# **JX** Report

for a Sustainable Future 2010

# The Future of Energy, Resources and Materials



JX Holdings, Inc.



The JX Group was formed in April 2010 in quest of a sustainable future.

Under our new mission statement, the JX Group aims to make major advances in the fields of energy, resources and materials. Guided by the slogan of "The Future of Energy, Resources and Materials," the JX Group is determined to shape the future.

## **JX Group Mission Statement**

## JX Group Slogan

## The Future of Energy, Resources and Materials

## **JX Group Mission Statement**

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

## **JX Group Values**

Our actions will respect the **EARTH**.

## **E**thics

Advanced ideas

Relationship with society

Trustworthy products/services

Harmony with the environment

#### About JX

The name "JX" symbolizes the JX Group's mission statement. 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 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.



## **Editorial Policy**

The JX Group marked a new beginning as an integrated energy, resources and materials company following the management integration of Nippon Oil Corporation and Nippon Mining Holdings, Inc. on April 1, 2010. This is the JX Group's first Corporate Social Responsibility (CSR) report.

The JX Group has prepared this report in order to be accountable with respect to CSR to shareholders and other investors, customers, employees and local communities while deepening communication and fulfilling stakeholders' expectations in this regard.

We have structured the report around the JX Group's newly established mission statement and Group values, in order to explain its activities clearly. To illustrate how we are pursuing the JX Group's mission of "contributing to a sustainable economy and society," we have summarized information on our core operating companies' business operations and the distinctive social issues faced by each business in the feature section. Moreover, we also present our policy for JX Group activities based on the Group's five values as represented by the acronym EARTH, along with the results for these activities in fiscal 2009.

Furthermore, various JX Group companies, including JX Holdings, Inc. and the three core operating companies, disclose a variety of CSR-related information on their websites. Information on these websites is summarized on pages 39–40 for easier access.

#### Scope of Report

JX Holdings, Inc. and its 10 main Group companies.

JX Nippon Oil & Energy Corporation and its 24 main Group companies

JX Nippon Oil & Gas Exploration Corporation and its 26 main Group companies

JX Nippon Mining & Metals Corporation and its 38 main Group companies

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

#### Reporting Period

The report mainly covers activities and results from April 2009 to March 2010, although some information from April 2010 onwards is also included, as the JX Group was formed in April 2010.

## Guidelines Used as Reference

- Sustainability Reporting Guidelines, Version 3.0, GRI (Global Reporting Initiative)
- Environmental Reporting Guidelines (2007 Edition), Ministry of the Environment, Japan.
- The GRI Mining and Metals Sector Supplement

## **Enhancing Reporting Reliability**

Environmental data on pages 35–38 have been reviewed by an independent body to ensure objective and reliable reporting. This report has been granted the environmental reporting assurance and registration mark, which shows that the report meets the standards for sustainability report assurance and registration established by The Japanese Association of Assurance Organizations for Sustainability Information (http://www.j-sus.org)

## Forward-looking Statements

This report contains forward-looking statements that are not historical facts, and that reflect management's judgment as of the time of preparation. Please note that actual results may vary significantly from such projections and forecasts due to various known and unforeseeable risks and uncertainties. JX Holdings cannot guarantee the accuracy of the targets, assumptions, expectations, projections, plans and evaluations and other similar information contained in forward-looking statements, or that they will be realized without qualification in the future.

## **Contents**

Management Message	3
At a Glance	5
The JX Group's Businesses and CSR	7
Petroleum Refining and Marketing Business	7
Special Issue—Helping to Achieve a Low-Carbon Society	9
Oil and Gas Exploration and Production Business	11
Special Issue—A Stable Supply of Energy	13
Metals Business	15
Special Issue—Helping to Achieve a	
Sound Material-Cycle Society	17
JX Group Management	19
Corporate Governance	19
JX Group Values	21
Respecting the EARTH	21
Ethics	22
Compliance	22
Risk Management	23
Human Rights	24
Advanced Ideas	25
Technology and R&D	25
Relationship With Society	27
Stakeholders	27
Corporate Citizenship	29
Trustworthy Products/Services	31
Quality and Product Safety	31
Customer Satisfaction	32
Environmentally Friendly Products	33
Purchasing and Procurement	34
Harmony With the Environment	35
Environmental Targets and Achievements	35
Global Warming Prevention	36
Air Pollution Prevention  Water Resources Protection	37 37
Chemical Substances Management	38
Waste Reduction	38
Guide to JX Group Websites	39
Third-Party Opinion	41
Independent Review Report	42

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



Shinji Nishio Chairman and

Representative Director

Mitsunori Takahagi President and Representative Director

## We are pioneering the future of energy, resources and materials.

JX Holdings was established in April 2010 through the management integration of Nippon Oil Corporation and Nippon Mining Holdings, Inc., two companies each with century-long histories in business. In July 2010, all businesses of both corporate groups were reorganized under JX Holdings, resulting in the incorporation of three core business companies: JX Nippon Oil & Energy, JX Nippon Oil & Gas Exploration and JX Nippon Mining & Metals. This step marked the full-fledged launch of the JX Group, imbued with all the dynamism of a new start.

Operating in the domains of energy, resources and materials, the JX Group is confronting more structural changes in its business environment than ever before. The spread of fuel-efficient vehicles, an ongoing switch in the types of energy consumed, and other changes are eroding demand for oil in Japan. At the same time, demand for energy and natural resources is holding firm, led by growth in newly emerging markets. Consequently, prices for energy and resources remain elevated, buoyed by intense competition to secure resources, rising resource nationalism, and the ebb and flow of speculative capital, among other factors. In this situation we expect the potential for extreme volatility will persist for some time. Growing awareness of the urgent need to address global environmental problems, as well as progress in the movement to develop low-carbon, recycling-oriented societies in advanced nations, have also emerged as critically important considerations in shaping the trajectory of JX Group businesses.

Given these business conditions, at the JX Group, all Group employees are united in a singular determination to become one of the largest integrated energy, resources and materials business groups in the world, with operations in Petroleum Refining and Marketing, Oil and Gas E&P, and Metals.

## For the JX Group, fulfilling our mission statement is synonymous with CSR.

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

For the JX Group, innovation has a multitude of meanings. In addition to radically transforming the business structure in the Petroleum Refining and Marketing Business, innovation includes researching and developing new types of energy; promoting new exploration and further development in the Oil and Gas E&P Business; applying new technologies to boost production volumes and reduce costs; pushing ahead with new mine development and the development of new smelting and refining techniques in the Metals Business; and pursuing product development, along with the creation of new markets, in growth fields targeted by the Group. Our overarching mission, through repeated initiatives of this kind, is the stable and efficient supply of the energy, resources and materials essential to people's lives. Furthermore, given the field in which we conduct business, our business activities themselves are closely linked with the natural environment. As such, we consistently work to reduce our environmental impact while meeting the public's demand for development of a sustainable economy and society. Failure to consistently conduct our business in this way would not only prevent the Group from earning stakeholder trust, but would ultimately push it out of the marketplace. Conversely, aggressively tackling these issues will win a high degree of public trust in the JX Group, and will ultimately raise the Group's corporate value. For this reason, we view the business activities that we pursue each day to fulfill our Group mission statement as synonymous with the kind of CSR activities that the JX Group should strive for.

## Our entire workforce is involved in autonomous activities aligned on a common vector.

It is not enough to simply state that the fulfillment of the Group mission statement alone constitutes CSR for the JX Group. Building a reputation for the JX Group as a company with an advanced stance on CSR requires all executives and regular employees to be aligned on the same vector, and to assume a more autonomous approach when taking action. To this end, we formulated the JX Group Values as a set of guidelines based on five concepts: "Ethics," "Advanced ideas," "Relationship with society," "Trustworthy products/services," and "Harmony with the environment." By moving in step with these guidelines to put our mission statement into practice, we are embedding a determination to pioneer the future in the actions we take each day, as we strive to meet the demands of our wide range of stakeholders. Furthermore, by sharing our Group mission statement and putting the JX Group Values into practice, we hope to create a new corporate culture, which will be critical for the future of the newly integrated JX Group.

## Group companies are individually committed to meeting their social responsibilities.

Moving along this common vector, JX Holdings and the companies comprising the JX Group will promote responsible business activities.

More specifically, among other activities, the three core operating companies with pursue measures as follows:

JX Nippon Oil & Energy

- Pursue extensive operational safety and stability at refineries and other facilities
- Develop service stations capable of supplying fuel following earthquakes

 Develop and market a variety of environmentally friendly products and services, such as environmental high-octane gasoline, and residential-use fuel cell systems, solar power generation systems, and other energy systems

JX Nippon Oil & Gas Exploration

- · Strive for operational safety, particularly in its operated projects
- Ensure stable oil and gas supplies
- Promote greenhouse gas reduction activities, including CDM at the Rang Dong Oil Field

JX Nippon Mining & Metals

- Ensure safety and prevent fires and other accidents at smelting, refining and other facilities
- Efficiently extract, smelt, refine, process and recycle non-ferrous metal resources
- · Collect rare metals from used lithium-ion batteries

In addition to these day-to-day actions, we actively promote a social contribution program that includes supporting the healthy development of the next generation through sports, promoting cultural events, publishing original collections of children's literature, providing donations, and offering scholarship assistance through the JX Children's Literature Awards, as well as environmental protection and volunteer activities with close ties to local communities.

# We will actively fulfill our social responsibilities as a global corporation.

In July 2010, JX Holdings announced its participation in the United Nations Global Compact. A month later, JX Holdings was joined by its three core operating companies, which announced their own participation in the compact. As one of the world's largest integrated energy, resources and materials business groups, the JX Group is determined to contribute to the future of our planet through proactive steps to meet its social responsibilities as a global citizen.

In promoting CSR, it is extremely important that we address the expectations and needs of all of our stakeholders with sincerity, and that we reflect this commitment in the initiatives that we pursue. With the JX Group now making a new start, we hope that stakeholders will share with us their opinions of our CSR activities, and that, through mutual dialogue, we can spur further progress in CSR at the JX Group.

In closing, we ask for your understanding and support of the JX Group as we move forward.

S. Nichio

JX Holdings, Inc.

Shinji Nishio

Chairman and Representative Director

M. Jakahagi

Mitsunori Takahagi

President and Representative Director

## **Company Overview**

Company Name: JX Holdings, Inc.

Representatives: Shinji Nishio Chairman and Representative Director

Mitsunori Takahagi President and Representative Director

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

Established: April 1, 2010

Capital: ¥100 billion

## JX Group:

## JX Holdings, Inc.

(Holding Company)



JX Nippon Oil & Energy Corporation

Petroleum Refining and

Marketing Business



JX Nippon Oil & Gas Exploration Corporation
Oil and Gas Exploration and
Production Business

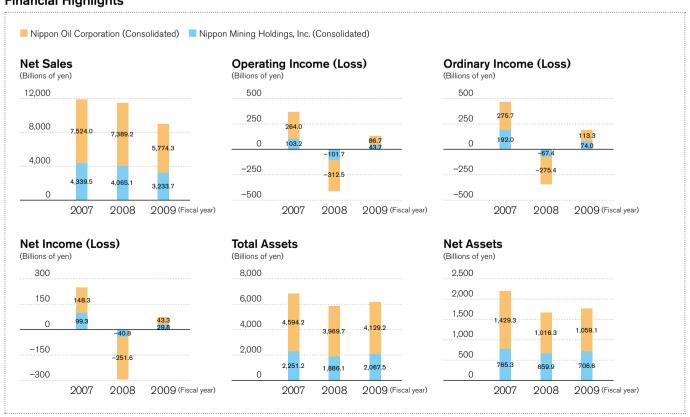


JX Nippon Mining & Metals Corporation
Metals Business

Listed Subsidiaries NIPPO CORPORATION Toho Titanium Co., Ltd., etc.

Common Group Function Companies Independent Companies

## **Financial Highlights**



## Medium-Term Management Plan for FY 2010-2012

## [Basic policy]

- With emphasis on the concept of "Best Practices,"
- dramatically transform the Petroleum Refining & Marketing Business by realizing integration synergies and rigorously reducing costs,
- and maximize corporate value by allocating management resources to highly profitable operations on a priority basis.

## [Targets (Fiscal 2012)]

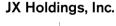
Ordinary income ROE Net Debt/Equity ratio	¥300 billion or more 10% or higher 1 times
Capital expenditure and financial investments	¥960 billion (FY2010-2012 total)
Dividend policy	Redistribute profits by reflecting consolidated business results while striving to maintain stable dividends

#### **Key Assumptions (Fiscal 2012)**

- Exchange rate ¥90/US\$
- Crude oil FOB (Dubai spot)
   US\$80/bbl
- Copper price (LME) 280 ¢/lb

## Long-Term Vision for FY 2020

Become one of the world's leading integrated energy, resources and materials business groups with new energy-related businesses





## **Petroleum Refining and Marketing**

Slim, robust production operations aligned with demand Goal: Refining capacity of 1,000 thousand barrels/day

## Oil and Gas Exploration and Production

Become an oil and gas E&P company that achieves sustained growth on the basis of operatorship

Goal: Produce 200 thousand barrels/day of crude oil and natural gas (equity basis)

#### Metals

Secure resources and develop businesses to meet societies' eco needs

Goal: Equity-entitled copper mine production ratio of 80%

## **New Energy**

#### Establish profitability

Goal: Fuel cell sales of 300 thousand units/year (including exports)

## **Petroleum Refining and Marketing Business**



Paraxylene production capacity: 2,620 thousand tons per year (No. 1 in Asia)



## Yasushi Kimura Representative Director,

President and Executive Officer
JX Nippon Oil & Energy Corporation

## Company Overview (As of July 1, 2010)

## **Head Office Location**

6-3 Otemachi 2-chome, Chiyoda-ku, Tokyo 100-8162, Japan

## Capital

¥139.4 billion

#### Shareholder

JX Holdings, Inc. (100% investment)

#### Number of Employees (Consolidated)

Approx. 12,500

## Main Businesses

Refining and marketing of petroleum and petrochemical products

# JX Nippon Oil & Energy Corporation

(No. 1 in Japan)

JX Nippon Oil & Energy Corporation was formed in July 2010 through the integration and realignment of Nippon Oil Corporation, Nippon Petroleum Refining Co., Ltd. and Japan Energy Corporation. As an integrated energy company for Japan, JX Nippon Oil & Energy conducts daily business activities to deliver efficient and stable supplies of energy. At the same time, the company recognizes that it has a social responsibility to harmonize its activities with the global environment and supply energy in ways that help to reduce environmental impact.

Faced with an increasingly challenging operating environment, JX Nippon Oil & Energy aspires to remain a company that is trusted by and useful to society. To this end, JX Nippon Oil & Energy must dramatically transform its business. To reach its aspirations, the company is executing a business strategy based on four key themes: "Realize integration synergies," "Develop the No. 1 competitiveness in refining and marketing in Japan," "Enhance overseas business," and "Develop new energy businesses." Every director and employee has embraced the JX Group Mission Statement and the pursuit of "innovation." Through these measures, JX Nippon Oil & Energy is committed to pioneering the future of energy.

## Imports and Stockpiling

Japan imports approximately 90% of all crude oil used in the country from Middle Eastern oil-producing nations in the Persian Gulf region. This crude oil must be transported to Japan across a 12,000 km sea route. JX Nippon Oil & Energy is working to reduce  $CO_2$  emissions by raising transport efficiency through the use of larger tankers and through rigor-



Tanker (Double hull)

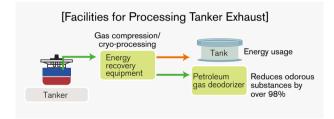
ous operation control to ensure proper tanker speed.

The JX Nippon Oil & Energy Group is also committed to preventing the release of crude oil into the environment as a result of accidents at sea. The Group has converted all of its tankers into double-hull tankers ahead

of legislation due to enter force in 2015.

Nippon Oil Staging Terminal Co., Ltd. has installed crude oil tanker exhaust processing facilities at its storage terminal site.

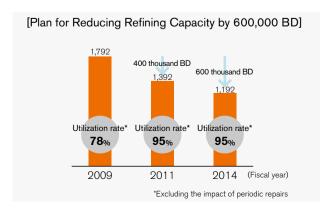
A first for Japan, these facilities for capturing and processing exhaust gas from crude oil tankers entered operation in May 2007. The facilities recover nearly 70% of volatile organic compounds (VOCs) in tanker exhaust for effective reuse as energy. The remaining VOCs and odorous substances are processed using a petroleum gas deodorizer.



## Refining and Production

In the refining division, we aim to maximize merger synergies by implementing several measures made possible by the integration. These include 1) Reduce refining capacity, 2) Integrate operation of the Mizushima Refinery, 3) Unify production plans, and 4) Pursue rationalization in crude oil procurement, supply coordination, and transportation divisions.

Our annual paraxylene production capacity has reached 2,620 thousand tons. By considering further increases in capacity, we aim to capture demand from the growing Asian market.



#### Sales

The JX Nippon Oil & Energy Group has combined the ENEOS and JOMO service station brands to launch the new ENEOS brand.

The new ENEOS service station network is the largest of its kind in Japan, with approximately 13,000 locations and a 35% share of domestic fuel oil sales. By consistently taking the customer's perspective and offering products, services and technologies to meet the needs of the times, the JX Nippon Oil & Energy Group aims to earn the full trust and support of its customers and to become Japan's strongest service station brand.

## New ENEOS Card







The JX Nippon Oil & Energy Group offers a lineup of three new credit cards tailored to various customer lifestyles: ENEOS Card C (Cash Back), ENEOS Card P (Point) and ENEOS Card S (Standard).

#### **Biomass Fuels**

Attention is turning to these fuels as a means of countering global warming since their raw materials are plants, which absorb CO<sub>2</sub> as they grow. With the completion of Japan's first bio-ETBE\* production plant in October 2009 at the Negishi Refinery, the JX Nippon Oil & Energy Group has established a biogasoline production structure in Japan. Biogasoline, which is regular gasoline blended with bio-ETBE, has already been sold primarily in the Tokyo metropolitan area. From June 2010, we began sales of ENEOS VIGO (Bio) premium gasoline. From September, the phased launch of ENEOS VIGO (Bio) sales will commence in Western Japan.

In addition, together with Hitachi Plant Technologies, Ltd. and euglena Co., Ltd., the JX Nippon Oil & Energy Group has begun a joint research project on the production of biojet fuel made from the microalgae euglena.

\*Stands for Ethyl Tertiary Butyl Ether

## The Future of Energy

To pioneer the future of energy, the JX Nippon Oil & Energy Group is promoting fuel cell, solar power generation and storage battery businesses.

To encourage wider uptake of next generation vehicles such as fuel cell and electric vehicles (EVs), the Group takes an active part in demonstration



SOENE Service Station

projects for hydrogen refueling stations and EV charge stations.

In March 2010, the Group opened the futuristic SOENE Service Station, which maximizes the use of solar energy, in Toyoake City, Aichi Prefecture. SOENE Service Stations will use solar electricity generated on-site as part of the service station's power supply, as well as to recharge electric vehicles.

## **Special Issue**

Kukkula Hirugano Tower Hall

JX Nippon Oil & Energy Corporation

# Helping to Achieve a Low-Carbon Society



Hands-on training at the Solar Power System Installation Training Center

Pioneering the Future of Home Energy as an Integrated Energy Company

# Aiming to Supply Energy in Support of a Low-Carbon Society

Various new energy devices and energy

saving equipment

For more than 100 years, the Nippon Oil Group and the Nippon Mining Group have contributed to the development of Japan, which lacks many natural resources, through the continued efficient and stable supply of energy, mainly petroleum.

As public interest in global warming and climate change issues increases, we must give top priority to living in harmony with the environment by optimally combining natural energy sources and fossil fuels.

To this end, JX Nippon Oil & Energy is actively engaged in supplying forms of energy that support a low-carbon society such as fuel cells, solar power generation and storage batteries.

In particular, we have pursued fuel cell research for more than 20 years based on hydrogen production and catalyst development technologies developed through our petroleum refining operations. We have focused on developing residential-use fuel cell systems (ENE-FARM\*), because these systems are expected to sharply reduce greenhouse gas emissions in the household sector.

\*The ENE-FARM system supplies electricity and heat (hot water) simultaneously using hydrogen extracted from fossil fuels and other sources and oxygen in the air.

## Popularizing Residential-use Fuel Cells

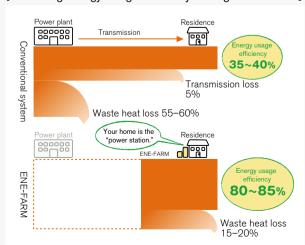
In fiscal 2008, Japan's annual greenhouse gas emission volume totaled 1,282 million tons, an increase of 1.6% over the fiscal 1990 benchmark set in the Kyoto Protocol. With substantial increases in household emissions volume, innovation in residential energy usage will be needed to achieve the Japanese government's commitment to reducing greenhouse gas emissions by 6% from the 1990 level. Against this backdrop, a Government-sponsored Large-Scale Demonstration Project for stationary fuel cells was held from fiscal 2005 to fiscal 2008 as a national project. As a participant in this project JX Nippon Oil & Energy has been contributing to research directed at the commercial use of ENE-FARM.

Following this and other demonstration projects, ENE-FARM was launched in fiscal 2009, and has entered commercial use.

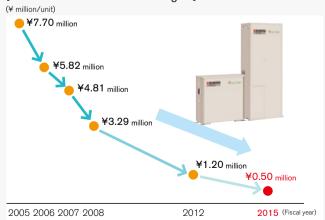
At JX Nippon Oil & Energy, ENEOS CELLTECH Co., Ltd., the developer and manufacturer of ENE-FARM, commenced operations at a new plant in April 2009. In May 2009, full-scale ENE-FARM sales began in the domestic market ahead of the rest of the world. In fiscal 2009, ENE-FARM sales volume was 1,250 units.

Going forward, we aim to reduce the ENE-FARM selling price to ¥500,000 per unit in fiscal 2015 through further cost reductions, with the view to promoting broader use of ENE-FARM.

#### [Enhancing Energy Usage Efficiency Through ENE-FARM]



## [ENE-FARM Cost Reduction Targets]



# Increasing the Penetration of Solar Power Generation Systems

As an integrated energy company, JX Nippon Oil & Energy is actively promoting the use of solar power.

Solar power generation systems convert the sun's energy directly into electricity. An outstanding feature of such systems is that they emit no greenhouse gases during power generation. Moreover, making solar power generation systems more compact has very little effect on their power-generating efficiency. For this reason, these systems are suitable for use as distributed power sources for every home.

Solar power generation systems have been rapidly penetrating society, supported by upgraded and expanded national and local government subsidy programs, the start of a surplus power purchasing system and other factors. To further strengthen the solar power generation business, in June 2010 we opened the Solar Power System Installation Training Center within the Kawasaki Plant. The Training Center offers classes on systems basics, design, and installation work and points of caution, as well as hands-on training using a mock roof. These classes are provided to JX Nippon Oil & Energy employees, as well as employees of dealerships that sell solar power generation systems and installation companies. By having these personnel attend the training program, we are able to develop a system that enables customers to put their full confidence in us in all aspects of solar power generation systems, from sales to installation and management.

JX Nippon Oil & Energy's sales personnel specializing in energy devices offer both solar power generation systems and ENE-FARM, and can handle installation of "Double Power Generation" systems combining both of these systems.





Shota Yagi
New Energy Planning Group
System Integration Business Dept.
Energy System Business Division
JX Nippon Oil & Energy Corporation

## Aiming to Promote Wider Use of "Double Power Generation" Systems

In "Double Power Generation" systems, which combine solar power generation and ENE-FARM, ENE-FARM-generated electricity is prioritized for household use. Therefore, electricity sold back to the grid is greater than when only a solar power generation system is installed.

ENE-FARM also produces hot water while generating electricity. This helps to enrich the lives of households, while promoting energy efficiency.

By encouraging wider use of "Double Power Generation" systems, JX Nippon Oil & Energy will help to reduce greenhouse gas emissions in the household sector.

## Optimal Combination of Natural Energy Sources and Fossil Fuels Eco-friendly Multi-Energy System

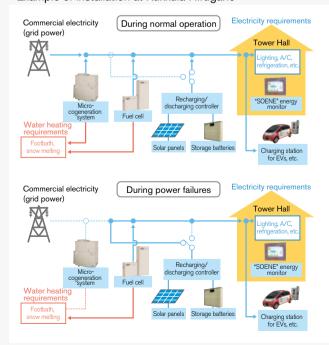
JX Nippon Oil & Energy is conducting demonstration trials of an Ecofriendly Multi-Energy System, which improves on "Double Power Generation" systems that optimally combine the use of natural energy sources and fossil fuels. As shown in the chart to the right, the Eco-friendly Multi-Energy System is a complex system that combines various new energy devices and energy-saving equipment. It is a clean, energy-efficient system that can control power generation and recharging/discharging of each device, in accordance with power consumption requirements.

In June 2010, JX Nippon Oil & Energy installed the new system at Kukkula Hirugano, a private-sector commercial facility in Gujo City, Gifu Prefecture. This facility has been selected as a "Next-generation Energy Park" as part of an initiative promoted by the Ministry of Economy, Trade and Industry. Together with Gifu Prefecture, JX Nippon Oil & Energy will conduct demonstration trials of the new system over the course of one year. The new system was designed to reflect the results of the demonstration trial of ENEOS SOENE House, an experimental residence built in March 2009 in Yokohama City, Kanagawa Prefecture. Even during power failures caused by natural disasters or other events, the system will switch to independent operation, enabling the stable supply of electricity and hot water.

JX Nippon Oil & Energy will continue to tackle the challenge of developing optimal energy systems in terms of environmental and economic performance, as well as comfort, while remaining focused on the needs of people in their daily lives.

## [Overview of Eco-friendly Multi-Energy System]

-Example of installation at Kukkula Hirugano-



## Oil and Gas Exploration and Production (E&P) Business



Crude oil and natural gas production: 143 thousand Barrels per Day (BD)

(Equity basis: Crude oil equivalent)



## Makoto Koseki

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

## Company Overview (As of July 1, 2010)

## **Head Office Location**

6-3 Otemachi 2-chome, Chiyoda-ku, Tokyo 100-8163, Japan

## Capital

¥9.8 billion

#### Shareholder

JX Holdings, Inc. (100% investment)

#### Number of Employees (Consolidated) Approx. 800

## Main Businesses

Exploration, development and production of oil and gas

## JX Nippon Oil & Gas Exploration Corporation

JX Nippon Oil & Gas Exploration Corporation is the result of the integration of Nippon Oil Exploration Limited and Japan Energy Development Co., Ltd. on July 1, 2010. The company is responsible for oil and gas E&P activities as one of the three core business companies of the JX Group.

JX Nippon Oil & Gas Exploration is currently involved in oil and gas exploration, development and production projects in 15 countries around the world. The company has positioned Vietnam, Malaysia and the U.K. North Sea as core countries under the medium-term management plan, and is leading projects as operator in such countries. We have also been promoting a crude oil production project in the United Arab Emirates for more than 30 years, as well as oil and gas production projects in Japan.

With recent rises in crude oil prices, an increase in resource nationalism, and growing demand from developing nations, JX Nippon Oil & Gas Exploration expects to face tougher competition in acquiring resources in the future. Under these circumstances, as one of the core business companies of the JX Group, we will maintain a high standard of ethics, build a strong relationship with society and strive to harmonize with the environment while actively promoting business operations. In addition, we aim to strengthen the relationships between resource-poor Japan and oil and gas producing countries by contributing to the development of these countries through our business activities.

## Exploration, Development and Production of Oil and Gas

Under the medium-term management plan, the basic strategy for JX Nippon Oil & Gas Exploration is to maintain and expand production over the medium to long term. To continue to grow as an oil and gas E&P company focused on operatorship, we will take the following measures:

## (1) Lay the groundwork for growth

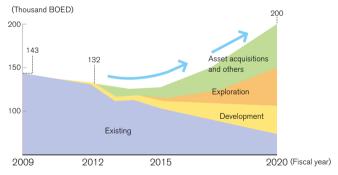
- · Reserves replacement and expansion Primarily through exploration, aim to increase future production. At the same time, acquire assets based on comprehensive risk analysis.
- · Pursuit of additional development projects Pursue additional development mainly in core countries of operation (Vietnam, Malaysia and the U.K. (North Sea)).
- · Application of new technologies: enhanced oil recovery, etc.

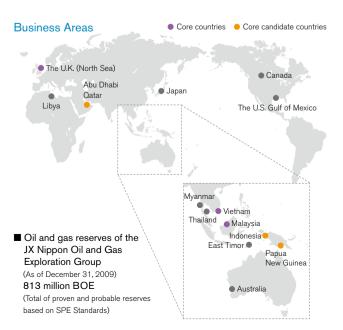
## (2) Restructure the asset portfolio

Allocate resources with a focus on core countries

To carry out these measures JX Nippon Oil & Gas Exploration plans to make capital expenditure and financial investments of ¥320 billion over the three years from fiscal 2010. In fiscal 2020, the final year of our long-term vision, we are targeting crude oil and natural gas production of 200,000 Barrels Oil Equivalent per Day (BOED).

#### Production Forecast for Oil and Gas





## Overview of Business in Core Countries Vietnam...FY2009 Sales Volume 14,000 BOED

We acquired a working interest in Southern Vietnam offshore Block 15-2 as operator in 1992. In 1994 we discovered the Rang Dong Oil Field and started production in 1998. In July 2008 we achieved cumulative production volume of 150 million barrels.

Since much of the oil from the Rang Dong Oil Field accumulates in fractures that have formed in the granite basement rock, we have applied advanced fracture evaluation, horizontal borehole drilling, and artificial lift techniques to maximize production from the oil field. The basement rock development and production techniques obtained in such process have become one of our key strengths. In other blocks in Vietnam, we are advancing exploration activities not only in basement rock, but also in sandstone.

Moreover, as part of our corporate activities, JX Nippon Oil & Gas Exploration is making a tangible contribution to improving the lives of the people of Vietnam. These efforts include social contribution activities and greenhouse gas emissions reduction measures such as a clean development mechanism (CDM)\* project to recover associated gas.

\*The clean development mechanism (CDM) is a mechanism under the Kvoto Protocol, Developed countries and developing countries cooperate in implementing a project which reduces the emissions of the greenhouse gases (GHGs) such as CO<sub>2</sub>. This project served as a model for establishing the CDM methodology, which is as of August 2010 being used in over 30 projects around the world that recover and reuse associated gas.

#### Malaysia...FY2009 Sales Volume 61,000 BOED

In 1987 we acquired a participating interest in Block SK10, offshore Sarawak, and in 1990 discovered the Helang Gas Field. In 1991 we acquired a participating interest in Block SK8, and discovered the Jintan Gas Field and other fields.

Subsequently, we joined with Malaysian national oil company, Petronas, Shell and others to establish a liquefied natural gas (LNG)\* project using the discovered gas as feed gas, and since 2003 we have been selling LNG to power companies as fuel for power generation, and to gas companies for use as city gas (including in Japan). By participating in natural gas exploration, development and production through to LNG sales, JX Nippon Oil & Gas Exploration Corporation is, together with other JX Group companies, contributing to the stable supply of LNG to consumer nations, including Japan.

\*Liquefied natural gas (LNG) is a form of natural gas consisting mainly of methane and is liquefied by refrigeration to around minus 160 degrees Celsius after impurities such as water, sulfur and carbon dioxide have been removed. Liquefaction reduces the volume of natural gas to 1/600, allowing LNG to be transported and stored efficiently. Moreover, compared with petroleum or coal, LNG emits less greenhouse gases and atmospheric pollutants such as nitrogen oxides and sulfur oxides when it is burned. As such, it has been drawing much attention as a cleaner and preferred energy option.

## The U.K. (North Sea)...FY2009 Sales Volume 13,000 BOED

With its established local laws, regulations, and tax regime relating to the exploration and production of oil and gas, and well-developed operating infrastructure, the U.K. North Sea is a strategic area for JX Nippon Oil & Gas Exploration to carry out exploration and production activities. We have been acquiring E&P assets since 1994, and currently hold interests in more than 10 producing oil and gas fields, including the Brae Oil and Gas Fields, and the Magnus Oil Field. We are also actively pursuing exploration, and are currently studying options for development of natural gas discovered at the Culzean prospect in Block 22/25a in December 2008. Moving ahead, JX Nippon Oil & Gas Exploration will continue to grow its business in the North Sea by guickly moving to development and production after success in exploration, and by acquiring further blocks through farm in, licensing rounds and other opportunities.

## **Special Issue**

Solar power generation system on a production platform (Vietnam)

## JX Nippon Oil & Gas Exploration Corporation

# A Stable Supply of Energy

Contributing to the stable supply of oil and gas while maintaining safe operations by effectively applying knowledge and experience accumulated as operator

## **HSE Management System**

E&P activities progress in four stages: exploration, development, production and abandonment. Each stage involves risks of injuries and illness, accidents, and impacts on the environment. Giving top priority to managing risks related to health, safety and environment (HSE) in carrying out our business activities, JX Nippon Oil & Gas Exploration has established and is implementing systematic approaches to manage those risks (HSE management system or HSE-MS) based upon internationally recognized standards such as ISO14001 and OHSAS18001. Moreover, to further prevent workplace accidents and reduce our environmental impact, we continually improve the HSE-MS and apply it across the entire organization, from the JX Nippon Oil & Gas Exploration headquarters to each office and operation site.

Offshore firefighting drill at Helang gas field (Malaysia)

## **Emergency and Oil Spill Response**

As part of the HSE-MS, JX Nippon Oil & Gas Exploration established a corporate emergency response plan and a structure based on site specific emergency status, and an oil spill response plan. Under the plans our response is organized in a tier structure comprising the accident site, the operation site office, and the company headquarters. Depending on the level of the emergency the necessary organizations and resources are mobilized at each tier to minimize the impact on human life and the environment. The plans are regularly tested for effectiveness. Emergency drills are performed internally and together with relevant emergency services providers, and improvements to the plans are made as necessary. In order to promptly respond to a major oil spill, we utilize an industry mutual aid organization in Malaysia, and have engaged industry-recognized oil spill response services providers in other countries.

## HEALTH, SAFETY and ENVIRONMENTAL POLICY OF JX NIPPON OIL & GAS EXPLORATION CORPORATION

## General Policy

We, JX Nippon Oil & Gas Exploration Corporation (NOEX), as a member of JX Group, whose mission statement is to contribute to the development of a sustainable economy and society through innovation in the areas of energy, resources and materials, are undertaking oil and gas exploration and production operations as one of the core businesses of JX Group.

We, as a member of the society, are committed to providing oil and gas for the society's needs in a manner that avoids injuries and illnesses to our employees, contractors and neighbours while acting in harmony with the environment of the Earth.

#### Strategies

We implement this policy by conducting the following strategies:

- Ensuring that Health, Safety and Environment (HSE) considerations are given prevailing status over our other business considerations.
- Ensuring compliance with all relevant legislations and other requirements to which we subscribe.
- Applying a systematic approach to HSE management to achieve continual HSE performance improvement including setting strict HSE objectives and performing regular audits and reviews.

- Designing our workplaces to minimise the risks to personnel and developing work practices to further reduce the risks as low as reasonably practicable.
- Encouraging the use of the best available technology to reduce the impact of our operations to the environment, particularly with regard to the efficient use of energy and materials, the minimisation of waste and the prevention of pollution.
- Ensuring our personnel to be competent for their tasks and further providing HSE training and awareness programmes to manage HSE
- Developing communication channels to ensure the HSE policy and its objectives are understood by all our personnel, contractors and customers, and to actively seek their input and feedback.

#### Applicatio

The President of NOEX is accountable for ensuring the HSE policy is implemented and that its effectiveness is reviewed annually.

All personnel and contractors of NOEX Group Companies in all areas of the activities under NOEX operational control are responsible for applying the HSE Policy.







## Supporting Development and Production Through Safe Operations

Since I was posted to Vietnam in October 2008, I have worked as a petroleum engineer involved in well intervention work and well testing in our oil fields. Well intervention work involves survey and analysis of well performance to find out why production has declined or problems have occurred, then address such problems with appropriate solutions. And it also involves replacing equipment in the well or adding new equipment to optimize production. During well testing, we evaluate new oil/gas reservoirs and production wells to estimate production potential.

Since we work with wells which are in production, we always plan carefully to avoid causing leakage or blowout of the high pressure fluid. Just one single mistake or moment of carelessness would not only suspend our operation for a long time, but would also pose a direct risk to the environment and to human life. We pay special attention to equipment maintenance and pressure control at every stage of our operations, and in some situations we have the person in charge of each section, before the operation or test, carefully go over conceivable accidents and response measures to them.

All of these works take place on offshore facilities that are in the middle of operation. At 20–30 meters above the sea, surrounded by high temperature, high pressure piping and heavy machinery, the environment demands that we are constantly on alert. I tackle my daily work with acute awareness that I am supporting safe operations, which are the cornerstone of development and production of oil and gas. Through my work, I aim to contribute to efficient development and production operations.

## Harmony with the Environment

## Environmental Preservation Activities Based on Environmental Impact Assessments

At JX Nippon Oil & Gas Exploration, environmental impact assessments (EIA) form the primary project planning process for proactively preventing environmental impact from oil and gas exploration and production. We examine countermeasures to mitigate identified environmental impacts, including biodiversity, when necessary, and monitor environmental impacts in accordance with the method set out by the EIA to ensure that any impacts are really being mitigated. From the early stage of project planning, technical experts and environmental specialists related to each project closely communicate on the best possible mitigation plans.

## Reduction in Greenhouse Gas Emissions

Two primary sources of greenhouse gas emissions from JX Nippon Oil & Gas Exploration's E&P operations are CO<sub>2</sub> emitted from the flaring of the associated gas produced along with crude oil and the continuous release of vent methane gas from gas processing facilities. We have formulated and are enforcing extensive measures to reduce greenhouse gas emissions at our major operating oil and gas fields, namely the Helang Gas Field in Malaysia, the Rang Dong Oil Field in Vietnam and the El-Bunduq and Mubarraz Oil Fields in the Middle East, among others. In the Helang Gas Field, the company reduced vent gas emissions released from gas processing facilities by approximately 50% in 2009 against a rolling average of the previous three years. This was achieved by managing the pressure of the vent gas lines and carrying out thorough maintenance inspections of production facilities. We also reduced unplanned shutdowns

of gas processing facilities and maintained stable gas production. In Vietnam, from September 2001 we ceased flaring associated gas produced along with crude oil from the Rang Dong Oil Field and began to transport such gas via a subsea pipeline to an onshore power plant in Vietnam for use as fuel gas to generate electric power. The JX Group applied to register this project, which efficiently utilizes associated gas, with the Clean Development Mechanism (CDM) Executive Board, the UN organization under the Kyoto Protocol. On February 4, 2006, the project was accepted and registered as a CDM project. Moreover, several of the offshore installations at the Rang Dong Oil Field are equipped with solar and wind power generators to partially cover electricity demands at the installations. In June 2009, the Vietnamese Ministry of Industry & Trade (MoIT) awarded Japan Vietnam Petroleum Company, Limited with a first prize for environmental protection in recognition of our concerted efforts in Vietnam in this regard.

In the United Arab Emirates, JX Nippon Oil & Gas Exploration is a shareholder of Abu Dhabi Oil Co., Ltd., which operates offshore oil fields such as the Mubarraz Oil Field. These operations involve using a high-pressure compressor to inject associated acid gas produced along with crude oil back into the producing oil reservoirs at depths of approximately 3,000m below sea level. This has greatly reduced CO<sub>2</sub> emissions into the atmosphere and enhances the reservoir's crude oil recovery rate. In recognition of the project's groundbreaking technology and its successful track record, Abu Dhabi Oil Co., Ltd. was honored by the state-owned Abu Dhabi National Oil Company with first prize (supreme winner) in the 2000 HSE Awards.



See page 26 for more information



(Ratio of equity-based entitlement volume: 17%) (Equity basis: volume of copper concentrate)



## Masanori Okada

Representative Director, President and Executive Officer JX Nippon Mining & Metals Corporation

## Company Overview (As of July 1, 2010)

## **Head Office Location**

6-3 Otemachi 2-chome, Chiyoda-ku, Tokyo 100-8162, Japan

## Capital

¥40 billion

#### Shareholder

JX Holdings, Inc. (100% investment)

#### Number of Employees (Consolidated) Approx. 5,000

## Main Businesses

Manufacture and sale of non-ferrous metal products and electronic materials

## JX Nippon Mining & Metals Corporation

JX Nippon Mining & Metals is a core operating company of the JX Holdings Group and is guided by the JX Group Mission Statement. With copper as our main product, our business areas include upstream (resource development), midstream (smelting and refining), and downstream (electronic materials, and recycling and environmental services) activities. We are working hard to strengthen and expand our existing business and to implement strategies for balanced growth across each of these areas.

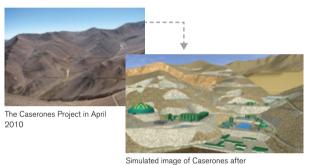
JX Nippon Mining & Metals Group businesses main features are as follows:

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

With an awareness of our company mission to stably supply non-ferrous metal resources and materials, we will pursue innovation in productivity through unceasing technology development, contributing to the development of a sustainable society on a global scale while working to maintain a harmonious relationship with a diverse range of stakeholders.

## Resource Development (Upstream)

In its resource development business, JX Nippon Mining & Metals is taking steps to secure long-term, stable supplies of high-quality ore to raise its ratio of equity-based entitlement volume amid growing global demand for copper ore. Specifically, we are actively developing new mines and acquiring promising deposits. One such initiative is the Caserones Copper and Molybdenum Deposit Development Project in Chile. Since acquiring an interest in May 2006, we have carried out exploratory drilling to ascertain the amount of ore as well as flotation tests and an economic evaluation of the project based on them. The results of these studies indicate that development of the project is expected to be economically viable, and a decision to move into development was taken in February 2010, after we received environmental approval from the environmental board of the III Atacama Region (Chile's third administrative division).



operations commence

## Smelting and Refining (Midstream)

Our smelting and refining business is carried out by the Saganoseki Smelter & Refinery and the Hitachi Works under the umbrella of our group company, PAN PACIFIC COPPER CO., LTD., and the Tamano Smelter of Hibi Kyodo Smelting Co., Ltd, all of which boast world-class technological capabilities, cost competitiveness and productivity. With a combined annual refined copper production capacity of 710 thousand tons/year, (Saganoseki and Hitachi: 450 thousand tons, Tamano: 260 thousand tons), JX Nippon Mining & Metals continues to stably supply the market with high-quality products as Japan's largest producer of refined copper.



Saganoseki Smelter & Refinery



## Electronic Materials (Downstream)

In its electronic materials business, JX Nippon Mining & Metals develops, manufactures and sells highly functional materials for making electronic components used in IT and electronic devices and in automobiles, among other applications. We hold the top share in the global markets for a host of products including rolled copper foil, sputtering targets for LSIs, sputtering targets for flat-panel displays, and titanium copper alloys. Aiming to remain the first-choice vendor for our customers, we are concentrating on understanding their needs and swiftly adapting our products and services to meet them. In particular, we are working hard on developing environmentally friendly surface treatments, such as by using lead-free chemicals.





Rolled copper foil

opper foil



Sputtering targets for LSIs

Surface treatments

# Recycling and Environmental Services (Downstream)

In our recycling business, we recover copper, precious metals and other materials from scrap containing precious and rare metals. In parallel, to avoid emitting secondary waste, we run an environmental business for detoxification processing of industrial wastes. In Hitachi City, Ibaraki Prefecture, we started the Hitachi Metal Recycling Complex (HMC) Works. To make full use of the manufacturing capacity of this facility, we are boosting our loading capacity for scrap containing precious and rare metals, and working to expand our analysis and pre-processing capacity. We are also working on a project to recover rare metals, such as lithium, from used lithium-ion batteries.



HMC Works

16

## **Special Issue**

## JX Nippon Mining & Metals Corporation

# Helping to Achieve a Sound Material-Cycle Society

Developing an Integrated Recycling and Environmental Services Business to Make Efficient Use of the Earth's Resources, and to Help Create a Sustainable Society



Solvent extraction equipment

## Playing Our Part in Creating a Recycling-Oriented Society

Modern society depends on supplies of oil, coal and other fossil fuels, as well as on iron, non-ferrous metals and other mined resources. At JX Nippon Mining & Metals, we believe it is vital to use the Earth's resources efficiently if we are to pass on a sustainable society to future generations.

Using metals refining technologies developed in copper smelting and refining operations, the JX Nippon Mining & Metals group has promoted the recovery of metals from so-called "urban mines." We have established a network of five operation bases throughout Japan as part of our integrated recycling and environmental services business to help create a sustainable society. Recently, operations began at our HMC Works, which recovers a wide variety of valuable metals.

## [JX Nippon Mining & Metals Group Recycling Network]

Operation base	Area
PAN PACIFIC COPPER CO., LTD., Saganoseki Smelter & Refinery	Western Japan region
HMC Works, Nikko Environmental Services Co., Ltd.	Kanto, Tohoku, Chubu regions
Tomakomai Chemical Corporation	Hokkaido region
Nikko Tsuruga Recycle Co., Ltd.	Chubu, Kansai regions
Nikko Mikkaichi Recycle Co., Ltd.	Chubu region

## [Valuable Metals Recovered at HMC Works]

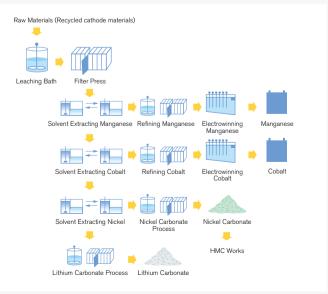


## Recycling High-Demand Lithium-ion Batteries

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

In 1978 JX Nippon Mining & Metals became the first in the world to use high-precision separation and recovery technology for nickel and cobalt using a sulfuric acid bath. Today we are working to develop commercially viable separation and recovery of cobalt, nickel, lithium and manganese from used lithium-ion batteries.

## [Diagram of the Recycling Process]



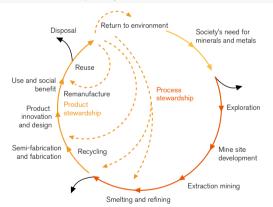
## Aiming to Build a Business Model for Materials Stewardship

In September 2009 following a public tender, JX Nippon Mining & Metals was commissioned by the Ministry of Economy, Trade and Industry (METI) to develop technology to recover rare metals from used lithium-ion batteries as a part of the ministry's industrial technology development program. In response, we constructed a pilot plant on the premises of group company Nikko Tsuruga Recycle Co., Ltd. We are currently conducting trials in collaboration with Waseda and Nagoya universities for recovery of lithium-ion batteries. We have developed basic technologies for the recovery of lithium and manganese from lithium-ion batteries, which, if brought to practical application, will represent a world first.

Plans are in place to supply value-bearing metals recovered as raw materials for use in cathode materials of the in-vehicle lithium-ion batteries manufactured by the company's Isohara Works and other manufacturers. In July 2009 the Isohara Works began operating manufacturing equipment with a capacity of 500 tons per year in anticipation of growth in demand for in-vehicle lithium-ion batteries.

In addition to striving to realize the practical application of recovery technologies in the future, JX Nippon Mining & Metals will endeavor to build an efficient supply chain encompassing lithium and other rare metals to realize materials stewardship.\*

## [Materials Stewardship Diagram]



\*Materials stewardship, which is advocated and promoted by the International Council on Mining and Metals (ICMM), embodies the range of activities required to ensure the optimal and appropriate use of minerals and metals in society. In cooperation with its corporate clients in the IT industry, the JX Nippon Mining & Metals Group is recovering the non-ferrous metals that it has put into society as recyclable materials. Through these efforts, we are contributing to the development of a recycling-oriented society.





Makoto Narusako
Tsuruga Plant Technology Development Section
JX Nippon Mining & Metals Corporation

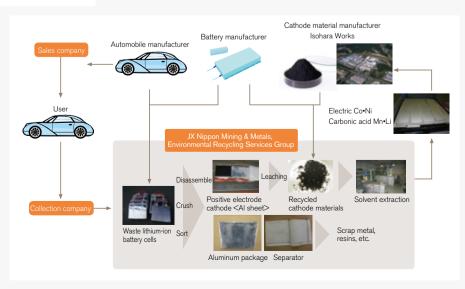
## From Demonstration Testing to Full-fledged Operation

When I was assigned to work on the Tsuruga Plant in January 2010, the outer shell of the facility had been completed and construction of the plant equipment was about to begin. I was involved in almost all aspects of the project, including construction, test operation and start-up of the equipment, procuring necessary materials, formulating an operating plan and setting up an operating system.

In particular, I spent a lot of time on instruction and training for plant operational personnel. With the support of many others, we started operation with real liquid in early April, and began operations in mid-May, with a staff of 17 people working in 3 shifts.

Inside the plant there are many reaction tanks, reservoirs, pipes and pumps. The equipment can be started and stopped remotely using a touch panel. We made the process flow easier to understand by clearly labeling the names of each tank, the destinations of the pipes and so forth; and we made the operation safer by allowing operators to check the status of each process onsite, and the composition of the liquid. This also helps to improve product quality.

At present, about 20% of the equipment for the entire plant is operational. Once the demonstration testing is complete, we aim to start full-fledged operations as soon as possible. This job is demanding in terms of achieving rigorous quality standards and establishing a low-cost operation, but as an engineer I feel it is an extremely worthwhile project.



## **Corporate Governance**

## Basic Approach to Corporate Governance

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

In line with these beliefs, as the holding company, JX Holdings focuses especially on formulating medium- to long-term strategies for the JX Group and strategically allocating management resources to implement these strategies. Under the holding company, the core operating companies are responsible for actual business activities in the Group: JX Nippon Oil & Energy, which is responsible for the petroleum refining and marketing business; JX Nippon Oil & Gas Exploration, which runs the oil and gas E&P business; and JX Nippon Mining & Metals, which is in charge of the metals business.

## Management Execution and Supervision

#### **Execution of Duties**

The Board of Directors decides and reports on matters prescribed by laws and regulations and the Articles of Incorporation, and other matters stipulated by the Regulations of the Board of Directors. Executive officers are appointed to execute the operations decided on by the Board of Directors.

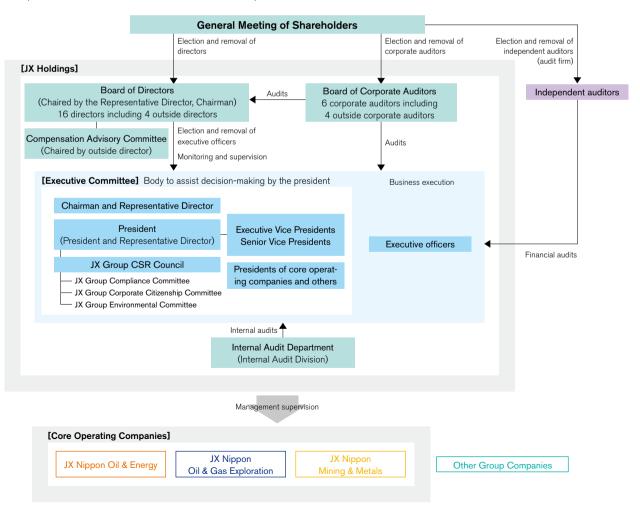
Furthermore, the Executive Committee meetings are held regularly to finalize important decisions related to operational execution.

In order to ensure transparency and objectivity in determining compensation for directors and executive officers, we have established a Compensation Advisory Committee as an advisory body to the Board of Directors.

## Supervision and Audits

JX Holdings has appointed four highly knowledgeable and experienced outside directors to strengthen supervision of management from an independent, objective perspective. Of the Company's six corporate auditors, a majority of four members are outside auditors with great expertise and experience in the field. Under Japan's

## [Corporate Governance Structure of the JX Group]



Companies Act, the powers of the (board of) auditors have been strengthened and expanded. In this way, the Company has built a system to ensure the effectiveness of supervision of the directors' execution of duties.

## Internal Control System

## Basic Approach to Internal Control

Based on the JX Group Mission Statement "JX Group will contribute to the development of a sustainable economy and society through innovation in the areas of energy, resources and materials" and the JX Group Values "Ethics, Advanced ideas, Relationship with society, Trustworthy products/services, and Harmony with the environment," JX Holdings is building internal control systems to ensure appropriate business activities.

## **CSR Promotion Structure**

## Basic Approach to CSR

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

## Group CSR Council and the Three Committees

The JX Group CSR Council, chaired by the president of JX Holdings and comprising members from across the Group, is tasked with control of CSR activities for the JX Group. Under the umbrella of this meeting are the JX Group's three CSR Committees, namely the JX Group Compliance Committee, JX Group Corporate Citizenship Committee and JX Group Environmental Committee, each focused on their respective areas.

The first JX Group CSR
Council convened in July 2010.
During the inaugural meeting,
the chair expressed his
thoughts on the JX Group CSR
Regulations and promotion of
the mission statement, resolved
to form committees, explained



The first JX Group CSR Council in session

methods of operation, and issued directions for the creation of CSR structures at each company. The meeting also sought to share measures for promoting the mission statement, one of the major policies for fiscal 2010.

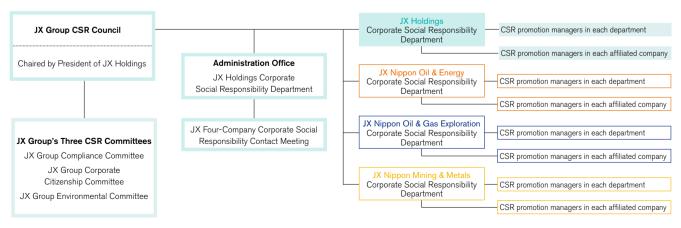
## **Group CSR Promotion Managers**

We have appointed CSR promotion managers in each Group department and affiliated company. These employees are on the frontlines of the Group's CSR activities.

## Fiscal 2010 Activity Policy

We believe that sharing a common mission statement and a unified sense of purpose among all officers and employees of Group companies in day-to-day business activities will help to foster a new corporate culture and realize the Group-wide cohesion necessary to achieve growth and expansion. Based on this belief, in fiscal 2010, the first fiscal year after the merger, we will work to spread the JX Group mission statement throughout the company as quickly as possible. We have set this goal as the CSR Activity Policy of JX Holdings, and will promote measures to that end.

## [JX Group CSR Promotion Structure]



# Respecting the EARTH



P. 22











# Ethics

Alongside compliance with laws and rules, the JX Group believes that the basis of trust is formed by fair and honest business transactions, protection of intellectual property and human rights, and other behaviors that underlie ethical decision-making and actions in all of its business activities.

Together with the promotion of thorough compliance and stronger risk management, the JX Group has formed a highly ethical stance based on management that respects human rights, and has set its sights on becoming a truly leading company in this field.

## Basic Approach to Compliance

To promote fair and honest corporate activities and earn greater trust from society, the JX Group has established regulations and other rules to ensure thorough compliance among all Group companies, and has declared a policy of full compliance with laws, the Articles of Incorporation and regulations in every aspect of work performance. In conjunction with the establishment of JX Holdings in April 2010, and in light of the transitional period needed to move to this management framework, we formulated regulations to prevent insider trading and took steps to rigorously manage information regarding important facts that employees acquire during the course of their duties. We also drafted compliance regulations and we conduct compliance inspections of each Group company, as well as offer support and suggestions on developing a proper compliance framework.

In July 2007, we established the JX Group Compliance Committee as a sub-unit under the JX Group CSR Council, establishing a framework for deliberating compliance-related matters, including information security and human rights, and for sharing information between individual Group companies. Going forward, the committee will be charged with periodically inspecting the status of JX Group legal compliance.

Furthermore, the Group, in cooperation with an outside legal firm, has put in place an internal reporting system for early discovery and correction of behavior that could lead to legal violations. This system also serves as a means to properly protect those who come forward to report such behavior. Moreover, the system is accessible not only to JX Holdings full-time employees, but to part-time staff, temp workers, and employees at partner companies. To encourage use of the system, we ask partner companies to help raise awareness of the system among all parties involved in operations relating to JX Holdings.

## JX Nippon Oil & Energy

Prior to the merger, Nippon Oil Corporation and Japan Energy Corporation both conducted a broad range of compliance training, promoting activities around priority concerns, using surveys to assess legal compliance status, and conducting follow-ups to check on improvements, in an effort to ensure thorough compliance. Compliance implementation at each company in fiscal 2009 is shown highlighted in the following chart.

## [Major Compliance Activities in Fiscal 2009]

Group name	Nippon Oil Group	Japan Energy Group
Compliance	Training for new hires	Training for new hires
education	Training for new supervisors	Training for new managers
	Training in document regulations Training in anti-trust laws, others	Presentations on basic compliance rules, etc.
Priority areas	Anti-trust laws Permissions/authorizations, qualifications, etc.	Establishment and promotion of themes in every department
Survey of legal compliance status	Surveys of legal compliance status at 20 companies, including Nippon Oil, Nippon Petroleum Refining Company, Limited, and Nippon Oil Exploration Limited	56 companies, including Japan Energy and Japan Energy Development Co., Ltd.

Following the merger in July 2010, both corporate groups plan to coordinate with JX Holdings in inspecting legal compliance status and conducting in-house compliance training.

## JX Nippon Oil & Gas Exploration

Prior to the merger, both Nippon Oil Exploration and Japan Energy Development had positioned compliance as a key management issue, conducting reviews of compliance status and a variety of in-house training among other efforts to ensure thorough compliance. In fiscal 2009, in addition to the reviews of compliance status, the companies reviewed their information management status and conducted compliance training on issues such as preventing insider trading and combating bribery of foreign public officials in international business transactions. These measures will remain in place for the post-merger JX Nippon Oil & Gas Exploration, along with ongoing coordination with JX Holdings to ensure thorough compliance.

## JX Nippon Mining & Metals

Basic policies on compliance, as well as priority issues for each fiscal year and the training curriculum, are decided by the Compliance Subcommittee established under the CSR Committee. In fiscal 2009, in addition to compliance training by job class (training for new hires, third-year employees, new supervisors, and new managers), we also conducted training on anti-trust laws and export control.



## Basic Approach to Risk Management

The JX Group has risk management structures that are tailored to the business lines of each Group company, with countermeasures in place to manage individual risks related to compliance, occupational safety, and the environment, among others.

For crisis management, comprehensive disaster prevention measures (earthquakes and new strains of influenza) and other such areas, we made certain companies responsible for Groupwide planning and coordination during the merger, taking into consideration the specific operational characteristics of JX Holdings and its core operating companies. The result is a risk management framework that encompasses the entire Group.

More specifically, crisis management is the responsibility of JX Holdings, which is to take care of overall coordination in the event of crisis situations that could potentially impact Group management. Accordingly, JX Holdings has formulated a set of crisis management rules detailing actions for minimizing damage should such situations arise. A standing administration office for responding to crisis situations has been established within JX Holdings. Should such situations arise at JX Holdings or a company within the JX Group, the general manager of this department, or alternatively, the general manager responsible for general affairs at the applicable Group company, is responsible for immediately reporting the incident and any response measures taken to the general manager of the administration office. Depending on the severity of the crisis, the president of JX Holdings may opt to establish an in-house response headquarters for specific countermeasures, or a response headquarters to devise and coordinate measures across the Group. The express purpose of these measures is to mount a swift and accurate response in service of the Group's social mission.

Regarding financial transactions, we drafted a set of regulations governing the enactment and management of derivative transactions by the JX Group. As part of the appropriate management of risk for the JX Group with respect to derivative transactions, JX Holdings is also responsible for formulation of basic policies and monitoring related to the development and maintenance of internal control systems for the entire JX Group.

Where comprehensive disaster prevention measures are concerned, in times of earthquakes, pandemics or other widespread disasters, JX Nippon Oil & Energy is charged with taking the lead in fulfilling the Group's vital social mission of maintaining the stable supply of energy. JX Holdings and other Group companies serve in a supporting role under this framework.

## JX Nippon Oil & Energy

Prior to the merger, both groups had devised Business Continuity Plans (BCPs) in case of a major earthquake, and also conducted annual disaster prevention drills. In fiscal 2009, too, Nippon Oil Corporation, during ENEOS Disaster Prevention Week initiatives, carried out disaster prevention and first-response drills based on simulations of a major earthquake directly beneath Tokyo. Japan Energy also conducted fire evacuation drills based on plans from participating fire departments.





Disaster prevention drills

First-response drills

Similarly, during the H1N1 influenza outbreak in May 2009, each company established response headquarters for devising countermeasures, took steps to prevent the spread of infection among employees and their families, and assessed infection rates, among other measures. In addition, the companies each formulated specific BCPs ahead of a possible pandemic.

## JX Nippon Oil & Gas Exploration

Prior to the merger, each respective company in the Nippon Oil Group and the Japan Energy Group devised countermeasures tailored to the individual risks that they faced. With the view of cooperative ties with other JX Group companies post the launch of JX Nippon Oil & Gas Exploration, along with re-establishment of a variety of rules including regulations governing crisis management, information security and other areas, a Risk Management Committee chaired by the President has also been set up, and we are working to identify risks in each department and pursue comprehensive risk countermeasures across the company.

## JX Nippon Mining & Metals

Risk management at JX Nippon Mining & Metals is primarily centered on a Risk Management Subcommittee, which meets twice yearly. In fiscal 2009, the company formulated a response manual for coping with new influenza outbreaks—a priority issue for the entire Group. In tandem, priority risk categories were identified in every department, with the status of risk countermeasure planning and implementation reviewed at the subcommittee meetings. Each department also carried out an annual self-evaluation of enacted measures and risk assessment in an ongoing drive to improve risk management.

As part of risk management, JX Nippon Mining & Metals is also developing countermeasures for coping with large-scale natural disasters at its business sites, including damage from earthquakes and floods.

## Basic Approach to Human Rights

The JX Group recognizes that achieving corporate behavior firmly rooted in high 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. Beyond respecting international rules such as the United Nations Declaration of Human Rights and the ILO Conventions, the JX Group strives to cultivate strong ethical values among its executives and employees by providing them with supportive environments for performing meaningful work. While individual policies and specific measures are decided based on Group company business characteristics and scale, we endeavor to improve working environments across the entire Group, including through the joint usage of welfare facilities, by promoting information exchanges between staff responsible for human resource management.

JX Holdings has also placed special emphasis on the development of human resources responsible for Group management, and is fostering a management class of high ethical standards through specific training for executives and joint training for administrative staff at all Group companies.

JX Holdings and its three core operating companies are also participants in the United Nations Global Compact, implementing and promoting the compact's 10 principles in the 4 areas of human rights, labor, the environment and anti-corruption.



## JX Nippon Oil & Energy

As a vehicle for human rights promotion following the July 2010 merger, JX Nippon Oil & Energy has put a framework in place with a human rights awareness office, which serves as a companywide administration office. The office is headed by the director in charge of human resources. As expressed in the basic policy below, by implementing systematic human rights training, we will strive to create a corporate culture with an ingrained respect for human rights.

## Fundamental Human Rights Policy of JX Nippon Oil & Energy

- Eliminate all forms of discrimination through respect for human rights
- · Systemize human rights training
- Enhance awareness and sensitivity regarding potential discrimination

In terms of initiatives by each company in fiscal 2009 prior to the merger, Nippon Oil, in addition to training by job class (24 sessions) and e-learning training (4 sessions), held 23 human rights training sessions for branches, refineries and affiliated companies. Furthermore, in 2009, Nippon Oil established an annually recurring Human Rights Week in November. In addition to using the internal email system to disseminate messages from the officer in charge of companywide human rights promotion, employees, including those at group companies, were invited to submit slogans related to human rights.

Japan Energy, for its part, has sought to raise human rights awareness by using presentations on basic compliance regulations as opportunities to discuss human rights-related regulations and the 10 principles of the United Nations Global Compact. 21 explanatory meetings of this kind were held in fiscal 2009.

## JX Nippon Oil & Gas Exploration

Prior to the merger, each respective company in the Nippon Oil Group and the Japan Energy Group conducted activities to promote human rights awareness. Nippon Oil Exploration provided explanations to overseas employees hired locally regarding the training program implemented at the head office on prevention of sexual and power harassment as part of efforts to encourage global promotion of human rights awareness. From August 2010, JX Nippon Oil & Gas Exploration became a participant in the United Nations Global Compact, and has taken steps to adopt the 10 principles as part of human rights awareness. Through these and other activities, JX Nippon Oil & Gas Exploration, in the wake of the merger, as one of the core business companies of the JX Group remains as committed as ever to actively promoting human rights awareness.

## JX Nippon Mining & Metals

JX Nippon Mining & Metals is developing an organization where respect for human rights is the norm, and where the personality and individuality of every employee is valued. Article 4 of the company's Code of Conduct states that, "We will respect employees' personalities, human rights and individuality." The company has raised awareness of its stance on respect for human rights among all affiliated companies, and, from a compliance perspective also, is clearly documenting its commitment to eliminating discrimination and prohibiting sexual and other types of harassment, and rigorously conveying this message to employees.

JX Nippon Mining & Metals unequivocally rejects child or forced labor of any kind. Outside of Japan, the company promotes numerous businesses in the Asia-Pacific region, employing some 1,700 people, and rigorously adheres to age restrictions and other limitations when recruiting. Managers, meanwhile, are extensively trained on the company's prohibition against the use of forced labor.

As global business development gains momentum going forward, JX Nippon Mining & Metals is dedicated to strict compliance with local labor laws and other restrictions at its overseas bases. Similarly, in terms of recruitment and human resource development, the company is committed to valuing its coexistence with local communities as it strives to create dependable work environments for its employees.



# Advanced idea

Dedicated to meeting the challenges of cutting-edge research and technology development with advanced ideas, the JX Group will contribute to society as a whole by creating technologies, products and services that help to answer social concerns.

## JX Group Technology and R&D

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. In parallel, JX Holdings will seek to comprehensively manage and coordinate a host of technology development themes being advanced by the Group. Efforts here include encouraging the establishment of a technology and development platform across the entire Group.

Individual Group companies, meanwhile, are advancing joint research and demonstration tests in collaboration with governments, public institutions, research institutes, universities and other entities. The following pages detail some of the themes and content of technology development for contributing to sustainable economic and social development.

#### JX Nippon Oil & Energy

In October 2009, JX Nippon Oil & Energy began construction of research equipment at the Mizushima Refinery for demonstration of a 3,000 barrel/day, High Severity-Fluid Catalytic Cracking (HS-FCC) process.

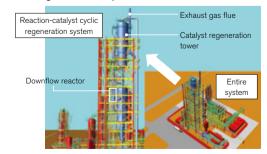
Compared to conventional fluidic catalytic cracking (FCC) systems, the HS-FCC process delivers much higher yields of propylene, which is a raw material for plastic, high-octane gasoline, and other products. Against a backdrop of higher global petroleum usage in the future, and with tighter demand expected for easy-to-handle light crudes, this process will enable efficient production of much needed products through effective use of the more difficult heavy crudes. The technology itself involves bringing heavy crude briefly and uniformly into contact with a catalyst inside a downflow reactor at high temperatures. Higher yields are achieved by stimulating the heavy crude breakdown reaction.\*

JX Nippon Oil & Energy has advanced the development of the HS-FCC process based on independent basic research since 1994. Specifically, the company participated in the development of advanced HS-FCC technology compatible with heavy crude as a component of "Developing Technologies for Innovative Next-Generation Oil Refining," a project publicly sponsored by Japan's Ministry of Economy, Trade and Industry. Since 2000, in conjunction with King Fahd University of Petroleum & Minerals and Saudi Aramco, JX Nippon Oil & Energy has built and operated a small-scale HS-FCC system producing 30 BD. From 2007, JX Nippon Oil & Energy began designing a 3,000 BD demonstration system as part of the Japan Petroleum Energy Center's technology development project.

The purpose of this latest project is to establish technology for designing a commercially viable system for producing several tens of thousands of barrels per day by constructing and operating the 3,000 BD demonstration research system based on the results of earlier research. This demonstration system will be completed at the end of January 2011, and is scheduled to begin research operation from May 2011.

\*The conventional process utilizes an upflow reactor, where the oil used as raw material is supplied from the lower section of the reactor along with a catalyst. However, since the catalyst and the raw material in an upflow reactor flow against gravity, the process is hindered by a phenomenon known as back mixing, whereby gravity causes some of the catalyst to fall back, prompting long stagnation of the raw material in places and resulting in uneven reaction times. By contrast, in downflow reactors, gravity causes the catalyst and the raw materials to flow in the same direction, eliminating back mixing and achieving uniform reaction times.

## [3-D Diagram of Complete HS-FCC Demonstration System]



## JX Nippon Oil & Gas Exploration

Since April 2008, JX Nippon Oil & Gas Exploration has collaborated with Japan Oil, Gas and Metals National Corporation (JOGMEC), an incorporated administrative agency, to conduct research into enhanced oil recovery technology using carbon dioxide gas injection at the Rang Dong Oil Field, a site operated by JX Nippon Oil & Gas Exploration's operating subsidiary, Japan Vietnam Petroleum Company, Limited.

With this technology, carbon dioxide is injected into the oil reservoir where it interacts with the crude oil to boost the crude oil recovery rate. Laboratory experiments and oil reservoir simulations were carried out with JOGMEC to predict how the technique would actually perform in the field. Results indicated a certain level of increase in oil production, so the company is now preparing for pilot tests in the field.



Rang Dong Oil Field

In the United Arab Emirates, JX Nippon Oil & Gas Exploration is a shareholder of Abu Dhabi Oil Co., Ltd., which operates offshore oil fields such as the Mubarraz Oil Field. At this field, we were the first in the Middle East to introduce the technology of re-injecting toxic sour gas including high density sulfur oxide and carbon dioxide associated with crude oil production into the oil reservoir, resulting in "zero gas flaring" oil field operations. This new technology prevents air pollution stemming from the flaring of associated gas, enabling the company to cut annual carbon dioxide emissions by approximately 200,000 tons. At the same time, the interactive effect between the injected associated gas and the oil in the reservoir results in greater crude oil production.

In upstream petroleum sectors, there is a growing call for more environmentally friendly oil field development. JX Nippon Oil & Gas Exploration is answering the call by effectively utilizing the associated gas, and carbon dioxide which is considered the main culprit contributing to global warming, in an effort to reduce environmental impact and boost crude oil production.



## **JX Nippon Mining & Metals**

JX Nippon Mining & Metals established the joint venture company BioSigma S.A. with the Chilean state-owned Corporacion Nacional del Cobre de Chile (CODELCO) in 2002. Bio Sigma S.A. is playing a leading role in the Company's efforts to develop bio-leaching technologies.

Bio-leaching is a hydro-metallurgical process that extracts value-bearing metals from their ores through the use of bacteria. In recent years, demand for copper has risen dramatically. On this basis, the effective application of low-grade copper ore, which was previously discarded as tailings, has become an increasingly pressing issue. While bioleaching technology has been employed to extract copper from low-grade secondary copper sulfide ore at certain mines since 1990, BioSigma's focus extends beyond secondary copper sulfide ore. Specifically, the company is working to further harness the potential of bacteria to develop a leaching technology that will efficiently recover copper from primary copper sulfide ore, a notoriously difficult application.

Under the bio-leaching process, bacteria perform the action of oxidizing iron and sulfur. In order to procure the energy required to spur bacterial growth, the bacteria draw on electrons found in the iron and sulfur, respectively. As a result, the copper remains unoxidized, and in a recoverable state. With this technology, previously discarded tailings become a resource while the speed of leaching in the hydro-metallurgical process is also accelerated, contributing to improved economic benefits.

In November 2009, construction of the first industrial-scale biomass plant with BioSigma Technology began at CODELCO's Radomiro Tomis Mines in Chile.

Currently under construction, the plant is designed to supply BioSigma's proprietary microorganisms to enhance the copper recovery from some 20 million tons of a mixed sulfide copper bearing ore, about half of which is primary copper sulfide ore. This is the world's first biomass plant for supplying bacteria, and it is expected that recovery will be significantly enhanced compared to that from conventional leaching technology once the full industrial scale of the technology is completed in the next four years.

## [Copper Recovery Process Utilizing Bio-leaching Technology]





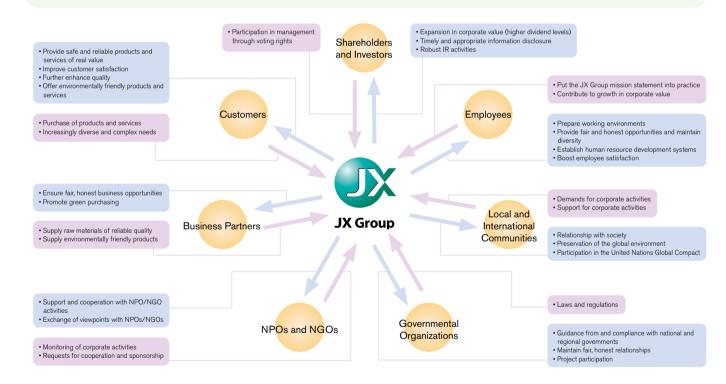
# Relationship

with society

We strive to earn society's trust by faithfully meeting the needs of our diverse stakeholders. Through sports, culture, programs for positive youth development, and environmental protection activities, we hope to deepen our relationships with communities and the public, and to coexist with society as a corporate citizen.

## Relationship with Stakeholders

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



## **Shareholders and Investors**

As a publicly listed company of the JX Group, JX Holdings is committed to the swift, proper and fair disclosure of information to shareholders and investors in its determination to promote highly transparent management.

When disclosing information, in addition to compliance with relevant laws, we actively disseminate information on management and relevant policies to encourage broader understanding of JX Group business activities.

Senior management creates ample opportunities for direct discussion, including at earnings presentations and medium-term management plan briefings.

Furthermore, our corporate website is expressly created to convey information in an unbiased and intuitive manner and contains management policies, financial and business information, press releases, various IR materials, and stock information.

are also posted on the website.



Presentation for analysts

In a commitment to fair disclosure, excerpts from presentations held for analysts and institutional investors, including meeting materials and video,

7

## Customers

The JX Group pursues initiatives in quality assurance and product safety to deliver trusted products and services that satisfy its customers. In parallel, the Group works to proactively communicate with customers, and to develop products and services tailored to diversifying customer needs. See pp. 31-33 for details regarding activities.

## **Employees**

In the JX Group, labor unions are present at nearly all affiliated companies in Japan. We also strive to realize a proper work-life balance and maintain occupational health and safety in order to provide good working environments for our employees.

The JX Group's basic approach to work-life balance is to forge a win-win relationship between a company and its employees. JX Group companies therefore have a variety of support systems on hand and conduct awareness-raising activities, among other actions.

The JX Group conducts business activities with a strong awareness that protection of worker health and safety are matters of paramount concern. JX Nippon Mining & Metals drafts a yearly Management Policy on Health and Safety as part of its commitment to creating safe and secure work environments. Despite these efforts, the Saganoseki Smelter & Refinery was the site of a significant accident in June 2009 in which three Group employees died from asphyxiation. In its resolve to prevent such a tragic accident from happening again, JX Nippon Mining & Metals is promoting a health and safety program aimed at eliminating disasters as part of its Management Policy on Health and Safety for fiscal 2010.

Prior to the merger, Nippon Oil and Nippon Petroleum Refining had a frequency of industrial accidents and an accident severity rate\* for fiscal 2009 of 0.14 and 0.001, respectively. The same rates for Japan Energy were 0.28 and 0.004, the totals for Nippon Oil Exploration (including in Malaysia and Vietnam) and Japan Energy Development were 0.00 and 0.00, and for Nippon Mining & Metals 0.61 and 0.01.

\*Frequency of industrial accidents: Number of deaths or injuries resulting from work-related accidents per 1 million man-hours. Accident severity rate: Number of lost workdays per 1.000 man-hours, (Reference) Overall frequency of industrial accidents and overall accident severity rate for Janan in calendar 2009 (Jan. to Dec.) were 1.62 and 0.09, respectively. (Source: Industrial Accident Trend Survey by the Ministry of Health, Labor and Welfare of Japan)

#### **Business Partners**

JX Nippon Procurement Corporation oversees purchasing operations for JX Group companies. Besides making purchasing information openly available and actively providing opportunities to business partners, JX Nippon Procurement is seeking to develop bonds of mutual trust with partners by ensuring fair and honest trading opportunities.

The company also places an emphasis on the environment by aggressively promoting green purchasing.



See p. 34 for details regarding activities.

## **Local and International Communities**

The JX Group consistently aims to conduct responsible corporate activities in local and international communities. As part of this commitment, along with vigorous community contribution activities, JX Holdings and its three core operating companies support the 10 principles of the United Nations Global Compact.



Dai Hao annex building at Cho Dai Elementary School, Quang Tri Province, Vietnam

Since 2002, JX Nippon Oil & Gas Exploration has focused on educational assistance, including the construction of schools, to provide a better learning environment for the children of Vietnam. In 2009, the company made a donation to the construction of the Dai Hao annex building for the Cho Dai Elementary School in Quang Tri Province, Vietnam. The company and its employees also made donations to ensure a full array of educational materials are on hand at elementary and junior high schools built through previous donations across Vietnam, in an ongoing effort to provide the schools with the equipment and supplies they need.

In conjunction with International Children's Day on June 1 of each year, employees take part in the procession and other events at a walking event held in the city of Vung Tau, Vietnam. In addition, Japan Vietnam Petroleum Company, Ltd. makes donations to economically disadvantaged children in the city through a fundraising effort run by the Vung Tau Committee on Population, Families and Children.



See pp. 29-30 for details regarding activities.

#### NPOs and NGOs

As part of its citizenship activities, the JX Group seeks to build cooperative relationships through dialogue with NPOs and NGOs involved in distinctive activities.

JX Nippon Mining & Metals, for example, sponsors the work of 2050, an NPO involved in address-



Scholarship recipients in Bangladesh

ing global problems such as rapid population growth, poverty, environmental degradation, and HIV/AIDS. Currently, the NPO is providing continuing higher education assistance for approximately 120 women in five Southwest Asian countries. Among other programs, 2050 is also operating an independence assistance project for giving agricultural instruction to women from impoverished households.

#### **Governmental Organizations**

The JX Group operates in regions across Japan and in countries worldwide. Wherever it operates, the Group maintains fair and honest relationships with national and regional governments and complies strictly with applicable laws and regulations. Along with active participation in government-backed projects, the Group provides policy recommendations, primarily through industry bodies.

## Basic Approach to Corporate Citizenship

The JX Group's actions are guided by the JX Group Values, which emphasis our relationship with society and working in harmony with the environment. As such, social contributions are a key theme in our CSR activities.

The JX Group Corporate Citizenship Committee was established expressly to discuss matters pertaining to JX Group social contributions and to share related information among JX Group companies. Chaired by the director in charge of the JX Holdings Corporate Social Responsibility Department, the committee is comprised of members drawn from across the JX Group.

Based on research by the committee, the following basic policy and other items concerning JX Group social contribution activities were drafted at the second JX Group CSR Council held in October 2010.

#### [Basic Policy for JX Group Social Contribution Activities]

Recognizing its role as a good corporate citizen, the JX Group will advance together with society and will contribute to the development of a sustainable society through the vigorous promotion of social contribution activities, as well as support for the citizenship activities of its employees.

## [Priority Fields for Social Contribution Activities]

- 1 Advancement of sports and culture
- 2 Youth development and support
- 3 Environmental protection

#### Examples of JX Group Social Contribution Activities

#### JX Children's Story Award/JX Children's Story Fund

Through this program, the JX Group calls for submissions from the general public of original children's literature on the theme of "heart-to-heart contact," gives recognition to the best works submitted, and publishes the works as a collected volume of children's literature called *The Bouquet of Children's Stories*. Copies of the book are donated to social welfare facilities and other sites across Japan, while funds generated from book sales to business partners, Group companies, employees and others are channeled into the JX Children's Story Fund. Each year, donations from the fund are given to the Japan National Council of Social Welfare. Donations go to children in foster-care facilities, mothers and children's homes, and foster families as educational assistance. In fiscal 2009, total donations totaled ¥23 million.

The paper used for The Bouquet of Children's Stories is "3.9 paper," made



A copy of The Bouquet of Children's Stories

from wood produced through forest thinning. Through this initiative, the Group, by using materials locally produced in Japan, is working to boost the volume of carbon dioxide absorbed by forests, while providing support for "Kizukai Undo," a domestic forest preservation program promoted by Japan's Forestry Agency.

#### JX-ENEOS Baseball Club/Baseball Support Activities

Founded as the ENEOS Baseball Club in 1950, the JX-ENEOS Baseball Club has won 9 Intercity Baseball Tournament titles, the most of any team in the tournament's history.

With sights on realizing positive youth development, the JX-ENEOS Baseball Club is involved in efforts to extend the support base for baseball as a national pastime. In addition to baseball classes for schoolchil-



Baseball class for schoolchildren

dren given by past and current club members, the club provides support for a variety of baseball-related events and groups, including the All Japan Junior Softball Tournament, the ENEOS CUP Junior Tournament for NPB12 baseball teams, the Women's Baseball Association Japan, the Japan Dream Baseball League, the Yokohama Bay

Stars Sports Community, and the Rakuten Eagles Baseball Clinic.

#### JX Sunflowers/JX Basketball Clinic

The JX Sunflowers are a women's basketball team originally founded by Kyodo Oil in 1969. The team boasts 15 championship wins in the All Japan Basketball tournament, a tied record for the most in the tournament's history.

In the JX Basketball Clinic, a special team made up of current and former JX Sunflowers players with Olympic or WNBA\* experience, travel across Japan, deepening interaction among young people through basketball and teaching them basic skills.

In fiscal 2009, the clinic was held 59 times, with a total of 2,254 people attending. JX Nippon Oil & Energy also provides assistance for wheelchair basketball among other activities.

\*WNBA: Women's National Basketball Association



JX Basketball Clinic

#### School Visits-ENEOS Environmental Classes

To enhance understanding of the environment and energy among children, JX Nippon Oil & Energy employees visit elementary schools and other sites to explain these topics in an intuitive way, using quizzes, experiments, and observations of actual crude oil to teach children about the relationship of oil to our daily lives, how petroleum products are made, global warming, new environmentally friendly forms of energy, and other topics.

Experiments that compare hydrogen to carbon dioxide or demonstrate how fuel cells work never fail to draw sounds of amazement from the children as they enjoy learning about the environment and energy.

Classes were held 32 times in fiscal 2009, and attended by some 1,800 students.



ENEOS Environmental Class (School visit)

# **ENEOS Forests and "Forest Foster Parent Agreement" Environmental Protection Activities**

Forests are expected to fulfill many different functions, including absorbing carbon dioxide and sustaining biodiversity. To stimulate the function of forests, ongoing preservation work is essential. The JX Nippon Oil & Energy Group, through employees and their families, conducts forest volunteer activities focused on locations across Japan where its refineries operate. The name given to these sites is ENEOS Forests. Among other actions, employees carryout forest thinning, clear away underbrush, prune branches, and create walking trails.

In two other prefectures in Japan, Nagano and Okayama, JX Nippon Oil & Energy is party to "Forest Foster Parent Agreements," under which it covers forest maintenance costs. Meanwhile, employees and their families take part in forest volunteer activities, joining forces with local residents to preserve forests.

Since 2005, forest events have been held 79 times in 9 locations throughout Japan, with 5,610 people taking part.



Activities at an ENEOS Forest

## [Examples of Other Social Contribution Activities in Fiscal 2009]

Company name	Activity	Overview of Activity
JX Nippon Oil & Energy	Donations to the National Land Afforestation Promotion Organization	When customers use their ENEOS Card at ENEOS service stations, 0.01% of the amount is donated to this organization. Total donations have climbed to over ¥160 million since the ENEOS Card was first issued in October 2001.
	Click Donation Drive to Support Sports for the Disabled	The website hosts a click donation drive to support sports organizations for the disabled based on the number of clicks the site receives. In fiscal 2009, donations were made to four organizations mainly for winter sports as part of the "Shoot for Vancouver!" campaign.
	ENEOS Hydrogen Trust Fund	To realize a hydrogen-based society as quickly as possible, the company supplies a total of ¥50 million in grants each year for basic research into ways to supply hydrogen energy.
JX Nippon Oil & Gas Exploration	Donations to Areas Affected by the Sumatra Earthquake	In 2009, the company made donations through NGOs to fund aid efforts in Indonesia, which was severely hit by an earthquake that struck off the coast of Sumatra.
	Ongoing Forest Conservation Activities	At the Nakajo Oil and Gas Field, volunteer activities include planting cherry trees around the gas treatment facility, planting evergreens in the surrounding area, and clearing weeds. These ongoing forest conservation activities serve both to improve the local landscape and to harmonize the site with the surrounding environment. Red pine saplings raised on the field grounds are used in the planting activities Efforts to cut away underbrush, thin trees and spray disinfectant began over a decade ago to protect the red pines from a pine-withering disease that had spread throughout the area.
JX Nippon Mining & Metals	Signing of Basic Agreement for the "Nikko Satoyama/Ryuki Forest Development" Project	In July 2009, the company signed a basic agreement with the City of Nanyo, Yamagata Prefecture, concerning the "Nikko Satoyama/Ryuki Forest Development" Project. Under the agreement, the company will plant new saplings while making use of the deciduous trees in the forest. Plans also call for the creation of two new areas in the forest. The first, called the "Satoyama Healing Forest Area," will make use of wood from thinning for mushroom cultivation and offer a bathing spot in the forest. The second, called the "Satoyama Four Seasons Forest Area," will allow visitors to enjoy cherry blossoms and other seasonal flowers and blooms. Other plans include the creation of new footpaths, service roads, an observatory, and an arbor.
	Participation in the Kurakakeyama Forest Maintenance Project	Since fiscal 2008, employees have served as volunteers in a project to maintain the Kurakakeyama Forest adjacent to the Hitachi Area Coordination Center.



# Trustworthy

## products/services

To satisfy customers, the JX Group works diligently to improve product and service quality from the customer's perspective, and to ensure product safety.

As the aspects that make up product quality diversify, we aim to provide even more trustworthy products and services by considering the environment in our products, and the human rights records of our business partners in our procurement activities.

# Basic Approach to Quality and Product Safety

Through its core operating companies alone, the JX Group is involved in a broad range of operations—from oil and gas exploration, refining and marketing, and copper mine development, smelting and processing, to electronic materials. Each Group company practices quality control, and each company and business site has obtained ISO 9001 certification, the internationally recognized standard, 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 (see p. 23).

#### JX Nippon Oil & Energy

In conjunction with the July 2010 merger, JX Nippon Oil & Energy formulated a new quality policy drawing from the quality assurance policies and product-specific quality policies in place at the companies prior to the merger, as well as the JX Group Values. As in previous years, the company continues in fiscal 2010 to identify key issues for improving quality and ensuring product safety. Major quality activities in fiscal 2009 prior to the merger are highlighted below.

## [Key Issues and Major Activities in Fiscal 2009]

[Ney issues and iviajor Activities in Fiscal 2009]		
Nippon Oil and Nippon Petroleum Refining	Japan Energy	
Strengthen companywide quality assurance system  • Embedded PDCA via close ties with key departments Enhance quality assurance system for fuel and chemical products • Enacted new internal audit and management review Extensive quality control at refineries and manufacturing sites • Reduced major complaints to zero via trouble and complaint prevention programs Enhance response to customers	Strengthen quality control and assurance systems  • Enacted quality survey conducted by head office and shared quality-related data Enhance quality competitiveness  • Applied for fuel oil quality patent Respond firmly to future quality and environmental quality  • Drafted product standards for biogasoline Establish fundamental technology  • Researched optimal anti-knocking indicators	

## JX Nippon Mining & Metals

JX Nippon Mining & Metals is sharing quality-related knowledge and experience within the group to respond quickly and efficiently to customers' increasingly sophisticated and diverse needs regarding quality. Viewing the development of an effective framework as an urgent task, the company has promoted efforts to integrate existing quality activities at each business site to establish a companywide quality management system, from the standpoint of greater quality information sharing.

Key initiatives taken in fiscal 2009 are described below.

### 1. Establishment of a companywide quality management system

In October 2009, the company drafted a basic quality policy and regulations governing quality management.

## 2. Sharing of quality information from each business site

A council meeting of officers responsible for quality at operating companies directly under JX Nippon Mining & Metals was convened in November 2009, where members reported on ISO 9001 audit status, quality losses, and the status of quality-related complaints.

## 3. Redevelopment of quality training system

JX Nippon Mining & Metals is developing a systematic training system that incorporates new quality control and problem resolution methods and ISO quality management, and that divides quality education previously conducted on an individual business site basis into business site specific and companywide categories.

Going forward, JX Nippon Mining & Metals will continue to spread in-house data, insight and experience relating to quality across the group, while advancing human resource development and building a more robust companywide quality management system.

## Basic Approach to Customer Satisfaction

The JX Group is committed to improving customer satisfaction. Group companies work to assess customer needs through everyday business transactions, the establishment of customer centers, and customer satisfaction surveys, then reflect customer input in products and services.

## JX Nippon Oil & Energy

JX Nippon Oil & Energy recognizes customer satisfaction (CS) as a vital component of quality, and has set up a CS Management Promotion Group within the Quality Assurance Department to drive CS improvement. Prior to the merger, each company had established its own customer centers and other customer help desks. Inquiry status for these centers in fiscal 2009 is shown below.

## [Achievements in Customer Consultation]

Nippon Oil	Japan Energy
49,300 inquiries 2,100 complaints	11,400 inquiries 900 complaints

Additionally, JX Nippon Oil & Energy offers training specifically for service stations designed to improve customer service. The status of training sessions held in fiscal 2009 is shown below.

## [Major Service Station Training Programs]

Nippon Oil	Japan Energy	
Course consists of two parts—training in ways to improve basic customer service and training in customer service and	CS Management Practice Program This program covers issue identification to action plan formulation in a drive for more successful CS management. Participating service stations: 270	

<sup>\*</sup>Car-life Support Program

Japan Energy has promoted a Field Communication Program for service stations in addition to the previously discussed initiatives. This practical training program for earning customer trust through inspection activities seeks to deepen communication with customers and give them the confidence to rely on their local service station for certain products and services. 34 service stations joined the program in fiscal 2009, making a total of 377 service stations to date.

## Redefined ENEOS Brand



# ENEOS and JOMO have joined to form a new ENEOS

"ENEOS" was coined from the words "ENERGY" and "NEOS," which means "new" in Greek, and expresses a desire to assemble a diverse energy portfolio capable of satisfying every customer.

The brand mark was designed to symbolize energy, with the globe in the center representing "reliability" and "continuity," and the spiral spreading outward symbolizing "creativity" and "innovation."

\*The JOMO brand will be successively changed to the ENEOS brand.

These activities will continue under JX Nippon Oil & Energy, which will also research additional measures for further increasing customer satisfaction.

## JX Nippon Mining & Metals

JX Nippon Mining & Metals uses input from customers and business partners to improve product and service quality. The company also places importance on creating relationships of trust. Customer praise for the company's technological capabilities and product quality in each of its businesses has resulted in JX Nippon Mining & Metals receiving several awards. Examples of some of the major awards and recognition received in fiscal 2009 are discussed below. Going forward, JX Nippon Mining & Metals remains dedicated to doing its utmost to respond dynamically to customer needs.

## [Examples of Major Awards for the JX Nippon Mining & Metals Group in Fiscal 2009] (Company names were as of fiscal 2009)

Customer	Type of Award	Recipient	Reason for Award
Intel Corporation	Preferred Quality Supplier Award	Nippon Mining & Metals Co., Ltd.	This award was established to encourage continuous and outstanding improvements among principal suppliers to Intel. Nippon Mining & Metals was highly rated in terms of cost, quality, supply system, delivery and technological capabilities as an outstanding vendor for sputtering targets used in thin film formation.
TAIFLEX Scientific Co., Ltd.	Best Supplier Award	Nikko Metals Taiwan Co., Ltd.	Contribution to stable supply of rolled copper foil
Sony Corporation	Green Partner Award	Nikko Metals Philippines, Inc.	Strict compliance with chemical substance management standards
Raytheon Company	NCS Supplier Excellence Award	Nikko Metals USA, Inc.	Contribution to high quality and other supply-side areas

# Basic Approach to Product Environmental Performance

With public interest in the environment growing every year, product environmental performance is becoming indispensable to efforts to improve the reliability of products and services. All companies in the JX Group are developing and offering environmentally friendly products, technologies and services.

## JX Nippon Oil & Energy

#### **ENEOS FLEET Series**

The ENEOS FLEET series of automotive lubricants was developed to embody the keywords "environment," "energy conservation," "long life," and "high performance."

Several new products were added to the product lineup in October 2010, among them three large diesel engine oil products, including a fuel-efficient diesel engine oil compatible with diesel particulate filters, and a gear oil for dual use on transmission and differential gears in heavy vehicles.



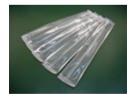
**ENEOS FLEET** 

The ENEOS FLEET series not only responds to environmental concerns, but helps to improve total cost merit for customers.

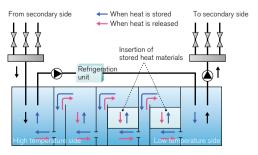
## Paraffinic Latent Heat PCM Ecojoule®

Latent heat refers to the heat released or absorbed when matter undergoes a phase change from liquid to solid, for example when water becomes ice, or vice versa. While water freezes at zero degrees centigrade, the freezing point of the Ecojoule® latent heat storage material can be adjusted at will. The result is a material for efficient heat storage that can eliminate wasted energy from overcooling or overheating when

adjusting temperature. In addition to its adoption in thermal storage air conditioning systems that help reduce energy use and carbon dioxide emissions in buildings and other facilities, Ecojoule® is finding application in automotive components, thermally adjustable apparel, building materials and a wide range of other fields.



Ecojoule®

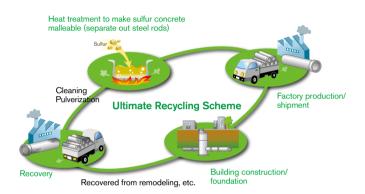


Thermal storage air conditioning systems for buildings

#### **RECOSUL (Sulfur Concrete) Anti-Erosion Construction Methods**

RECOSUL is a product developed and sold as a way of effectively using the sulfur generated as a byproduct at refineries.

Made from modified sulfur (created by adding an additive to sulfur), RECOSUL is a new aggregate material that, when it hardens, offers outstanding tensile strength, water impermeability and acid resistance. RECOSUL is also an environmentally friendly recycled product, since the raw material is an industrial byproduct. Furthermore, RECOSUL can be reheated to reform it into a product again, resulting in an ultimate recyclable product that never becomes industrial waste. The manufacture of RECOSUL also produces 60% fewer carbon dioxide emissions than conventional cement concrete products.



## JX Nippon Mining & Metals

#### **Hyper Eco Alloy**

Hyper Eco Alloy is an environmentally friendly copper alloy that offers superior heat dissipation properties and higher electrical conductivity than brass (an alloy of copper and zinc), while retaining the same tensile strength and workability. Brass has been widely used as a material for the male terminal of automotive connectors. However, greater use of automotive electronics in recent years has led to concerns over the heat dissipation and conductive properties of this material. Moreover, recovered pieces of tin-plated brass cannot be melted down and used as a raw material for brass. However, since Hyper Eco Alloy is made from copper, zinc and tin, it can be made even from recycled tin-plated scrap. These features make Hyper Eco Alloy ideal not only for use in automotive connectors, but also for electrode tabs in lithium-ion batteries.





Automotive connectors

## Basic Approach to Purchasing

Procurement sources for raw materials are growing increasingly diverse in step with economic globalization. Numerous examples exist of cases in which supplier-side problems concerning compliance practices, the environment and human rights have ultimately impacted consumable goods. For this reason, responsible supply chain management has become an important element in garnering trust in products and services.

To develop a Group-wide supply chain management framework, the JX Group in July 2010 merged the Purchasing Department of Nippon Oil with Nippon Mining Procurement Inc., the two units responsible for the purchasing functions of Nippon Oil and Nippon Mining Holdings. This integration resulted in the establishment of JX Nippon Procurement Corporation. Going forward, JX Nippon Procurement will spearhead the Group's efforts to promote transparent, fair and honest transactions. Along with environmentally friendly purchasing activities, the Group will pursue stronger communication with business partners, aiming for mutually beneficial outcomes by building partnerships grounded on mutual trust.

In its procurement activities, Nippon Oil, aimed to meet public expectations by emphasizing 1. Greater transaction transparency, 2. CSR and compliance, 3. Concern for the environment, and 4. Partnerships. In fiscal 2009, the company worked to procure supplies, materials and services from those business partners that strive to reduce their environmental impact. The company also promoted green purchasing, achieving a 100% green procurement rate. To bolster partnerships, Nippon Oil sponsored suppliers' meetings to explain and share awareness of its medium-term management plan, future supply-demand trends and purchasing policies.

JX Group Company Initiatives in Fiscal 2009

Nippon Mining Procurement has approached purchasing policies and green purchasing by conducting questionnaires among its business partners. In fiscal 2009, the company targeted suppliers above a certain size with a questionnaire that touched on topics of growing interest, such as respect for human rights and procurement from regions embroiled in civil unrest. Through these activities, the company also worked to reflect the opinions and requests of business partners in its purchasing activities.

## Basic Purchasing Policy

JX Nippon Procurement has drafted a new basic purchasing policy as shown below.

## JX Nippon Procurement Basic Purchasing Policy

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

## **Ethics**

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

## Advanced ideas

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

## Relationship with society

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

## Trustworthy products/services

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

## Harmony with the environment

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



# Harmony with the environment

We develop technologies and services for creating a better global environment. As a corporate group closely connected to the Earth's resources, the JX Group is involved in ongoing and vigorous efforts to use resources and energy effectively, and to preserve the environment.

## Basic Approach to the Environment

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.

In conjunction with the July 2010 start of the JX Group's three-core operating company framework, we established the JX Group Environmental Committee to serve as an advisory body to the president of JX Holdings. Going forward, the committee is to lead efforts to develop an Environmental Management System (EMS) tailored to the JX Group. Among other functions, the Committee will manage progress on medium-term environmental management plans proposed by Group companies.

JX Group companies are also aggressively advancing efforts to obtain internationally recognized ISO 14001 EMS certification. The same certification has already been obtained for the Group's key business sites, including refineries and smelters.

After discussion in the JX Group Environmental Committee, the JX Group Environmental Policy, described below, was established at the second meeting of the JX Group CSR Council in October 2010.

## JX Group Environmental Policy

## The JX Group will

- 1. Develop the technologies, products and services that help to create a better global environment.
- Work diligently to prevent global warming and be mindful of preserving biodiversity.
- 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.

## Strict Compliance with Environmental Laws

The JX Group strives for strict compliance with environmental laws through rigorous EMS operation. In fiscal 2009, there were no incidents involving violations of any laws pertaining to the environment.

## **Environmental Targets and Achievements**

Key environmental targets and achievements in fiscal 2009, prior to JX Group integration, for the corporate groups of core operating companies are as follows:

## [Nippon Oil Group Major Environmental Targets and Achievements]

Medium-Term Environmental Management Plan (FY 2008–2010)	Fiscal 2009
Reduce specific energy consumption* (fiscal 2010) (Refineries/Plants) Down 20% from fiscal 1990 (Oil and Gas E&P) CO <sub>2</sub> emissions intensity down 3%* <sup>2</sup> from fiscal 2007	-19% -11%
Reduce waste (Nippon Oil Group) Maintain Zero Emissions Plus goals (waste-to-landfill ratio*3 of under 0.5%)	0.27%

- \*1 Amount of energy consumed (kL)/production volume (kL)
- \*2 Targets in Malaysia
- \*3 Volume of landfill waste/total volume of waste generated (excludes excavation sludge)

## [Japan Energy Group Major Environmental Targets and Achievements]

Medium-Term Environmental Plan (FY2008-2010)	Fiscal 2009
Reduce specific energy consumption (average for 2008–2012) (Refineries) Lower than 8.59 kL of crude oil equivalent/	
production volume (1,000 kL)	8.70
(Oil and Gas E&P) CO <sub>2</sub> emissions intensity lower than 2.70 kg-CO <sub>2</sub> /GJ*	262
	2.02
Reduce waste (Refineries, Plants) Waste-to-landfill ratio of less than 1.0%	0.54%

<sup>\*</sup>Targets related to gas production at the Nakajo Oil and Gas Field.

## [Nippon Mining & Metals Group Major Targets and Achievements]

., , ,	
Autonomous Action Plan on Environmental Protection (FY2006–2010) (Reduction rate versus average achievement for FY2003–2005*)	Fiscal 2009
Reduce specific energy consumption (fiscal 2009) (Nippon Mining & Metals Group) Down 4%	-3.5%
Reduce CO <sub>2</sub> emissions intensity (Nippon Mining & Metals Group) Down 6%	-6.9%
Reduce final waste disposal intensity (Nippon Mining & Metals Group) Down 24%	-60%

<sup>\*</sup>Based on fiscal 2006 achievement for some overseas business sites.

## Initiatives to Prevent Global Warming

Global warming is a problem that faces all of us. The companies within the JX Group are addressing this issue by setting activity targets, reducing energy consumption, and taking steps to cut greenhouse gas emissions.

## JX Group Energy Consumption and CO<sub>2</sub> Emissions

Prior to the merger, the Nippon Oil Group made efforts to reduce carbon dioxide emissions throughout its entire supply chain. In parallel, the group placed the strongest emphasis on achieving greater energy efficiency at the refining stage, which accounts for roughly 80% of its total CO<sub>2</sub> emission volume. In its Medium-Term Environmental Management Plan, the group's main target was to reduce specific energy consumption at the refining stage in fiscal 2010 by 20% compared to fiscal 1990. Guided by this goal, the group has pushed forward with a host of activities to enhance energy efficiency, including the development and adoption of cutting-edge technologies, improved production processes, and efforts to reduce losses from waste heat.

The Japan Energy Group is also determined to contribute to reductions in CO<sub>2</sub> levels through more efficient energy use. Accordingly, the group worked to use energy more efficiently throughout its supply chain. In its Medium-Term Environmental Plan, the group's main target is to reduce average specific energy consumption (kL crude oil equivalent/production volume (1,000kL)) at refineries to 8.59 or lower from fiscal 2008 to fiscal 2012. To this end the group is promoting energy efficiency measures at its refineries through the ongoing enactment of operational improvements and other actions.

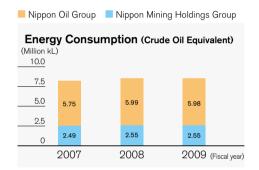
The Nippon Mining & Metals Group, meanwhile, has positioned global warming prevention as one of the priority issues of its Autonomous Action Plan on Environmental Protection. Here, the group's main targets for fiscal 2010 were to reduce specific energy consumption and CO<sub>2</sub> emission intensity by more than 5% and 7.5%, respectively, compared to the average values for fiscal 2003 through fiscal 2005. Specifically, the group is working to reduce its energy usage through greater efficiency and effective waste heat utilization in smelting processes, including rationalization of copper smelting methods, and boosting electrical current efficiency in copper EW processes.

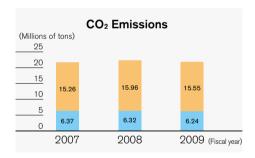
## Fiscal 2009 Achievements

In terms of energy consumption (crude oil equivalent) in fiscal 2009, the Nippon Oil Group and the Nippon Mining Holdings Group consumed 5.98 million kL and 2.55 million kL of energy, respectively, a total of 8.53 million kL for both groups. This figure was largely unchanged from fiscal 2008.

As shown on p. 35, JX Group companies are largely on track to meet reduction targets for specific energy consumption outlined in their medium-term environmental management plans.

For  $CO_2$  emissions in fiscal 2009, the Nippon Oil Group and the Nippon Mining Holdings Group reported emissions of 15.55 million tons and 6.24 million tons, respectively, a total of 21.79 million tons of emissions for both groups. This figure was slightly lower than that reported in fiscal 2008.





## About Energy Consumption and CO<sub>2</sub> Emissions

Figures for the Nippon Oil Group represent totals for the entire supply chain (exploration and production, shipment and stockpiling, refining and production, and distribution and retailing). Figures for the Nippon Mining Holdings Group represent totals for petroleum (exploration and production, and refining and production) and metals operations, and Toho Titanium Co., Ltd. (following consolidation by the Nippon Mining Holdings Group in fiscal 2008). To enable past fiscal-year comparisons, the scope of data for the Nippon Oil Group and the Nippon Mining Holdings Group has been limited to 2009 CSR reports respectively published by both corporate groups in the previous fiscal year. Due to rounding, figures for some past year data may differ slightly from those published in the CSR reports published last fiscal year.

## Initiatives to Prevent Air Pollution

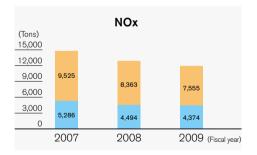
In line with laws, ordinances, accords and voluntary standards to prevent air pollution, the JX Group closely monitors gases emitted into the atmosphere by its facilities. The Group also works diligently to reduce emissions by adopting a range of equipment to enhance environmental performance and by switching to low-sulfur fuels, among other actions.

#### Fiscal 2009 Achievements

In fiscal 2009, sulfur oxide (SOx) emissions by the Nippon Oil Group and the Nippon Mining Holdings Group amounted to 6,577 tons and 8,915 tons, respectively, a total of 15,492 tons for both groups. This figure was largely unchanged from fiscal 2008.

Moreover, nitrogen oxide (NOx) emissions by the Nippon Oil Group and the Nippon Mining Holdings Group in fiscal 2009 amounted to 7,555 tons and 4,374 tons, respectively, a total of 11,929 tons for both groups. This figure represented a slight improvement over fiscal 2008.





## 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.

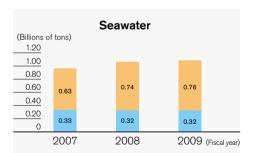
## Fiscal 2009 Achievements

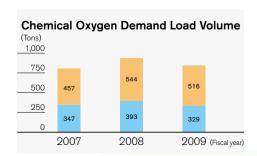
Of the freshwater resources consumed in fiscal 2009, the Nippon Oil Group and Nippon Mining Holdings Group used 91.84 million tons and 43.97 million tons, respectively, a total of 135.81 million tons. This figure was largely unchanged from fiscal 2008.

Of seawater resources consumed, the Nippon Oil Group and Nippon Mining Holdings Group used 760 million tons and 320 million tons, respectively, a simple total of 1,080 million tons. This figure was largely unchanged from fiscal 2008.

In fiscal 2009, the chemical oxygen demand (COD) load volume, an indicator of water pollution levels, for the Nippon Oil Group and Nippon Mining Holdings Group was 516 tons and 329 tons, respectively, a total of 845 tons for both groups. This figure was lower than that for fiscal 2008.





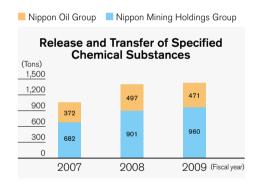


## Initiatives for Management of Chemical Substances

JX Group companies conduct proper management of specified chemical substances stipulated under the Pollutant Release and Transfer Register (PRTR) Law. Group companies also strive to reduce chemical emission levels as part of steps to reduce their environmental impact. Where the Material Safety Data Sheet (MSDS) system is concerned, Group companies endeavor to present information on the behavior and handling of target chemical substances in a readily accessible manner.

#### Fiscal 2009 Achievements

In fiscal 2009, the release and transfer of specified chemical substances into the environment for the Nippon Oil Group and Nippon Mining Holdings Group was 471 tons and 960 tons, respectively, a total of 1,431 tons for both groups. This figure represented an increase over 1,398 tons reported for fiscal 2008. The main source of this increase was the addition from fiscal 2009 of the Kurobe Plant within the scope of data compiled by Nippon Mining Holdings Group company Toho Titanium Co., Ltd.



## Management of PCB Waste

JX Group companies properly store and manage equipment such as capacitors and oil that contain polychlorinated biphenyl (or PCB). The ongoing disposal of PCB waste has been entrusted to Japan Environmental Safety Corporation (JESCO).

#### Conformance with REACH Regulations

The European Union (EU) implemented new regulations pertaining to chemical products from June 2007 called REACH (Registration, Evaluation, Authorization and Restriction of Chemicals). Based on the principle of preventive action, these regulations seek to identify the particular characteristics of each chemical and the risks it poses in accordance with standardized management for chemicals transported within the EU, and to clarify the potential environmental effects of such substances. In fiscal 2008, all JX Group companies carried out preliminary registration of all chemicals that fall under the scope of these regulations, and are now conducting preparatory work ahead of full registration.

## Initiatives to Reduce Waste

JX Group companies each set waste reduction targets in line with their own medium-term environmental management plans, and take steps to reduce both their waste-to-landfill ratio and final waste disposal intensity.



See p. 35 for environmental targets and achievements.

#### Fiscal 2009 Achievements

In fiscal 2009, total waste generated (volume of total waste excluding volume recycled internally) by the Nippon Oil Group and Nippon Mining Holdings Group was 90,000 tons and 70,000 tons, respectively, a total of 160,000 tons for both groups.

The volume of landfill waste generated by the Nippon Oil Group and Nippon Mining Holdings Group was 237 tons and 2,507 tons, respectively, a total of 2,744 tons for both groups. This figure represented a sharp improvement compared to 5,963 tons reported in fiscal 2008. The main source of this reduction was the completion of a soil remediation project on property owned by Japan Energy outside its Funakawa Works, that had been ongoing since fiscal 2001. This resulted in a sharp drop in waste related to soil treatment.



## Concerning Air and Water Pollutants, Chemical Substances and Waste

Figures for the Nippon Oil Group represent totals from refining and production (data from the Oita Refinery included in calculations of the volume of landfill waste from fiscal 2009). Figures from the Nippon Mining Holdings Group are totals for petroleum (exploration and production (excluding SOx and NOx), and refining and production) and metals operations, and Toho Titanium Co., Ltd. (following consolidation by the Nippon Mining Holdings Group in fiscal 2008).

Due to rounding, figures for some past year data may differ slightly from those published in the CSR reports published last fiscal year.

## **Guide to JX Group Websites**

JX Holdings http://www.hd.jx-group.co.jp/english/



## About JX Group

Establishment of JX Group

JX Group Mission Statement

Objectives and Basic Concept

Disclosure Materials of the Integration

## Corporate Profile

JX Group Mission Statement

**Group Companies** 

Management Policies

Corporate Data

Executives

Organization

Corporate History

## News Release

## Investor Relations

IR News

Management Policies

Financial Highlights

IR Library

Shareholder & Stock Information

IR Calendar

Latest IR Materials

## Corporate Social Responsibility

## The UN Global Compact's Ten Principles

Human Rights		
Principle 1	Businesses should support and respect the protection of internationally proclaimed human rights; and	P24, P34
Principle 2	make sure they are not complicit in human rights abuses.	P24, P34
Labour		
Principle 3	Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining;	P24
Principle 4	the elimination of all forms of forced and compulsory labour;	P24
Principle 5	the effective abolition of child labour; and	P24
Principle 6	the elimination of discrimination in respect of employment and occupation.	P24
Environment		
Principle 7	Business should support a precautionary approach to environmental challenges;	P35, P38
Principle 8	undertake initiatives to promote greater environmental responsibility; and	P35-38
Principle 9	encourage the development and diffusion of environmentally friendly technologies.	P9-10, P13-14, P17-18, P25-26, P33
Anti-corruption		
Principle 10	Businesses should work against corruption in all its forms, including extortion and bribery.	P22, P28

## JX Nippon Oil & Energy http://www.noe.jx-group.co.jp/english/



## Corporate Profile

Company Overview

JX Group Mission Statement

**ENEOS** brand

Executives

Organization

Research & Development

## **CSR Report**

## **Products**

Lubricants

Petrochemicals

Optical Films

TU Cloth

Tow PREPREG

Energy for Industrial customers

## JX Nippon Oil & Gas Exploration http://www.nex.jx-group.co.jp/english/index.html



## **Business Activities**

Japan

The North Sea

The Middle East/Africa

North America

Southeast Asia

Oceania

## Exploration Development and

**Production Flow** 

## Corporate Profile

President's Message

Corporate Data

Executives

Organization

Operating Overview

## Safety, Environment and Community

**HSE** Policy

HSE Management System

Operation Safety

Environment

Community

Recruit

## JX Nippon Mining & Metals http://www.nmm.jx-group.co.jp/english/



## Corporate Profile

Corporate Data

Message from the Management

Organization Chart

JX Group Mission Statement

Corporate History

Main Operating Sites

## **Business Segments**

Resources Development

Smelting and Refining

Recycling and Environmental Service

**Technology Development** 

## **Products**

Copper Foil

Sputtering Targets

Compound Semiconductors

Surface Treatment Agents

Precision Rolled Products

Precision Fabricated Products

Cathode Materials

## Corporate Social Responsibility

## **Third-Party Opinion**

## We received comments from an outside expert on the JX Report for a Sustainable Future 2010.



Masaatsu Doi Associate Professor Faculty of Regional Policy Takasaki City University of Economics

This year for the first time, the CSR report includes reports on the newly formed JX Holdings parent company separate from reports on the core operating companies. This new addition will help the listed JX Holdings to fulfill its social responsibility.

The main points in JX Holdings' CSR activities are the creation of the five values (EARTH) to guide the activities of the new Group, and its efforts to implement a highly abstract mission statement in a concrete manner, incorporating it into day-to-day business activities.

The JX Group aspires to embody all five of the EARTH values, but I believe that the "A" in EARTH, symbolizing the Group's intention to incorporate "Advanced ideas" into CSR activities, demonstrates the Group's unique perspective on CSR. This fiscal year, the focus was on advanced use of petroleum and technologies for effective use of iron ore. The Group has positioned these efforts as part of a social business that leverages its proprietary expertise, and I have great hopes for it going forward. Starting this year, the JX Group has specified a basic policy and focus areas for its social contribution activities. In these areas, I believe the Group will be able to leverage its core business technologies and expertise in initiatives that will truly require strategic "Advanced ideas."

The newly created five EARTH values are a powerful, easy-toremember acronym that will be able to permeate throughout the entire JX Group. However, in my opinion there is still room to improve on several points, including what information to offer and how and where to communicate it. For example, the report includes figures on diversity and employment of disabled persons at the core operating company level, but not for the holding company. In addition to these data that are well covered, there are other areas where the Group's response to issues was insufficient and will need to be improved across the Group. For example, page 28 contains negative information that a company might traditionally prefer not to disclose, and although these points need real-world improvement, the JX Group is to be commended for actively disclosing even these harsh facts. However, readers would be better able to understand the wider picture of such events if the report included information such as explanations of why various incidents and accidents occurred, and what mechanisms are being developed to prevent reoccurrences.

Finally, I would like to touch on the need for a long-term CSR vision as a future issue. Pages 5 and 6 present the medium-term management plan and long-term vision of JX Holdings. I think the Company needs to present a similar page clearly indicating goals and action plans for CSR activities. I also think it needs to develop mechanisms to enable ongoing evaluation of the results. Next fiscal year, I hope that the JX Group will further advance its CSR management by effectively establishing the five values formulated in fiscal 2010.

Professor Doi earned his undergraduate degree at the Hitotsubashi University Faculty of Economics, and is completing his doctoral degree at the Hitotsubashi University Graduate School of Commerce and Management. He joined the faculty of Takasaki City University of Economics in 2009, and is the co-author of CSR Management: Corporate Social Responsibility and Stakeholders and The Rise of Social Enterprise, both published by CHUOKEIZAI-SHA, Inc.

## Response

The social mission of the JX Group is to provide a stable and efficient supply of the energy, resources and materials indispensable to human life. Because our business areas are closely related to the natural environment, we are expected to work constantly to reduce the environmental impact of our business activities.

We are pleased to receive these comments and opinions from Professor Doi in his capacity as a researcher in the area of harmonious co-development of companies and society. In particular, we have taken to heart his recommendation that we clearly indicate our CSR goals and plans for implementation, and the importance of disclosing our progress

toward these goals based on our view that our very business embodies CSR. Going forward, we will work with all our stakeholders to contribute to the development of a sustainable economy and society.

Yuji Nakajima
Executive Officer,
General Manager,

General Manager,
Corporate Social Responsibility Dept.
JX Holdings, Inc.



## **Independent Review Report**

(TRANSLATION)

## Independent Review Report

September 29, 2010

Mr. Mitsunori Takahagi, President and Representative Director, JX Holdings, Inc.

> Deloitte Tohmatsu Evaluation and Certification Organization Co., Ltd. Chief Executive Officer Hiroshi Inanaga

1. Scope of Review

We have reviewed the "JX Report for a Sustainable Future 2010" (the "Report") prepared by JX Holdings, Inc. (the "Company"). The purpose of our review was to provide limited assurance from an independent practitioner about whether the material environmental information for the period from April 1, 2009 to March 31, 2010 included in pp.35-38 of the Report was accurately measured and calculated, referring to the Environmental Reporting Guidelines - Year 2007 version (issued by the Japanese Ministry of the Environment), GRI Sustainability Reporting Guidelines (Version 3.0) and GRI Mining and Metals Sector Supplement, in accordance with calculation methods adopted by the Company, and that no such material items were omitted.

Responsibility of Management

The Report is the responsibility of the Company's management. Our responsibility is to provide our limited assurance with respect to our review performed on the Report as an independent practitioner.

Summary of Review

To obtain an adequate and valid standard of basis for providing limited assurance with respect to our conclusions, we performed our review with reference to the International Standard on Assurance Engagements (ISAE) 3000 (issued by the International Federation of Accountants in December 2003), and in accordance with the Practical Guideline for Assurance Engagement of Sustainability Information (issued by the Japanese Association of Assurance Organizations for Sustainability Information in December 2009). The review procedures performed for the material environmental information for the period from April 1, 2009 to March 31, 2010 included in pp.35-38 of the Report consisted of: 1) agreeing information to summary tables and supporting documents on a sample basis; 2) interviewing the responsible personnel and the persons in charge; 3) reviewing and agreeing information to the relevant minutes, the Company's regulations, and ISO-related documents, etc.; 4) site visits; and 5) comparing information with other available supporting internal and external materials.

## 4. Conclusions

On the basis of the review procedures described in the preceding paragraph, nothing has come to our attention that caused us to believe the material environmental information for the period from April 1, 2009 to March 31, 2010 included in pp.35-38 of the Report was not accurately measured or calculated, referring to the Environmental Reporting Guidelines -2007 version (issued by the Japanese Ministry of the Environment), GRI Sustainability Reporting Guidelines (Version 3.0) and GRI Mining and Metals Sector Supplement, in accordance with calculation methods adopted by the Company, in all material respects, or that any material items listed in the Appendix: Requirements for Logotype Registration of Environmental Reporting were omitted.

Special Interests

There are no interests between the Company and Deloitte Tohmatsu Evaluation and Certification Organization Co., Ltd. or its engagement personnel, requiring disclosure based on the provisions of the Japanese Association of Assurance Organizations for Sustainability Information.



## JX Holdings, Inc.

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

Corporate Social Responsibility Department Inquiries (e-mail) csr@hd.jx-group.co.jp

As of September 30, 2010, JX Holdings was a constituent of the following major SRI Indexes:



DJSI Asia Pacific: A global index of approximately 140 companies selected for their outstanding sustainability from among the 600 largest companies in the Asia-Pacific region.



MS-SRI: This index comprises 150 stocks selected from among listed companies in Japan on the basis of noteworthy social responsibility efforts. This is Japan's first socially responsible investment index.

Indicators of environmental performance in this report have been reviewed by a third party and received the mark appearing below.



The J-SUS mark indicates that the JX Report for a Sustainable Future 2010 meets the standards for sustainability report assurance and registration established by the Japanese Association of Assurance Organizations for Sustainability Information (J-SUS).







This report was printed using an environmentally friendly waterless printing process and vegetable oil ink. In support of the  $\mathit{Kizukai Undo}$  (Tree-Use Movement) promoted by Japan's Forestry Agency, JX Holdings has printed this report on paper made from wood harvested in Haramura, Nagano, Japan, during forest thinning. This contributes to increased absorption of  $\mathrm{CO}_2$  in Japanese forests.