

# JX Report

for a Sustainable Future 2014



**The Future of Energy,  
Resources and Materials**

**JX Holdings, Inc.**

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## ● Editorial Policy

This report was prepared to fulfill the JX Group's accountability in relation to corporate social responsibility (CSR) to all stakeholders—including shareholders, investors, customers, employees, business partners and local communities—and to deepen communications with and meet the expectations of these stakeholders.

The framework of this report is based on the JX Group Mission Statement and the JX Group Values.

The Features section introduces initiatives for the future the JX Group as a whole is undertaking to contribute to the development of a sustainable economy and society “a stable supply of energy, resources, and materials,” “a low-carbon society,” and “the sustainable use of resources and a recycling-oriented society” and also covers the Group's communications with its stakeholders.

The JX Group Values section reports on several representative activities we are conducting in accordance with the Group's five EARTH values. It also includes remarks from employees who carry out daily operations in line with the EARTH values.

The JX Group companies, including JX Holdings and the three core operating subsidiaries, disclose information on various CSR activities on their respective websites. Please take time to visit these websites. (See page 42)

### ● Scope of Report

- JX Holdings, Inc. and its 11 main Group companies.
- JX Nippon Oil & Energy Corporation and its 21 main Group companies.
- JX Nippon Oil & Gas Exploration Corporation and its 32 main Group companies.
- JX Nippon Mining & Metals Corporation and its 52 main Group companies.

The scope of quantitative information is defined in notes on each page.

### ● Reporting Period

In principle, the report covers the period from April 2013 to March 2014. However, some information from April 2014 onwards is also included, as necessary.

### ● Publication Date

December 2014  
(Previous issue February 2014. Next issue December 2015.)

### ● Guidelines Used as Reference

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

### ● Enhancing Reporting Reliability

The quantitative environmental information data on pages 35–38 has been assured by an independent body to ensure objective and reliable reporting.

### 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.

# 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 a 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  
(left)

**Isao Matsushita**  
Representative Director, President  
(right)

## Fulfilling Our Mission as a Group to Respond to Society's Expectations

JX Group has now entered the fifth year since its establishment. In recent times, we experienced the Great East Japan Earthquake which reconfirmed our mission to "secure and stably supply energy, resources, and materials vital to the development of the society and economy to support people's lives and the economic infrastructure," as well as to "contribute to the development of a sustainable economy and society."

However, the JX Group must be a group worthy of responding to the expectations of society to fulfill the commitment outlined in our mission statement. We believe we can only accomplish this mission if the JX Group is constantly committed to "establishing both proper governance backed by thorough compliance and a CSR implementation structure." We also clearly stated this point in the 2nd Medium-Term Management Plan, which was announced in 2013, as a premise for our business goals.

## Steady Churning Out Results in Line with Our 2nd Medium-Term Management Plan (Fiscal 2013–2015)

JX Group is systematically embarking on the development, production, and sales of resources, including petroleum, natural gas, and non-ferrous metals, all of which are essential to building the foundation of an industry. For Japan, which lacks these resources, we play an indispensable role in supporting economic activities and people's lives. However, the marketing environment in which we are operating these businesses is becoming increasingly complex as we will explain herein.

In Japan, the economy is trending toward recovery owing to benefits from the introduction of "Abenomics." Nevertheless, we forecast demand for petroleum products is likely to continue to decrease, reflecting factors such as a shrinking population, low birth-rate, aging society, and the popularity of fuel-efficient vehicles. Meanwhile, there are movements to develop

and promote new energies, as well as deregulate the electricity and gas industries. Although the energy supply structure is undergoing changes, we believe petroleum will continue to be the leading source of primary energy.

Looking globally, the global economy is forecast to continue to make a recovery owing to an improvement in the US economy. In particular, demand for petroleum, natural gas, and non-ferrous metals mainly in Asia is expected to continue expanding going forward. In light of this, we believe that international competition to secure resources will likely persist.

Amid these trends, JX Group aims to firmly seize business opportunities and steadily move forward toward its goal of becoming the corporate group that will shoulder "The Future of Energy, Resources and Materials."

From Fiscal 2013 onward, we are moving forward with plans for further globalization of our Energy Business in accordance with our 2nd Medium-Term Management Plan. This includes the start-up of operations at a joint venture plant to produce paraxylene in South Korea and the completion of construction of a lubricants manufacturing plant in Vietnam. In addition, we are promoting wider use of next-generation energy through activities such as the expansion of the mega solar power generation business, the promotion of the hydrogen business, and the construction of LNG terminals in Hachinohe and Kushiro, and also seeing results for initiatives aimed at achieving a low-carbon society.

In the Oil and Gas Exploration and Production Business, we successfully launched shipment of LNG from Papua New Guinea, extended oil field concessions in Vietnam, and secured new exploration and development areas in countries such as Australia and Malaysia. Moreover, in July 2014 we launched the CO<sub>2</sub>-EOR Project in the US, which aims to enhance oil recovery by utilizing CO<sub>2</sub> emitted from a coal-fired power plant while concurrently reducing impact on the environment.

In the Metals Business, we started production of copper concentrate at the Caserones Copper Mine in Chile, which is wholly-owned by Japanese companies, in May 2014. We aim to contribute to the stable supply of copper to users in Japan going forward. In addition, we aim to efficiently use resources and contribute to the solving of environmental issues through actions such as the increased promotion of research and development for new smelting and refining technologies and the commencement of providing a service to treat low-concentration PCB wastes.

## Continuing to Implement Group-Wide CSR Activities

JX Group is promoting group-wide CSR activities. Since the group's establishment in 2010, we have continued to embark on initiatives to instill the JX Group Mission Statement. In fiscal 2013, we conducted mission statement training for the entire Group. We also implemented a CSR survey of our 47 group companies. We provided feedback on the results of the survey to each group company and are dealing with the issues that were identified.

Meanwhile, in October 2013, we established the JX Group Compliance Activity Basic Policies for compliance activities to be carried out in accordance with global standards. In April 2014, we established basic policy concerning the prevention of corruption and conduct in violation of regulations on restraint of competition. We established these as standard rules for all group companies and they have been put into effect.

We are also actively partaking in activities that contribute to society. Since the Great East Japan Earthquake, we have continued to carry out volunteer activities supporting restoration and recovery of disaster stricken areas. In addition, we are also implementing activities to nurture and support the next generation, including forest preservation activities and the JX-ENEOS Children's Story Award.

Furthermore, JX Group's businesses are deeply related to Earth, which is our home. Given demand for increased consideration for the environment, we are steadily working toward achieving the group targets we set in the JX Group Medium-Term Environmental Management Plan (fiscal 2013–2015), formulated in 2013—(1) Global warming prevention and biodiversity preservation measures, (2) environmental load mitigation, and (3) enhancement of environment management system.

## Hand-in-Hand with Our Stakeholders

Going forward, JX Group aims to 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

### A Comprehensive Energy Company Responding to Society's Diverse Needs

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

To this end, in addition to building various optimal value chains to respond to diverse needs, we also are working to establish a supply structure that will ensure stable delivery even during times of disaster.

Furthermore, given that our mainstay

is precious fossil energy, we are actively promoting energy efficiency and greater technology sophistication at our refineries, and the spread of 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 embark on measures that will further solidify our relationship of trust by placing priority on compliance and safety, and through dialogue with our stakeholders.

## 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 Environment and Society

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

Under the intensifying global 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 reduces the emission of greenhouse gases

(CO<sub>2</sub>) into the atmosphere while concurrently enhancing oil recovery, and development of deep-water oil and gas fields, which require sophisticated technologies.

Also, in countries and regions where we conduct business, we carry out social contribution activities, such as donations for the construction of schools and volunteer programs by our employees.

It is our goal to contribute to the development of a sustainable economy and society through these daily business activities.

## 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 Metal Resources

The JX Nippon Mining & Metals Group is responsible for the JX Group's Metals Business. We are aiming to become a global resources and materials company centering on copper.

We strive to contribute to the development of high performance, compact, light-weight, and energy efficient end products by effectively and stably supplying non-ferrous metal resources as well as electronic materials. We also endeavor to efficiently utilize resources by leveraging our recycling and environmental services businesses,

and achieve a reduction in environmental impact.

In executing our business activities, as a good corporate citizen, we look to coexist and mutually prosper with society by gaining the trust of stakeholders, such as customers, business partners, and local communities, based on full-blown compliance that is backed by the establishment of a proper corporate governance system.

## JX Group Overview

### Holding Company Overview

#### JX Holdings, Inc.

Representatives: Yasushi Kimura, Representative Director, Chairman  
Isao Matsushita, Representative Director, President

Head Office Location: 6-3 Otemachi 2-chome, Chiyoda-ku, Tokyo  
100-8161, 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

Representatives: Yasushi Kimura, Representative Director, Chairman of the Board  
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: Refining and marketing of petroleum products (gasoline, kerosene, lubricants, etc.); manufacturing and marketing of petrochemical products; import and marketing of gas (LPG and LNG) and coal; supplying electric power; marketing of residential-use fuel cells, photovoltaic cells, power storage batteries and other products



#### 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 oil, 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.); manufacturing and marketing of electronic materials; recycling of nonferrous metal materials; treatment of industrial waste for reuse



### Overview of Listed Subsidiaries

#### Consolidated Subsidiaries: 2

##### NIPPO CORPORATION

Representative: Hiromi Iwata, Representative Director, President

Head Office Location: 9-11 Kyobashi 1-chome, Chuo-ku, Tokyo 104-8380, Japan

Capital: ¥15.3 billion (57.2% 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.)

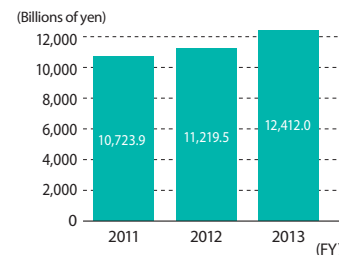
Principal Business: Refining, melting and sale of titanium metals

#### Equity-Method Affiliates: 5

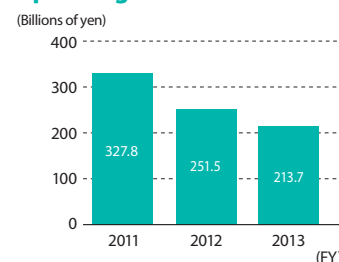
## Financial Highlights

(JX Holdings and Consolidated Subsidiaries)

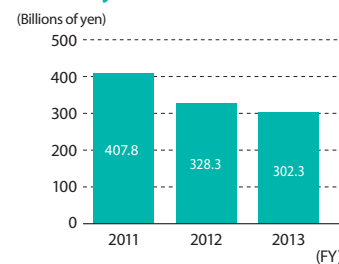
### Net Sales



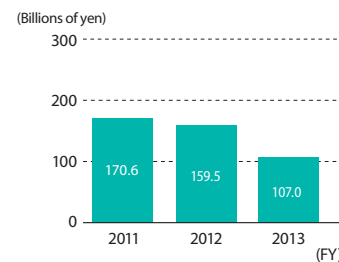
### Operating Income



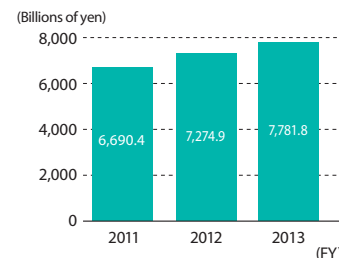
### Ordinary Income



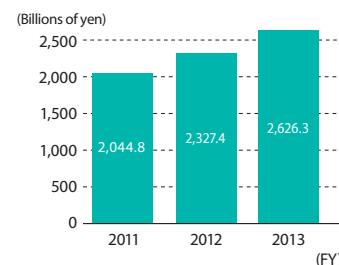
### Net Income



### Total Assets



### Net Assets



# JX Group Business Activities

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, JX Group is determined to contribute to society through all of its business activities.

## JX JX Holdings







**Consolidated net sales**  
**¥12.4** trillion  
 FY2013

**Total assets**  
**¥7.8** trillion  
 As of the end of March 2014

**Number of group companies\***  
**173** companies  
 As of the end of March 2014

**Total number of consolidated employees**  
 Around **27** thousand people  
 As of the end of March 2014

\* Consolidated subsidiaries and equity-method affiliates

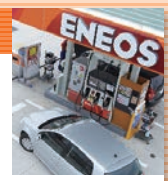
**Refining and production**

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.



**Distribution and sales**

The ENEOS brand has a domestic network of around 11 thousand service stations. In Japan, we sell around 71 million kiloliters of fuel annually, giving us a high market share of around 37%.



**Refining capacity**  
**1.21** million barrels per day  
 (No. 1 in Japan)

**Paraxylene (Petrochemical) supply capacity**  
**3.12** million tons per year  
 (No. 1 in Asia)

**Number of domestic service stations**  
 Around **11** thousand locations  
 (Leading share in Japan of 32%)

**Domestic fuel oil sales volume**  
 Around **71** million kiloliters  
 (Leading share in Japan of 37%)

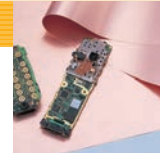
**Smelting & Refining**

Pan Pacific Copper Co., Ltd. and LS-Nikko Copper Inc. combined boast a total refined copper production capacity of 1.17 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.



**Electronic materials**

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.



**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.



**Refined copper production capacity**  
**1.17** million tons per year

**Global market share**  
**Multiple No. 1 products**

**Gold collection through recycling**  
**6** tons per year

# 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.

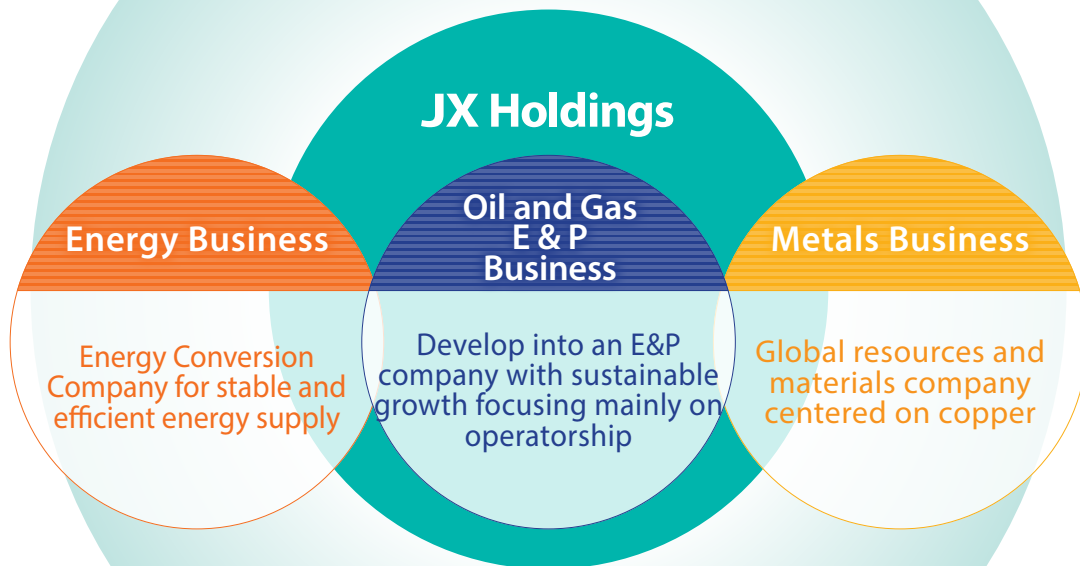
## JX Group Mission Statement

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

## 2020 Vision

Become a world's leading "integrated energy, resources and materials business group"

- A corporate group holding competitive business evaluated by global standards
- Well-balanced business portfolio of petroleum and non-petroleum, upstream and mid & downstream business



## 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

## Ensuring a Stable Supply of Energy, Resources and Materials in the Future



### Recognition of Current Conditions

Demand for natural resources, such as oil, gas and metals, is increasing annually, mainly in emerging economies. Countries and companies are consequently competing more intensely for these resources. Given this trend, our stakeholders have been expecting a stable supply of energy, resources and materials, which are indispensable to industries, economies and people's everyday lives.

### Basic Approaches

The JX Group will leverage our comprehensive competencies to ensure a stable supply of energy, resources and materials.

## Realizing a Low-Carbon Society in the Future



### Recognition of Current Conditions

Reducing CO<sub>2</sub> emissions in society overall and in various facets of our lives has become an urgent issue. Consequently, various actions are desired at all levels, including changes in energy policies, innovations in industrial circles, and changes in consumer life-styles.

### Basic Approaches

The JX Group is committed to creating systems for supplying energy and to developing the materials of tomorrow that will lead to a low-carbon society.

## Aiming for the Sustainable Use of Resources and a Recycling-Oriented Society in the Future



### Recognition of Current Conditions

In modern society, non-ferrous metals are an invaluable resource for leading wealthy and cultural lives. In order to pass on a sustainable society to future generations, the establishment of systems that enable us to effectively reuse limited resources is encouraged.

### Basic Approaches

The JX Group will leverage technological capability that we have long cultivated to help create a society where metal resources are effectively recycled and reused.

# Ensuring a Stable Supply of Energy, Resources and Materials in the Future

Rang Dong Oil Field in Vietnam

The JX Group develops a stable supply system that encompasses resource development, production and sales in the respective fields of energy, resources and materials, which support people's lives and play an integral role in the economic infrastructure. It is our goal to contribute to economic and social development through these businesses.

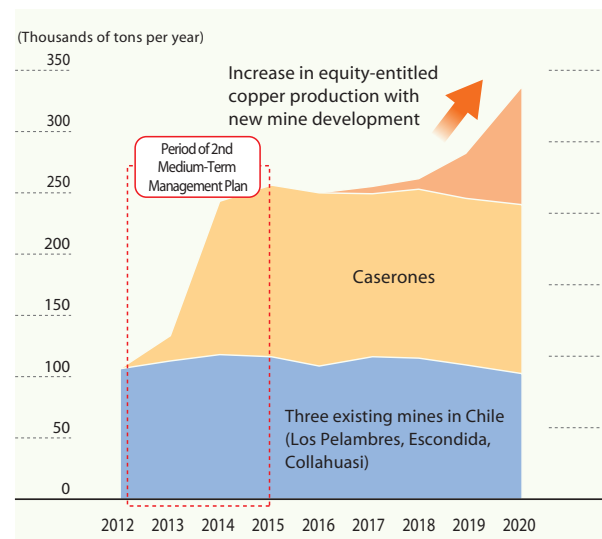
## Expand Copper Mine Interests

To ensure the stable procurement of metal resources, JX Nippon Mining & Metals has moved forward with acquiring mining interests, including the investment in the Escondida Mine in Chile, which is the world's largest copper mine. In addition, in May 2014 the company at long last launched the production of copper concentrate at the Caserones copper mine in Chile, which has been under development since 2010. Now a full-fledged operation system has been put in place, and for the first 10 years it is scheduled to produce an annual average of 150 thousand tons of copper concentrate (copper content), and 30 thousand tons of refined copper. This will boost the company's equity-entitled copper mine production to 250 thousand tons per year. We plan to continue to embark on new copper mine development to achieve our 2020 goal for copper production of 350 thousand tons per year.



The opening ceremony for the Caserones copper mine which took place in Chile (July 2014)

## Equity-Entitled Copper Mine Production



## Initiatives & Key Achievements in FY2013

### Initiatives

- Expand exploration and development of overseas oil and gas fields to attain our goal of 200 thousand barrels of production per day in 2020
- Enhance business as an Energy Conversion Company
- Strengthen the petrochemical and lubricant supply system, primarily in Asia
- Promote exploration and development activities to expand equity-entitled copper mine production to 350 thousand tons per year

### Key Achievements in FY2013

- Acquiring exploration blocks, discovering oil and gas reservoirs at oil and gas field projects in Southeast Asia and other achievements (p. 12)
- Expansion of the power generation and LNG businesses, establishment of a hydrogen supply infrastructure, and development of a subsequent business model (pp. 13, 15-18)
- Progress was made in areas such as the paraxylene project (South Korea) and the fortification of the lubricants sales infrastructure (Southeast Asia and elsewhere) (p. 14)
- Launched production at the Caserones copper mine (p. 11)

## Expand Oil and Gas Exploration and Production

Competition for resource interests has been intensifying due to the global demand growth for oil and gas. 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 harsh business climate, JX Nippon Oil & Gas Exploration is working on increase of reserves and production, mainly through exploration activities, to attain its daily production goal of 200 thousand barrels in 2020. Specifically, 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 advantage by accumulating technologies, primarily through our activities as an operator.

We are promoting the following projects towards the production of 200 thousand barrels per day in 2020.

(Production commenced)

- Papua New Guinea LNG

(Under development)

- Mariner oil field in the UK North Sea

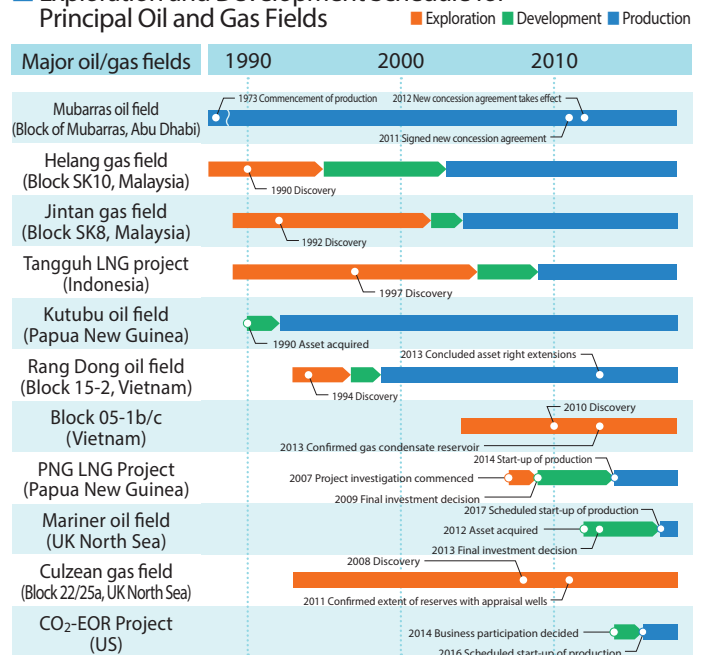
(Before final investment decision)

- Culzean gas field in the UK North Sea
- 3rd train of the Tangguh LNG Project in Indonesia

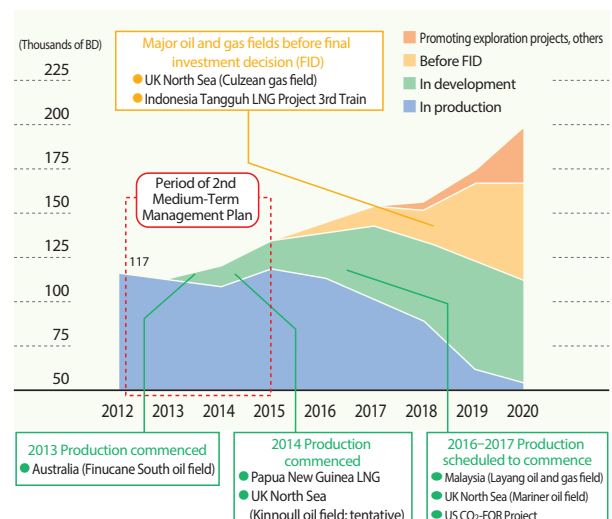
(Large exploration operation project)

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

### Exploration and Development Schedule for Principal Oil and Gas Fields



### Production Forecast (Crude Oil Equivalent)

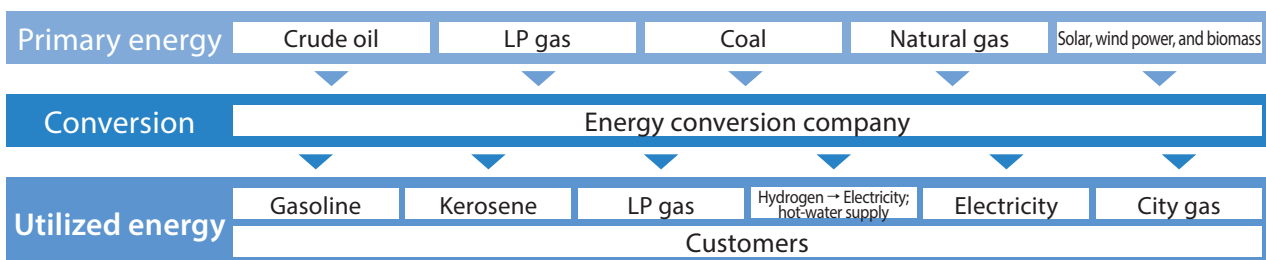


## Initiatives as an Energy Conversion Company

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 business to respond to electrical power system reforms, augment our LNG supply infrastructure, and increase sales to acquire new demand for coal in Japan. Moreover, we are promoting the “ENEOS new energy business” and also developing the mega solar power generation business, which utilizes idle land owned by the JX Group. We are also pouring energies into establishing a hydrogen supply infrastructure and building a correlating business model, including the opening of hydrogen supply stations combined with service stations.



### ■ Kashima Oil’s Energy Conversion Initiatives

Kashima Oil Co., Ltd. will install a new Solvent De-Asphalting (SDA) unit at Kashima Refinery in 2015 and set up power plant in Kashima-Kita Electric Power Corporation adjacent to Kashima Refinery; to upgrade heavy residue into a high value-added product in responding to declining oil products demand. The SDA unit separates heavy residue into de-asphalted oil and ultra-heavy extracted residue. De-asphalted oil will be cracked into petrochemical products and diesel fuel; ultra-heavy extracted residue will be used as fuel at a boiler/turbine power plant for electricity business.

## Delivering a Stable Supply of Petroleum Products

The fortification of the petroleum product supply system is also a crucial issue for Japan’s security and for getting through times of disaster. As a major oil refiner-distributor in Japan, the JX Group plays an important role in building a resilient supply system that spans the entire value chain.

### Fortifying the Supply System

Petroleum stockpiling consists of national stockpiling and private sector stockpiling. JX Nippon Oil & Energy not only fulfills its obligations for private sector stockpiling but of the 10 national stockpiling bases stations in Japan, group companies handle the operation and management of four national stockpiling bases. In addition, group company’s tanks are used when national stockpiling bases lease tanks from the private sector. In this and many other facets, the company is cooperating to maintain the petroleum stockpiling system.

At our refineries, oil depots, and other facilities, we learned from the lessons the Great East Japan Earthquake taught us and are working to strengthen our disaster response capabilities. This includes measures to prepare for earthquakes and tsunamis such as installing drum shipment facilities, securing emergency power sources, building an information gathering system, and moving to high ground or elevating the flooring at key facilities.

In 2012, the Amended Oil Stockpiling Act was enacted. In accordance with this, oil refiner-distributors are required to draw up and submit to the Ministry of Economy, Trade and Industry, a petroleum supply cooperation plan for times of disaster for each of 10 regions nationwide to ensure that oil refiner-distributors would work together to supply oil to disaster-stricken areas. JX Nippon Oil & Energy has filed plans for all 10 regions and is embarking on establishing a stable supply system during times of disaster through cooperation with related parties.

### ■ Japan’s Petroleum stockpiling (as of the End of March 2014)

	National stockpiling	Private sector stockpiling
Oil stockpile	110 days’ worth	83 days’ worth
Stockpile volume	47.96 million kl (standard oil product equivalent)	36.10 million kl (standard oil product equivalent)
Breakdown of stockpiling	Crude oil 49.11 million kl Products 1.30 million kl	Crude oil 19.90 million kl Products 17.19 million kl
Stockpiling target	51.00 million kl (crude oil equivalent)	Equivalent to 70 days’ worth for domestic demand
Stockpile location	National stockpiling bases and private-sector tanks (leased)	Private-sector tanks

Source: Agency for Natural Resources and Energy (METI) and Japan Oil, Gas and Metals National Corporation (JOGMEC)

### Opening New Earthquake-Ready Service Stations

JX Nippon Oil & Energy has opened service stations that can continue to pump fuels even during a power outage following an earthquake. The Great East Japan Earthquake, however, brought about a new problem, as a giant tsunami destroyed the electricity system, rendering service station fill-ups impossible.

As a result, we have been conducting trial demonstrations at a new earthquake-ready service station, which has rooftop space for a water tank for drinking and temporary evacuation site. This reflects our belief that it is important to ensure that infrastructures for daily life function during emergencies, in addition to making sure our service stations can withstand not only a power outage, but major flooding as well, in order to accommodate risks associated with a major disaster that affects a wide area. The service station also has a fuel cell, solar power generation system, and LED lighting to help reduce energy use during normal operations.

At present, we are moving ahead with the establishment of new earthquake-ready service stations along the Pacific coastline, stretching from the Tohoku region of northern Japan down to the island of Kyushu. As of the end of March 2014, we opened a total of seven earthquake-ready service stations in the following locations: Ishinomaki City and Wakabayashi-ku, Sendai City (Miyagi Prefecture), Yaizu City

(Shizuoka Prefecture), Sakai-ku, Sakai City, and Sennan City (Osaka Prefecture), Onomichi City (Hiroshima Prefecture), and Kagoshima City (Kagoshima Prefecture). Furthermore, we plan to open up a new earthquake-ready service station in Asahi City, Chiba Prefecture by the end of fiscal 2014.

**■ New Earthquake-Ready Service Station Network (as of the End of March 2014)**

Service Station name	Operator	Location	Opened
Dr. Drive Self-service Station Ishinomaki Okaido	Kamei Corporation	Ishinomaki City, Miyagi Prefecture	March 2012
Dr. Drive Self-service Station Sendai Oroshimachi Higashi	Kamei Corporation	Wakabayashi-ku, Sendai City, Miyagi Prefecture	February 2013
Dr. Drive Self-service Station Shinjima	Hirokawa Nisseki KK	Onomichi City, Hiroshima Prefecture	March 2013
Dr. Drive Self-service Station Yaizu Kogawa	S-net Shizuoka Co., Ltd.	Yaizu City, Shizuoka Prefecture	April 2013
Dr. Drive Self-service Station Sakai Daisen	Yamabun Trading Co., Ltd.	Sakai-ku, Sakai City, Osaka Prefecture	October 2013
Dr. Drive Self-service Station Rinku Minami	Yamabun Trading Co., Ltd.	Sennan City, Osaka Prefecture	November 2013
Dr. Drive Self-service Station Josai-dori Takemachi	Misumi Co., Ltd.	Kagoshima City, Kagoshima Prefecture	December 2013

**■ Features of New ENEOS Earthquake-Ready Service Stations**

Earthquake resilient	Flooding	Waterproof fuel pump meters (motor can be easily accessed and replaced) Emergency generators and fuel cells located on second floor
	Power outage	Emergency generator (independent, distributed energy system)
Energy efficient operations	Photovoltaic power generation system	Photovoltaic power generation system (uses renewable natural energy)
	LED lighting	LED canopy lights and indoor lighting (changed over to energy efficient lighting equipment)
Community contributions	Fuel cells	High efficiency power generation and hot-water system (JX Nippon Oil & Energy's ENE-FARM solid-oxide fuel cell system)
	Power source for charging mobile phones	Power source provided by emergency generators
	Drinking water	Approximately 2,000 PET bottles of drinking water stored onsite
	Emergency evacuation site	Located on second floor rooftop (temporary evacuation during flooding)

**Supplying Products to Regions in Asia**

JX Nippon Oil & Energy is utilizing its wide range of know-how, which extends from the R&D of petroleum products to the production and sales of these products, to expand its business, primarily in Asia, where there is short supply due to brisk demand and also as it aims to contribute to economic and industrial development overseas.

**Paraxylene Project in South Korea**

Paraxylene is a basic chemical used to make polyester and PET bottles. JX Nippon Oil & Energy signed a joint venture contract with SK Global Chemical Co., Ltd. of South Korea to establish Ulsan Aromatics Co., Ltd. Paraxylene production facilities were built and commercial operations were launched in June 2014. The company aims to meet demand, which is expected to increase, with this plant, which will boast one of the world's highest production capacities for paraxylene of 1 million tons per year.

**Expanding Overseas Lubricants Business**

There is demand for a stable supply of high-end lubricants owing to the increase in automotive and industrial uses for lubricants. Since fiscal 2013, we have made progress, including the launch of raw material shipments to our joint base oil manufacturing business with SK Lubricants Co., Ltd. (South Korea), the start of commercial production at our Vietnam lubricant production plant, and the opening of an office in Johannesburg, South Africa. Moreover, we are in talks to establish a joint venture to handle lubricants sales in India.

**Import and Sales of Fuel Oil**

In Indonesia, there is a lack of petroleum refining capacity in the country due to the ongoing rise in fuel oil demand. The country constantly imports petroleum products. To respond to the needs of this market environment, JX Nippon Oil & Energy has acquired a license to import and sell diesel fuel in Indonesia and is commencing business activities from June 2014.

**Working with the Earth—  
a Story about Supporting the Future**

**My workplace is 130 kilometers off shore of Vietnam**



**Kento Ushiguchi**  
Miri Office, JX Nippon Oil & Gas Exploration Corporation  
(At the time of this interview, Vietnam Office, JX Nippon Oil & Gas Exploration Corporation)

The Rang Dong Oil Field is an environmentally-conscious oil field located 130 kilometers off shore of Vietnam. Oil is produced from reservoirs that lay several thousand meters deep under the seabed. Erection of an offshore platform has been necessary for oil producing operations. I was engaged from designing through construction of this platform. Aside from the difficulty of off shore construction works, given that the project had been conducted over a long period of time, I have felt a special bond with the platform as it has virtually become my home. I was deeply moved when the project was safely completed.

People have analyzed the space even in very long distance but there are still many mysteries in the underground of the earth. I have continued a process of trial and error. My task is to project underground conditions while building a facility that fits them. Accordingly I have a view that this is a business where the leading player is not the human but the earth. It is therefore the biggest thrill of this business to create how to proceed oil development while communicating with the earth every day.





Kudamatsu Mega Solar Power Generation Facility

# Realizing a Low-Carbon Society in the Future

As a comprehensive energy company underpinning Japan, JX Nippon Oil & Energy not only supplies efficient and stable energy, but also drives further expansion in the new and renewable energy business to reduce environmental impact. It is through these measures that JX Nippon Oil & Energy aims to realize a low-carbon society.

## Initiatives for New Energy and Distributed Energy

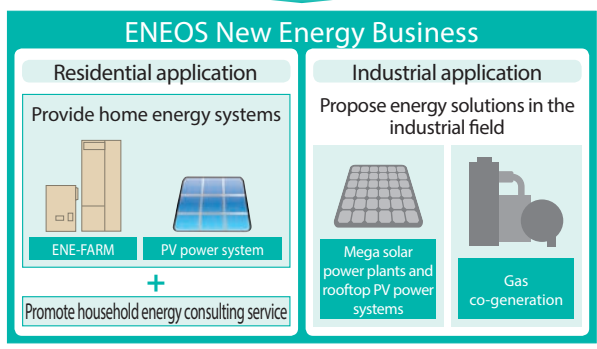
JX Nippon Oil & Energy is promoting the ENEOS New Energy Business to realize a low-carbon society. The three main initiatives we are undertaking is “energy efficiency,” “renewable energy,” and “independence.”

We are aiming to realize an independent and distributed energy society by promoting products such as ENE-FARM, a residential-use fuel cell, and photovoltaic (PV) power systems.

Moreover, we plan to promote the use of renewable energy. We are actively expanding our mega solar power generation business, which takes advantage of idle land, and are working to build a business model for hydrogen business through demonstration trials for hydrogen supply stations combined with service stations.

### ENEOS New Energy Business

(1) Energy Efficiency	(2) Renewable Energy	(3) Independence
Achieve advanced use of resources by enhancing energy efficiency	Accelerate the use of renewable energy	Ensure the ability to generate electricity independently of the power grid



Realize a low-carbon society  
Society based on independent, distributed energy systems



# Initiatives & Key Achievements in FY2013

## Initiatives

- Promote the realization of a low-carbon society by application of new energy such as mega solar power generation and expanding the LNG business
- Promote the reduction of household emissions by providing consultation and distributed energy devices, including PV power systems and fuel cells
- Establish hydrogen stations to realize a low-carbon society

## Key Achievements in FY2013

- Construction of mega solar power plants and LNG terminals (Hachinohe and Kushiro) [pp. 16, 18](#)
- Promoted ENE-FARM and expanded the household energy consulting service [pp. 17-18](#)
- Made progress in the verification of hydrogen technologies, opened hydrogen supply stations combined with service stations for demonstration trials, and began construction of commercial stations [p. 17](#)

## Expansion of the Mega Solar Power Generation Business

Since launching the mega solar power generation business in February 2013, with the aim of expanding renewable energy application, JX Nippon Oil & Energy is using JX Group's idle land nationwide to promote the power generation business.

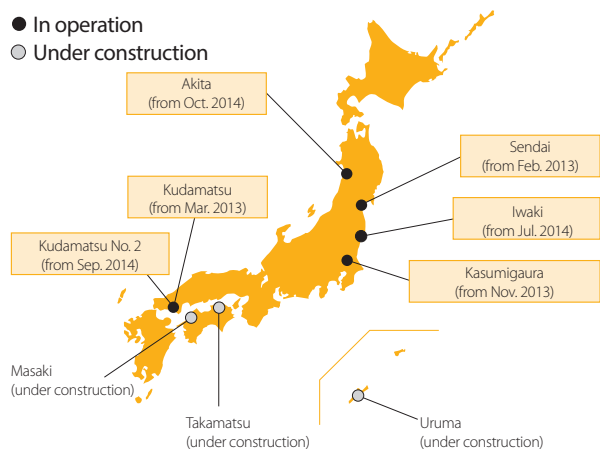
In 2013, we began transmitting electricity from facilities set up at the Sendai Refinery (Miyagi Prefecture), the Kudamatsu Terminal (Yamaguchi Prefecture), and the former site of the Tsuchiura Depot (Ibaraki Prefecture). The 1,000kW mega solar power generation facility at the Sendai Refinery was set up in the western area of the refinery. This was previously where the tank truck shipment facilities were located. However, these facilities were severely damaged due to tsunamis in the Great East Japan Earthquake and were subsequently moved to the east area of the refinery. As a facility that can contribute to the local community, during a major power outage the facility can provide a maximum of 50kW under off-grid operations. Furthermore, we are installing new energy systems, including PV power systems, fuel cells, power storage batteries, and engine generators, on the roofs of our office buildings. We plan to reduce environmental impact through the combined operation of these systems. We will also fulfill our function as a disaster prevention center, as we will be able to provide electrical power to key devices during power outages.

Currently, we are moving forward with the expansion of our mega solar power generation business throughout Japan. Mega solar facilities installed at the former site of Onahama Depot (Fukushima Prefecture), the former site of Kudamatsu Refinery (Yamaguchi Prefecture), and the former site of Akita Refinery (Akita Prefecture) came on line in 2014. The construction at the former site of Matsuyama Depot (Ehime Prefecture), the former site of Takamatsu Depot (Kagawa Prefecture), and our facility at Okinawa CTS Corporation (Okinawa Prefecture) are in progress, with the aim of bringing them all on line within this fiscal year. All combined, we will have a total of nine mega solar power generation facilities that output around 27 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 and contribute to the realization of a low-carbon society.

## Mega Solar Power Generation Business Expanding Nationwide

- In operation
- Under construction



<b>1. Sendai Refinery Mega Solar Power Generation Facility</b> (1) Power output 1 megawatt (1,000kW) (2) Land area 18,000m <sup>2</sup> (3) Transmission start date February 2013 (4) Buyer Tohoku Electric Power	<b>6. Akita Mega Solar Power Generation Facility</b> (1) Power output 4 megawatts (4,000kW) (2) Land area 80,000m <sup>2</sup> (3) Transmission start date October 2014 (4) Buyer Tohoku Electric Power
<b>2. Kudamatsu Mega Solar Power Generation Facility</b> (1) Power output 1.8 megawatts (1,800kW) (2) Land area 27,000m <sup>2</sup> (3) Transmission start date March 2013 (4) Buyer Chugoku Electric Power	<b>7. Masaki Mega Solar Power Generation Facility</b> (1) Power output 2.1 megawatts (2,100kW) (2) Land area 24,000m <sup>2</sup> (3) Transmission start date January 2015 (scheduled) (4) Buyer Shikoku Electric Power
<b>3. Kasumigaura Mega Solar Power Generation Facility</b> (1) Power output 2 megawatts (2,000kW) (2) Land area 36,000m <sup>2</sup> (3) Transmission start date November 2013 (4) Buyer Tokyo Electric Power	<b>8. Takamatsu Mega Solar Power Generation Facility</b> (1) Power output 1.4 megawatts (1,400kW) (2) Land area 17,000m <sup>2</sup> (3) Transmission start date January 2015 (scheduled) (4) Buyer Shikoku Electric Power
<b>4. Iwaki Mega Solar Power Generation Facility</b> (1) Power output 1 megawatt (1,000kW) (2) Land area 20,000m <sup>2</sup> (3) Transmission start date July 2014 (4) Buyer Tohoku Electric Power	<b>9. Uruma Mega Solar Power Generation Facility</b> (1) Power output 12 megawatts (12,000kW) (2) Land area 160,000m <sup>2</sup> (3) Transmission start date March 2015 (scheduled) (4) Buyer Okinawa Electric Power
<b>5. Kudamatsu No. 2 Mega Solar Power Generation Facility</b> (1) Power output 2 megawatts (2,000kW) (2) Land area 26,000m <sup>2</sup> (3) Transmission start date September 2014 (4) Buyer Chugoku Electric Power	

## Develop Business Model for Hydrogen Business Reflecting Results of Demonstration Trials of Hydrogen Supply Stations Combined with Service Stations

JX Nippon Oil & Energy is carrying out demonstration trials of hydrogen supply infrastructures as part of a joint project led by the New Energy and Industrial Technology Development Organization (NEDO) and the Research Association of Hydrogen Supply/Utilization Technology (HySUT). The company is mainly embarking on the test demonstration trials of hydrogen supply stations combined with service stations by utilizing its strength—possessing the largest service station network in Japan. As a part of the Ministry of Economy, Trade and Industry’s Japan Hydrogen & Fuel Cell Demonstration Project (JHFC), which was launched in 2002, the trial is



being carried out to technically verify areas such as comprehensive efficiency of fuel cell vehicles, establishing safety of hydrogen stations, and achieving low costs.

In fiscal 2013, we engaged in demonstration trials for the entire supply chain as the final step before commercialization. A large compressor, for shipping high pressure hydrogen, was installed

commenced for filling a newly developed high pressure hydrogen trailer. We aim to improve transportation efficiency and cut costs by establishing shipment and transport technology for high pressure hydrogen two or more times higher than conventional hydrogen filling pressure. Moreover, at two locations in Aichi and Kanagawa prefectures, we constructed Japan’s first hydrogen supply stations combined with service stations that have both gasoline meters and hydrogen chargers. We have conducted tests to see if technology will make it possible to fill a car with high pressure hydrogen in the same short time it takes to fill a car with gasoline, and to test operations for handling self-service gasoline and diesel fuel services side-by-side with hydrogen filling services.

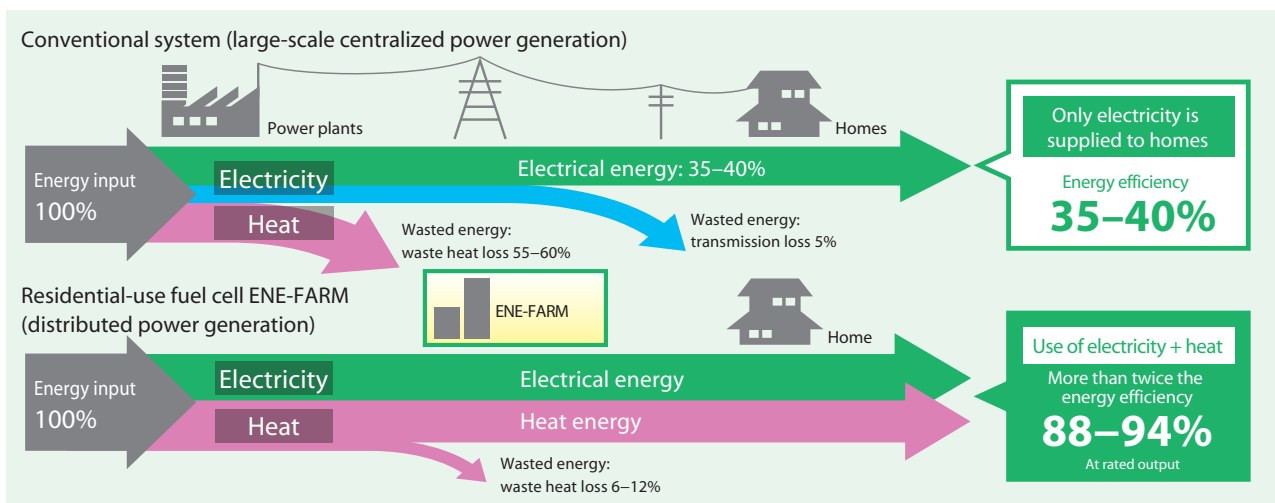
Major automotive manufacturers have announced that they will begin commercial production of fuel cell vehicles from 2014. JX Nippon Oil & Energy believes that society expects it to put a hydrogen supply infrastructure in place prior to this. We are moving forward with construction of hydrogen filling stations at 19 locations selected for the Next Generation Vehicle Promotion Center’s fuel cell car hydrogen supply facility installation aid project. We are considering construction of around 40 hydrogen service stations within fiscal 2015. Moreover, on October 1, 2014, we established ENEOS Hydrogen Supply & Service Corporation, which is a wholly owned subsidiary of JX Nippon Oil & Energy, as a step toward our goal of establishing an efficient hydrogen supply system for fuel cell vehicles.

## Promoting Residential-Use Fuel Cell ENE-FARM

As we aim to realize a low-carbon society, the reduction of energy consumption in the home is a major challenge. Japan’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 city 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 CO<sub>2</sub> emission.

### Enhancing Energy Efficiency through ENE-FARM



## Further Reduction of Household Environmental Impact

“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 781 household energy consultants carrying out this service nationwide as of the end of fiscal 2013.

In fiscal 2012 and 2013, JX Nippon Oil & Energy was selected by the Ministry of the Environment to be a dealership and gas supplier for the "Uchi-Eco Shindan Project." In fiscal 2014, we were once again recognized by the ministry and were certified as a home eco assessment operator for the Uchi-Eco Shindan Project.

In October 2013, JX Nippon Oil & Energy entered into a business alliance contract with LIXIL Corporation to mutually gain from the synergy of household energy business with the housing fixtures and construction materials business. Both companies are leveraging their strengths to provide proposals to customers on next-generation energy systems and housing. Through this, we aim to achieve a low-carbon society and create new value for the future.

### Further Expansion of the LNG Business

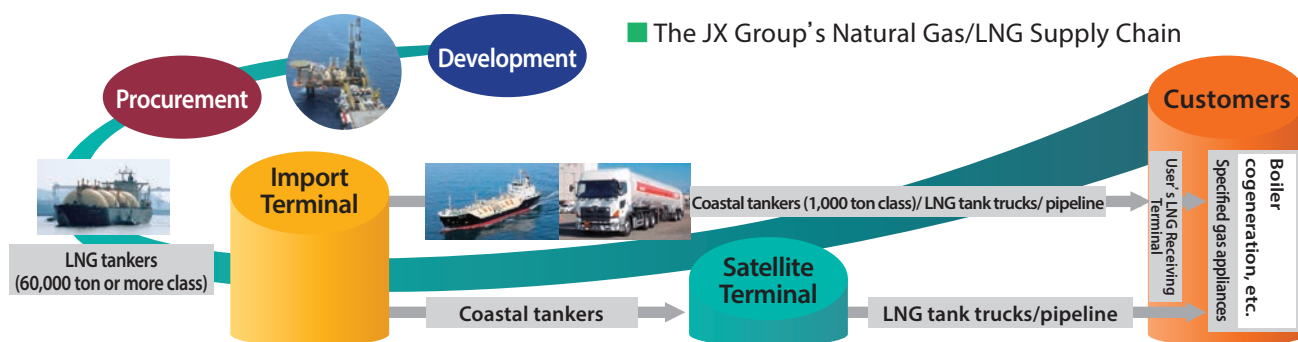
There is a wealth of natural gas reserves located around the world in comparison with crude oil. In addition to a

potential stable supply, it is gaining attention as a form of clean energy that emits little CO<sub>2</sub>. With expectations that it will continue to be a critical energy source, Japan is using more and more natural gas annually.

To respond to rising demand, in addition to engaging in the development of gas fields overseas, the JX Group is working to secure LNG through long-term contracts with major US, European, and Malaysian LNG players, and is in talks with several potential suppliers, including companies producing LNG from shale gas. Meanwhile, we are building and reinforcing our supply system via operations of proprietary LNG terminals at Mizushima\* and Hachinohe, and shipments via enhanced preparation of coastal tankers, tank trucks and pipeline.

In 2007, JX Nippon Oil & Energy began operations at the Hachinohe LNG Satellite Terminal in the northern Tohoku region, which until then did not have a large-scale natural gas receiving terminal. At present, with an eye to growing supply, we are moving ahead with construction at the Hachinohe LNG Import Terminal and the Kushiro LNG Satellite Terminal to expand import and supply capacity. Both terminals are slated to start commercial operation in April 2015.

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



## Working with the Earth— a Story about Supporting the Future

New energy: a job that forms a connection with people and the community

Naoko Mayumi  
New & Renewable Energy Department, ESCO & Solar Group  
JX Nippon Oil & Energy Corporation

JX Nippon Oil & Energy has six mega solar power plants on-line and has three under construction as of today. Among these under construction, the Uruma mega solar power generation facility, planned to come on-line March 2015, is to be the largest mega solar power generation facility in the JX Group and in Okinawa Prefecture as well. As a project manager, I am responsible for drafting business plans, basic designing of the facility, negotiating with the power company, coordinating with government authorities and managing the operation after interconnection to the grid.

Working closely with the local community for coexistence and to promote development is what the JX Group values. Talking to the local residents to understand what they expect is treasurable for me and I appreciate the network of people I have built through this job. I also enjoy leading local children to tours of the facility to boost their environmental awareness.

It is my dream to realize a sustainable society through the development of energy supply, matching the needs of the local community at the time.



# Aiming for the Sustainable Use of Resources and a Recycling-Oriented Society in the Future

JX Nippon Mining & Metals engages in an integrated range of businesses, centering on copper, which encompass upstream (resource development), midstream (smelting & refining), and downstream (electronic materials, and recycling and environmental services) operations. We are aiming to build a recycling-oriented society through our various business operations to achieve the effective use of valuable metal resources that will support our future.

## 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, centering on copper, which encompass resource development, metal smelting, 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 with high purity. The Group largely contributes to the development of a sustainable, recycling-oriented society by utilizing the key features and strengths of this business—zero emissions, effective and reliable treatment processes based on proprietary technologies, and a nationwide collection and treatment network.

## Key Features and Strengths of the Recycling and Environmental Services Business

### (1) Zero emissions

The processes for the detoxification of industrial waste and the conversion of recycled materials into reusable resources do not produce any secondary waste which would require landfill disposal. All iron, excluding non-ferrous metals, are recovered as slag and used for such purposes as cement material. Moreover, dioxins and other toxic substances emitted during the treatment process are properly treated and detoxified.

### (2) Effective and reliable treatment processes based on unique technologies

The recycling of non-ferrous metals in the business is carried out using uniquely developed effective and reliable treatment processes which are based on the smelting and refining technologies we have fostered over many years.

# Initiatives & Key Achievements in FY2013

## Initiatives

- Develop a zero emission, eco-friendly global resource recycling business
- Promote commercialization of new smelting technologies

## Key Achievements in FY2013

- Continued to expand the recycling and environmental services business, which achieves both economic efficiency and environmental conservation [p.19](#)
- Increased collection of recycled materials in North America [p.20](#)
- Promoted the commercialization of the N-Chlo process (Nikko Chloride Process) and biomining technologies [p.20](#)

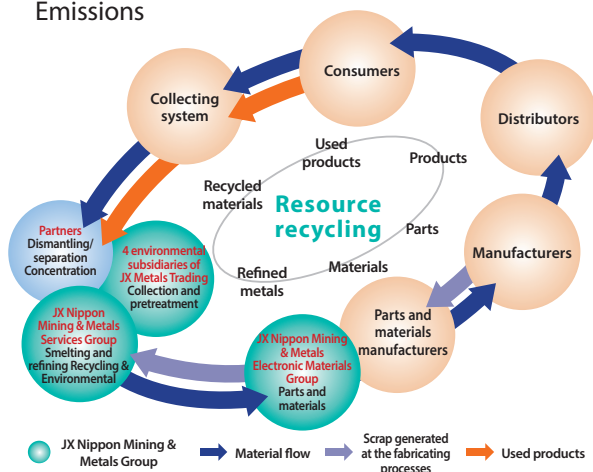
In particular, at the Saganoseki Smelter & Refinery of Pan Pacific Copper Co., Ltd.—66% owned by JX Nippon Mining & Metals—energy conservation is achieved by using the excess heat generated from copper concentrate smelting for melting recycled materials.

**(3) Nationwide collection and treatment network**  
We are building a nationwide network to collect industrial waste and recycled materials which are then processed at our five treatment plants in Tomakomai (Hokkaido), Hitachi (Ibaraki), Mikkaichi (Toyama), Tsuruga (Fukui), and Saganoseki (Oita).

electronic devices and parts. The recycling center handles pretreatment processes, such as the crushing of recycled materials, and then sends them to Japan for recycling.

Furthermore, in 2014 JX Nippon Mining & Metals set up a sales office in the US and launched full-fledged collection activities. The US is promoting the establishment and fortification of laws and regulations related to the environment protection. In light of this, we anticipate an increase in recycling demand for non-ferrous metals going forward.

## Resource Recycling Initiatives to Pursue Zero Emissions



## Expanding the Recycling Business Overseas

The amount of recycled materials generated in Japan is decreasing in part due to the shift overseas of electronic parts and products manufacturers, and trends to converse on the use of metals in their parts and products. Meanwhile, recycling demand overseas is increasing steadily. Corresponding to this trend, JX Nippon Mining & Metals is expanding its collection network overseas.

In 2010, JX Nippon Mining & Metals set up a recycled materials collection site (Nikko Metals Taiwan Chiongpin Recycling Center) in Taiwan, a global production base for

## Achieving a Sustainable Society by Developing New Smelting Technologies

Moving forward, demand for refined copper, which is used as a raw material to produce electric cables or electronic components, is expected to increase, mainly in emerging economies. However, various issues hindering supply capabilities are emerging at existing copper mines, such as deeper deposits, lower ore grade, and higher impurities.

Amid this backdrop, the JX Nippon Mining & Metals Group is pouring energies into the development of new smelting technologies to efficiently recover valuable metals from low-grade copper ore. A proprietary technology currently under development is the N-Chlo process (Nikko Chloride Process). The process uses hydrochloric acid to leach metals. At the demonstration trials implemented in Australia from 2009 to 2013, positive results were obtained for leaching copper and gold. At present, we are continuing study at the Technology Development Center in Hitachi to commercialize this technology.

In addition, the biomining technology developed by BioSigma S.A., which is jointly owned by JX Nippon Mining & Metals and Corporación Nacional del Cobre de Chile (Codelco), effectively recovers copper from primary copper sulfide ores, which was previously difficult using the conventional hydrometallurgical process. In August 2014, Codelco approved the introduction of the technology at a mine that is currently in operation and commercial use of the technology is to start. Owing to these technologies, low-grade ore that had no commercial value thus far can be used as a new resource. These technologies are largely expected to contribute to realizing a sustainable society.



# Creating the Future with Our Stakeholders

The JX Group aims to create innovations for problem-solving and to create a sustainable society through communications with various stakeholders, including customers, shareholders, investors, and employees, and also through industrial-academic collaborations with universities and specialists.

## Customer Service Center (Call ENEOS) Initiatives

The ENEOS Customer Service Center receives valuable opinions from customers regarding JX Nippon Oil & Energy Corporation. The center offers easy-to-understand, detailed explanations for inquiries and takes quick and earnest action when it receives complaints. In fiscal 2013, the customer service center received around 23,500 inquiries and so on from customers. We mainly answered questions about ENEOS credit card privileges and rewards, and offered explanations on various products.

The customer service center immediately responds to around 90% of the total inquiries it receives. For the remaining 10%, the center obtains the cooperation of related departments and, in principle, responds back to the customer within 24 hours, in line with internal rules.

Moreover, we analyze the voice of customers. For those areas that require improvement, we quickly supply prevalent information to the department in charge to prompt a course of action and thereby facilitate an improvement in customer satisfaction.

## Communication with Shareholders and Investors

JX Holdings aims to strengthen its communication with its shareholders and investors, which are important stakeholders. We conduct regular meetings for individual investors in major cities throughout Japan.

Meetings consist of presentations given by the president or directors in charge of IR (Investor Relations) or other IR staffs, after which a Q&A session is held. We always receive a wide variety of questions from participants asking about specific details of our business operations, our growth strategies, and the future potential of methane hydrate and hydrogen as new energy sources.

Furthermore, we implement surveys at the end of each meeting to gather the opinions of participants. Many participants reply that the meetings deepened their understanding of our businesses and our Medium-Term Management Plan. At the same time, many participants requested more detailed information on various matters, including the outlook for new business development and

longer-term forecasts that look beyond the Medium-Term Management Plan.

These communications enable JX Holdings to review the issues the group faces from the perspective of its shareholders and investors and reflects investor opinions into future initiatives.

## 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 September 2013, we conducted our second CSR survey, which was given to JX Group employees and executives. The first survey was carried out in 2011. The survey allowed us to analyze our current status by making a comparison with the results of the first survey and with the average responses at other companies. The goal is to use our findings to help promote CSR activities going forward. Of the total number of JX Group employees and executives, 92.0% or 18,257 people responded to the survey.

Looking the annual changes the group underwent since the previous survey, there was an improvement overall. This clearly indicated that the JX Group was steadily making headway with its CSR initiatives. In particular, we saw substantial improvement for "recognition of the whistle-blowing system" and "individual employee inquiries regarding unclear rules," which surfaced as issues during the previous survey. This indicates we are having success with our activities to familiarize and train employees on CSR issues.

We also detected areas requiring improvement, when we compared the responses we received with the average response at other companies. Based on the results of our analysis of our findings, the JX Group has concluded on the following three issues to address going forward: (1) "improve risk awareness" by enhancing risk sensitivity and quickly reporting/consulting depending on the urgency of the information; (2) "exert independence" by thinking for yourself and taking proactive action; and (3) "integrate the missions statement into daily job tasks" by executing daily operations in accordance with the JX Group Mission Statement. In response to this, these issues were disseminated throughout the company under the name of the president of JX Holdings as issues to be tackled by the JX Group as a whole, and employees were asked to take action.

In addition to these undertakings, reports outlining the results of the survey are created for and feedback is provided to each group company. Each group company extracts its own issues based on these reports, including feedback, and proposes and executes a plan of action.

## Initiatives for Industry-Academia Collaborations

### Set up an Endowed Chair Course at the Graduate School of Engineering, the University of Tokyo

JX Nippon Oil & Gas Exploration launched the Environment-harmonized Energy Development Laboratory, which is an endowed chair course, at the University of Tokyo in collaboration with the Energy and Resources Frontier Center at the University of Tokyo's Graduate School of Engineering which will run for five years from fiscal 2013.

Under the ongoing development of new resources at a robust pace, including shale gas/oil, ultra-heavy and heavy oils under the tight supply-demand conditions for energy worldwide, development of those resources is accompanied with great difficulties and there is concern of an increase in environmental impact. In light of these circumstances, we have opened this course in collaboration with the University of Tokyo, which has conducted research and education on the development of energy sources that are in harmony with the environment.

Through research activities carried out via industry-academia collaborations, it is our goal to optimize each process in the development of energy resources and create development methodologies that improve the recovery rate of resources while curbing environmental impacts. Also, through the education and research activities of this endowed course, we would like to support the development of human resources who will contribute to securing stable energy supplies for Japan.

### Collaboration with Institute of Industrial Science, the University of Tokyo

JX Nippon Mining & Metals established the Endowed Research Unit for Non-ferrous Metals Resource Recovery Engineering (JX Metals Endowed Research Unit) jointly with the Institute of Industrial Science, the University of Tokyo. In November 2013, the Unit took part in the forum held in Santiago, the capital of Chile, and it hosted an industry-academia-government collaboration workshop between Chile and Japan in the fields of nonferrous metal mining and smelting and refining. There were eight presentations made, with around 80 persons attending. After the forum, we heard from many Chilean participants that such valuable gatherings on nonferrous metals have been rarely hosted and they would like more of them to be held.

In January 2014, we hosted the Precious Metals Symposium on the theme of "The Front Lines of Refining and Recycling Technologies for Precious Metals." This symposium was held at the Institute of Industrial Science, the University of Tokyo as an event co-sponsored by the JX Metals Endowed Research Unit, the Rare Metals Workshop, and the International Research Center for Sustainable Materials. Mainly from companies, more than 200 people attended the symposium. A result of a survey targeting corporate attendees showed that many people came for the chance to learn about research at other companies. However, there were those who said that upon hearing the presentations they came away impressed with the university research.



# JX Group Values Report

The JX Group continues to conduct activities based on the JX Group values the **EARTH**.

## What does the **EARTH** mean to me?



### Ethics

The JX Safety Education Center conducts employee safety training to eliminate occupational injuries. Ensuring safety is a part of corporate social responsibility, and rather than simply meeting minimum standards, it is desirable to raise group employee sensitivity to risks. To carry out this role, we are enhancing and improving the content of the training.



**Tokio Takahashi** Director, JX Safety Education Center



### Advanced ideas

"Can't help but try an idea that seems interesting. I am fearless about failure!" So, we have newly begun to send out every Friday the "Refresh Day" e-mail, of which design is prominent and tone is loose but with a little spice, in order to make everyone aware that it is overtime-free on Friday. We have also set up an intranet site called "Who's Who" where portraits and names of employees are posted to help everyone know each other more easily. We have been surprised to receive positive responses beyond even what we had expected.



**Kaeko Matsuo** Human Resources Group, Human Resources Department, JX Nippon Oil & Gas Exploration Corporation



### Relationship with society

We work to build close relationships with local communities from the time of construction of a crude oil terminal. While conducting a range of activities with residents including local beautification campaigns and summer festivals, my awareness as a member of the community was raised. From now on, I will build stronger relationships of trust and engage in more active dialogue with local communities as a company and as an individual.



**Yoji Sonobe** General Affairs Group, General Administration Department, JX Nippon Oil & Energy Staging Terminal Corporation



### Trustworthy products/ services

I work in the Human Resource Staffing Division as a bridge between jobseekers and companies. I try to find a best match for both by asking specific questions to both sides concerning the specifics of the job as well as requests, conditions, and so on and obtaining detailed client information. When a best match is achieved, I'm glad that I selected a job that is useful to people and feel pride in my work.



**Natsuko Yoshiba** Human Resource Staffing Division, JX Nippon Career Support Corporation



### Harmony with the environment

There are expectations that hydrogen will be a next-generation clean energy. I am accumulating technology and operational expertise at a hydrogen supply station combined with a service station preparing for the advent of a hydrogen-based society in the future. We keep the "Five Promises" made to customers based on our management guidelines, and I hope to contribute to the restoration and preservation of the global environment through the hydrogen business.



**Takuya Toyoda** Manager, Dr. Drive Ebina Chuo Branch, ENEOS-NET Co., Ltd.



# Measures to Promote Mission Statement

The JX Group positions the JX Group Mission Statement at the foundation of all business activities and makes efforts from a variety of perspectives to promote the mission statement as an expression of the significance of the Group's existence and values that should be shared by all executives and employees.

## Background to and Significance of Measures

The JX Group Mission Statement was adopted in April 2010 at the time of establishment of JX Holdings through a merger with the aim of integrating and further developing the principles developed over many years by its predecessor companies. The Mission Statement is the highest-level concept for all JX Group activities, and the Long-Term Vision and Medium-Term Management Plan were formulated based on the JX Group Mission Statement.

The scope of the Group's business was expanded through the merger, and by sharing values and aligning our direction as a single corporate group, we can make powerful contributions to society through our core business. The confidence that we gain from society as a result becomes a driving force for continuous development of the Group and enhances its corporate value.

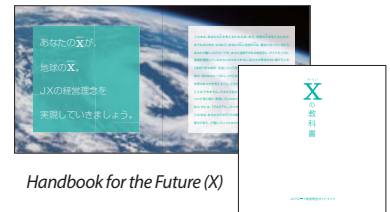
## Measures Undertaken through FY2013

Since fiscal 2010, the first year of the merger, we have distributed mission statement cards to all personnel, displayed the mission statement using panels within the company and the Group intranet, prepared ID card holders and neck straps with the Group's slogan printed on them, and have taken various other comprehensive measures to make all executives and employees aware of the JX Group Mission Statement so that they can act with the mission statement in mind.

Starting in April 2012, as the Group entered its third year since the merger, we prepared booklets on the JX Group Mission statement entitled *Handbook for the Future (X)* and distributed them to all employees. These guidebooks deepen understanding of the JX Group Mission Statement and encourage employees to apply the mission statement to their work and put it into

practice thoughtfully.

In parallel with these initiatives, we surveyed the awareness of executives and employees concerning the JX Group Mission Statement and other aspects of CSR in 2011 and 2013. By indexing the responses and comparing the results and averages from other companies, we monitor current conditions within the group and identify issues. The analysis results are shared with all group companies and are used for disseminating the Group Mission statement and in CSR activities. In November 2013, the divisions responsible for implementing CSR programs of JX Holdings and the three core operating subsidiaries cooperated to prepare mission statement training tools under the supervision of outside experts. After deploying the training tools group-wide through the 2013 Seminar for JX Group CSR Promotion Managers, they were used in practical training at each group company. CSR training is conducted not only in Japan, but also at overseas business sites, and measures to promote the JX Group Mission Statement are showing steady expansion.



Handbook for the Future (X)

## Future Actions

Individual JX Group companies and divisions are developing their own conduct guidelines based on the Group Mission Statement so that the JX Group Mission Statement can be put into practice consistently by employees in their day-to-day activities. The aim is to embody the JX Group Mission Statement in a manner that takes into consideration the unique business characteristics of each group company, and this effort will be reinforced in the future.

## Formulation and Promotion Process

### JX Group Mission Statement adoption

- Formal adoption by the Board of Directors at the time of establishment of JX Holdings on April 1, 2010
- Repeated deliberation during the business integration process and identification of core elements including the principles of individual companies

### Disseminating the Mission Statement

- Production and distribution of various tools including panel displays, ID cardholders, and neck straps
- Posting animated mission statement on the intranet

### Disseminating and promoting understanding of the Mission Statement

- *Handbook for the Future (X)* prepared and distributed in April 2012
- In November 2013, divisions responsible for implementing CSR programs of JX Holdings and three core operating subsidiaries prepared mission statement training tools in cooperation with outside experts and conducted training sessions

### Monitoring

- Conducted awareness survey concerning the JX Group Mission Statement and other aspects of CSR in 2011 and 2013; the results are used for measures to instill the Group Mission statement and implement CSR programs



## Compliance

### Basic Approach

The JX Group has declared a policy of regulations and other rules to ensure thoroughness of compliance, and laws, the Articles of Incorporation and regulations shall be observed in every aspect of work performance.

In accordance with this policy, the JX Group established the JX Group Compliance Committee to review the results of compliance measures throughout the Group, set the direction of future measures based on its review, and investigate issues that need to be addressed by the Group as a whole.

The Group also has an internal whistle-blowing system in place for the early identification and remediation of conduct that is or may be in violation of laws or regulations.

### Priority Compliance Action Items

In order to reduce the legal risks that may occur with the expansion of overseas business by the JX Group companies, in October 2013, the JX Group adopted the JX Group Compliance Activity Basic Policies, a systematic statement of compliance measures in accordance with global standards, and began implementing those regulations. In April 2014, the Group established internal rules setting forth a group-wide basic policy concerning the prevention of corruption and conduct in violation of regulations on restraint of competition, areas in which regulation is becoming stricter around the world, and took measures to further strengthen its compliance systems.

In addition, the Group specified improvement in the quality of compliance checks as a shared group-wide priority action item and took further measures for the accurate identification of problems, early correction, and follow-up.

Individual group companies also implemented a variety of measures including confirmation of compliance systems and the status of measures at overseas sites by JX Nippon Oil & Energy and JX Nippon Oil & Gas Exploration.

### Implementation of Compliance Training

To raise awareness of compliance, the JX Group conducted compliance training for all JX Group executives and employees.

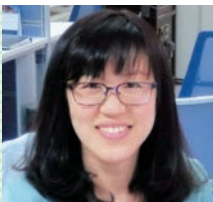
JX Nippon Oil & Energy conducted business ethics training a total of 34 times in fiscal 2013 with approximately 900 executives and employees attending. The training uses the case method to study the practice of the JX Group Mission Statement, and specific examples of compliance violations from both inside and outside the company are discussed. In addition, various training sessions intended for employees to acquire and enhance legal knowledge, environmental and safety training for new managers at refineries and plants, education and training for personnel responsible for the four basic laws on safety, training on the High-Pressure Gas Safety Act for personnel who operate equipment, training sessions on internal controls for group companies, and various other training was conducted to raise awareness concerning compliance.

The JX Nippon Oil & Gas Exploration Group is working to thoroughly ensure compliance through implementation of a training workshop for executives on the internal control, another one for executives and employees on anti-corruption law, another for employees on key model agreements in upstream business of oil and gas, and other trainings.

The JX Nippon Mining & Metals Group conducted four internal control training sessions for executives, managers, and general affairs and accounting personnel in June and July 2013. Approximately 600 persons at domestic and overseas sites underwent similar sessions that made use of a video recording of the training content.

### Cooperation with and Support for the Extractive Industries Transparency Initiative

The Extractive Industries Transparency Initiative (EITI) is an international framework that seeks to prevent corruption and conflicts, provide the foundations for sustainable economic growth, and encourage resource development that leads to reductions in poverty by increasing the transparency of the flows of funds from extractive industries (industries involved in the development of resources such as oil, natural gas, and minerals) to the governments of resource possessing countries. JX Nippon Mining & Metals is in agreement with the principles of EITI and supports its activities.



**Lin Lin**

Assistant Manager  
General Affairs, Legal &  
Human Resources Department  
JX Nippon Oil & Energy (Beijing)  
Management Co., Ltd.

### What does "ethics" mean to me?

I see the legal compliance inspections that I perform as creating opportunities for personnel to think about fundamental, intangible ethics in terms of specific business operations. It is modest work, but conducting it continuously is important, so I hope to continue making innovations to make it interesting to people.

The JX Group has formed a highly ethical stance based on thoroughness of compliance, strengthening of risk management and respect for human rights, and has set its sights on becoming a true leading company in the field.

### ■ Reinforcement of Internal Whistle-Blowing System

Considering that it may be difficult for individual worksites to independently resolve issues regarding conduct that is or may be in violation of laws and regulations, the JX Group established a Compliance Hotline, an internal whistle-blowing system. Use of the system is not limited to JX Group employees, but is available to all personnel who work within the JX Group including temporary employees and employees of cooperating companies, who are guaranteed that they will not be subject to any detrimental treatment as a result of making reports. The JX Group Whistle-blowing Systems Basic Policies were adopted in January 2013 to make it possible for whistleblowers to remain anonymous and to introduce Group Reporting that allows reports of legal violations by a group company to be reported to any company, enhancing the system. The Group is also progressively expanding the system to overseas sites so it can respond to legal risks in conjunction with the expansion of overseas business.

## Human Rights

### Basic Approach

The JX Group recognizes that achieving corporate behavior firmly rooted in highly ethical values ultimately rests on the actions of its individual executives and employees. Accordingly, the JX Group strives for labor, personnel management, and human resource development underpinned by respect for human rights.

The JX Group strives to cultivate strong ethical values among its executives and employees by respecting international rules such as the Universal Declaration of Human Rights and the ILO Conventions, and providing them with supportive environments for performing meaningful work. The individual policies and specific measures are decided based on group company business characteristics and scale.

Also, JX Holdings is fostering a management class with highly ethical standards through specific training for executives at each group company and joint training for managers across the group.

## Supporting the UN Global Compact

JX Holdings and its three core operating subsidiaries are participants in the United Nations Global Compact,

implementing and promoting the compact's 10 principles in the four areas of human rights, labor, the environment and anti-corruption.

▶ Please refer to page 42 for the UN Global Compact's Ten Principles.

## Initiatives to Eliminate Child Labor and Forced Labor

The JX Group complies with local laws and regulations at all domestic and overseas sites and strives to engage in proper human resource management including rigorous confirmation of the age of employees at the time of hiring.

## Human Rights Training

The JX Group conducts various types of training in order to raise the awareness of each employee concerning human rights issues, a topic of increasing emphasis in recent years.

JX Nippon Oil & Energy annually conducts about 50 training sessions, including personnel ranks-based training, business sites-based training, affiliates-based training and all-employees e-learning sessions on human rights. The topics are varied and include human rights issues in Japan and the prevention of sexual harassment and power harassment.

JX Nippon Oil & Gas Exploration gave a training workshop on human rights lectured by an outside expert in March 2014. Two sessions were held for managerial staff and general employees, with a total of 83 persons attending.

In April 2013, JX Nippon Mining & Metals held lectures on addressing human rights risks. Approximately 80 personnel from the Group attended, deepening their awareness of issues regarding human rights.



JX Nippon Mining & Metals human rights lecture



**Omar Suhaimi Abu Hassan**

Senior General Manager,  
Administration  
JX Nippon Oil & Gas  
Exploration (Malaysia) Limited,  
Miri Office

### What does "ethics" mean to me?

What is ethical conduct? If we act in good-faith in relationships with workplace colleagues and in our work in accordance with the principles and characteristics of the organization, this will lead to better relationships with people outside the company. It is important to do the right thing in the right way at all times.



# Advanced ideas

## Technology and R&D

### Basic Approach

With advanced nations leading the move to structure low-carbon, recycling-oriented societies amid growing awareness of the urgent need to address global environmental problems, the role of the energy, resources and materials industry has become more important than ever before.

Guided by its Group mission statement to “contribute to the development of a sustainable economy and society through innovation in the areas of energy, resources and materials,” the JX Group is aggressively pursuing technology development in each of its business domains. At the same time, we are advancing joint research and demonstration tests in collaboration with public institutions, universities and other entities.

JX Holding also creates synergies by developing and promoting technologies and development infrastructure across the entire Group and by integrating technologies within the Group.

## Implementation of Project to Increase Oil Production While Reducing CO<sub>2</sub>

JX Nippon Oil & Gas Exploration announced in July 2014 that it launched in the United States a project in which a plant would be constructed to capture carbon dioxide (CO<sub>2</sub>) in the processed flue gas from a coal-fired power generation plant and the captured CO<sub>2</sub> would be injected into an oil field to increase oil production. It is an epoch-making project that will increase oil production while concurrently reducing CO<sub>2</sub> emitted into the atmosphere from a coal-fired power generation plant.

The project is a joint venture with NRG Energy Inc. (NRG), a major independent power producer of the US. The world’s largest plant to capture CO<sub>2</sub> from the processed flue gas will be built at the W.A. Parish coal-fired power generation plant of NRG in Texas, and the captured CO<sub>2</sub> will, in order to increase oil production, be injected into the West Ranch oil field,\* also located in Texas, in which JX Nippon Oil & Gas Exploration holds an interest. Meanwhile, this scheme has an annual capture

capacity of 1.6 million tons of CO<sub>2</sub> emitted into the atmosphere from the power plant.

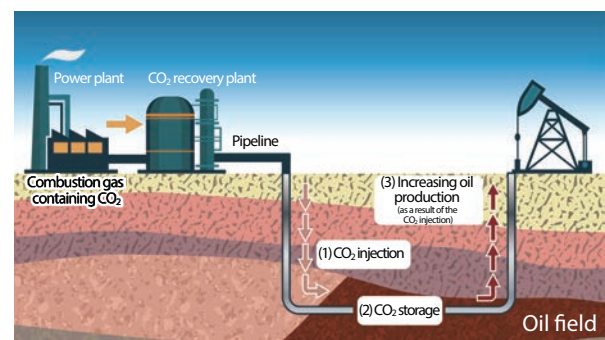
We will start commercial operation of the CO<sub>2</sub> capture plant and begin the CO<sub>2</sub> injection into the West Ranch oil field. The oil production at the field is expected to boost from around 500 barrels per day to approximately 12 thousand barrels per day (the average output during the project) and the oil field is estimated to hold approximately 60 million barrels of cumulative production increase.

Of the CO<sub>2</sub>-EOR (Enhanced Oil Recovery) initiatives that aim to increase oil production by injecting CO<sub>2</sub> into an oil field, the method to be used in this project is innovative because it will utilize CO<sub>2</sub> emitted from a coal-fired power plant. CO<sub>2</sub>-EOR stores CO<sub>2</sub>, a cause of global warming, in underground reservoirs. At the same time, it also facilitates an increase in oil recovery. JX Nippon Oil & Gas Exploration Corporation has been focusing on enhanced oil recovery as a core technology. One such project was the CO<sub>2</sub>-EOR pilot test at the Rang Dong Oil Field offshore Vietnam in 2011, conducted together with Japan Oil, Gas and Metals National Corporation (JOGMEC) and PETROVIETNAM, the state oil company of Vietnam.

We will continue to develop our business in harmony with the environment together with advanced ideas.

\* JX Nippon Oil & Gas Exploration holds a 25% interest in the West Ranch oil field through a 50:50 joint venture with NRG.

### Project Concept



**Len Olexiy**

Business Development Group,  
Lubricants Business Planning  
Department  
JX Nippon Oil & Energy Corporation

### What do “advanced ideas” mean to me?

I hope to increase ENEOS’s presence in developing countries through the sale of lubricants. In order to do this, an understanding of the characteristics of each country and advanced ideas are needed. I will tackle various challenges while considering sales promotion tools and the most efficient methods of proceeding.

By using advanced ideas and continuing to undertake the challenges of cutting-edge research and development and technologies, we will create technologies, products, and services that support solutions to societal issues and make broad contributions to society.

## Increasing the Efficiency of Copper Resource Transport with New Carrier

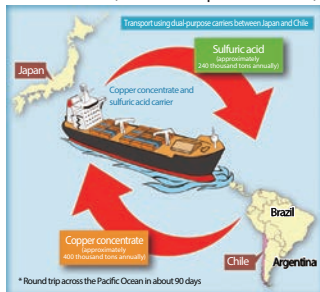
Copper is a metal resources essential for Japan's industries, and global demand is rising continuously. Nippon Marine Co., Ltd., a subsidiary of JX Nippon Mining & Metals, launched the Koryu, its second copper concentrate and sulfuric acid combination ship, at the end of 2013 to increase the efficiency of transport between Chile, the world's largest producer of copper, and Japan.

Japan relies on Chile for about half of its imports of copper concentrate, a raw material used in copper smelters. During the copper smelting process, sulfur contained in the copper concentrate is recovered and sulfuric acid is produced. A portion of that sulfuric acid is exported to Chile for use in the manufacture of refined copper using a hydro-metallurgical process.

Normally, copper concentrate in powder form is transported on a bulk carrier and liquid sulfuric acid is separately transported via tanker, but the Koryu is a dual-purpose means of transport that can carry both. Since the Koryu will make round trips on a set route between Japan and Chile carrying set cargos, it will provide the benefits of a stable schedule and minimal operating losses.

The JX Nippon Mining & Metals Group first developed the idea of a combination ship in the mid-1990s, when Chile's imports of sulfuric acid were increasing, and launched the first-generation Cypria in 1997. Shortly after the Cypria was retired, the Mar Camino was put into service in 2010, followed by the Koryu in 2013. With both vessels in operation, it will be possible to transport approximately 400 thousand tons of copper concentrate from Chile each year and about 240 thousand tons of sulfuric acid from a smelter in Japan to Chile. The JX Nippon Mining & Metals Group began production of

Structure of Copper Concentrate/Sulfuric Acid Carriers (between Japan and Chile)



copper concentrate at the Caserones copper mine in Chile in May 2014 and will use these vessels to reinforce its logistics structures so that it can provide stable and efficient supplies of copper concentrate and sulfuric acid.



**Yasunori Nishikawa**

Construction Manager,  
Marine & Technical Section,  
Shipping Group  
Nippon Marine Co., Ltd.

## Flame Retardant, High-Performance Nonwoven Fabric Developed

JX Nippon Oil & Energy used proprietary technology to develop flame retardant product based on MILIFE® polyester nonwoven fabric.

Flame retardant MILIFE is made using Trevira CS, a polyester resin produced by Trevira GmbH (Headquartered in Germany) to achieve enhanced flame retardant properties while maintaining the functionality and silky feel of standard MILIFE fabric.

Woven and nonwoven fabrics are generally made flame resistant through application of topical treatments or coatings with fire retardant additives. Milife made using Trevira CS resin, however, is inherently fire resistant. No further processing is needed and there is no decline in performance with age.

In addition, the product does not emit any harmful gases during combustion.

These features were thoroughly evaluated, and flame retardant MILIFE won the Encouragement Award of "Cho' Monodzukuri Innovative Parts and Components Award 2013" sponsored by the Conference for the Promotion of MONODZUKURI\* and Nikkan Kogyo Shimbun Ltd.

JX Nippon Oil & Energy will make use of the flame retardant properties and unique appearance of MILIFE to develop a wide range of applications, such as interior design elements including curtains and wall paper used in theaters, hospitals, hotels and other public facilities as well as ships, vehicles, and more.

\* An organization established and participated in by more than 1,800 companies from throughout Japan with the objective of building a sustainable manufacturing-based society.



The awards ceremony

Combustion Comparison  
After ignition, conventional MILIFE® (left) burns, but the Fire Resistant MILIFE (right) quickly extinguishes.



### What do "advanced ideas" mean to me?

A ship that can be used to transport both copper concentrate and sulfuric acid were created based on original ideas of the JX Group. With the start of operations of the Caserones copper mine, I hope to contribute to ensuring stable supplies of copper concentrate and sulfuric acid and to raising logistics efficiency between Japan and Chile.



# Relationship with society

## Relationship with Stakeholders

### Basic Approach

The JX Group conducts business activities while maintaining relationships with a variety of stakeholders, among them shareholders, investors, customers, business partners and employees. By accurately assessing the demands of these many stakeholders, and sincerely responding to them, we seek to earn society's trust.

### Shareholders and Investors

JX Holdings is committed to the swift, proper and fair disclosure of information to shareholders and investors in accordance with its disclosure policy.

**Main means of communication**

- General meetings of shareholders, presentation meetings on financial results, individual investors meetings
- Disclosure of information in annual reports and on websites

### Customers

The JX Group is committed to developing and delivering products and services that fulfill customer needs, expectations, trust and satisfaction.

▶ For more information, please refer to page 33.

**Main means of communication**

- Communications through marketing activities
- Provision of safe, secure, and valuable products and services
- Disclosure of information on websites

### Business Partners

JX Nippon Procurement Corporation handles purchasing operations for JX Group companies. JX Nippon Procurement makes purchasing information available to business partners on its website, actively provides business opportunities to them, and strives to ensure fair trading opportunities.

▶ For more information, please refer to page 34.

**Main means of communication**

- Communications through procurement activities
- Use of websites
- Implementation of surveys of business partners



### NPOs/NGOs

The JX Group actively undertakes social contribution activities including building cooperative relationships with NPOs and NGOs and implementing environmental preservation programs and Great East Japan Earthquake recovery programs.

**Main means of communication**

- Financial support for gorilla preservation program through the Click Donation Program (JX Nippon Oil & Energy)
- Donation of proceeds from a used book sale charity event conducted by employees
- Cooperation with volunteer programs

### Local Communities / Global Society

We strive to engage in responsible corporate activities by responding to the needs and expectations of communities in the areas where we conduct business as well as international society and engaging in active communications.

**Main means of communication**

- Active participation in local events
- Volunteer programs

### Employees

The JX Group positions employees as critical stakeholders in its operations and has established various systems to ensure that each employee can work with peace of mind and exhibit his or her full capabilities.

**Main means of communications**

- Periodic communications between labor unions and management
- Publication of Group newsletters



**Jaime Andrade G.**  
External Affairs and Communications Officer  
SCM Minera Lumina Copper Chile

### What does "relationship with society" mean to me?

I work for MLCC, which operates the Caserones copper mine, where I am engaged primarily in public relations with local communities. Good relationships with stakeholders are built by acting as a responsible member of the community. I am building networks with local communities with a focus on management of water resources, contributions to local communities, traffic safety measures, job training, and the maintenance and creation of jobs

I hope to obtain the trust of the local communities by responding in good faith to the needs of various stakeholders.

We are also developing mutually-beneficial relationships as a corporate citizen through promotion of sports and culture, support for education, environmental preservation programs, and other measures.

## Relationship with Employees

### Basic Approach

It is crucial for companies to incorporate the opinions of a diverse array of personnel in business activities in order to respond to societal changes and achieve sustainable development. The JX Group actively hires senior citizens and people with disabilities in an effort to promote diversity in the workforce. Furthermore, in addition to a good workplace, employees need to lead fulfilling lives outside the workplace, including at home, and in leisure and other activities, if they are to demonstrate their respective abilities to the fullest and work energetically. Accordingly, JX Group companies have developed a range of employee support programs and also conduct awareness-raising activities designed to encourage employees to take advantage of these programs.

### Workforce Composition

		JX Holdings	JX Nippon Oil & Energy	JX Nippon Oil & Gas Exploration	JX Nippon Mining & Metals
Total headcount		98	5,743	401	1,307
Male employees	Headcount	76	5,184	360	1,203
	Average age	45.2	42.2	41.9	41.3
	Average years of service	21.3	20.5	16.6	17.5
Female employees	Headcount	22	559	41	104
	Average age	40.0	41.6	37.0	37.6
	Average years of service	17.1	19.6	11.7	12.6

### Promoting the Career Development of Women

JX Nippon Oil & Energy Corporation promotes workplace diversity and supports the career development of women so that it can meet the wide-ranging needs of customers and become an organization that incorporates varied and flexible ways of thinking.

The company provides necessary support and has made reforming employee awareness and reforming the corporate culture into priority issues so that female employees can maintain high levels of ambition, consider their careers, and continue working with enthusiasm. At the foundation of this is reforming awareness concerning men and women working together and establishing work styles that maximize effective use of limited time.

Going forward, we will increase the percentage of women among recent graduates hired, conduct training and educational programs to reform awareness, support the development of networks among female employees, review methods of working, and implement other measures.

### Number of Recent Graduates Recruits and Separation Rate

		JX Holdings	JX Nippon Oil & Energy	JX Nippon Oil & Gas Exploration	JX Nippon Mining & Metals
Total headcount		—	203	7	59
Male university graduates		—	68	5	28
	Female university graduates	—	11	0	9
Junior college/vocational school graduates		—	13	0	3
Senior high school and other graduates		—	111	2	19
Separation rate <sup>*1</sup>		—	4.4%	0%	4.3%

\*1 The separation rate is the percentage of recent graduates hired as new employees in fiscal 2011 who left the company within three years

### Employment Rate of Persons with a Disability, Number of Employees Re-hired after Retirement, Usage Rate for Annual Paid Leave, and Number of Employees Taking Leave

		JX Holdings	JX Nippon Oil & Energy	JX Nippon Oil & Gas Exploration	JX Nippon Mining & Metals
Employment rate of persons with a disability		— <sup>*2</sup>	2.16%	1.53%	1.99%
Number of employees re-hired after retirement		— <sup>*2</sup>	253	8	19
Number of annual paid leave days granted		19.9	19.6	19.5	20.8
Number of annual paid leave days taken		11.5	15.0	10.9	13.7
Usage rate for annual paid leave		57.6%	76.7%	55.9%	65.7%
Number of employees taking nursing care leave		0	3	0	0
Number of employees taking childcare leave		3	37	2	4
(incl. male employees)		1	18	0	0

\*2 "Employees" refer to those seconded from operating companies, and are accounted for at their companies of origin.

### Frequency of Industrial Accidents and Accident Severity Rate

		JX Holdings	JX Nippon Oil & Energy	JX Nippon Oil & Gas Exploration	JX Nippon Mining & Metals
Frequency of industrial accidents <sup>*3</sup>		—	0.24	— <sup>*5</sup>	0.00
Accident severity rate <sup>*4</sup>		—	0.01	— <sup>*5</sup>	0.00

\*3 Number of deaths and injuries due to industrial accidents per 1 million working hours

\*4 Number of lost work days per 1,000 working hours

\*5 JX Nippon Oil & Gas Exploration has not adopted these indicators



**Sachiyo Yamanaka**

Administration Group,  
Oita Refinery  
JX Nippon Oil & Energy Corporation

### What does "relationship with society" mean to me?

Social contribution activities are carried out mainly by the ENEOS Oita Support Team. These initiatives have been spread to each employee at the refinery, and by establishing deep-roots, CSR programs form a large network, leading to beneficial relationships with society. I will do my very best to serve as a liaison between the programs and individuals.



# Relationship with society

## Corporate Citizenship

### Basic Approach

The JX Group views CSR activities that contribute to society as an important issue and takes proactive steps in this area. The JX Group Corporate Citizenship Committee, with members drawn from across the JX Group, deliberates and reports on the group's social contribution efforts, while sharing information on such contributions with group companies. Under the Basic Policy for JX Group Social Contribution Activities, the JX Group collectively implements initiatives in the priority fields of (1) advancement of sports and culture, (2) next generation development and support, and (3) environmental protection.

## Advancement of Sports

The JX Group hosts a baseball and basketball team and conducts various sporting programs with a focus on these two sports. With regard to baseball, the Group sponsors the NPB 12 Team Junior Tournament ENEOS Cup, supports the Rakuten Eagles Youth Baseball program, and as of 2014, supports the Japan Rubber Baseball Association Emperor's Cup. Concerning basketball, the Group sponsors the JX-ENEOS Winter Cup, conducts 60 to 70 JX-ENEOS Basketball Clinics, primarily for elementary and junior high school students, each year nationwide, and in 2014 became an official sponsor of the Japan women's national basketball team. The Group is also an official sponsor of F.C. Tokyo of the J1 soccer league, with the aim of expanding the base of sports lovers.



The JX-ENEOS Sunflowers winning the 15th W League championship



The JX-ENEOS Baseball Team winning the 84th Intercity Baseball Tournament



A basketball clinic

## Advancement of Culture / Next Generation Development and Support

Every year since 1970, the JX Group has called for submissions from the general public of original children's literature on the theme "heart-to-heart contact." JX-ENEOS Children's Story Award is presented to outstanding works in three categories (elementary school and younger, junior high school, and others).

The winning works are published in a collection entitled *The Bouquet of Children's Stories*. The Group donates copies to educational institutions, child welfare and other facilities. In fiscal 2014, the 45th time that the program was conducted, 11,370 heart-warming submissions were received from members of the public in Japan and overseas.

The JX Group positioned this program as a social contribution activity of the entire group and has continuously carried it out. *The Bouquet of Children's Stories* is, through charity sales, purchased widely by the general public and dealerships that operate ENEOS service stations and LPG dealerships as well as group company executives and employees, with all proceeds going to the JX-ENEOS Children's Story Fund. Each year, as a part of its child welfare programs, the Fund makes a donation to the Japan National Council of Social Welfare (JNCSW). The donations are used by the JX-ENEOS Scholarship Program established by the JNCSW to provide support to children from foster-care facilities, single-mother support facilities, and foster homes when they enter university or undertake other education. In fiscal 2013, scholarships were granted to 451 students.

*The Bouquet of Children's Stories* is printed on paper made from raw materials derived from wood produced as a by-product of forest thinning in areas where the JX Group is working on reforestation, and this program helps to increase the absorption of carbon dioxide by forests in Japan. Through *The Bouquet of Children's Stories* program, the JX Group supports *Kizukai Undo* (Tree-Use Movement), a domestic forest preservation program promoted by Japan's Forestry Agency.



Award winners at the 44th JX-ENEOS Children's Story Award ceremony



*The Bouquet of Children's Stories* (volume 44)



### Katie Taylor

Head of Organizational Strategy & External Affairs  
JX Nippon Exploration and Production (U.K.) Limited

### What does "relationship with society" mean to me?

As our activities in the UK expand we are designing an integrated CSR programme, and a key focus is how we maintain strong relationships within the society in which we operate. Our approach includes proactive engagement with our regulatory and industry bodies, building a deeper relationship with the Japanese/UK communities, investing in the future of our industry through sponsoring university geoscience studies and volunteering within our communities.



## Environmental Conservation

In a partnership with local governments or the National Land Afforestation Promotion Organization, the JX Nippon Oil & Energy Group is involved in forest stewardship activities at eight ENEOS Forests across Japan. Employees and their families volunteer to take part in tree planting, thinning and bush clearing that helps to ensure the forests are maintained in a responsible manner. In 2013, approximately 1,600 persons participated in these programs. Since 2004, we have participated in the Tokyo Greenship Action environmental preservation program conducted in collaboration with the Tokyo Metropolitan Government, private companies, NPOs, and other organizations. In order to preserve the valuable remaining natural areas in Tokyo, employees and their families undertake *satoiyama* preservation using traditional agricultural methods to restore neglected rice paddies in a historical environmental preservation district of Machida City in Tokyo. In 2013, approximately 270 persons participated. In addition, one of the privileges of the ENEOS Card, a personal credit card, is that the Company donates 0.01% of the amounts charged by member customers at ENEOS service stations to the National Land Afforestation Promotion Organization. As of the end of March 2014, cumulative donations reached 310 million yen, supporting a variety of environmental preservation programs conducted by the Organization including afforestation, youth tree-planting programs, restoration of tropical forests, and prevention of

desertification.

Since 1998, JX Nippon Oil & Gas Exploration has worked to preserve the pine forest located on and around the site of its Nakajo Field Office in Niigata Prefecture. In 2013, a total of 55 executives, employees and their family members planted approximately two thousand black pine trees over the course of two days, including for the first time five national staff of the overseas offices.

JX Nippon Mining & Metals conducted reforestation activities at five sites of closed mines in Japan to promote the conservation of the natural environment in fiscal 2013. The Company also conducted Mt. Kurakake Sakura Mountain Development activities in Hitachi City, Ibaraki Prefecture.



Forest stewardship activities at the ENEOS Forest



Preservation activities for the pine forest in Nakajo



Cherry trees planting activities at Mt. Kurakake Mountain in Hitachi city

## JX Group Volunteer Activities Supporting Restoration and Recovery

In an effort led by the JX Group Corporate Citizenship Committee, JX Group executives and employees are recruited and continue to take part in volunteer activities to support recovery efforts in areas affected by the Great East Japan Earthquake. From July 2011 to March 2014, a total of 30 rounds of volunteer activities were conducted with the participation of more than one thousand employees.

The activities began with the removal of rubble and clearing mud from gutters, but since fiscal 2012, the focus has shifted in line with new needs to providing emotional support to individuals in the disaster areas. In fiscal 2013, volunteer activities centered on emotional care such as reading to children at nursery schools, interacting with senior citizens, and participating in festivals at foster-care facilities in Iwate, Miyagi, Fukushima, and Ibaraki prefectures.

The scope of activities was expanded even further

in fiscal 2014 to include support for children in regions outside the disaster-affected areas and the name was changed to the JX Group "Connect to the Future" Volunteer Program. Employees from throughout the Group continue to participate.

Further details concerning volunteer activities can be found on the following website:

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



Children being read to



A scene from a festival



### Hajime Tawada

Systems Audit Group,  
System & Infrastructure Technology  
Department  
JX Nippon Information Technology  
Co., Ltd.

## What does "relationship with society" mean to me?

I participated as a supporting restoration and recovery volunteer in tree planting to create a forest of tide embankment in a coastal area of Miyagi Prefecture. This was the first time that I participated in a program in a disaster area, and I had some hesitations but I felt encouraged by being with the other employees in the group. From my experience, I confirm the significance of social contribution activities.



# Trustworthy products/services

## Quality Assurance, Product Safety and Customer Satisfaction

### Basic Approach

Because the JX Group is involved in a broad range of operations, each group company practices quality control, and each company and business site has obtained ISO 9001 certification, the internationally recognized standard for quality management systems, as part of efforts to ensure quality.

JX Holdings has extensive knowledge of the quality control and product safety policies and annual targets of each company. If a product-related accident does arise, JX Holdings works together with the group company involved to minimize damages and formulate steps to prevent recurrence, in line with crisis management rules.



Please visit the following websites for information about the quality initiatives of JX Nippon Oil & Energy and JX Nippon Mining & Metals.

JX Nippon Oil & Energy  
<http://www.noe.jx-group.co.jp/csr/social/customer/quality.html> (Available only in Japanese)

JX Nippon Mining & Metals  
[http://www.nmm.jx-group.co.jp/english/industry/ind07\\_08.html](http://www.nmm.jx-group.co.jp/english/industry/ind07_08.html)

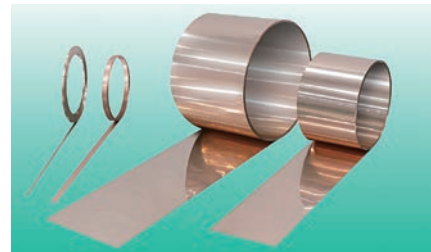
## Trustworthy Products/Services

### Basic Approach

With customer's demands toward products and services growing more diverse, the JX Group is striving to provide new products and services that are trustworthy and that fulfill the needs of customers.

## Development of the World's Strongest Titanium Copper Foil

JX Nippon Mining & Metals developed a titanium copper foil that has the world's highest tensile strength, and subsequently launched manufacturing and sales of this product. In Japan and overseas, titanium copper foil is being employed as a material for springs used in cameras for smartphones, mobile phones and other similar devices. In tandem with the development of slimmer and more compact electronic devices, thinner and stronger titanium copper foils have also come into demand. We developed this titanium copper foil by combining manufacturing technologies for rolled copper foil and high-strength copper alloys, and thereby achieved a product that is 30 micrometers thin but with a strength that is roughly 1.2-times that of conventional products. This product makes it possible to carry out fine processing that was previously not feasible. We anticipate the material will be employed in new uses and applications.



Exterior of a titanium copper foil

## Eco-Friendly, Safe Lubricants Launched

JX Nippon Oil & Energy is selling lubricants and greases that take the environment and safety into consideration. TOUGHLIX Grease MP2, a new product with energy-saving performance and extreme high-pressure properties launched in 2014, has excellent energy-saving performance, controls bearing temperature increase, and contributes to reducing maintenance operations. Also, lubricants for food machines contribute to the safety of food in manufacturing processes by using only materials approved by the United States Food and Drug Administration. In addition, newly launched were RELIAPRESS RC 150, a press oil that does not use carcinogenic chlorides, and HYRANDO JINEN TX hydraulic oil, which minimizes environmental impact in the event of a leak by using easily biodegradable materials.



**Yukie Shimizu**  
ENEOS Globe Energy, Co., Ltd.

### What do "trustworthy products/services" mean to me?

I visit customers in their homes and speak directly with them, and to me, trust is the starting point. I do my best to stand as one of "trustworthy products/services" myself so that I can make energy improvement proposals from the customer's perspectives and hear smiling customers say "thank you."

In order to achieve customer satisfaction, I work to enhance the quality of products and services from the customer's perspectives, ensure the safety of products, and provide more reliable products and services.

## Purchasing

### Basic Approach

Procurement sources are growing increasingly diverse in step with economic globalization. The practice of compliance and consideration for the environment and human rights on the supplier side are required aspects of responsible supply chain management and are an important aspect of establishing trust in our products and services.

JX Nippon Procurement Corporation plays a central role in procurement for the JX Group, strives to conduct in transparent and fair transactions, and conducts purchasing with consideration for the environment. We seek to achieve mutually beneficial development by enhancing communications with suppliers and building partnerships based on mutual trust.

## Basic Policy on Procurement

The JX Group implements procurement operations in accordance with the JX Group Values.

### Basic Policy on Procurement

- We will abide by relevant laws and social norms as well as respect and operate in accordance to the spirit of both.
- The selection of suppliers will be performed based on a fair assessment of their compliance with laws and social norms, consideration for the environment, quality, price, delivery and performance.
- We will maintain an appropriate and highly ethical relationship with suppliers.
- We will always create and innovate using new ideas and strive to employ new products and services.
- We will pursue stronger communication with suppliers and strive to make contributions to society based on relationships of mutual trust.
- Each JX Group company will provide trust and satisfaction based on activities that are highly accurate, prompt and transparent.
- We will strive to create a sustainable society by encouraging the procurement of materials, equipment and services that have lower environmental impacts.



JX Nippon Procurement Corporation is in charge of procurement operations for materials. <http://www.pr.jx-group.co.jp/> (Available only in Japanese)

## Supplier Survey

JX Nippon Oil & Energy and JX Nippon Mining & Metals also conduct a supplier survey to complement their procurement of environmentally friendly products, materials and services in accordance with the Basic Policy on Procurement.

JX Nippon Oil & Energy conduct supplier surveys that include questions on green purchasing. As a result of vigorous efforts targeting suppliers, 37% of suppliers that had not yet adopted green procurement practices in fiscal 2011 did so over the course of the past two years.

JX Nippon Mining & Metals conducts surveys on green procurement practices as well as on issues relating to conflict minerals. Starting last fiscal year, the company began checking for changes in supplied products, manufacturing processes, and raw materials, and any suppliers for which such changes are discovered are asked to retake the survey. In fiscal 2013, approximately 500 companies responded to the survey.

### JX Group Procurement Division Training Conducted

In November 2013, the JX Group conducted its first training session for personnel working at JX Group companies in materials purchasing and construction contracts.

Some 40 employees from 20 Group companies underwent training on six topics including strict compliance and sharing information on construction materials. The Group is considering holding regular training to foster collaboration among Group procurement divisions.



A training session in a conference room at the JX Building



### Yoshio Kajiya

Surface Treatment Department,  
Thin Film Materials Division  
Electronic Materials Group  
JX Nippon Mining &  
Metals Corporation

### What do "trustworthy products/services" mean to me?

I'm conducting development to increase the capacity of the cathode materials used in automotive lithium-ion batteries. Through these efforts, the JX Group will contribute to improving the performance batteries from a material aspect, and I hope that this leads to the widespread use of electric cars and household power supplies.



# Harmony with the environment

## Environment

### Basic Approach

“Harmony with the environment” is one component of the JX Group Values. Accordingly, the environment is a vital theme in the Group’s CSR activities.

Through environmental actions enabled by operation of an Environmental Management System (EMS), coupled with deliberation and reporting on the Group environmental safety by the JX Group Environment & Safety Committee, the JX Group manages progress on the Medium-Term Environmental Management Plan by the Group.

### JX Group Environmental Policy

The JX Group will

1. Develop the technologies, products and services that help to create a better global environment.
2. Work diligently to prevent global warming and be mindful of preserving biodiversity.
3. Constantly strive to reduce environmental impact in all business activities.
4. Strive for strict compliance with environmental laws and ordinances, based on the highest ethical values.

### JX Group Medium-Term Environmental Management Plan (FY2013–2015)

In fiscal 2013, the first year of the three-year plan, the entire Group worked together, and as a result, almost all targets were achieved. Targets and results are presented below.

### Compliance with Environmental Laws and Regulations

In fiscal 2013, JX Holdings and the core operating subsidiaries conducted compliance checks and no major violations were identified.

### Results and Evaluation of the JX Group Medium-Term Environmental Management Plan (FY2013–2015)

Energy Business (JX Nippon Oil & Energy Group)	Activities	Reduction of CO <sub>2</sub> emissions	Soil contamination countermeasures	Waste reduction
	Targets	Reduce by 1.1 million tons in FY2013 compared with FY2009 Reduce by 1.25 million tons in FY2014 compared with FY2009 Reduce by 2.1 million tons in FY2015 compared with FY2009	Operating properties: Prevent external leakage Decommissioned properties: Conduct deliberate surveys and treatment measures	Waste-to-landfill ratio: Less than 0.5%
	FY2013 results and evaluation	Reduced by 780 thousand tons compared with FY2009 (Target not achieved)	Soil surveys implemented: 145 sites Treatment measures: 85 sites (Target achieved)	0.29% (Target achieved)
	Planned measures for FY2014	Reduce by 1.25 million tons compared with FY2009	Implementation of Continuous Improvements	Waste-to-landfill ratio: Maintain at less than 0.5%
Oil and Gas Exploration and Production Business (JX Nippon Oil & Gas Exploration Group)	Activities	Reduction of energy consumption	Management of final waste disposal volume and oil content in produced water disposed to the sea	Maintenance and management of environmental management systems
	Targets	Reduce 1% in FY2013 compared with FY2012 Reduce 2% in FY2014 compared with FY2012 Reduce 3% in FY2015 compared with FY2012	Monitor volumes, including at overseas sites (Vietnam, Malaysia)	Appropriately manage the HSE Committee, and maintain the environmental management system throughout the JX Nippon Oil & Gas Exploration Group
	FY2013 results and evaluation	Reduced by 1.4% compared with FY2012 (Target achieved)	Implemented (Target achieved)	Held 3 HSE Committee meetings, etc. (Target achieved)
	Planned measures for FY2014	Reduce by 2% compared with FY2012	Continuous implementation	Continuous implementation
Metals Business (JX Nippon Mining & Metals Group)	Activities	Specific energy consumption reduction	Reduction of CO <sub>2</sub> emissions	Waste reduction
	Targets	Reduce 1% in FY2013 compared with FY2012 Reduce 1% in FY2014 compared with FY2013 Reduce 1% in FY2015 compared with FY2014	FY2013: 1.08 million tons FY2013–2014: 2.14 million tons cumulative FY2013–2015: 3.17 million tons cumulative	Non-application waste ratio: Less than 0.7%
	FY2013 results and evaluation	Of all subject sites, 40% achieved targets	840 thousand tons (Target achieved)	Non-application waste ratio: 0.6% (Target achieved)
	Planned measures for FY2014	Switch to highly efficient machines and reduce electricity consumption Reduce energy consumption through recovery of waste heat	Continuous implementation	Continuous implementation



**Tetsuo Iwakami**

No. 2 Development Group,  
Development Business Division  
JX Nippon Real Estate Corporation

### What does “harmony with the environment” mean to me?

I am involved in condominium construction, and right from the design stage, we seek to obtain housing performance assessment degradation countermeasures rank 3 and energy conservation countermeasures rank 4 (both the highest possible ranks) with the aim of building eco-friendly housing as well as strive to employ low-noise and low-carbon dioxide equipment to minimize the environmental impact at the construction site.

As a group that works together to create technologies and services that will be useful for the development of a better global environment and is deeply involved in global resources, we actively and continuously take measures to effectively use energy, resources, and materials and to preserve the environment.

## FY2013 Environmental Impact Reduction Measure Topics

### ■ Providing a Service to Treat Low-Concentration PCB Wastes

In March 2014, JX Nippon Tomakomai Chemical received certification from the Minister of the Environment to provide a service to treat low-concentration PCB wastes. The company became the first certified firm for low-concentration PCB waste disposal in Hokkaido.

Due to their excellent electrical insulating properties, PCBs were used extensively as insulating oils mainly in transformers and capacitors, as heat transfer media in various industries, and in pressure-sensitive copiers and other equipment, but today their use in new manufacturing or import is banned.

A deadline of March 31, 2027 has been prescribed by law for the disposal of waste materials containing PCBs. By that date, the owner must either dispose of them or have their disposal handled by an agent.

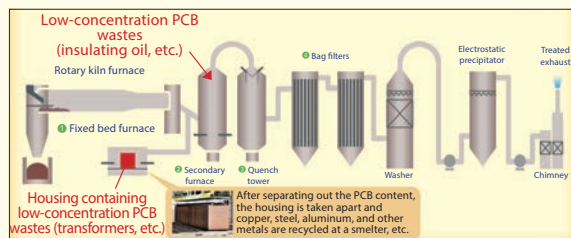
PCB wastes are classified as either high-concentration or low-concentration wastes depending on the amount of PCB they contain, with different disposal methods prescribed for each.

As of March 2014, there were only seven locations in Japan, including JX Nippon Tomakomai Chemical, capable of treating not only low-concentration PCB waste materials such as insulating oils but also the transformers containing them. Given the amount of low-concentration PCB wastes in circulation, the number of treatment facilities is still too low to keep up with the demand.

High-concentration wastes (PCB content exceeding 0.5%)	These can be disposed of only at one of the five regional treatment facilities operated by Japan Environmental Safety Corporation.
Low-concentration wastes (PCB content of 0.5% or less)	The certification of treatment facilities throughout Japan is currently being carried out.

Only seven facilities nationwide including JX Nippon Tomakomai Chemical can detoxify waste material with low-concentration PCB, such as insulating oil containing PCB and transformer cases that used such insulating oil (as of March 2014). The number of facilities that can process low-concentration PCB waste is limited compared to the volume of such waste, and treatment is lagging substantially.

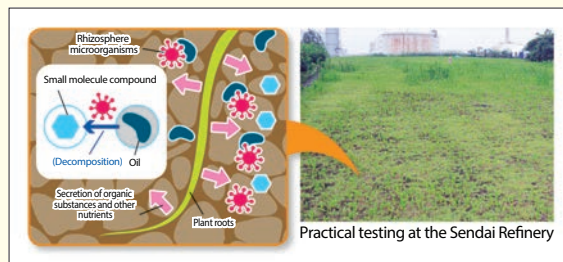
### Flow of complete treatment service for low-concentration PCB wastes



### ■ Contributing to Pollution Prevention with Soil-Remediation Technologies

JX Nippon Oil & Energy Corporation, together with Sumitomo Forestry Co., Ltd., jointly developed a phytoremediation technology used to purify oil-contaminated soil. With this technique, grass is planted to degrade the oil. The grass puts down roots, thereby providing nutrients to the microbes (microorganisms) in the soil, causing them to multiply and decontaminate the soil. Utilizing a grass with a high resistance to oil is a simpler method of soil remediation compared with other conventional methods, such as completely replacing the soil through excavation and removal or chemical treatment. This technique was highly evaluated for its innovativeness and the results it produced, and in 2012, it received the 2012 Environment Minister Award for Model Initiatives on Environment Measures from Japan's Ministry of the Environment. JX Nippon Oil & Energy is currently employing this technology to make former service station, oil terminal, and refinery sites reusable.

### Principles of phytoremediation



### ■ Going Paperless

JX Nippon Oil & Energy is working to accelerate the pace of operations and improve communications by shifting from work methods that relied on paper to the use of electronic data. Efforts to eliminate the use of paper include the development of various IT tools in conjunction with abolishing the distribution of material printed on paper at meetings and printing documents to perform checks. As a result, the number of copying machines and printers was nearly halved in April 2014, leading to conservation of paper resources.



### Osamu Nakamura

Group Manager  
Planning Group  
Planning Department  
JX Nippon LNG Service Company,  
Limited

### What does "harmony with the environment" mean to me?

Preparations are proceeding to begin operations at the Hachinohe and Kushiro LNG Terminal. After operations are started, we plan to stably supply natural gas, which has lower CO<sub>2</sub> emissions than oil and coal, primarily to the northern Tohoku and eastern Hokkaido regions. I believe that this work is meaningful for the global environmental and for development of local communities.



# Harmony with the environment

## Environmental Performance

### Basic Approach

The environmental performance data on pages 37 to 38 covers a total of 54 business sites at 29 companies engaged in the Energy Business, the Oil and Gas Exploration and Production Business, the Metals Business, and Other Businesses.

- Energy Business: 20 sites at 11 companies
- Oil and Gas Exploration and Production Business: 3 sites at 1 company
- Metals Business: 27 sites at 15 companies
- Other Businesses: 4 sites at 2 companies

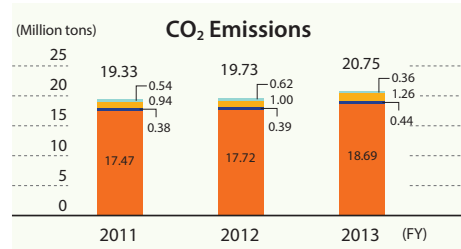
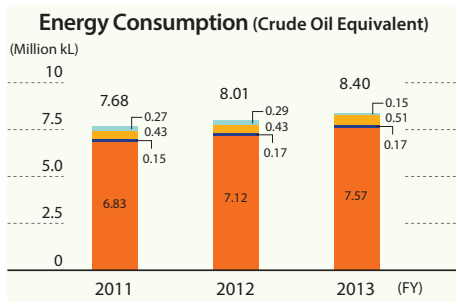
For the energy business, we recorded data only for business sites involved in petroleum product refining and production (data for fiscal 2012 and 2013 includes depots). Some sites included in the other business segment until fiscal 2012 were included in the metal business segment starting in fiscal 2013.

## Initiatives to Prevent Global Warming

Energy consumption in fiscal 2013 (crude oil equivalent) for the entire JX Group was 8.40 million kL, marking a 0.39 million kL increase.

CO<sub>2</sub> emissions for the JX Group in fiscal 2013 totaled 20.75 million tons, a year-on-year increase of 1.02 million tons.

■ Energy Business ■ Oil and Gas Exploration and Production Business ■ Metals Business ■ Other Businesses



\* CO<sub>2</sub> emissions include emissions from energy consumption (electricity, fuel, etc.) as well as greenhouse gases emitted mainly in oil and gas production converted to CO<sub>2</sub>.

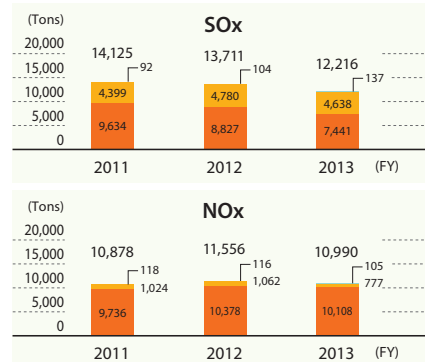
### Initiatives to Cut CO<sub>2</sub> in Logistics

The JX Nippon Oil & Energy Group is working to determine CO<sub>2</sub> emissions generated during logistics stages and to reduce those emissions. In addition to measures for efficient transport including the use of tankers for marine transport and tank cars for railway transport, optimization of transport routes, consolidation of oil depots, and increasing the size of tank trucks and tankers, the JX Group is also taking measures to reduce fuel consumption, such as thoroughly reducing vehicle idling.

## Initiatives to Prevent Air Pollution

In line with laws, ordinances, accords and voluntary standards to prevent air pollution, the JX Group closely monitors gases emitted into the atmosphere by its facilities. In fiscal 2013, the JX Group reduced emissions of sulfur oxides (SOx) by 1,495 tons and of nitrogen oxides (NOx) by 566 tons.

■ Energy Business ■ Metals Business ■ Other Businesses



\* Not applicable for the Oil and Gas Exploration and Production Business. Figures for NIPPO CORPORATION in Other Businesses were estimated by its 50 main plants.



**Do Pham Kim Hoa**

Senior Environmental Engineer  
Japan Vietnam Petroleum  
Company, Limited

### What does "harmony with the environment" mean to me?

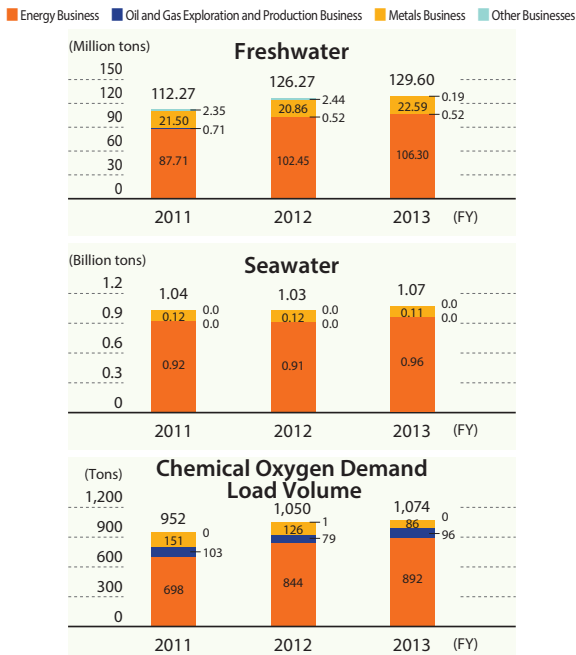
Harmony with the environment means care for the health of the environment in parallel with effective implementation of our operations. For instance, we use water-based drilling fluid that has less impact on the environment than oil-based or synthetic fluids, and we monitor the impact on the environment of our operations through periodic environmental surveys in Block 15-2, where we operate. We always make the utmost effort to protect the environment in our operations.

## Initiatives for Protecting Water Resources

As one of its resource conservation measures, the JX Group firmly manages its use of water resources and monitors wastewater produced by its facilities in line with laws, ordinances, accords and voluntary standards, in an effort to reduce its environmental impact.

In fiscal 2013, the JX Group used a total of 129.6 million tons of water (freshwater resources), an increase of 3.33 million tons. The JX Group also used 1.07 billion tons of seawater, an increase of 40 million tons.

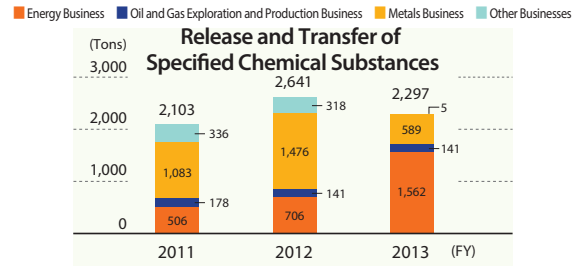
The JX Group's chemical oxygen demand (COD) load volume in fiscal 2013, an indicator of water pollution levels, increased 24 tons year-on-year to 1,074 tons.



\* Figures for overseas sites (Malaysia and Vietnam) are not applicable in the figure for the Oil and Gas Exploration and Production Business.

## Initiatives for Management of Chemical Substances

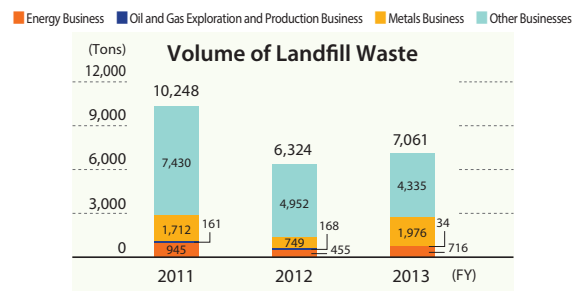
The JX Group conducts proper management of specified chemical substances stipulated under the Pollutant Release and Transfer Register (PRTR) Law and also strives to reduce chemical emission levels. In fiscal 2013, the JX Group's release and transfer of specified chemical substances totaled 2,297 tons, a decrease of 344 tons.



\* Figures for overseas sites (Malaysia and Vietnam) are not applicable in the figure for the Oil and Gas Exploration and Production Business.

## Initiatives to Reduce Waste

In fiscal 2013, the JX Group's final waste disposal volume totaled 7,061 tons, an increase of 737 tons.



## Initiatives for Conserving Biodiversity

The JX Group is taking steps to conserve biodiversity as one of the three shared targets laid out in its Medium-Term Environmental Management Plan and each group company is implementing measures to this end.

### Biodiversity Survey Conducted at Negishi Refinery

JX Nippon Oil & Energy conducted a biodiversity survey at its Negishi Refinery to assess the ecosystem, particularly of green areas within the refinery grounds. Employees from the refinery and cooperating companies conducted the survey under the guidance of instructors from the non-profit organization Woods and Environment Network Association, investigating plants, birds, insects, and other organisms. The results of the survey will be used in future biodiversity preservation measures.



Li Bei

Sales Department  
Nikko Metals Shanghai Co., Ltd.

### What does "harmony with the environment" mean to me?

China has undergone remarkable economic development in recent years. In the course of this development, companies have faced major CSR challenges, including reducing greenhouse gas emissions and conserving resources and energy. Nikko Metals Shanghai's business is recycling oriented, ranging from proposing optimal materials to recovering scrap metals, and plays an important role from a CSR perspective.

# JX Group Management

## Corporate Governance

The basic approach to corporate governance within the JX Group is to make decisions and execute operational activities quickly and flexibly to implement growth strategies for the JX Group as a whole and make appropriate responses to changes in the business environment. In addition, the company endeavors to secure the soundness and transparency of its management to respond to the trust and confidence of all its stakeholders.

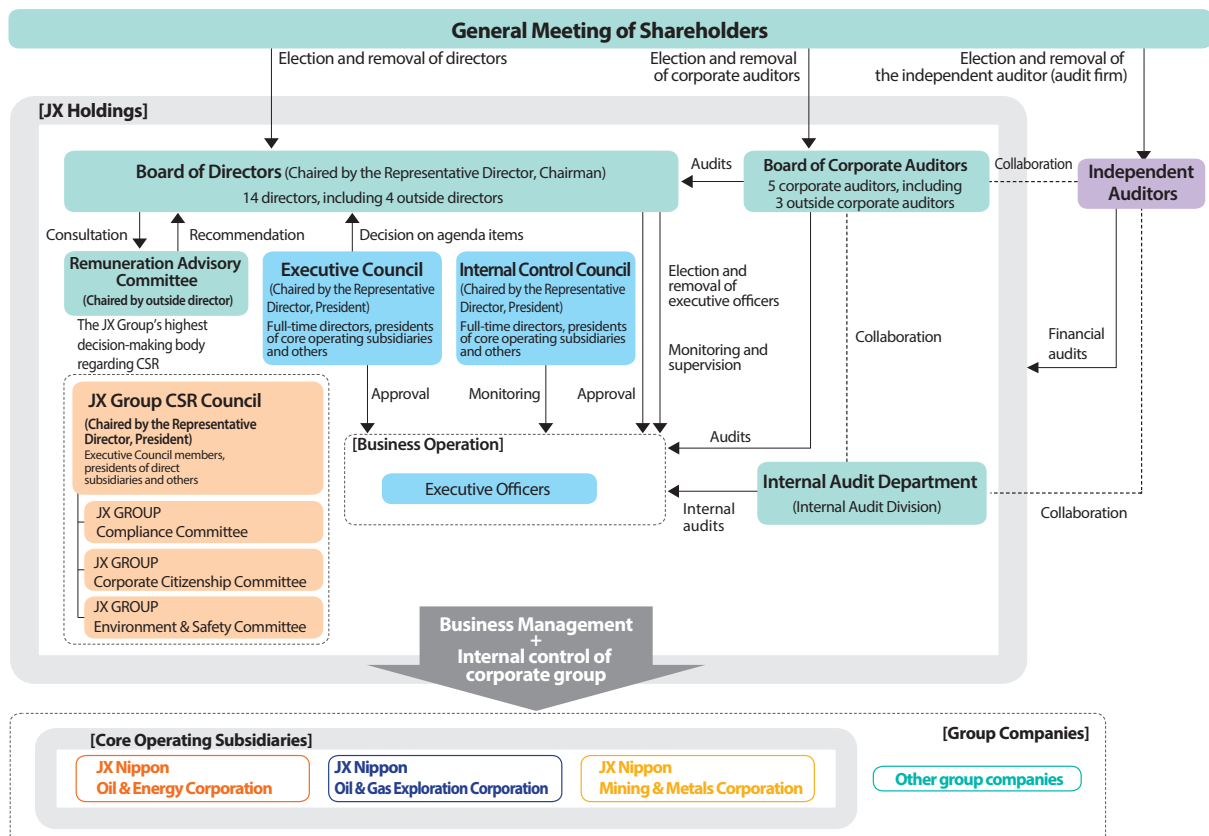
Guided by this basic policy, JX Holdings, as the ultimate holding company of the JX Group, focuses especially on formulating medium- to long-term strategies for the JX Group and strategically allocating management resources and conducting risk management to implement these strategies. Under JX Holdings, its three core operating subsidiaries wholly owned by it have been positioned to be responsible for each of the group's three core businesses, namely the Energy Business, the Oil and Natural Gas Exploration and Production Business, and the Metals Business.

In addition, JX Holdings' corporate governance structure is characterized by the following features:

1. Directors are elected for a term of one year and must stand for re-election each year at the General Meeting of Shareholders.
2. Independent outside directors with management insight and extensive experience, are appointed to strengthen the supervisory function over the management from an objective perspective.

3. In addition to full-time directors and outside directors, the presidents and certain other key personnel of the core operating subsidiaries are elected as directors of JX Holdings to deliberate and decide on cohesive group-wide business strategies at meetings of the Board of Directors of JX Holdings.
4. The majority of corporate auditors consist of independent outside corporate auditors appointed on the basis of management insight and extensive experience. This structure ensures the effectiveness of audits of directors' performance of management duties by the Board of Corporate Auditors.
5. The Remuneration Advisory Committee comprising two outside directors and two representative directors has been formed as an advisory body to the Board of Directors, in order to ensure the transparency and objectivity of the decision-making processes related to remuneration of directors and executive officers as well as related matters.
6. The Executive Council has been formed as a body to discuss matters that require the approval of the president and other important issues with respect to the execution of the president's duties based on authority handed down from the Board of Directors. This council is composed of full-time directors, the presidents and certain other key personnel of the core operating subsidiaries. The Executive Council helps to ensure appropriate and efficient decision making by the president.
7. The Internal Control Council has been established as an advisory body to the president to ensure appropriate execution of operation. This council, which consists of the same members as the Executive Council, monitors, confirms and reviews the appropriateness of business operation status as an autonomous self-control system.

## JX Group Corporate Governance Framework





## Development of Internal Control System

Based on the JX Group Mission Statement and the JX Group Values, JX Holdings has established and implements its internal control system to ensure appropriate execution of operation in line with the following Basic Policy:

### [ Basic Policy for the Establishment and Operation of Internal Control System]

<p><b>1. System to ensure that execution of the duties by the directors and the employees complies with laws and regulations, and the Articles of Incorporation</b></p> <p>(1) Develop and implement various rules and ensure compliance with laws and regulations, the Articles of Incorporation, and various other rules.  (2) Establish and operate the JX Group Compliance Committee, implement the compliance status checks, and address the results.  (3) Develop and implement an internal whistle-blowing system.  (4) Hold the Board of Directors' meetings on a monthly basis and conduct adequate discussion and reporting, based on "Rules for the Board of Directors."  (5) Ensure objectivity and improve appropriateness through the appointment of outside directors and outside corporate auditors.  (6) Establish the Internal Audit Department independent of other divisions and conduct internal audits.  (7) Develop and implement an internal control system for the Financial Instruments and Exchange Act.  (8) Develop and implement rules to prevent relationships with anti-social forces and ensure thorough compliance with such rules.</p>
<p><b>2. System for the storage and management of information related to execution of duties by the directors and the employees</b></p> <p>(1) Develop and implement rules concerning documents.  (2) Prepare minutes of the Board of Directors' meetings, and develop rules for preparing other documents related to decision-making, and ensure their appropriate implementation.  (3) Develop and implement rules regarding information security, and ensure thorough compliance with such rules through training and other programs.  (4) Provide proper external disclosure of information, including timely disclosure.</p>
<p><b>3. Rules and other systems for management of risk of loss</b></p> <p>(1) Analyze risks and clarify policy for handling them in the Board of Directors' meetings and the Executive Council.  (2) Develop and implement a system and rules for handling large fluctuations in economic conditions, resource prices and foreign currency exchange rates, along with natural disasters and other risks.  (3) Develop and implement a system and rules for handling crises and emergency situations.</p>
<p><b>4. System to ensure efficient execution of duties by directors and the employees</b></p> <p>(1) Establish and implement "Rules on Organization and Authority," and efficiently execute duties.  (2) Ensure appropriate and efficient approval by the president through discussions in the Executive Council before making decisions in the Board of Directors' meetings.  (3) Formulate the Medium-Term Management Plan, and develop and implement a management system.</p>
<p><b>5. System to ensure appropriate business operation within the corporate group</b></p> <p>(1) Ensure penetration and thoroughness of the "JX Group Mission Statement" and the "JX Group Values."  (2) Ensure presidents of core operating subsidiaries and others attend meetings of the Board of Directors and the Executive Council.  (3) Discuss group companies' business execution projects to a certain extent in the Board of Directors' meetings and the Executive Council of JX Holdings.  (4) Formulate and implement "Rules on operation of the JX group" and ensure thorough compliance with the rules.  (5) Establish and implement compliance systems and extend to group companies.</p>
<p><b>6. System to ensure effective auditing by the corporate auditors</b></p> <p>(1) Ensure respect for audit standards and audit plans, along with cooperation with the efficient execution of audits and the development of an audit environment.  (2) Ensure the corporate auditors attend meetings of the Executive Council and other meetings, and establish and implement a reporting system for requested items.  (3) Establish and implement a system for promptly reporting to corporate auditors regarding the discovery of material breaches of laws and regulations and the Articles of Incorporation, as well as any discovery of misconduct.  (4) Ensure the corporate auditors and management personnel exchange opinions regarding the group's management issues and other matters.  (5) Ensure close collaboration between the corporate auditors and the Internal Audit Department.  (6) Establish the Auditors Affairs Office independent of divisions responsible for business execution.</p>

## Risk Management

In the JX Group, each company has prepared risk management systems appropriate for their respective lines of business and implements measures in consideration of such individual risk related to compliance and occupational safety, environment, and other.

### ● Crisis Management

When crises or emergency situations arise that may significantly affect the management of the JX Group, JX Holdings exercises overall control and has prepared its Rules for Responding to Crises and Emergency Situations, which specifies measures to be taken to minimize the damage that may occur.

The General Administration Department of JX Holdings functions as the standing organizational unit in charge of crisis and emergency response and management, and the general manager of this department acts as head of this crisis response unit, and, when such situations arise, operating procedures require that the situation and measures to be taken be reported immediately to the head of the crisis response unit.

Also, depending on the magnitude of the crisis or emergency, at its discretion, JX Holdings may form a crisis response headquarters or a joint crisis response headquarters with JX Group companies to respond quickly and appropriately to the crisis.

### ● Information Security Management

Based on its Basic Rules for Information Security, the JX Group works to prevent the improper usage or disclosure, including leakage, of company information, which is a corporate asset. The JX Group also strives to maintain the accuracy and reliability of its corporate information as well as prevent falsification or erroneous handling while making it possible for authorized users of information to have constant access to information when they need it.

## Information Disclosure

### ● Disclosure Policy

JX Holdings is fully aware that the timely and proper disclosure of corporate information is a core issue of healthy capital markets and, to promote transparency in management, works to provide prompt, appropriate, and fair disclosure of information to shareholders and investors.

Systems have been prepared to obtain, manage, and disclose information on JX Holdings as well as information on JX Group companies quickly and accurately. Information that is subject to Timely Disclosure Rules is made public through the timely disclosure information transmission system (TDnet) provided by the Tokyo Stock Exchange and others, and the same information is made available on JX Holdings' website.

## CSR Management

### Basic Approach

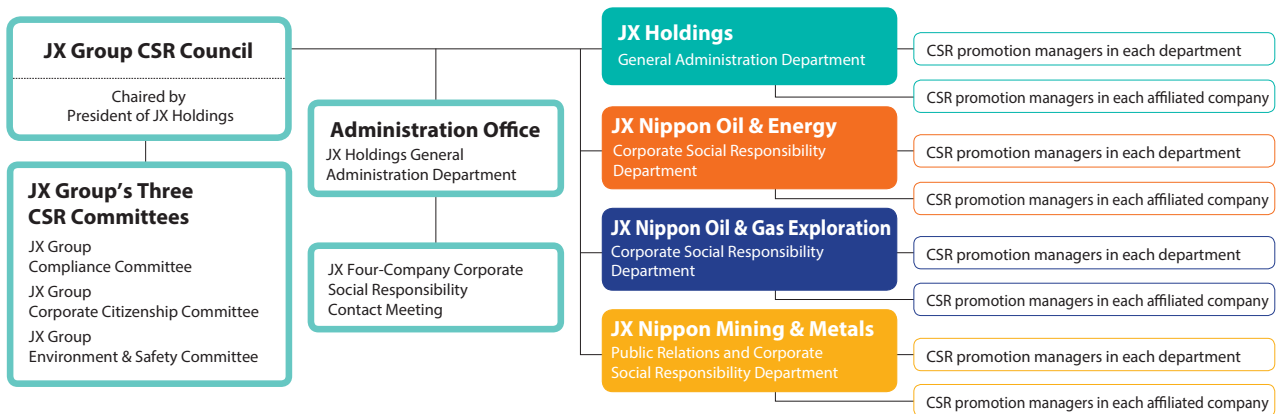
As a group of companies involved in the energy, resources and materials fields, which are vital for people's lives and economic activity, we believe that the embodiment of CSR is to ensure a stable and efficient supply of energy, resources and materials, as well as the implementation of the Mission Statement 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, Priority Fields and Results of Activities

The JX Group established the JX Group CSR Council, chaired by the president of JX Holdings, to formulate and carry out the Group's 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 in the JX Group 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. In addition, group CSR promotion managers attend annual conferences where they undergo training and exchange opinions.

The results of activities undertaken for priority fields designated by the three committees are presented below. 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.

### JX Group CSR Implementation Structure



### Priority Fields for JX Group's Three CSR Committees

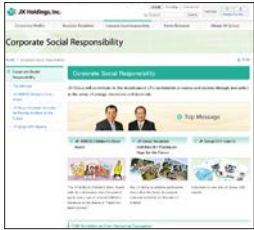
	FY2013	FY2014
<b>JX Group Compliance Committee</b>	<ul style="list-style-type: none"> <li>Globally systemize and standardize current compliance activities by referencing the corporate compliance system designated by the US Department of Justice</li> </ul>	<ul style="list-style-type: none"> <li>Enhance the quality of compliance checks</li> <li>Reinforce systems to prevent corruption and ensure compliance with competition law</li> <li>Establish internal whistle-blowing systems at overseas sites</li> </ul>
<b>JX Group Corporate Citizenship Committee</b>	<ul style="list-style-type: none"> <li>Promote continuous support activities for regions affected by the Great East Japan Earthquake</li> </ul>	<ul style="list-style-type: none"> <li>Provide support for children who are our future</li> </ul>
<b>JX Group Environment &amp; Safety Committee</b>	<ul style="list-style-type: none"> <li>Operate JX Group EMS</li> <li>Formulate the FY2013–2015 JX Group Medium-Term Environmental Management Plan</li> <li>Promote safety-related activities</li> </ul>	<ul style="list-style-type: none"> <li>Operate JX Group EMS</li> <li>Follow-up on the FY2013–2015 JX Group Medium-Term Environmental Management Plan</li> <li>Promote safety-related activities</li> </ul>

# 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 their 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>



- ▶ 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 Group
  - JX Group Mission Statement
  - Establishment of 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

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

## TOHO TITANIUM CO., LTD.

TOHO TITANIUM CO., LTD. ▶ About Us  
[http://www.toho-titanium.co.jp/en/about/quality\\_en.html](http://www.toho-titanium.co.jp/en/about/quality_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	p. 26
Principle 2	make sure they are not complicit in human rights abuses.	p. 26
Labour		
Principle 3	Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining;	p. 26
Principle 4	the elimination of all forms of forced and compulsory labour;	p. 26
Principle 5	the effective abolition of child labour; and	p. 26
Principle 6	the elimination of discrimination in respect of employment and occupation.	p. 26, p. 30
Environment		
Principle 7	Business should support a precautionary approach to environmental challenges;	pp. 27-28, 35-38
Principle 8	undertake initiatives to promote greater environmental responsibility; and	pp. 27-28, 32, 35-38
Principle 9	encourage the development and diffusion of environmentally friendly technologies.	pp. 27-28, 33
Anti-corruption		
Principle 10	Businesses should work against corruption in all its forms, including extortion and bribery.	pp. 25-26, 34

# Third-Party Opinion



## Masaatsu Doi

Associate Professor, Faculty of Social Policy & Administration, 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.

This year marks the fifth since the creation of JX Holdings in 2010. This year's report includes messages from the leaders of the Group's core operating subsidiaries, who were appointed in June of this year, and in those messages we can discern new basic policies and their features.

In the energy business sector, the Group is making a full-scale entry into social business in the form of a mega solar generating project, and I continue to have high expectations with regard to the Group's target of establishing 40 hydrogen stations by 2015. Also, in addition to the earthquake-ready service stations that the Group has been opening, "new earthquake-ready service stations" (pages 13–14) with flooding countermeasures and temporary evacuation site functions are steadily being opened around the country, raising expectations regarding the Group's contributions to the development of earthquake-resilient infrastructure. With regard to the Oil & Gas exploration and production business, oil and gas field projects in southeast Asia and Oceania are proceeding and being expanded, and dialogue with local residents as well as additional responses concerning environmental aspects and the preservation of biodiversity are desirable. In the metals business, full-scale production at the Caserones copper mine in Chile began in May of this year. The development of new copper concentrate and sulfuric acid carriers, discussed on page 28, will improve logistics efficiency and increase environmental value, and I hope that this type of new idea will likely be used in a wide range of fields in the future.

Various developments can be observed in the Group's CSR initiatives, and what was most impressive about this year's report was implementation of the CSR surveys targeting all JX Group employees (page 22) and its assessment. Looking to the results, we can see from the quantitative data that CSR is steadily advancing within the JX Group. It is particularly apparent that considerable efforts have been made over a number of years to incorporate CSR into day-to-day activities centered on promotion of the mission statement adopted by

the company in fiscal 2010. CSR means questioning the ways that profits are generated in core businesses, disclosing this information to stakeholders, and engaging in activities to win their trust. By using this type of survey, the JX Group is not only incorporating CSR into its day-to-day activities but also building stronger relationships of trust with its employees.

Below, I make three proposals for the JX Group to further advance its CSR management in the future.

First is incorporating CSR into the management process. As I have stated repeatedly in previous years, this means not only linking CSR and medium-term management plans, but also rigorously scrutinizing both financial and non-financial aspects in management conferences. In order to do this, transferring CSR division functions to management planning or management strategy or creating inter-departmental organizations to address specific topics relating to human resources, legal affairs, procurement, and CSR are possible measures. At that time, it is also necessary to reconsider responsible boundaries that identify the scope of effects (i.e., the scope of responsibility) of the company's business activities on individual topics. One of the difficulties regarding CSR in recent years is that those boundaries are changing, and their delineation must be justified.

Second, while this may be something that is being implemented by the core operating companies, in order to address diverse CSR issues, it is also necessary for the Group as a whole to engage in dialogue with stakeholders such as expert nonprofit or nongovernmental organizations. It appears that until now, the Group's approach to NPOs and NGOs has been the provision of support. With regard to labor, human rights, and other issues in developing countries, it is crucial that we proactively position NPOs and NGOs as strategic partners that will enhance the company's sustainability.

Third, I look forward to the JX Group using its resources to build systems that evoke social innovation that can solve various social issues. This will also serve as a framework that can support the independent thinking and exercise of initiative for proactive action clearly identified by the recent CSR survey. As an organization that oversees the group as a whole, I look forward to seeing the holdings company starting design of a comprehensive system to do this. This type of effort cannot be completed quickly, but I believe that they will lead to enhanced organizational capabilities and greater sustainable competitiveness by the group overall.

## Response to Third-Party Opinion

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

The JX Group has undertaken CSR initiatives and worked to disseminate its Group Mission Statement since its foundation, and we appreciate Associate Professor Doi's high regard for the CSR survey results and analysis conducted this year.

Associate Professor Doi also made suggestions concerning our future actions. We will consider these proposals carefully, continue our investigations regarding the incorporation of CSR into the management process, and conduct further dialogue regarding our relationships with NPOs and NGOs. We will not allow ourselves to be satisfied with past

measures addressing various social issues, but will work to achieve new perspectives and propose new policies that will lead to solutions.

The JX Group remains dedicated to contributing to the development of a sustainable economy and society while gaining the understanding and cooperation of our stakeholders.

## Ichiro Yamamoto

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



# Independent Practitioner's Assurance Report

(TRANSLATION)

## Independent Practitioner's Assurance Report

September 29, 2014

Mr. Isao Matsushita,  
Representative Director, President,  
JX Holdings, Inc.

Hiroshi Inanaga  
Chief Executive Officer  
Deloitte Tohmatsu Evaluation and Certification Organization Co., Ltd.  
3-3-1, Marunouchi, Chiyoda-ku, Tokyo

We have undertaken a limited assurance engagement of the quantitative environmental information (the "quantitative environmental information") for the year ended March 31, 2014 that included in P. 35-38 of the "JX Report for a Sustainable Future 2014" (the "Report") of JX Holdings Inc. (the "Company").

### The Company's Responsibility

The Company is responsible for the preparation of the quantitative environmental information in accordance with the calculation and reporting standard adopted by the Company (the Report P. 35-38). Greenhouse gas quantification is subject to inherent uncertainty for reasons such as incomplete scientific knowledge used to determine emissions factors and the values needed to combine emissions of different gases.

### Our Independence and Quality Control

We have complied with the independence and other ethical requirements of the Code of Ethics for Professional Accountants issued by the International Ethics Standards Board for Accountants, which is founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality and professional behavior. We apply International Standard on Quality Control 1, *Quality Control for Firms that Perform Audits and Reviews of Financial Statements, and Other Assurance and Related Services Engagements*, and accordingly maintains a comprehensive system of quality control including documented policies and procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements.

### Our Responsibility

Our responsibility is to express a limited assurance conclusion on the quantitative environmental information based on the procedures we have performed and the evidence we have obtained. We conducted our limited assurance engagement in accordance with the International Standard on Assurance Engagements ("ISAE") 3000, *Assurance Engagements Other than Audits or Review of Historical Financial Information*, issued by the International Auditing and Assurance Standards Board ("IAASB"), and ISAE3410, *Assurance Engagements on Greenhouse Gas Statements*, issued by the IAASB.

The procedures we performed were based on our professional judgment and included inquiries, observation of processes performed, inspection of documents, analytical procedures, evaluating the appropriateness of quantification methods and reporting policies, and agreeing or reconciling with underlying records. These procedures also included the following:

- Evaluating whether the Company's methods for estimates are appropriate and had been consistently applied. However, our procedures did not include testing the data on which the estimates are based or reperforming the estimates.
- Undertaking site visits to assess the completeness of the data, data collection methods, source data and relevant assumptions applicable to the sites.

The procedures performed in a limited assurance engagement vary in nature and timing from, and are less in extent than for, a reasonable assurance engagement. Consequently, the level of assurance obtained in a limited assurance engagement is substantially lower than the assurance that would have been obtained had we performed a reasonable assurance engagement.

### Limited Assurance Conclusion

Based on the procedures we have performed and the evidence we have obtained, nothing has come to our attention that causes us to believe that the Company's quantitative environmental information is not prepared, in all material respects, in accordance with the calculation and reporting standard adopted by the Company.

The above represents a translation, for convenience only, of the original Independent Practitioner's Assurance report issued in the Japanese language.



## JX Holdings, Inc.

6-3 Otemachi 2-chome, Chiyoda-ku, Tokyo 100-8161, Japan  
<http://www.hd.jx-group.co.jp/english/>

General Administration Department  
Inquiries (e-mail): [csr@hd.jx-group.co.jp](mailto:csr@hd.jx-group.co.jp)

After you have read the JX Report for a Sustainable Future 2014, feel free to submit any opinions or comments you may have via email.  
Please send an email.



The Morningstar Socially Responsible Investment Index, in which JX Holdings is included (as of the end of September 2014), 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.



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 CO<sub>2</sub> by Japanese forests.