclosure Study Group of The Securities Analysts Association of Japan, making it the second year running that we received awards in the two categories. We also received the Award for Excellence in the main

category of the "Nikkei Annual Report Awards 2014" for our Annual Report 2014.

We conducted a securities analyst seminar for our employees to hear opinions on expectations and issues on the JX Group from the viewpoints of analysts.

We will continue to actively pursue IR activities to disseminate useful and meaningful information so as to enhance our corporate value through various events and IR tools.

JX Group's CSR Management

CSR Management

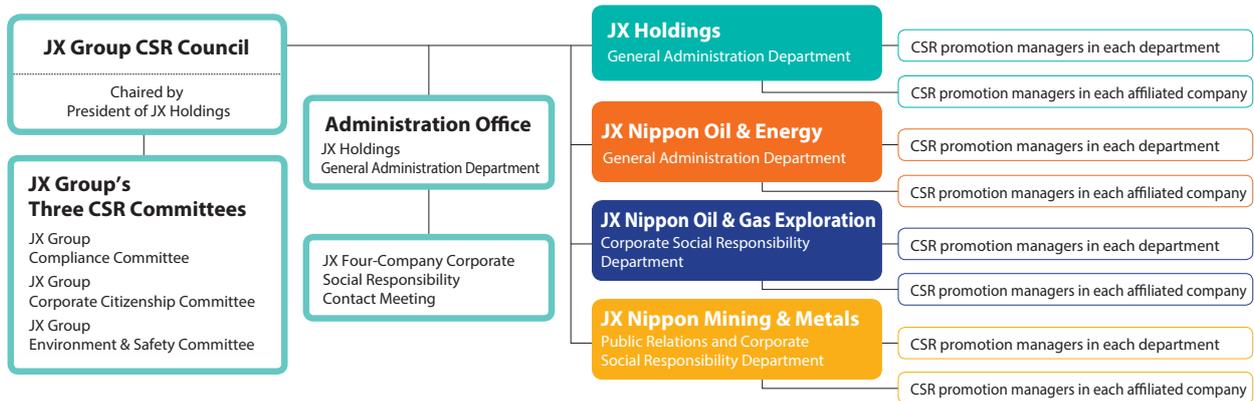
Basic Approach

As a group of companies involved in the energy, resources and materials fields, which are vital for people's lives and economic activity, we believe that the embodiment of CSR is to ensure a stable and efficient supply of energy, resources and materials, as well as the implementation of the Mission Statement by every employee throughout the course of executing business operations. This is the JX Group's social responsibility. Based on this belief, we aim to establish a corporate group worthy of the trust of stakeholders, including shareholders and other investors, customers and employees.

Implementation Structure

The JX Group established the JX Group CSR Council, chaired by the president of JX Holdings, to formulate and carry out the basic policy on CSR and oversee and coordinate CSR measures throughout the Group. We designated three priority fields for CSR: (1) compliance (including information security and human rights), (2) social contribution, and (3) environment and safety. Group CSR committees have been established for each field, and the committees act as advisory bodies to the chairman of the JX Group CSR Council. Each committee deliberates and makes reports on working-level business operations and shares information. Furthermore, group CSR promotion managers are assigned to each workplace and cooperate with the department responsible for CSR in each company, working on the front lines of CSR implementation organizations to manage CSR in the workplace.

JX Group CSR Implementation Structure



Implementing Employee CSR Surveys

In regard to CSR, the JX Group periodically conducts an awareness survey that touches upon areas such as the JX Group Mission Statement. This is based on our belief that each of our employees is responsible for supporting our activities to contribute to the development of a sustainable economy and society.

In fiscal 2014, shared issues across the entire Group were extracted from the second CSR survey conducted in September 2013, and efforts were placed to raise awareness through measures such as the message by the management, and training based on e-learning methods, with importance placed on "improving risk awareness," "exerting independence," and "integrating the Mission Statement into business operations."

In July 2015, we conducted the third CSR survey, and the achievements of our activities to publicize our CSR activities and educate on CSR will be continually monitored through analysis such as comparisons with past years and with other companies.

Organizing the JX Group CSR Promotion Managers Workshop

In November 2014, about 130 CSR promotion managers of the JX Group got together and organized the "JX Group CSR Promotion Managers Workshop" to make employees and officers understand more about CSR and share information. Using specific measures adopted by JX Holdings to handle shared issues faced across the Group based on the results of the second CSR survey, the workshop focused on items such as formulating a code of conduct specifying the detailed actions of the Group Values in an easy-to-understand manner, and sharing e-learning content. In addition, Associate Professor Masaatsu Doi from Hosei University Graduate School gave a lecture on "Stakeholder Relations Expected from Enterprises" that not only built relationships of mutual trust with stakeholders, but also provided a good opportunity to deepen expertise.



Lecture by Associate Professor Doi

Priority Fields and Results of Activities

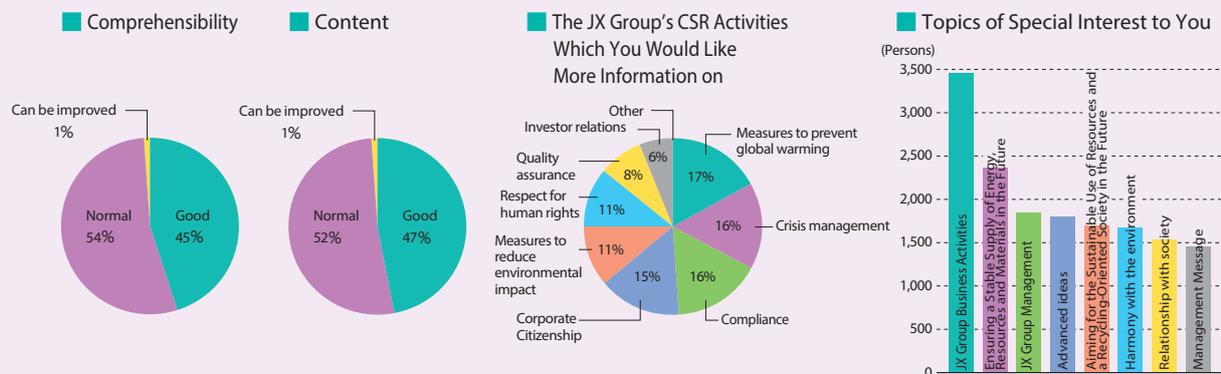
Group companies worked on the steady implementation of the priority fields designated by the JX Group's three CSR committees for fiscal 2014. Activities undertaken for priority fields for each fiscal year are reported to the

JX Group CSR Council, while the content of reports on priority fields for the following fiscal year are determined by individual committees, and the entire JX Group employs the PDCA cycle to carry out these CSR measures.

Priority Fields and Results of Activities

	FY2014		FY2015
	Priority Fields	Results of Main Activities	Priority Fields
JX Group Compliance Committee	<ul style="list-style-type: none"> Enhance the quality of compliance status checks Reinforce systems to prevent corruption and ensure compliance with competition law Establish internal whistle-blowing systems at overseas offices and plants 	<ul style="list-style-type: none"> Enhanced checklists used for compliance status checks; improved precision of discovering issues through organizing workshops on past cases, etc. Strengthened regulations and organized workshops and training sessions related to anti-corruption and compliance with competition law Established central reporting window for the JX Group's overseas offices and plants 	<ul style="list-style-type: none"> Implement compliance status checks steadily (focusing on: internal regulations; information security; systems to prevent corruption and ensure compliance with competition law) Enhance compliance training Establish the internal whistle-blowing system at domestic and overseas offices and plants, and make the system known to all.
JX Group Corporate Citizenship Committee	<ul style="list-style-type: none"> Provide support for children who are our future 	<ul style="list-style-type: none"> Implemented JX Group volunteer activities for "Connect to the Future" targeted at children Donated copies of the collection of children's stories <i>The Bouquet of Children's Stories</i> published by the JX Group to institutions nationwide such as welfare facilities (extending distribution across the Group) Organized activities targeted at school children, such as environmental classes (18 schools) and basketball clinics (74 times), at various locations nationwide (JX Nippon Oil & Energy) Implemented educational support in Vietnam, such as donations to rebuild kindergarten buildings (JX Nippon Oil & Gas Exploration) Provided tours of facilities and plants, and school visits targeted at elementary, junior high and high school students; taking in of internship students (JX Nippon Mining & Metals) 	<ul style="list-style-type: none"> Provide support for children who are our future
JX Group Environment & Safety Committee	<ul style="list-style-type: none"> Operate JX Group EMS Follow-up on the FY2013-2015 JX Group Medium-Term Environmental Management Plan Promote safety-related activities 	<ul style="list-style-type: none"> Continuously monitored EMS operation status Followed up on attainments of the FY2013-2015 JX Group Medium-Term Environmental Management Plan Conducted information sharing and exchange of opinions within the Group 	<ul style="list-style-type: none"> Operate JX Group EMS Follow-up on the FY2013-2015 JX Group Medium-Term Environmental Management Plan Promote safety-related activities Formulate the FY2016-2018 JX Group Medium-Term Environmental Management Plan

"JX Report for a Sustainable Future 2014" Survey Results



The JX Group conducts annual surveys on its "JX Report for a Sustainable Future," and received 5,430 responses for "JX Report for a Sustainable Future 2014." The overall evaluation for the report largely ranged from normal to good in terms of ease of understanding, volume, content, and design. For content, the "JX Group Business Activities"

that was included from 2014's report was evaluated as the topic of special interest to most. The 2015 report aims to use such opinions and requests to enhance the content of communications with our stakeholders.

Selected for "Nadeshiko Brand" as an Enterprise that Encourages Empowerment of Women

JX Holdings was selected in March 2015 for the "Nadeshiko Brand" (jointly selected by the Ministry of Economy, Trade and Industry and the Tokyo Stock Exchange to publicize enterprises that are exceptional in encouraging women's success in the workplace). The designation as a "Nadeshiko Brand" is recognition of our stance to encourage empowerment of women as being important to changing the organization into one with diverse and flexible thinking. One example is the "Goodbye Overtime—Action 8" initiative by JX Nippon Oil & Energy which optimized working hours so as to achieve work-life balance.

The JX Group works to create a working environment where all employees, regardless of sex or age, can exhibit their full capabilities.



"Diversity Management Selection 100" award ceremony and announcement of "Nadeshiko Brand"

Third-Party Opinion



Masaatsu Doi

Associate Professor
Social Services, Graduate School of Social Well-Being Studies
Hosei University

Associate Professor Doi earned his undergraduate degree from the Hitotsubashi University Faculty of Economics and completed his doctoral degree at the Hitotsubashi University Graduate School of Commerce and Management. He became an associate professor in the Faculty of Regional Policy of Takasaki City University of Economics in 2009 and began his current position at Hosei University in 2014. He holds a Doctorate of Commercial Science. He is the co-author of *CSR Management: Corporate Social Responsibility and Stakeholders*, and *The Creation and Diffusion of Social Innovation*, published by CHUOKEIZAI-SHA, Inc. and NTT Publishing Co., Ltd., respectively.

The petroleum industry suffered huge inventory valuation losses due to the sudden drop in crude oil prices, and the JX Group was also heavily affected, but even under such circumstances, it continued to steadily build its CSR implementation structure. Below, I will provide an evaluation of this year's report and some proposals for areas of study, as JX Holdings enters its sixth year since integration and moves into the next stage of being an integrated energy, resources and materials business.

There are two characteristics to this year's report. First is the separation into the "Highlights" and "Performance Report" to make the report easier for readers to understand. This is especially so for the "Highlights," which was designed for easy browsing by external stakeholders such as individual investors and business partners. Second is the sorting of CSR issues across the entire JX Group. In pages 7–8 of the "Highlights," the Group's business activities and CSR issues have been arranged from upstream to downstream, making it easy to see the big picture. By looking at business activities from this new perspective, it is possible to reexamine the activities for each CSR issue, rethink the CSR approaches expected at the global and local levels, and find out which are the areas that are lagging behind. I look forward to this "sketch" being slowly evolved in subsequent years.

Initiatives such as the "Goodbye Overtime—Action 8" promoting work-life balance were also recognized, with the Group being selected for the "Nadeshiko Brand" in 2014 as being one of the listed companies on the First Section of the Tokyo Stock Exchange that is exceptional in supporting and disclosing information on women's success in the workplace. I hope that the Group will continue not only to support women but also promote diversity in its working environment, regardless of sex, age and race, to further improve its competitiveness.

On the other hand, I would like to propose three areas of study for the future promotion of the Group's CSR management.

(1) Enhancing and Expanding the "Performance Report"

Compared to the previous year's report, while the annual data has been rearranged and expanded, such as the trend for frequency of industrial accidents and the accident severity rate, I hope it can state how the Group perceives the society-related data and what its goals are, similar to the environmental management plan. In addition, besides explaining an organization chart, I hope the Group can provide details of its performance in corporate governance—including the use of governance code—to cater to various stakeholders including professionals.

(2) Stating the Relationship Between CSR Issues and the Stakeholders

While the relationship between the Group's overall business activities and CSR issues can be clearly seen in this year's report, I hope it can go one step further and explore the relationship between each business stage and the stakeholders. For example, how the relationship between the energy business and the 10,800 service stations across the nation is built, what are the issues that arise from this, and how the Group as a whole perceives the issues. Furthermore, how it builds relationships with oil-producing countries, and what is the Group's basic approach in dealing with governments (such as responding to renewable energy laws). As it may be difficult to disclose all these in one report, I hope it can use the sketch provided this time as a base and include it as part of the "Communications with Stakeholders" (pages 21–22 of the "Highlights") in future annual reports.

(3) Undertaking and Promoting CSR Procurement

This is related to (2) above. While CSR procurement was listed as a CSR issue for the electronic materials process in the metals business (page 8 of the "Highlights"), I hope the Group can further develop its current green procurement to formulate CSR procurement policies and guidelines for its entire supply chain and set an example for the industry to follow. Although monitoring of formulated policies and responding to individual issues that may arise will not be easy, such issues pertaining to individual department needs to be understood by the entire Group, and is also part of risk management.

The Group's aim for 2020 is to be one of the world's largest integrated energy, resources and materials business groups. Facing the above issues may be a challenging task, but as the Group moves from the integration phase into the evolutionary phase, I hope the Group is able to use this to further enhance its total corporate value and competitiveness.

Response to Third-Party Opinion

We are very grateful for Associate Professor Doi's valuable opinions concerning the JX Group's CSR initiatives and proposals on how we can be improved.

The JX Group promotes diversity to enhance its corporate value, with the ultimate goal to create an environment where everyone can demonstrate his or her fullest abilities regardless of sex, age, nationality, and a personal history. We are very honored to receive Associate Professor Doi's evaluation on this matter.

Regarding the proposals to enhance information disclosure and the promotion of CSR procurement along our entire supply chain, we will sort out the relevant issues and work to meet the wide-ranging expectations of our stakeholders.

Fiscal 2015 is the year where we formulate our Third Medium-Term Management Plan which will commence in fiscal 2016, and our long-term vision working towards 2030. We will continue to resolve various social issues and earnestly promote CSR activities as a premise for our business development.



Ichiro Yamamoto

Executive Officer and General Manager
General Administration Department
JX Holdings, Inc.

Guide to JX Group Websites

JX Group companies, including JX Holdings, Inc. and the three core operating subsidiaries, disclose a variety of CSR-related information on our websites. Please feel free to have a look at the information on these websites.

JX Holdings

JX Holdings ▶ Corporate Social Responsibility
<http://www.hd.jx-group.co.jp/english/csr/index.html>



- ▶ Top Message
- ▶ JX-ENEOS Children's Story Award
- ▶ JX Group Volunteer Activities for Passing on Hope for the Future
- ▶ JX Group CSR Reports
- ▶ CSR Activities at Core Operating Companies

Other Related Information about JX Holdings

>Corporate Profile

- JX Group Mission Statement
- Management Message
- Management Strategy
- Corporate Data
- Executives
- Organization
- Corporate History
- Group Companies

>Investor Relations

- Management Policies
- Financial Highlights
- IR Library
- Shareholder & Stock Information

>About JX the Group

- JX Group Mission Statement
- Establishment of the JX Group
- Objectives and Basic Concept
- Business Integration Disclosure Materials

JX Nippon Oil & Energy

<http://www.no.e.jx-group.co.jp/english/index.html>



- ▶ Corporate Profile
- ▶ CSR Report
- ▶ Products

JX Nippon Oil & Gas Exploration

JX Nippon Oil & Gas Exploration

▶ CSR (Safety, Environment, Social Contribution and Compliance)
<http://www.nex.jx-group.co.jp/english/environment/index.html>



- ▶ President's Message
- ▶ HSE Policy
- ▶ HSE Management System
- ▶ Operations Safety
- ▶ Environment
- ▶ Social Contribution
- ▶ Compliance and Human Rights Awareness
- ▶ Our Measures to Support Raising Children of The Next-Generation

JX Nippon Mining & Metals

JX Nippon Mining & Metals ▶ Corporate Social Responsibility
<http://www.nmm.jx-group.co.jp/english/sustainability/index.html>



- ▶ Outline of Our CSR Activities
- ▶ CSR Activities of the JX Nippon Mining & Metals Group
- ▶ Sustainability Report
- ▶ JX Nippon Mining & Metals' Corporate DNA and CSR
- ▶ Material Issues of the JX Nippon Mining & Metals Group
- ▶ Environmental Activities Report
- ▶ Social Activities Report
- ▶ CSR Topics

NIPPO CORPORATION

NIPPO

▶ About NIPPO

<http://www.nippo-c.co.jp/english/aboutnippo/csr.html>

- ▶ Quality Policy
- ▶ Environmental Policy
- ▶ CSR

TOHO TITANIUM CO., LTD.

TOHO TITANIUM CO., LTD. ▶ About Us

http://www.toho-titanium.co.jp/en/about/local_en.html

- ▶ Quality and Environmental Management System
- ▶ CSR

The UN Global Compact's Ten Principles

Human Rights		
Principle 1	Businesses should support and respect the protection of internationally proclaimed human rights; and	Performance Report p. 4
Principle 2	make sure they are not complicit in human rights abuses.	Performance Report p. 4
Labour		
Principle 3	Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining;	Performance Report p. 4
Principle 4	the elimination of all forms of forced and compulsory labour;	Performance Report p. 4
Principle 5	the effective abolition of child labour; and	Performance Report p. 4
Principle 6	the elimination of discrimination in respect of employment and occupation.	Performance Report p. 4, p. 8
Environment		
Principle 7	Business should support a precautionary approach to environmental challenges;	Performance Report pp. 5-6, 13-16
Principle 8	undertake initiatives to promote greater environmental responsibility; and	Performance Report pp. 5-6, 10, 13-16
Principle 9	encourage the development and diffusion of environmentally friendly technologies.	Performance Report pp. 5-6
Anti-corruption		
Principle 10	Businesses should work against corruption in all its forms, including extortion and bribery.	Performance Report pp. 3-4, 12



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From January 1, 2016, it will shift to this new address.

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<http://www.hd.jx-group.co.jp/english/>

General Administration Department

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After you have read the JX Report for a Sustainable Future 2015, feel free to submit any opinions or comments you may have via email.



Network Japan
WE SUPPORT



モーニングスター社会的責任投資株価指数
Morningstar Socially Responsible Investment Index

The Morningstar Socially Responsible Investment Index, in which JX Holdings is included (as of the end of September 2015), comprises 150 noteworthy socially responsible companies selected from Morningstar Japan K.K. from among publicly-traded companies in Japan to create an index from their share prices. This is Japan's first socially responsible investment index.



The Nadeshiko Brand is a joint program of the Ministry of Economy, Trade and Industry (METI) and the Tokyo Stock Exchange (TSE) that selects and announces listed companies that excel in encouraging women's success in business (40 companies were selected in FY2014).



This report was printed using an environmentally friendly waterless printing process and vegetable oil ink. In support of the Kizukai Undo (Tree-Use Movement) promoted by Japan's Forestry Agency, JX Holdings has printed this report on "3.9 paper," made from wood produced through forest thinning in areas where the JX Group is engaged in forest maintenance. This contributes to increased absorption of CO₂ by Japanese forests.