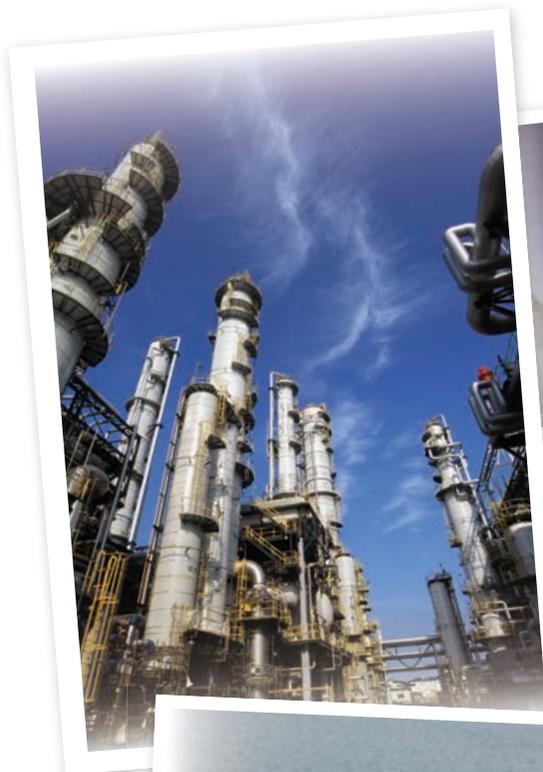


# The Future of Energy, Resources and Materials

## JX Report for a Sustainable Future 2012



**JX Holdings, Inc.**



The JX Group has entered its third year after being formed. Under our mission statement, the JX Group will fulfill its social responsibilities as an integrated energy, resources and materials business group, and contribute to the development of a sustainable economy and society.

## JX Group Mission Statement

JX Group Slogan

# The Future of Energy, Resources and Materials

JX Group Mission Statement

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

JX Group Values

Our actions will respect the **EARTH**.

**Ethics**

**Advanced** ideas

**Relationship** with society

**Trustworthy** products/services

**Harmony** with the environment

### About JX

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

### About the JX Corporate Brand Mark

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

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



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## Editorial Policy

The JX Group has prepared this report to communicate the results of its second year in existence 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.

The report is structured such that it is based around the JX Group's Mission Statement and the JX Group Values. The feature section gives an overview of the impact of the Great East Japan Earthquake on the JX Group and the Group's response. At the same time, the feature describes the JX Children's Story Award, one of JX's social contribution activities in which the entire JX Group is engaged. The report also introduces the JX Group's stance of actively striving to contribute to society through its business operations, from the viewpoints of the stable supply of oil and gas, and of achieving a recycling-oriented society and a low-carbon society.

The "JX Group Values" section reports on some representative examples of JX's activities that are based on the five JX Group Values (EARTH).

Furthermore, various JX Group companies, including JX Holdings, Inc. and the three core operating subsidiaries, disclose a variety of CSR-related information on their websites. Please have a look at the information on these websites which is summarized on page 36.

## 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.

## Scope of Report

JX Holdings, Inc. and its 11 main Group companies.

JX Nippon Oil & Energy Corporation and

its 24 main Group companies.

JX Nippon Oil & Gas Exploration Corporation and

its 29 main Group companies.

JX Nippon Mining & Metals Corporation and

its 55 main Group companies.

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

## Reporting Period

In principle, the report covers the period from April 2011 to March 2012. However, some information from April 2012 onwards is also included, as necessary.

## Guidelines Used as Reference

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

## Enhancing Reporting Reliability

The environmental performance information data on pages 31–35 has been reviewed by an independent body to ensure objective and reliable reporting.



**Yasushi Kimura**  
Representative Director, Chairman

**Isao Matsushita**  
Representative Director, President  
(JX Group CSR Council Chairman)

**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.**

### Establishing a Structure for the Stable Supply of Energy and Materials

The JX Group sustained massive damage to refineries, factories and other production facilities caused by the Great East Japan Earthquake that struck in March 2011. Flooding from the ensuing tsunami also rendered our service stations in the area unusable. This situation caused major interruption and inconvenience for people of the region who eagerly awaited the petroleum products we supply.

Through this unprecedented experience, the JX Group was forcefully reminded of the importance of our role in the stable supply of energy and materials. In addition to improving and reinforcing the seismic resistance of our refineries, oil depots, factories and other facilities, this experience prompted the start of trial demonstrations for a new type of earthquake-ready service station. This new facility can supply petroleum products for a short time even if major roads and railways are severely compromised. We will continue to tackle a variety of issues going forward to ensure that we can stably supply energy and materials.

## Helping Realize Low-Carbon, Recycling-oriented Societies

Three years have passed since the launch of the JX Group. In that time, the integration of JX Holdings, the three core operating subsidiaries and other group companies has gained momentum, and has continued to produce synergies beyond what we imagined possible.

Nevertheless, the global economy remains subdued overall, reflecting debt problems in Europe and the consequent slow-down in emerging markets. The Japanese economy, too, remains guarded as risks linked to the threat of power shortages and the yen's strong appreciation persist.

We are right now in the midst of a dramatic turning point in the domestic and global economic environment. Nevertheless, the fundamental mission of the JX Group remains unchanged. We are committed to delivering the essential energy, resources and materials needed in the most environmentally friendly form possible, all in a stable and unhindered manner.

The JX Group is especially committed to realizing low-carbon societies where carbon dioxide (CO<sub>2</sub>) emissions are greatly reduced, and recycling-oriented societies that minimize waste of the planet's limited resources. Our efforts to harmonize with society include the new energy business, where ENE-FARM residential fuel-cell systems and other products help reduce household CO<sub>2</sub> emissions, and the recycling and environmental services business, where we effectively utilize the invaluable metal resources that will support our future. We urge you to read more about these initiatives in the feature section of this report.

## Realizing the JX Group Mission Statement through Group-wide CSR Efforts

The JX Group adheres to the following 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." The business activities we pursue each day to this end embody the kind of CSR activities that the JX Group should strive for. We hold that compliance, social contribution and environmental safety are critical to earning broad trust from society as a good corporate citizen, and develop proactive CSR activities with this in mind.

In fiscal 2011, we took aggressive action in each of these areas. We performed legal compliance checks at our sites in Japan and strengthened compliance structures at our bases overseas. We also expanded our support for nurturing the next generation through the JX Children's Story Fund, and carried out a comprehensive inspection to ensure thorough compliance with environmental and safety regulations. Elsewhere, in response to the Great East Japan Earthquake, we are channeling intensive effort into maintaining the stable supply of petroleum products and the supply chain for copper and electronic materials products. At the same time, we have implemented support activities that reflect needs in the disaster zone to help life return to normal as soon as possible for those living there. These activities include monetary donations from group companies, volunteer activities supporting recovery in which both executives and employees take part, and the donation of *The Bouquet of Children's Stories* to children in the affected region.

Leveraging strengths as a corporate group with operations across the diverse fields of energy, resources and materials, the JX Group will aim for a new stage of growth and strive to realize the JX Group Mission Statement through robust CSR, all while enhancing our capacity to cope with a volatile business environment.

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



**Yasushi Kimura**  
Representative Director, Chairman



**Isao Matsushita**  
Representative Director, President  
(JX Group CSR Council Chairman)

## At a Glance—JX Group Overview

The JX Group is an integrated energy, resources and materials business group that comprises JX Holdings, which is the holding company and under which are three core operating subsidiaries that are active in three different business domains.

As of July 1, 2012, unless otherwise noted.

### Holding Company Overview

#### JX Holdings, Inc.

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

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

**Established:** April 1, 2010

**Capital:** ¥100 billion

**Principal Group Businesses:** Petroleum Refining and Marketing Business, Oil and Gas Exploration and Production Business, and Metals Business

**Group Companies:** 166 (134 consolidated subsidiaries and 32 equity-method affiliates, as of March 31, 2012)

**Number of Employees:** 24,236 (Consolidated, as of March 31, 2012)



### Overview of Core Operating Subsidiaries

#### JX Nippon Oil & Energy Corporation

**Representatives:** Seiichi Isshiki, Representative Director, President

**Head Office Location:** 6-3 Otemachi 2-chome, Chiyoda-ku, Tokyo 100-8162, Japan

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

**Principal Business:** Manufacturing and marketing of petroleum and petrochemical products



#### JX Nippon Oil & Gas Exploration Corporation

**Representatives:** Shigeo Hirai, Representative Director, President and CEO

**Head Office Location:** 6-3 Otemachi 2-chome, Chiyoda-ku, Tokyo 100-8163, Japan

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

**Principal Business:** Exploration, development and production of oil and gas



#### JX Nippon Mining & Metals Corporation

**Representatives:** Yoshimasa Adachi, Representative Director, President and Chief Executive Officer

**Head Office Location:** 6-3 Otemachi 2-chome, Chiyoda-ku, Tokyo 100-8164, Japan

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

**Principal Business:** Development and extraction of nonferrous metal resources, and manufacturing and marketing of nonferrous metal products and electronic materials



### Overview of Listed Subsidiaries

● Consolidated Subsidiaries: 2

#### NIPPO CORPORATION

**Representatives:** Kazunori Mizushima, Representative Director, President

**Head Office Location:** 19-11 Kyobashi 1-chome, Chuo-ku, Tokyo 104-8380, Japan

**Capital:** ¥15.3 billion (57.2% investment of JX Holdings, Inc.)

**Principal Business:** Civil engineering works such as construction of roads and painting work, and building work

● Equity-method Affiliates: 4

#### Toho Titanium Co., Ltd.

**Representatives:** Kiyonobu Sugiuchi, Representative Director, President

**Head Office Location:** 3-5 Chigasaki 3-chome, Chigasaki City, Kanagawa 253-8510, Japan

**Capital:** ¥12 billion (50.4% investment of JX Holdings, Inc.)

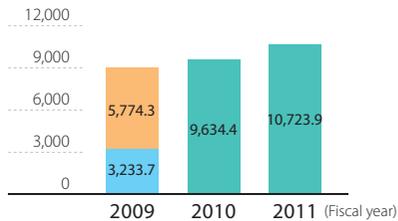
**Principal Business:** Manufacturing, processing and marketing of titanium metals

## Financial Highlights

■ Nippon Oil Corporation (Consolidated) ■ Nippon Mining Holdings, Inc. (Consolidated) ■ JX Holdings, Inc. (Consolidated)

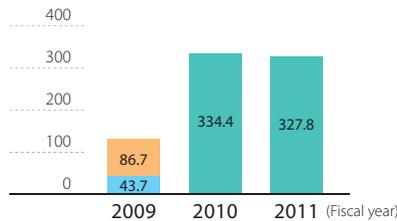
### Net Sales

(Billions of yen)



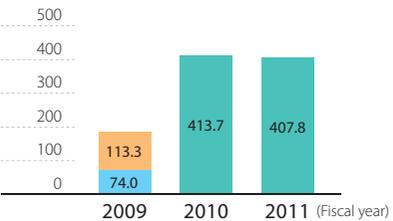
### Operating Income

(Billions of yen)



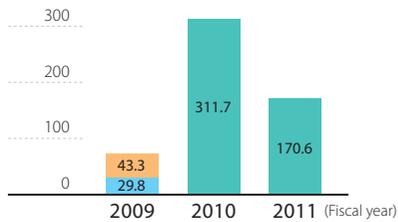
### Ordinary Income

(Billions of yen)



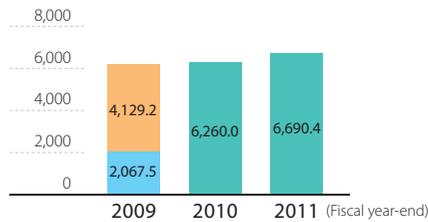
### Net Income

(Billions of yen)



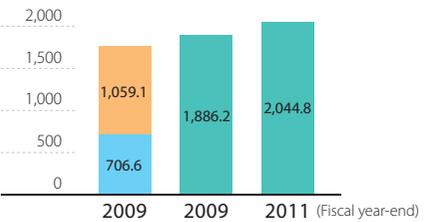
### Total Assets

(Billions of yen)



### Net Assets

(Billions of yen)



## First Medium-Term Management Plan for FY2010–2012

### [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)] (Announced in May 2012)

**Ordinary income:** ¥300 billion or more

**ROE:** 10% or more

**Net debt/Equity ratio:** 1.0 times

### Capital expenditure and financial investments:

¥980 billion (FY2010–2012 3-year total)

**Dividend policy:** Redistribute profits by reflecting consolidated business results while striving to maintain stable dividends

### Key Assumptions (Fiscal 2012)

- Exchange rate  
¥80/US\$
- Crude oil FOB (Dubai spot)  
US\$110/bbl
- Copper price (LME)  
360 ¢/lb

## Long-Term Vision for FY2020

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

### JX Holdings, Inc.

Transform existing operations into world-class businesses

● **Petroleum Refining and Marketing Business**  
Slim, robust production operations aligned with demand  
Goal: Refining capacity of 1,000 thousand barrels/day

● **Oil and Gas Exploration and Production Business**  
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 Business**  
Secure resources and develop businesses to meet societies’ eco needs  
Goal: Equity-entitled copper mine production ratio of 80%

Establish profitability

● **New Energy Business**  
Establish profitability  
Goal: Fuel cell sales of 300 thousand units/year (including exports)

● **Construction, Titanium Business, etc.**



## Restoration and Recovery After the Great East Japan Earthquake (1)

### <Restoration and Recovery at the JX Group>

The JX Group sustained tremendous damage from the Great East Japan Earthquake that struck on March 11, 2011. Determined to fulfill our responsibility to ensure the stable supply of energy and materials, we quickly enacted measures to restore and recover operations. Today, the JX Group is taking on new initiatives to develop a stable supply structure that can strongly withstand the impact of disaster.

### Status of Restoration and Recovery at the JX Group

The Sendai and Kashima refineries of JX Nippon Oil & Energy, and the Hitachi Works and Isohara Works/Isohara Fabricating Works of JX Nippon Mining & Metals sustained particularly serious damage in the wake of the Great East Japan Earthquake. Following the disaster, we took all possible and immediate action to restore these sites, with the goal of quickly resuming production. As a result, production at the Hitachi Works and the Isohara Works/Ishohara Fabricating Works was back on line by May 2011, and resumed at the Kashima Refinery in June.

The Sendai Refinery, which experienced the worst damage by far, is the sole refinery in the Tohoku region. To enable the site to assist in the recovery of daily and economic life for the people in this hardest hit region, the Group came together to perform recovery work under a recovery plan announced in July 2011. Production at the Sendai Refinery recommenced in March 2012.

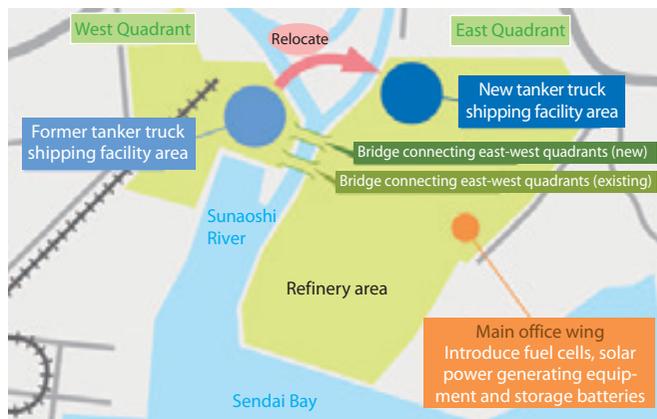
### ■ Damage at the Sendai Refinery and Our Response

The tsunami that struck caused massive damage that included flooding across the entire refinery and huge fires at the site's onshore shipping facilities. In May 2011, onshore shipping reconvened for certain products via temporary facilities. Subsequent restoration work was guided by three main concepts: restart production as soon as possible, enhance disaster response capabilities, and install alternative energy equipment and facilities. We relocated the tanker truck shipping facility from the severely damaged west quadrant of the refinery to the east, which is situated on higher ground. To enable fire engines and other vehicles to move more freely during a disaster, we also built a new bridge that accommodates large vehicles connecting the east and west quadrants of the refinery.

Efforts to restore the refinery were severely hampered by flood damage to the control systems and electrical equipment that were located on the first floor of the building. In response, these facilities and equipment were relocated to the upper floors of the building,

and steps were taken to make the structure itself more watertight. Thanks to these measures, production safely reconvened at the refinery in March 2012.

In the near future, we plan to install solar power generating equipment on the roof of the main office wing to the plant, as well as fuel cells and storage batteries on site to better conserve energy. At the same time, these changes will make it possible to maintain office functions as a disaster-ready site even in the event of a power outage.



Brief summary of the Sendai Refinery Recovery Plan



New bridge connecting east and west quadrants

## Establishing a Stable Supply Structure More Resilient to Disaster

Having experienced a disaster of unprecedented proportions, the JX Group is again reminded of the importance of its responsibility to society as a company involved in the stable supply of energy and materials. Accordingly, the JX Group is taking on bold new initiatives to better fulfill its mission around supply stability and efficiency.

### ■ Trial Demonstrations of New Earthquake-ready Service Stations

Since 2006, JX Nippon Oil & Energy has opened service stations across Japan that allow fuel to be pumped after an earthquake. These service stations are equipped with compact emergency generators and manual fuel pumps that allow fueling to take place during localized power outages triggered by seismic events. However, the Great East Japan Earthquake, where tsunami flooding destroyed the power grid itself and made the pumping of fuel and other actions impossible, exposed a host of other issues that must be addressed. Guided by the concept of pursuing energy-saving operations that contribute to communities, and centered on facilities highly resilient to major earthquakes, JX Nippon Oil & Energy launched trial demonstrations of a new type of earthquake-ready service station. The first of this new breed of service stations opened in Ishinomaki, Miyagi Prefecture, in March 2012.

Along with the installation of waterproof fuel pump meters, this new earthquake-ready service station has both emergency generators and the company's own ENE-FARM solid-oxide fuel cell system installed on the second floor of the building. If a tsunami hits, this configuration makes it possible to quickly resume fueling and other basic services once the waters recede. Efforts are also being made to

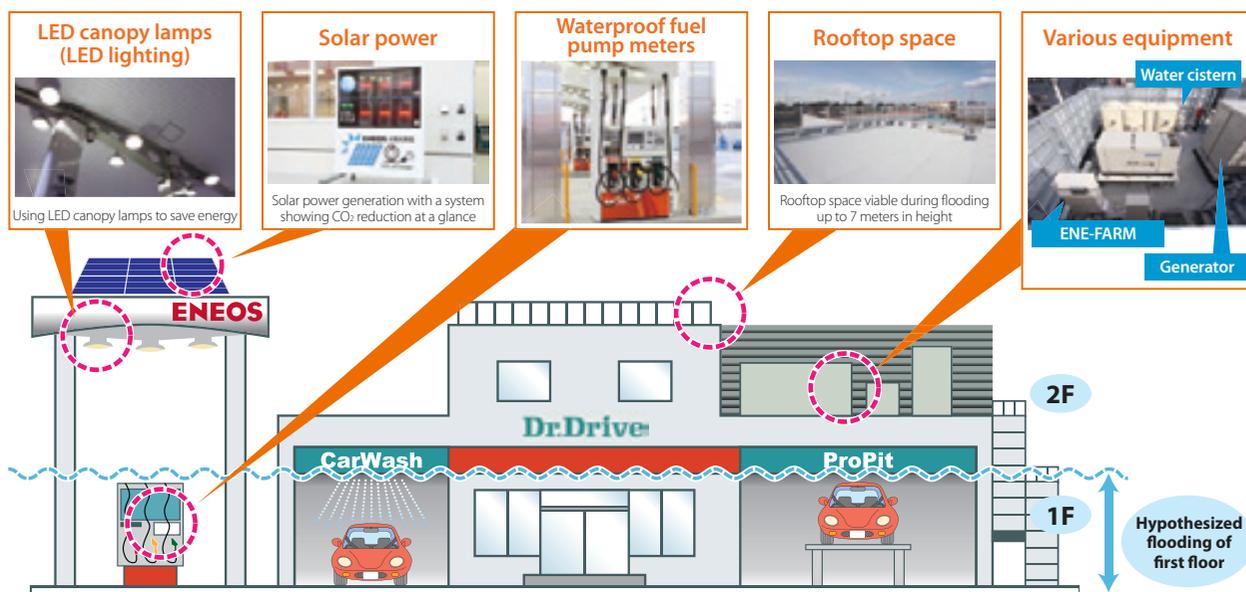


The new earthquake-ready service station (Ishinomaki City, Miyagi Prefecture)

reduce service station energy consumption with the installation of a solar power generation system, LED lighting and ENE-FARM. A water cistern has also been installed on the second floor of the building, making the rooftop of the service station viable as an evacuation site for local residents during an emergency.

By fiscal 2013, JX Nippon Oil & Energy plans to have its new service stations installed and tested in each of the 12 municipal districts that lie within Japan's Pacific coast from the northern Tohoku region to Kyushu, where a tsunami of 3 meters or more is predicted in the event of a major earthquake.

### [Overview of the New Earthquake-ready Service Station]





## Restoration and Recovery After the Great East Japan Earthquake (2)

### <Supporting Recovery in the Disaster Zone>

Guided by a commitment to a “Relationship with society,” one of the five JX Group Values (EARTH), we will continue to conduct volunteer activities and offer other support based on needs present in the disaster zone, with the aim of helping life for people there return to normal as quickly as possible.

### Monetary Donations

In a follow-up to ¥300 million in monetary donations by JX Holdings and its three core operating subsidiaries in March 2011, JX Group companies made similar donations during fiscal 2011 to the Japanese Red Cross Society and local governments in the disaster zone. Relief support was also provided to employees of JX Group companies who were directly impacted by the disaster and their families. As of March 31, 2012, monetary donations from the JX Group following the earthquake have totaled roughly ¥1.1 billion.

The JX Sunflowers women’s basketball team joined with the Kashiwa Reysol soccer team and four other sports teams to take part in fundraising activities. The JX Sunflowers also traveled to Phoenix, Arizona (USA) for a camp, where they played in a charity game against the Phoenix Mercury, one of the teams of the Women’s National Basketball Association (WNBA).



© Gekkan Basketball  
Scene from the charity game

### Supplies and Other Donations

JX Group companies donated water, food, clothing, fuel oil and other relief supplies to the disaster zone and local governments there. A variety of daily supplies were also sent to damaged JX Nippon Oil & Energy and JX Nippon Mining & Metals offices and sites.



Volunteer kitchen  
(JX Nippon Mining & Metals Isohara Works/  
Isohara Fabricating Works)

### Opening Facilities to Evacuees

JX Nippon Oil & Gas Exploration provided its employee dormitories as temporary accommodations for disaster evacuees. JX Nippon Real

Estate Corporation, meanwhile, opened the lobbies and available rooms of the JX Building and the Shin-Nisseki Building to accommodate those unable to return home on the day of the disaster.

### Support for Farmers in Areas Damaged by Concerns of Radiation

In partnership with disaster recovery support efforts by the KEIDANREN (Japan Business Federation), the employee cafeteria at the JX Building since April 2011 has offered a menu serving produce (excluding crops restricted from shipment) from areas that have suffered reputation damage due to concerns over radioactive contamination.

In tandem, special shopping opportunities (called “Corporate Marche”) to sell the same produce were held nine times from April to July 2011. In this way, the Group supported farmers from the prefectures of Fukushima, Gunma, Tochigi, Ibaraki, Saitama and Chiba that have suffered reputation damage regarding the quality of their crops due to the nuclear accident triggered by the Great East Japan Earthquake.

### Donation of *The Bouquet of Children’s Stories*

To play a role in helping people in the impacted region heal emotionally, the JX Group donated copies of the book, *The Bouquet of Children’s Stories*, to evacuation centers, elementary schools, preschools, disaster volunteer centers, temporary housing complexes and other sites. By August 2012, roughly 45,000 copies of the collection of stories chosen from the JX Children’s Story Award had been donated.



Donation of *The Bouquet of Children’s Stories*

Refer to pp. 11–12 or visit the website below for more details.  
<http://www.jx-group.co.jp/hanataba/>

## JX Group Volunteer Activities Supporting Restoration and Recovery

In an effort spearheaded by the JX Group Corporate Citizenship Committee, JX Group executives and employees are broadly recruited to take part in volunteer activities to support recovery in the disaster-stricken region.

From its launch in July 2011 to the 19th round of volunteer activities conducted in August 2012, this effort has grown to see participation from 737 people. Volunteers have been involved in a range of activities, from removing rubble from private homes and fishing ports, to clearing weeds from temporary housing and shoveling mud away from street gutters.

In parallel with these disaster volunteer activities, efforts from fiscal 2012 will focus on activities that help address emotional care, one of the new needs emerging in the disaster zone.



Youth baseball clinic held in the town of Minamisanriku

### [JX Group Volunteer Activities Supporting Restoration and Recovery]

	Date	Activity site	Participants	Activity Details
1st	July 1, 2011	Shichigahama, Miyagi Prefecture	23	Removed rubble from private homes
2nd	July 15	Shichigahama, Miyagi Prefecture	43	Removed rubble from private homes
3rd	July 28–29	Rikuzentakata, Iwate Prefecture	46	Cleared weeds from a temporary housing complex, removed rubble from a fishing port
4th	August 8–9	Ofunato, Iwate Prefecture	32	Washed pallets for handling fresh fish, shoveled mud away from street gutters
5th	August 10–11	Rikuzentakata, Iwate Prefecture	46	Removed rubble from private homes, identified and sorted items washed ashore at a fishing port
6th	August 19	Ishinomaki, Miyagi Prefecture	25	Shoveled mud and sludge away from settlements
7th	August 25–26	Ishinomaki and Shichigahama, Miyagi Prefecture	44	Sorted oyster shells, removed fallen trees from along the shoreline
8th	September 8–9	Rikuzentakata, Iwate Prefecture	52	Removed rubble from crop fields, cleaned out irrigation channels
9th	September 15–16	Minamisanriku, Miyagi Prefecture	44	Removed rubble and cleared weeds
10th	September 22	Minamisanriku, Miyagi Prefecture	23	Removed rubble and cleared weeds
11th	November 17–18	Rikuzentakata, Iwate Prefecture	54	Created net rings for a salmon hatchery, removed rubble from private homes
12th	December 8–9	Minamisanriku, Miyagi Prefecture	50	Bagged potatoes for distribution to temporary housing facilities, made ballasts for aquaculture rafts
13th	March 1–2, 2012	Minamisanriku, Miyagi Prefecture	52	Removed rubble from within a shopping center and private homes
14th	March 22–23	Rikuzentakata, Iwate Prefecture	58	Removed rubble from private homes, shoveled mud away from street gutters
15th	May 13	Minamisanriku, Miyagi Prefecture	25	Held a youth baseball clinic, drawing and coloring lessons, a cookout and other events
16th	June 21–22	Otsuchi, Iwate Prefecture	32	Cleared weeds from a graveyard, made ballast for aquaculture rafts
17th	July 5–6	Rikuzentakata, Iwate Prefecture	18	Removed rubble and cleared weeds
18th	July 27–28	Minamisanriku and Ishinomaki, Miyagi Prefecture	37	Removed rubble and sediment from the shoreline, held a fair in a common room of a temporary housing complex
19th	August 7–9	Iwaki, Fukushima Prefecture	33	Held a fair in a common room of a temporary housing complex, held lessons making pressed flowers into bookmarks, cleaned up after the Taira Tanabata Matsuri (Milky Way Festival of Taira)
<b>Total</b>			<b>737</b>	

Visit the website below for more on “JX Group Volunteer Activities Supporting Restoration and Recovery”  
<http://www.hd.jx-group.co.jp/english/csr/volunteer/>

## VOICE

### Participation in JX Group Volunteer Activities Supporting Restoration and Recovery

I had known for a while that recruitment was happening for what was being called “JX Group Volunteer Activities Supporting Restoration and Recovery.” My grandparents live in Sendai, so I thought I should join in at least once. But after missing opportunity after opportunity, I finally took the plunge and decided to take part in the 16th round of volunteer activities.

My cohort was involved in activities in the town of Otsuchi in Iwate Prefecture. Although more than a year had passed since the massive earthquake struck, it was clear that almost everything had been lost in the tsunami. My shock was only amplified when local residents showed me a model of how completely different the town looked before the earthquake.

Yet despite being victims themselves, I found that local residents have seriously taken to heart and reflected on harsh lessons learned from the disaster, and that they are working hard for the town’s recovery. Listening to them talk about creating a new town was something I found deeply moving.

During our round of volunteering, we cleared away weeds that had grown in a local graveyard now that the groundskeeper is gone. We also

helped to make ballast used in the local fishing industry. This all happened over just two days. While my personal impact on the situation was very small, I am really glad that I took part. I think what I can do now is to share what I actually saw and felt there with as many people as possible.

The look of the town of Otsuchi has changed dramatically, but the beautiful mountains, crystal clear spring waters and the blue ocean are as breathtaking as ever. I am hopeful that the town can recover to beyond where it was before the earthquake, and would love to visit again personally someday.



**Asako Yanase**

Research & Development Planning Dept.  
 JX Nippon Oil & Energy Corporation



## For Future Generations

### <Contributing to Society Through JX Children's Story Award/JX Children's Story Fund>

The JX Group is making a collective effort to implement JX Children's Story Award/JX Children's Story Fund, given that this initiative satisfies all three priority fields in the group's social contribution activities: (1) advancement of sports and culture, (2) next generation development and support, and (3) environmental protection. The JX Children's Story Award embodies the JX Group's wishes for future generations, namely its desire to foster "heart-to-heart contact" among many people, support children's aspirations, and play a part in the development of healthy forests.

### What the JX Group Can Do for Future Generations

The JX Group positions social contribution activities as a key priority of CSR activities. Accordingly, under the Basic Policy for JX Group Social Contribution Activities, the JX Group is actively promoting social contribution measures. The JX Group is engaged in a broad range of initiatives with the view to realizing the JX Group Values of "Relationship with society" and "Harmony with the environment." At the same time, since the Great East Japan Earthquake, the JX Group has also focused on offering support to children in the disaster-hit regions, in addition to traditional social contribution programs. In fiscal 2011, we identified "further expansion of social contribution activities through *The Bouquet of Children's Stories*, including support for children directly affected by the Great East Japan Earthquake" as an important theme of our social contribution activities. In keeping with this theme, we donated collections of children's stories to schools in the affected regions and made donations to foster-care facilities.

However, in light of current conditions in the disaster-stricken areas, we believe that many more children still require various forms of assistance. For this reason, the JX Group will continue to implement these sorts of social contribution activities. Our actions will focus on offering emotional care for children, in addition to providing material support as a matter of course.

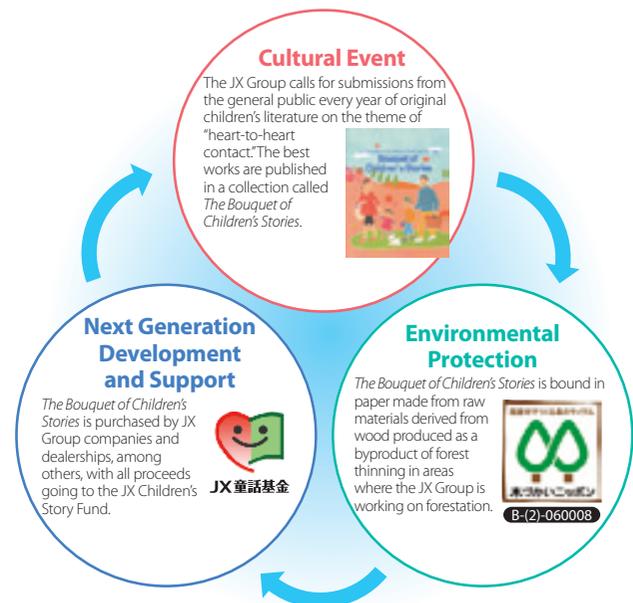
### Three Wishes Embodied by JX Children's Story Award/JX Children's Story Fund

The JX Group calls for submissions every year of original children's literature on the theme of "heart-to-heart contact." The best works are awarded and published in a collection called *The Bouquet of Children's Stories*. The JX Group donates copies of the book to social welfare facilities and other organizations across Japan. *The Bouquet of Children's Stories* is purchased by dealerships, which operate service stations, and LPG dealerships, with all proceeds going to

the JX Children's Story Fund. This fund makes donations every year to the Japan National Council of Social Welfare. The donations are used by the JX Scholarship Program established by the council as support funds when children from foster-care facilities, single-mother support facilities and foster homes enter university and undertake other education.

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

### [JX Children's Story Award/JX Children's Story Fund Activities]



## 42nd JX Children's Story Award

The 42nd JX Children's Story Award called for submissions of works from March to May 2011. Although this call for submissions occurred shortly after the Great East Japan Earthquake, the JX Group received 7,242 heartfelt submissions of children's stories. As a result of the selection process, 18 works were chosen for publication in *The Bouquet of Children's Stories (Volume 42)*, a collection of JX Children's Story Award-winning works.

In addition, from January to February 2012, JX Group companies sold copies of *The Bouquet of Children's Stories (Volume 42)* to raise money for charity. With the corporate officers and employees of 56 JX Group companies working together, we generated proceeds of approximately ¥10 million. Proceeds of approximately ¥25 million were also generated by sales to dealerships which operate service stations and LPG dealerships in May and June 2012. All proceeds were donated to the JX Children's Story Fund.



42nd JX Children's Story Award recipients (November 2011)

## Support for Children Affected by the Great East Japan Earthquake

Since the Great East Japan Earthquake, the JX Group has delivered copies of *The Bouquet of Children's Stories* to elementary schools, volunteer centers and temporary housing in the affected regions, in order to help with the emotional care of children in these regions. This is in addition to donations to social welfare facilities and other organization nationwide as before.

Furthermore, in October 2011, the JX Group made a donation totaling ¥10 million to 10 foster-care facilities in Iwate, Miyagi, Fukushima and Ibaraki prefectures, which sustained particularly severe damage in the Great East Japan Earthquake. These donations are being used to fund events, travel and other activities designed to assist with the emotional care of children in foster-care facilities.

The JX Group plans to continue these sorts of activities in fiscal 2012 and beyond. Through *The Bouquet of Children's Stories*, we hope to provide continuous support for the emotional well-being of children directly affected by the March 2011 earthquake and tsunami.



Presentation of the catalog of donations to foster-care facilities

## New Initiatives

To further promote support for future generations through the JX Children's Story Award/JX Children's Story Fund, the JX Group has begun taking steps to expand these activities overseas. In 2011, to mark the 40th anniversary of the establishment of diplomatic relations between Japan and the United Arab Emirates, the JX Group prepared an Arabic version of *The Bouquet of Children's Stories (Volume 42)* and distributed copies to local children. In addition, the JX Group also produced an English version of *The Bouquet of Children's Stories (Volume 42)* and delivered copies to children abroad through the overseas subsidiaries of JX Group operating companies and other organizations.

In order to more widely promote the appeal of the JX Children's Story Award, the JX Group has appointed Ms. Chiharu Niiyama, a Japanese actress and celebrity, to serve as the JX Children's Story Award's PR Ambassador from April 2012.



Ms. Chiharu Niiyama, JX Children's Story Award's PR Ambassador

Visit the following website for further information about the JX Children's Story Award  
<http://www.hd.jx-group.co.jp/english/csr/douwa/>

## VOICE

### Reading Session for *The Bouquet of Children's Stories* at Elementary Schools

In the hope of applying the experience I had gained in my former job as a schoolteacher in CSR activities, in 2003, I approached my former colleagues in the teaching profession with a request to hand out copies of *The Bouquet of Children's Stories* to children. The elementary schools wholeheartedly accepted the books. This was partly because of a vigorous movement to promote reading among children following the National Year of Reading for Children in 2000.

In 2012, the tenth year of donating these books to the elementary school, we became strongly interested in meeting directly with the children to convey the intent and content of *The Bouquet of Children's Stories*, instead of merely requesting the school to hand out the books. That is why we proposed to the school that we would hold a reading session for *The Bouquet of Children's Stories*. The proposal was accepted, and we were to hold our first reading session.

On the day of the reading session, I felt nervous returning to the teacher's lectern after a long absence. However, I was deeply moved by the intent, pure gaze of all the children, and I had to work hard to hold back the tears.

I am grateful to *The Bouquet of Children's Stories* for providing us with such an opportunity to interact with a large number of children. At the same time, I hope to spur the growth of children and my own personal development together with *The Bouquet of Children's Stories* by continuing to implement these CSR activities.



**Yumi Suzuki**  
Hitachi Office  
JX Nippon Insurance Corporation



## Ensuring a Stable Supply of Oil and Natural Gas

### <Expanding the Oil and Gas Exploration and Production Business While Giving Consideration to the Environment and Safety>

As a business group that supports people's lives and functions as a pillar of the economy, the JX Group bears a significant responsibility with respect to the stable supply of energy, resources and materials. We are constantly aware of this duty as we strive to contribute to society through our operations.

#### Our Approach to Ensuring Stable Supply

Even as global demand for energy has continued to increase, primarily in Asia, conventional oilfields have been diminishing. This has resulted in intensified international competition for interests in natural resources such as oil and gas. Given that Japan has very few domestic resources, JX Nippon Oil & Gas Exploration is expanding its exploration and production business targeting overseas oil and gas fields, with the aim of ensuring a stable production volume of 200,000 barrels a day.

We aim to conduct efficient and stable production by taking full advantage of our strengths. These include exploration and development technologies, along with our expertise in project management and operation, which have been honed through the operatorship business over many years. Another strength is our strong relationships with governments and national oil companies of oil-producing nations and regional communities. Furthermore, we are working to reduce our exposure to business risk by focusing on core countries and building up knowledge in each country.

Looking ahead, we will continue to rigorously enforce safe and stable operations by enhancing project management and developing new technologies, with the aim of ensuring an even more stable supply of oil and gas.



**Masahiko Yamamoto**  
Strategic Planning Group Manager  
Corporate Planning Department  
JX Nippon Oil & Gas Exploration Corporation

#### JX Nippon Oil & Gas Exploration's Strategy for Exploration and Production of Oil and Natural Gas

##### ■ Participation from the Exploration Stage

Against the backdrop of fierce competition for resource interests and persistently high resource prices, JX Nippon Oil & Gas Exploration currently finds it extremely difficult to purchase assets under favorable conditions. In response, JX Nippon Oil & Gas Exploration has adopted a basic strategy of participating in oil and gas exploration and production projects from the exploration stage, provided that the company determines that a project offers high commercial feasibility in light of its own knowledge. Guided by this strategy, the company is working to expand its interests in oil and natural gas resources.

Furthermore, JX Nippon Oil & Gas Exploration has positioned Vietnam, Malaysia, and the U.K. (North Sea), where it has an extensive track record, as core countries. In these countries, the company is pursuing operatorship projects where it can expect to capture synergies with existing projects.



Offshore production facility (Malaysia)

## ■ Building Relationships of Trust with Stakeholders Through Safe Operation

When conducting the exploration and production business, it is crucial to build relationships with the primary stakeholders of projects, namely the country and regional communities. More specifically, if risks such as illness, injuries and accidents were to materialize in the stages of exploration, development, production and abandonment, the impact could extend to regional communities. For this reason, a commitment to ensuring safe operations at all times is fundamental to building strong relationships of trust with stakeholders.

Accordingly, JX Nippon Oil & Gas Exploration has positioned risk management related to Health, Safety and the Environment (HSE) as a top priority for business execution. The company has established an HSE management system based on international standards such as ISO 14001 and OHSAS 18001, and operates this system globally.

Also, the awareness of every employee in the course of daily duties is crucial to ensuring safe operations. Therefore, JX Nippon Oil & Gas Exploration is also focusing on awareness-building programs.

For example, the JX Nippon Oil & Gas Exploration Miri Office in Malaysia, one of the company's core countries, conducts an annual event called HSE Family Day for employees and their family members. The event aims to increase understanding of the importance of HSE, while encouraging employees to implement HSE measures in the course of fulfilling their daily duties.

As a result of these activities, the Miri Office achieved ZERO LTI (Lost Time Injury) during natural gas production over seven years from 2005 to 2011. In recognition of this "outstanding HSE performance" the Miri Office received an award from PETRONAS, Malaysia's state-run oil company.

Going forward, JX Nippon Oil & Gas Exploration will continue to earn the trust of host countries and regional communities through safe operations, while striving to ensure a stable supply of oil and gas by executing the exploration and production business without any disruptions.



Award presented for achieving ZERO LTI for seven consecutive years

## Further Measures Ahead

The proportion of crude oil accumulated underground reservoir that can be recovered is limited, and the recovery factor is generally considered to be 5–25% for primary recovery using natural flow and about 30% for secondary recovery using water injection. Attention is now focused on tertiary recovery technology (Enhanced Oil Recovery: EOR) through injection of gas or chemicals, etc., to further improve the crude oil recovery.

Against this backdrop, JX Nippon Oil & Gas Exploration is conducting R&D activities related to CO<sub>2</sub>-EOR technology for boosting oil recovery by injecting carbon dioxide (CO<sub>2</sub>) into reservoirs targeting Carbon Capture and Storage (CCS) at the final stage of production. CCS has attracted high hopes for its potential to help mitigate greenhouse gas emissions.

Since 2007, JX Nippon Oil & Gas Exploration has been working together with Petrovietnam, Vietnam's state-owned oil company, and JOGMEC, Japan Oil, Gas and Metals National Corporation, on commercial feasibility studies for CO<sub>2</sub>-EOR technology at the Rang Dong oil field in Vietnam. The studies have revealed that CO<sub>2</sub>-EOR technology has considerable potential to increase oil production as well as to reduce CO<sub>2</sub> emissions. Accordingly, an offshore pilot test was conducted from May to June 2011. Subsequent analysis of data and test results provided adequate confirmation of an increase in oil production.

Looking ahead, we will continue aiming to contribute to global warming mitigation measures while making effective use of finite resources.



A supply vessel provides CO<sub>2</sub> for injection into the reservoir.



## Achieving a Recycling-Oriented Society

### <Sustainable Resource Recycling Through Proper Treatment Methods>

As a comprehensive non-ferrous metals manufacturer, JX Nippon Mining & Metals conducts integrated operations spanning upstream (resource development), midstream (smelting and refining) and downstream (electronic materials and recycling and environmental services business) operations. The company is working to build a recycling-oriented society through its recycling and environmental services business, with the view to achieving the effective use of invaluable metal resources that will underpin the future.

### Our Priorities and Approaches to Achieving a Recycling-Oriented Society

In modern society, non-ferrous metals are an invaluable resource for leading enriched and civilized lives. In order to hand a sustainable society to future generations, we must seek to create a society that effectively recycles and reuses finite resources. In the course of building such a society, we believe that all stakeholders involved in the resource value chain must fulfill their respective roles and responsibilities.

JX Nippon Mining & Metals group conducts a recycling business where it recovers a diverse array of metals from many different materials using a broad spectrum of treatment technologies. Generally speaking, recycling of invaluable metals in developing countries is believed to entail major environmental issues. Therefore, JX Nippon Mining & Metals puts emphasis on recycling using proper treatment methods. In this context, "proper treatment methods" means methods of reducing the environmental and social impact of recycling as close to zero as possible, in addition to considering economic factors.

Leveraging the strengths of technologies developed through mine development and metal smelting and refining operations, JX Nippon Mining & Metals aims to build a recycling-oriented society that does not leave an environmental burden on future generations by ensuring the use of proper treatment methods.

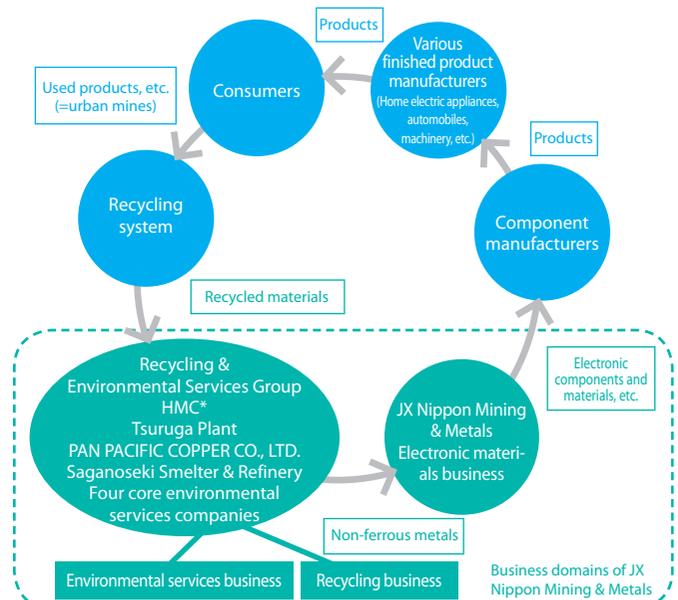


**Naoki Kojima**  
 Planning Department,  
 Recycling & Environmental Services Group  
 JX Nippon Mining & Metals Corporation

### Features of the Recycling and Environmental Services Business

In the recycling and environmental services business, JX Nippon Mining & Metals conducts a recycling business to convert recycling materials containing invaluable metals into highly pure materials, and an environmental services business to render industrial waste harmless through proper treatment methods. In addition, the company generates synergies by additionally recovering invaluable metals condensed from the proper treatment of industrial wastes in the environmental services business, and using these metals as raw materials for the recycling business. In this manner, one of the key features and strengths of JX Nippon Mining & Metals' recycling and environmental services business is that we possess a full spectrum of technologies, ranging from technologies for rendering industrial waste harmless to those for recycling resources into highly pure materials.

#### [Schematic of Recycling-Oriented Society]



\* Hitachi Metal Recycling Complex

## [Recycling and Environmental Services Business of JX Nippon Mining & Metals]



### Features and Strengths of the JX Nippon Mining & Metals Group

#### 1. Proprietary technology

The group owns proprietary process technologies combining pyrometallurgical and hydrometallurgical technologies, based on smelting, electrolysis and analysis technologies developed over many years in the non-ferrous metal smelting and refining business.

#### 4. Collection network

The group has a nationwide network of collection sites for recycled materials in Japan, as well as a collection site in Taiwan.

#### 2. High-quality facilities

The group utilizes the facilities of Saganoseki Smelter & Refinery, which has one of the world's largest, high-efficiency copper smelting and refining processes.

#### 5. Treatment network

The group has enhanced pretreatment capabilities utilizing the four core environmental services companies (capable of addressing difficult-to-treat materials).

#### 3. Location

The group carries out non-ferrous metal recycling at the Hitachi Works in close proximity to the Tokyo metropolitan area, an urban mine where large amounts of recycled materials are available.

#### 6. Group-wide capabilities of JX Nippon Mining & Metals

The group harnesses synergies with the copper smelting and refining and electronic materials businesses, and utilizes its group-wide network of affiliated companies.



The JX Nippon Mining & Metals Group conducts its recycling business at the Saganoseki Smelter & Refinery, which has one of the world's largest, high-efficiency copper smelting and refining processes. Since copper smelting and refining produces surplus heat, the Group uses this heat to recycle scrap containing conventional and precious metals. This makes a sizable contribution to reducing the Group's environmental impact by effectively utilizing energy in addition to resources.

In the recycling business, it is important to efficiently collect home electric appliances and electronic devices, which are used widely throughout society. Accordingly, the JX Nippon Mining & Metals Group has achieved efficient recycling by establishing a nationwide collection network while conducting non-ferrous metal recycling operations at the Hitachi Works in close proximity to the Tokyo metropolitan area, an urban mine where large amounts of discarded products are available.

### Further Challenges Ahead

The JX Nippon Mining & Metals Group is taking additional steps, such as recycling lithium-ion batteries and expanding the recycling business overseas, in order to achieve a recycling-oriented society.

#### ■ Recycling of Lithium-Ion Batteries and Electrode Resources

Demand for lithium-ion batteries is rapidly increasing given that these batteries are a vital source of automotive power for next-generation eco-friendly vehicles. JX Nippon Mining & Metals is working to expand its production capacity of cathode and anode materials essential to lithium-ion batteries. At the same time, it is working to develop technologies for recovering invaluable metals used in lithium-ion batteries such as cobalt, nickel, lithium

and manganese from discarded lithium-ion batteries and cathode materials. From April 2010 to March 2011, JX Nippon Mining & Metals was commissioned to carry out a project for an industrial technology development project of the Ministry of Economy, Trade and Industry. As part of the commissioned project, the company has implemented demonstration trials and various studies directed at commercialization.



JX Nippon Mining & Metals' Tsuruga Plant (battery recycling plant)

#### ■ Overseas Expansion of Recycling Business

Economic advancement of developing and emerging countries has led to the popularization of home electric appliances and electronic devices in these countries. Therefore, recycling of these items will become key future priorities in terms of reducing waste materials and making effective use of resources. The JX Nippon Mining & Metals Group is actively expanding its recycling business in Taiwan, which is a major production center for electronic devices. To this end, the group has established a sales base for recycled materials (Taichung Sales Office of Nikko Metals Taiwan Co., Ltd.) and a collection site (Chiongpin Recycling Center). The Chiongpin Recycling Center collects recycled materials and conducts pretreatment such as crushing before sending the materials to Japan for recovery of a diverse array of non-ferrous metals. JX Nippon Mining & Metals will explore further avenues for overseas expansion to ensure that resources are recycled using proper treatment methods on a global basis.



Nikko Metals Taiwan Co., Ltd. (Recycling base in Taiwan)

## Realizing a Low-Carbon Society

### <Aiming to Establish New Ways of Supplying Energy>

As a comprehensive energy company underpinning Japan, JX Nippon Oil & Energy is working to deliver stable supplies of energy, while driving further expansion in the new and renewable energy business, which will contribute to reducing environmental impact. Through these measures, JX Nippon Oil & Energy aims to help realize a low-carbon society.

### Our Approach to Realizing a Low-Carbon Society

Carbon dioxide (CO<sub>2</sub>) is believed to be a cause of global warming. JX Nippon Oil & Energy aims to fulfill its responsibilities as a supplier of petroleum products and energy, which are sources of CO<sub>2</sub> emissions, while answering the demands of society. To this end, JX Nippon Oil & Energy is promoting measures focused on the introduction of new forms of energy, and highly efficient uses of fossil fuels, with the view to realizing a low-carbon society.

Meanwhile, Japan is currently considering extremely ambitious targets for its future energy mix. In 2030, Japan aims to generate 25–30% of its electricity from renewable energy and 15% from co-generation. JX Nippon Oil & Energy will help the nation to achieve these targets in order to fulfill its social responsibilities as an energy supplier.

Furthermore, electrification has been progressing at the energy consumption stage, particularly in the home, while electricity supply formats have continued to diversify. Against this backdrop, we will build an energy infrastructure that fits consumer needs. At the same time, as a system integrator, we will focus on providing energy-efficient distributed power devices with outstanding environmental performance, such as fuel cells, solar power generation systems and storage batteries. In addition to this, we will explore the nature of a low-carbon lifestyle and society through multi-energy systems reflecting regional factors, as we make every effort to provide these sorts of services going forward.

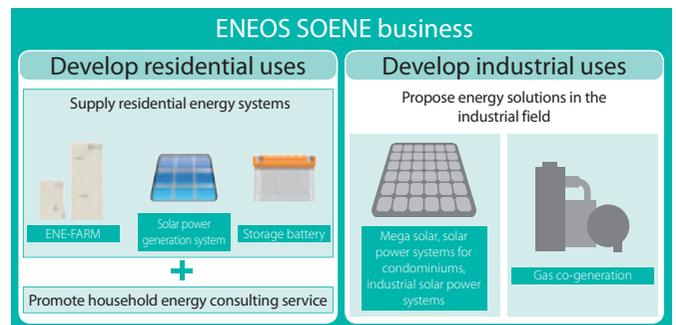
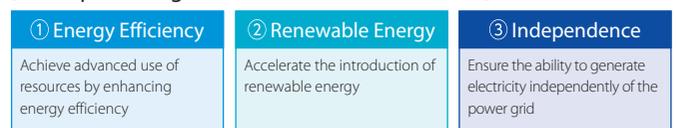


**Norimasa Murahashi**  
Deputy General Manager,  
System Integration Business Department  
JX Nippon Oil & Energy Corporation

### ENEOS SOENE Business

JX Nippon Oil & Energy aims to achieve a low-carbon society, along with a society based on independent, distributed energy systems through the ENEOS SOENE business. This business has three themes: (1) energy efficiency (achieve advanced use of resources by enhancing energy efficiency); (2) renewable energy (accelerate the introduction of renewable energy); and (3) independence (ensure the ability to generate electricity independently of the power grid). In the ENEOS SOENE business, JX Nippon Oil & Energy provides the “ENE-FARM” residential-use fuel cell, as well as residential-use energy systems centered on solar power generation systems. Going forward, the ENEOS SOENE business will be expanded beyond residential use to include industrial uses such as mega solar power generation facilities.

#### [Conceptual Diagram of ENEOS SOENE Business]



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

### Development of Original Storage Battery Systems

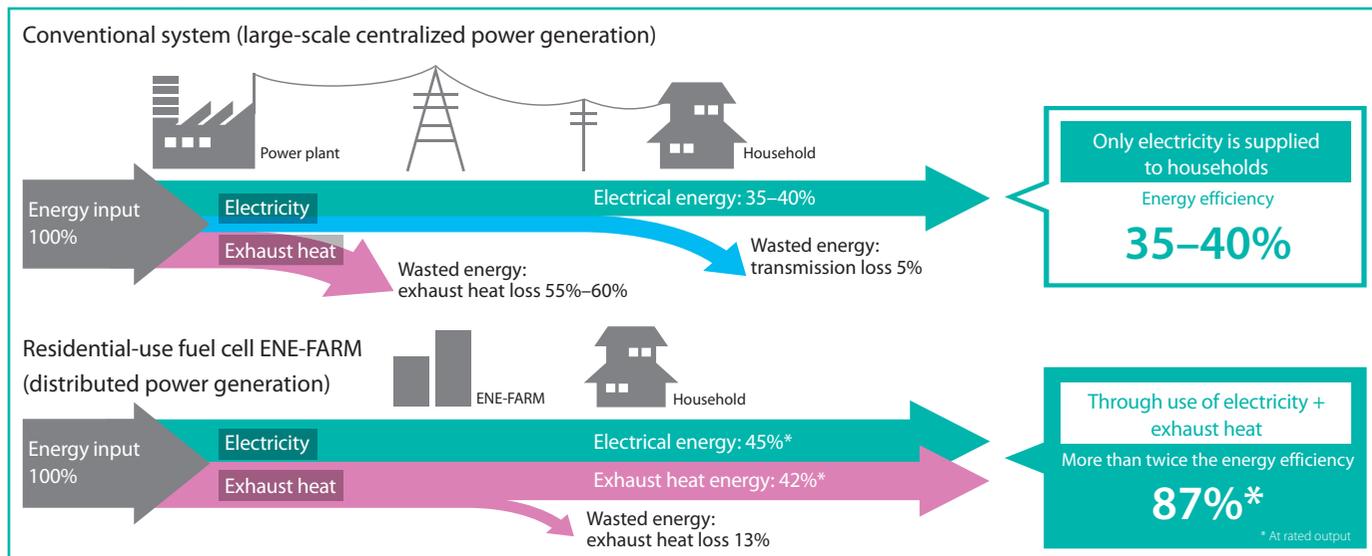
Following the Great East Japan Earthquake, there has been heightened demand for addressing disaster preparedness, in addition to energy efficiency. To answer this demand, JX Nippon Oil & Energy is working to develop original storage battery systems with the view to enhancing independent energy systems. Through the combination of three products, namely ENE-FARM, solar power generation systems and storage batteries, households will be able to achieve a higher self sufficiency rate in terms of electricity in ordinary times. During power outages such households will be able to continue receiving supply of electricity to their homes through power drawn from storage batteries and power generated by ENE-FARM.

### Introduction of Household Energy Consulting Service

Given that energy consumption is increasing in the private sector, curtailing energy usage and CO<sub>2</sub> emissions from households has

become an urgent priority. That is why JX Nippon Oil & Energy has been expanding its “Dr. Ouchi-no Energy” household energy consulting service, which proposes ways to optimize energy usage for each home, since June 2012. This service evaluates all aspects of home energy efficiency, from energy devices to the building itself, and proposes improvements through assessment of approximately 60 items via diagnostics and interviews. JX Nippon Oil & Energy established this service with guidance from the Energy Conservation Center, Japan, and was selected to be a dealership and gas supplier for the “Foundation Programme for Environmental Home Consultants 2012” of the Ministry of the Environment. JX Nippon Oil & Energy will use a proprietary specialized training system to nurture the household energy consultants who will provide this service. In fiscal 2013, JX Nippon Oil & Energy plans to deploy a nationwide force of 1,000 energy consultants.

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



## VOICE

### Aiming to More Widely Popularize ENE-FARM

JX Nippon Oil & Energy has positioned the popularization of fuel cell systems as a core operation of the ENEOS SOENE business. These fuel cell systems leverage the company’s desulfurization and hydrogen production technologies developed through oil refining operations. ENE-FARM generates electricity through a chemical reaction between hydrogen extracted from oil-based fuel and oxygen in the air. Heat generated in this process is used to heat water. Compared with conventional fuel combustion energy systems, this system can generate electricity and supply hot water with higher energy efficiency, while also offering excellent energy saving features.

In October 2011, JX Nippon Oil & Energy launched solid oxide fuel cell (SOFC) systems, which employ ceramics as an electrolyte. With a power generation efficiency of 45%, and heat recovery efficiency of 42%, SOFC offers higher power generation efficiency than conventional polymer electrolyte fuel cells (PEFC). Therefore, SOFC is optimal for use in homes,

which use large amounts of electricity. In addition, SOFC has a higher operating temperature than PEFC, enabling hot water storage at higher temperatures. This has allowed us to substantially reduce the size of hot water storage units. As a result, JX Nippon Oil & Energy has developed power generation and hot water storage units that are about 40% smaller than those of PEFC in terms of volume.



**Akiko Tamagawa**  
Energy System Development Department  
JX Nippon Oil & Energy Corporation

### Realizing Smart Mobility

The transportation sector is a large source of CO<sub>2</sub> emissions, accounting for about 20% of Japan's total CO<sub>2</sub> emissions. Lowering the carbon output of automobile transportation is therefore extremely important to the realization of a low-carbon society. To this end, as a supplier of automobile fuel, JX Nippon Oil & Energy is actively implementing measures in the transportation sector.

The JX Group believes that electric vehicles (EV) and plug-in hybrid vehicles will penetrate the market at a steady rate, and that fuel-cell vehicles will become the primary automobile over the long term. For this reason, the JX Group is working to develop energy supply systems in step with the evolution of automobile propulsion systems, along with services designed to achieve new ways of utilizing energy. The Group is actively carrying out demonstration projects in these fields.

#### ■ Developing Next-Generation Service Stations

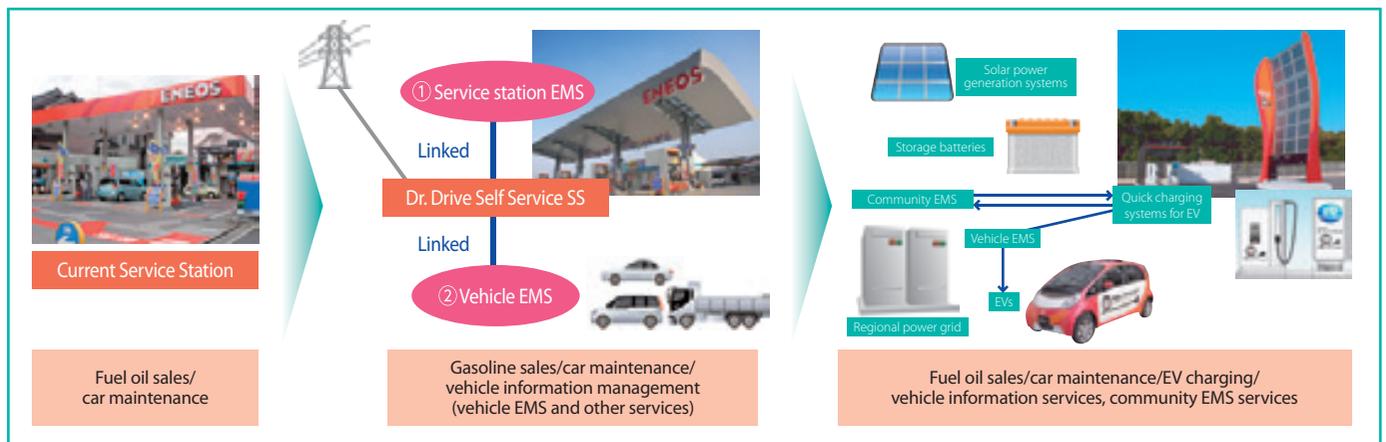
Since September 2011, the JX Nippon Oil & Energy Corporation has been commissioned by the Ministry of Economy, Trade and Industry to begin exploring possibilities for new services based on the development of energy management systems (EMS) for vehicles and service stations. The group is developing vehicle EMS designed to support environmentally friendly driving, using vehicle information

obtained when drivers visit service stations. At the same time, the group has been working to promote energy conservation at service stations through the use of solar power generation, storage batteries and other systems, while proceeding with development and verification work on EV quick charging systems fitted with storage batteries.

#### ■ New Energy Proposals for the Home and Automobile

In cooperation with Nissan Motor Co., Ltd., the JX Group began a demonstration project in August 2012 aimed at offering new energy proposals for the home and automobile using homes equipped with SOFC ENE-FARM systems and service stations fitted with quick charging stations for EVs, along with the Nissan LEAF electric vehicle. The trial will explore charging the LEAF using power generated by ENE-FARM during periods of low household electricity consumption. The trial will also look at improving the utilization rate of ENE-FARM by using the LEAF to supply electricity to the home during periods when ENE-FARM cannot meet all household power consumption requirements. Demonstration projects aimed at achieving low-carbon homes and automobiles will also be conducted in which quick charging stations will be used to avoid battery power shortages when driving electric vehicles, with part of this power to be supplied by solar power generation systems.

[Diagram of Next-Generation Service Station Development]



### Tackling Further Challenges Ahead

Energy management at the household level, as well as energy management on a broader scale for multi-unit dwellings and communities, is essential to further promoting energy conservation to reduce CO<sub>2</sub> emissions. In the transportation sector, energy management of automobiles during driving is also an extremely important theme.

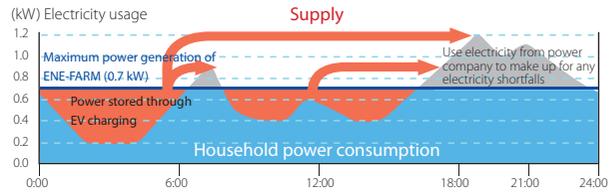
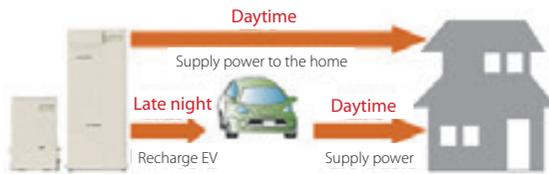
Besides providing an efficient and stable supply of energy as a comprehensive energy company, JX Nippon Oil & Energy will also fulfill the role of a system integrator by delivering management systems that enable smarter use of energy in people's lives. In doing so, JX Nippon Oil & Energy seeks to make a significant contribution to the realization of a low-carbon society.

[Joint Demonstration Trials to Offer New Energy Proposals for the Home and Automobile]

**Greater Use of ENE-FARM's High Power Generation Efficiency**

During the late-night hours, when household power consumption is low, power generated by ENE-FARM will be used to recharge "V2H (Vehicle to Home) EVs." Conversely, when household power consumption is large, power

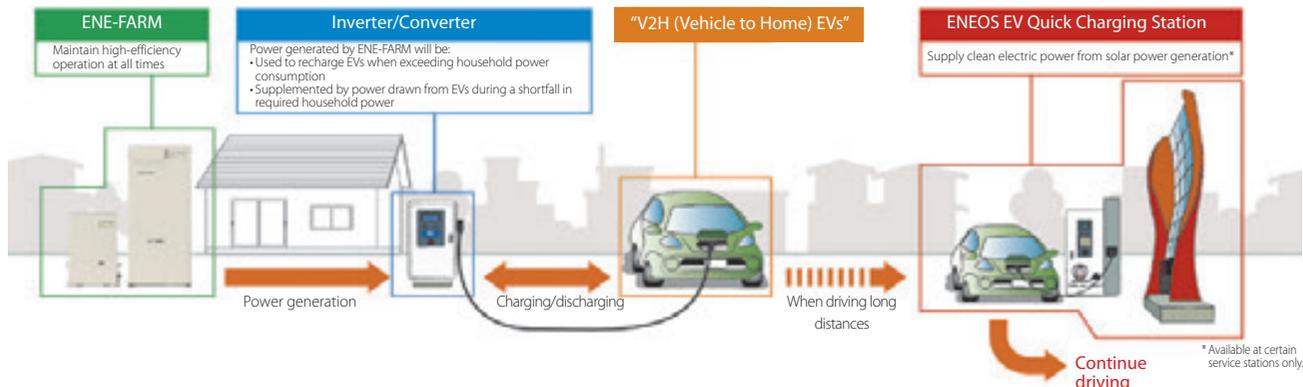
can be supplied from "V2H (Vehicle to Home) EVs" charged during the late-night hours to the home. The demonstration trials will verify improvements in the utilization rate of ENE-FARM, among other factors.



**Avoid Battery Power Shortages During Driving Through ENEOS EV Quick Charging Station**

When the battery power of "V2H (Vehicle to Home) EVs" is running low while driving long distances and under other circumstances, drivers will be able to recharge their EV batteries with clean electricity supplied by ENEOS EV Quick Charging Station,

which uses solar power generation as one source of its electricity supply. The demonstration trials will verify needs for EV quick charging station services and how to achieve further low-carbon energy usage by homes and automobiles.



**Demonstration Trials of ENEOS SOENE Renovation**

Together with Toshiba Corporation and Mitsui Fudosan Residential Co., Ltd., JX Nippon Oil & Energy is jointly participating in the Yokohama Smart City Project, which is part of the project for "Next-Generation Energy and Social Systems Demonstration" of the Ministry of Economy, Trade and Industry. As part of this project, JX Nippon Oil & Energy began "ENEOS SOENE Renovation" demonstration projects in June 2012. In the projects, JX Nippon Oil & Energy renovated an existing multi-unit dwelling and installed an independent, distributed energy system consisting of ENE-FARM, solar power generation systems, storage batteries and other elements.

JX Nippon Oil & Energy will conduct the projects at a nearly 40-year old employee dormitory of Yokohama City by having employees live there for approximately 3 years through the end of fiscal 2014. JX Nippon Oil & Energy will verify reductions in environmental impact and improvement in energy self-sufficiency by centrally providing electricity and heat to 16 households. In the future, the company aims to realize community energy management systems including for detached homes.

**Developing ENEOS EVIS (Energy & Vehicle Information System)**

JX Nippon Oil & Energy has developed ENEOS EVIS as a new energy management system for vehicles. Specifically, this system enables visualization of vehicle energy usage and support for environmentally friendly driving and vehicle safety through four measures: (1) Transfer of information gathered by a vehicle-installed device to a service station area server when drivers visit a service station; (2) Transfer and analysis of information obtained through (1) above to an EVIS server; (3) Diagnosis of environmentally friendly driving and any vehicle malfunctions; and, (4) Transfer of diagnostic results to smartphones. Since this service obtains vehicle information at service stations, where vehicles must stop by at some time, there is no need for the use of public communications links. This enables drivers to utilize these services at a more affordable price rate. Going forward, JX Nippon Oil & Energy plans to first provide ENEOS EVIS as a service for business customers, and then consider expanding the service to individual customers.

## 1. Corporate Governance

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

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

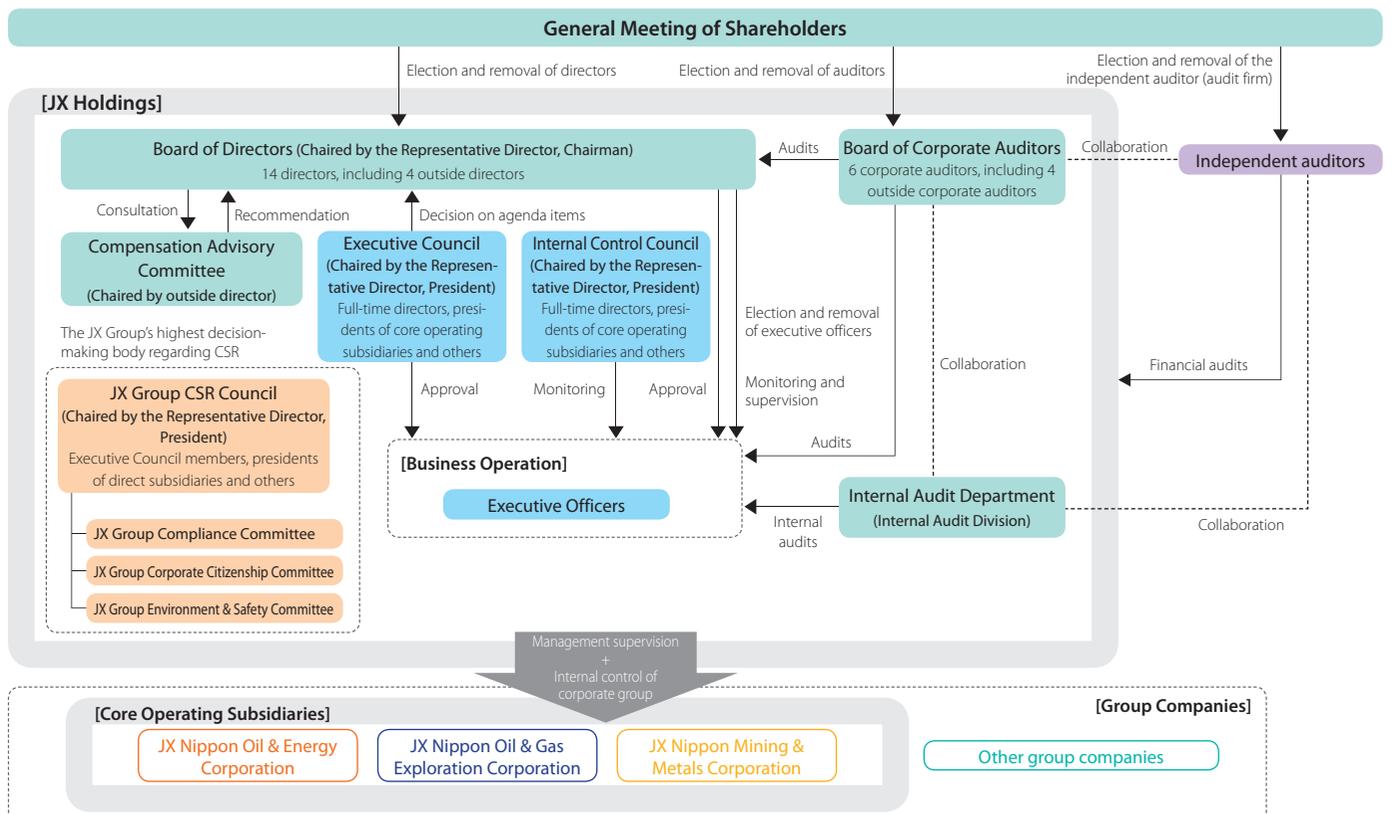
In addition, JX Holdings' corporate governance structure is characterized by the following features:

1. Directors are elected for a term of one year and must stand for re-election each year at the General Meeting of Shareholders.
2. Outside directors with management insight and extensive experience, as well as an independent standpoint, are appointed to strengthen the supervisory function over the management from an objective perspective.
3. In addition to full-time directors and outside directors, the presidents and certain other key personnel of the core operating

subsidiaries are elected as directors of JX Holdings to deliberate and decide on cohesive group-wide business strategies at meetings of the Board of Directors of JX Holdings.

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

[JX Group Corporate Governance Framework]



## 2. Development of Internal Control System

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 “our actions will respect the E.A.R.T.H: E: Ethics, A:

Advanced ideas, R: Relationship with society, T: Trustworthy products/services, and H: Harmony with the environment,” JX Holdings has established its internal control system to ensure appropriate operational execution in line with the following Basic Policy:

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

<p><b>1. System to ensure that the execution of directors’ and employees’ duties conforms to laws and regulations and the Articles of Incorporation</b></p> <ol style="list-style-type: none"> <li>(1) Develop and implement various rules and ensure compliance with laws and regulations, the Articles of Incorporation, and various other rules.</li> <li>(2) Establish and operate the JX Group Compliance Committee, in addition to checking the status of compliance with laws and regulations and addressing the results.</li> <li>(3) Develop and implement an internal reporting system.</li> <li>(4) Hold Board of Directors’ meetings on a monthly basis and conduct adequate discussion and reporting, based on the Rules for the Board of Directors.</li> <li>(5) Ensure objectivity and improve appropriateness through the appointment of outside directors and outside corporate auditors.</li> <li>(6) Establish an Internal Audit Department independent of other divisions and conduct internal audits.</li> <li>(7) Develop and implement an internal control system for the Financial Instruments and Exchange Act.</li> <li>(8) Develop and implement rules concerning blocking all relationships with anti-social forces and ensure compliance.</li> </ol>	<p><b>4. System for ensuring the efficient performance of directors’ and employees’ duties</b></p> <ol style="list-style-type: none"> <li>(1) Establish and implement an organization and delegations, and efficiently execute duties.</li> <li>(2) Ensure appropriate and efficient approval by the president through discussion of agenda items in the Executive Council before making decisions in Board of Directors’ meetings.</li> <li>(3) Formulate a medium-term management plan, and develop and implement a management system.</li> </ol>
<p><b>2. System concerning the storage and management of information related to the execution of directors’ and employees’ duties</b></p> <ol style="list-style-type: none"> <li>(1) Develop and implement rules concerning documents.</li> <li>(2) Develop rules for preparing minutes of Board of Directors’ meetings and other documents related to decision-making, and ensure their appropriate implementation.</li> <li>(3) Develop and implement rules regarding information security, and ensure compliance through training and other programs.</li> <li>(4) Provide proper external disclosure of information, including timely disclosure.</li> </ol>	<p><b>5. System for ensuring appropriate business activities in the corporate group</b></p> <ol style="list-style-type: none"> <li>(1) Ensure penetration and implementation of the JX Group’s Mission Statement and the JX Group Values.</li> <li>(2) Ensure presidents of core operating subsidiaries and others attend meetings of the Board of Directors and Executive Council.</li> <li>(3) Discuss group companies’ business execution projects to a certain extent in the Board of Directors’ meetings and the Executive Council of JX Holdings.</li> <li>(4) Formulate and implement group management regulations and ensure compliance with these regulations.</li> <li>(5) Establish and implement a compliance system and extend to group companies.</li> </ol>
<p><b>3. Regulations and other systems for managing risk of loss</b></p> <ol style="list-style-type: none"> <li>(1) Analyze risks and clarify policy for responding to them in the Board of Directors’ meetings and Executive Committee.</li> <li>(2) Develop and implement a system and rules for responding to large fluctuations in economic conditions, resource prices and foreign currency exchange rates, along with natural disasters and other risks.</li> <li>(3) Develop and implement a system and rules for responding to crises and emergency situations.</li> </ol>	<p><b>6. System for ensuring the efficient conduct of audits by corporate auditors</b></p> <ol style="list-style-type: none"> <li>(1) Ensure respect for audit standards and audit plans, along with cooperation with the efficient execution of audits and the development of an audit environment.</li> <li>(2) Ensure corporate auditors attend meetings of the Executive Council and other meetings, and establish and implement a reporting system for requested items.</li> <li>(3) Establish and implement a system for promptly reporting material breaches of laws and regulations and the Articles of Incorporation, as well as any discovery of misconduct.</li> <li>(4) Ensure corporate auditors and management exchange opinions regarding the group’s management issues and other matters.</li> <li>(5) Ensure close collaboration between the corporate auditors and the Internal Audit Department.</li> <li>(6) Establish an Auditors Affairs Office independent of divisions responsible for business execution.</li> </ol>

## 3. CSR Promotion Structure

### ■ Basic Approach

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

### -COLUMN- JX Group CSR Questionnaire

In December 2011, the JX Group conducted the 1st JX Group CSR Questionnaire of the entire group to check the degree of penetration of the group’s CSR activities and to determine a future course for these activities. The response rate was 79.3% and the total number of respondents was 15,763.

The JX Group established a broad range of questions in the questionnaire and analyzed the responses. These questions included those designed to gauge employees’ understanding and the degree of penetration of the JX Group Mission Statement. Other questions explored the openness of worksites, the presence of any hidden problems, awareness of the internal reporting system, and promotion of operations in the optimal interest of the group as a whole.

Looking ahead, the JX Group plans to have each group company consider response measures while striving to make improvements based on an analysis of the questionnaire results. In this manner, the JX Group will implement PDCA cycles for CSR activities across the entire group, while harnessing the unique business characteristics of each group company.

## ■ Priority Fields and Promotion Structure

We established the JX Group CSR Council, which is chaired by the president of JX Holdings, to formulate and promote the JX Group's basic policy on CSR and to manage and coordinate CSR activities across the JX Group. We have specified three priority areas for CSR: 1) compliance (including information security and human rights), 2) social contribution, and 3) environment and safety. JX Group CSR committees have been established for each field, and these committees act as advisory bodies to the chairman of the JX Group CSR Council. Each committee deliberates and makes recommendations on actual business operations and shares information.

At a meeting of the JX Group CSR Council in April



A JX Group CSR Council in session

2012, participants reported on activities based on key themes for fiscal 2011 in each field, while adopting the recommendations of each committee concerning key themes for fiscal 2012.

Furthermore, group CSR promotion managers have been assigned to each workplace in the JX Group. The group CSR promotion managers cooperate with the department responsible for CSR in each company, working at the frontline of CSR promotion to manage CSR in the workplace. In addition, group CSR promotion managers gather once a year for a conference at which they attend training events and share opinions.



A scene from the training event for JX Group CSR promotion managers

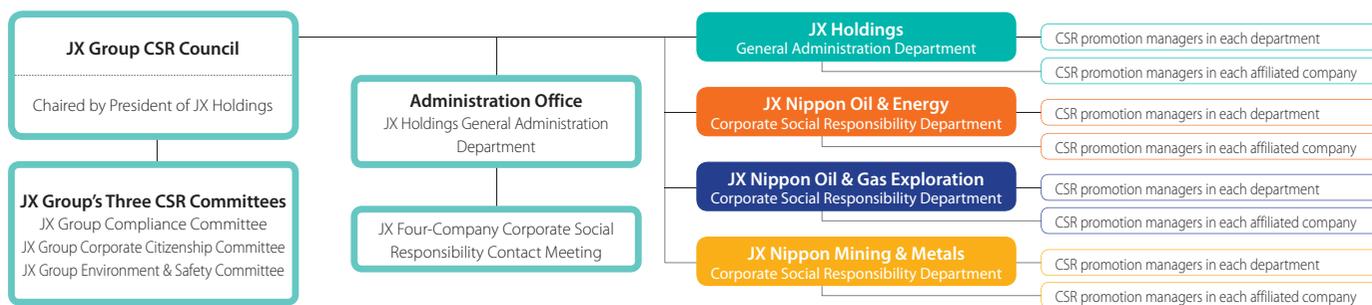
## -COLUMN- Activities to Foster Awareness and Increase Penetration of the JX Group Mission Statement

In April 2012, we prepared a booklet on the JX Group Mission Statement titled the "Handbook for the Future (X)" and distributed copies to the JX Group's executives and employees. By having personnel keep this booklet close at hand for easy reference, we hope to further increase their understanding of the JX Group Mission Statement, and encourage them to consider the mission statement in light of their own duties and take action accordingly.



"Handbook for the Future (X)"

### [JX Group CSR Promotion Structure]



### [Key Themes for JX Group's Three CSR Committees]

	Fiscal 2011	Fiscal 2012
JX Group Compliance Committee	<ul style="list-style-type: none"> <li>Conduct compliance status checks and follow-up inspections.</li> <li>Study system for sharing information that addresses legal issues overseas.</li> </ul>	<ul style="list-style-type: none"> <li>Conduct compliance status checks and follow-up inspections.</li> <li>Build a system for addressing the JX Group's global legal risk.</li> </ul>
JX Group Corporate Citizenship Committee	<ul style="list-style-type: none"> <li>Further develop social contribution activities with <i>The Bouquet of Children's Stories</i>, including support for children affected by the Great East Japan Earthquake.</li> </ul>	<ul style="list-style-type: none"> <li>Promote continuous support activities for regions directly affected by the Great East Japan Earthquake.</li> <li>Expand measures to enhance public awareness of the JX Children's Story Award.</li> </ul>
JX Group Environment & Safety Committee	<ul style="list-style-type: none"> <li>Operate JX Group environmental management system (EMS).</li> <li>Manage progress with the JX Group Medium-Term Environmental Management Plan.</li> <li>Manage key points for environment-related compliance.</li> </ul>	<ul style="list-style-type: none"> <li>Operate JX Group EMS</li> <li>Follow up on the 2010–2012 JX Group Medium-Term Environmental Management Plan.</li> <li>Formulate the 2013–2015 JX Group Medium-Term Environmental Management Plan.</li> <li>Promote safety-related activities.</li> </ul>

## 4. Human Resource Development

### ■ Basic Approach

We have a practice of periodically rotating personnel among JX Holdings and the core operating subsidiaries. With this personnel development structure, we seek to deepen awareness of the JX Group's businesses and create cohesion as a business group by enabling employees to accumulate a wealth of experience as they communicate with various stakeholders.

In addition, JX Holdings sponsors group-wide education and training programs, while each of the group companies has a diverse array of human resource development programs suited to each company's own business characteristics.

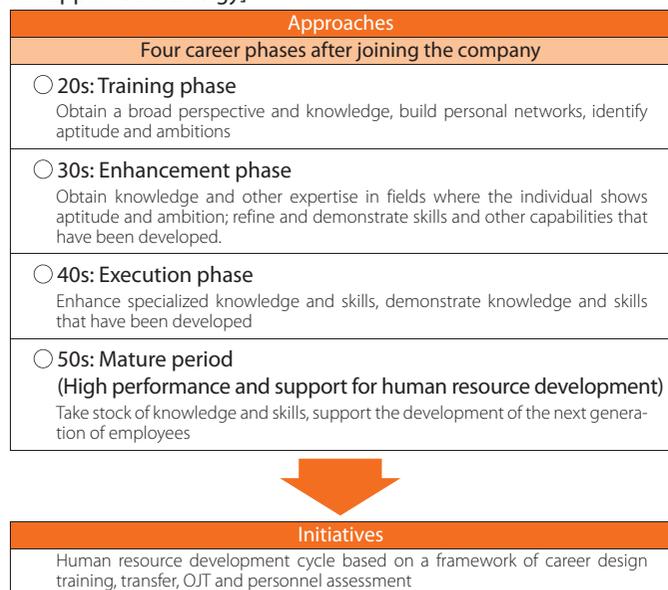
### ■ JX Nippon Oil & Energy

JX Nippon Oil & Energy has adopted three basic concepts underpinning its personnel systems: "Remuneration according to the most recent results," "Management that motivates," and "The provision of opportunities and support for skills development."

Furthermore, JX Nippon Oil & Energy implements a human resource development cycle based on a framework of career design training, transfer, OJT and personnel assessment. Employees are grouped into one of four phases depending on their career stage.

In regard to training programs, as the group's overseas businesses accelerate in each field, the training program to increase communication skills in English (the International Communication School) has achieved tremendous results.

#### [Core Human Resource Development Approaches and Initiatives of JX Nippon Oil & Energy]



### ■ JX Nippon Oil & Gas Exploration

JX Nippon Oil & Gas Exploration holds HR meetings chaired by the president to discuss all aspects of personnel systems, and makes reforms and improvements to develop human resources from a comprehensive perspective.

In particular for technical employees, JX Nippon Oil & Gas Exploration dispatches young employees early in their careers to overseas offices that do business as project operators to quickly master basic technologies on site and acquire specialized expertise.

In fiscal 2011, JX Nippon Oil & Gas Exploration introduced an e-learning program. This program has enabled technical employees to study specialized technologies related to oil and gas exploration, development and production, and non-technical employees to acquire basic knowledge of the oil and gas markets, as well as legal affairs, business evaluation and other topics. Employees are able to utilize the e-learning program at their convenience.

Looking ahead, JX Nippon Oil & Gas Exploration will consider actively implementing more e-learning programs.

### ■ JX Nippon Mining & Metals

JX Nippon Mining & Metals has adopted a small yet elite workforce as a basic tenet of business management. The company conducts human resource development based on a people-oriented management philosophy, as illustrated by its motto of "One mine, One family."

Furthermore, JX Nippon Mining & Metals carries out planning and management of company-wide personnel training based on the themes of improving on-site capabilities and strengthening strategic skills. For example, the company fosters among personnel in charge of resource development sensitivity to the need for coexistence with society and harmony with the environment, the foundation for activities at project sites, by providing on-the-job training at mines in Japan in their first and second years of employment. The company has a human resource development program that enables employees to accumulate technological and professional competencies on top of this foundation. In other areas, the company strives to implement a broad range of human resource development initiatives. Examples include dispatching employees on study abroad programs, implementing long-term foreign language training programs in Japan, and actively encouraging employees to participate in various seminars on financial analysis, presentation skills and other topics. These seminars are attended by employees as a means of self-improvement.

JX Nippon Mining & Metals, JX Nippon Environmental Services Co., Ltd. and PAN PACIFIC COPPER CO., LTD. (Saganoseki Smelter & Refinery, Hitachi Works) implemented the following training during fiscal 2011.

#### [Training Implemented for the Year]

(Hours)

	Managerial employees	General employees	Total
Total number of training hours	6,133	48,009	54,142
Average number of hours per employee	19.23	22.80	22.33

## 5. Relationship with Employees

It is crucial for companies to incorporate the opinions of a diverse array of personnel in business activities in order to respond to societal changes and achieve sustainable development. The JX Group actively works to recruit senior citizens and people with disabilities in an effort to promote diversity in the workforce.

Furthermore, in addition to a good workplace, employees need to lead fulfilling lives outside the workplace, including at home, and in leisure and other activities, if they are to demonstrate their respective abilities to the fullest and work energetically. Accordingly, JX Group

companies have developed a range of employee support programs, along with conducting awareness-raising activities designed to encourage employees to actually utilize these programs.

The following indicators for JX Holdings, Inc. and its three core operating subsidiaries for fiscal 2011 are shown below: the workforce composition, the number of recent graduate recruits, the disabled persons' employment ratio, the number of employees re-hired after retirement, the usage rate for annual paid leave, and the number of employees taking nursing care or childcare leave. The frequency of industrial accidents and accident severity rate for fiscal 2011 are also shown below.

### [Workforce Composition]

		JX Holdings	JX Nippon Oil & Energy	JX Nippon Oil & Gas Exploration	JX Nippon Mining & Metals
Total headcount		107	5,926	326	1,390
Male employees	Headcount	88	5,360	297	1,281
	Average age	45.0	42.8	41.8	40.9
	Average years of service	22.2	21.4	16.8	16.7
Female employees	Headcount	19	566	29	109
	Average age	39.1	40.5	35.4	37.0
	Average years of service	17.6	18.7	9.2	10.7

### [Number of Recent Graduate Recruits]

		JX Holdings	JX Nippon Oil & Energy	JX Nippon Oil & Gas Exploration	JX Nippon Mining & Metals
Total headcount		—	115	11	46
Male university graduates		—	42	8	20
Female university graduates		—	7	1	1
Junior college/vocational school graduates		—	9	0	0
Senior high school and other graduates		—	57	2	25

### [Disabled Persons' Employment Ratio, etc.]

		JX Holdings	JX Nippon Oil & Energy	JX Nippon Oil & Gas Exploration	JX Nippon Mining & Metals
Disabled persons' employment ratio		—*1	1.85%	2.52%	1.90%
Number of employees re-hired after retirement		—*1	189	6	34
Number of annual paid leave days granted		20.0	19.6	15.9	21.0
Number of annual paid leave days taken		13.0	15.5	9.7	13.1
Usage rate for annual paid leave		65.0%	79.1%	61.1%	62.4%
Number of employees taking nursing care leave		0	2	0	2
Number of employees taking childcare leave		0	32	2	7
(incl. male employees)		0	11	0	0

\*1: "Employees" refer to those seconded from operating companies, and are accounted for at their companies of origin.

### [Frequency of Industrial Accidents and Accident Severity Rate]

		JX Holdings	JX Nippon Oil & Energy	JX Nippon Oil & Gas Exploration	JX Nippon Mining & Metals
Frequency of industrial accidents*2		0.00	0.45	—*4	0.27
Accident severity rate*3		0.00	0.00	—*4	0.00

\*2: Number of deaths and injuries due to industrial accidents per 1 million working hours

\*3: Number of lost work days per 1,000 working hours

\*4: JX Nippon Oil & Gas Exploration has not adopted these indicators

## EARTH Activity Topics

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



### Ethics

#### Compliance

#### Formulation of Basic Rules for Countering Antisocial Elements

The JX Group has drafted a basic policy designed to ensure no connection whatsoever with antisocial elements. In addition to publicizing this policy internally and externally, the group has formulated a set of basic rules for countering antisocial elements and promotes concrete measures in this regard.

#### Human Rights

#### E-learning to Educate All Employees on Human Rights

To improve and embed human rights awareness, an e-learning program was instituted for all employees at the 24 JX Group companies in fiscal 2011. This effort to raise understanding of human rights included lessons on themes such as the normalization principle (acceptance of people with disabilities) and the problem of social discrimination.



### Advanced ideas

#### Technology and R&D

#### Completion of Research Demonstration Facility for HS-FCC Technology

We have completed installation of a research facility based on revolutionary High Severity Fluid Catalytic Cracking (HS-FCC) technology at JX Nippon Oil & Energy Corporation's Mizushima Refinery. The facility, designed to demonstrate the HS-FCC process, adopts a down flow that works with gravity for more uniform reaction times. The result is the high-yield production of propylene, high octane gasoline and other products from crude oil.



### Relationship with society

#### Relationship with Stakeholders

#### Highly Rated IR Activities

JX Holdings was named for excellence in corporate disclosure by The Securities Analysts Association of Japan for highly transparent investor relations (IR) activities. The company's website has also earned recognition for the fullness of information disclosed.

#### Corporate Citizenship

#### Supporting the Disaster Area via JX Children's Story Award/JX Children's Story Fund

We presented copies of *The Bouquet of Children's Stories* to evacuation centers, disaster volunteer centers, temporary housing complexes and other sites following the Great East Japan Earthquake. Furthermore, a total of ¥10 million has been donated to 10 foster-care facilities in the disaster zone through the JX Children's Story Fund.



### Trustworthy products/services

#### Quality Assurance, Product Safety and Customer Satisfaction

#### ZP (Zinc P) Additive Technology Wins Chemical Technology Award

The ZP Technology used in ENEOS Premium Motor Oil SUSTINA received The Chemical Society of Japan's CSJ Award for Technical Development, presented to technologies that have made a significant contribution to Japan's chemical industry.



### Harmony with the environment

#### Environment

#### Reconfiguration of the Environment & Safety Committee

As a reaffirmation within the JX Group of the importance of occupational safety as a CSR issue, the JX Group Environmental Committee has been reconfigured as the Environment & Safety Committee. Under the committee's guidance, extensive efforts will be taken to further safeguard occupational safety.

#### Reduction of 1.21 Million Tons in JX Group CO<sub>2</sub> Emissions

Each company within the JX Group takes action to prevent global warming through individualized targets and measures to this end. As a result, CO<sub>2</sub> emissions in fiscal 2011 fell 1.21 million tons year on year, or 5.9%.



# Ethics

Alongside compliance with laws and rules, the JX Group believes that the basis of trust from society 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 with laws and strong risk management, the JX Group has formed a highly ethical stance based on the management that respects human rights, and has set its sights on becoming a truly leading company in the field.

## Compliance –Basic Approach–

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.

The JX Group Compliance Committee has been established as a subcommittee under the JX Group CSR Council to examine matters

regarding the direction of compliance activities and compliance response across the entire JX Group. The committee selects policies to guide JX Group compliance and reports the outcome of activities. Furthermore, all principal group companies have an internal whistle-blowing system in place for the early discovery and correction of any behavior that has or could result in violation of the law and other regulations.

### ● Policy Prohibiting Connection to Anti-social Forces

In January 2012, the JX Group formulated a basic policy designed to prevent any connection whatsoever to anti-social forces. Along with publicizing this policy internally and externally, the Group drafted a set of basic rules for countering antisocial elements and promotes concrete measures in this regard.

### ● Compliance Status Checks

Fiscal 2011 again saw compliance status checks instituted at JX Group companies. As a common group initiative, individual interviews were held with managers at each worksite and their subordinates, allowing them to freely express if there were any problems, concerns or points of uncertainty regarding legal compliance across the range of their respective duties. In addition, key themes were set for each company to check compliance risk in line with their business operations. These included topics such as obtaining permission and submitting

paperwork through the proper channels, and inspecting compliance at overseas bases. Corrective measures were immediately formulated and instituted for any problems exposed as a result of these inspection activities.

These annual compliance status checks, together with a host of other compliance activities, highlight cases in which questions regarding compliance exist, enabling appropriate improvement steps to be taken. More importantly, these activities help foster greater compliance awareness among executives and employees. Nevertheless, in July 2012, a compliance violation pertaining to safety tests stipulated by the High Pressure Gas Safety Act came to light regarding JX Nippon Oil & Energy's Mizushima-B Refinery. Compliance violations warrant a reassessment of the way that we perform compliance status checks, which to date have relied solely on our own voluntary inspections.

## Human Rights –Basic Approach–

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 by promoting best practices across the entire group.

JX Holdings has also placed special emphasis on the development of human resources responsible for group management, and is fostering a management class with high ethical standards through specific training for executives at each group company and joint training for managers across the group.

### ● United Nations Global Compact

JX Holdings and its three core operating subsidiaries 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.



Please refer to page 36 for the UN Global Compact's Ten Principles.

# Advanced ideas

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.



## Technology and R&D –Basic Approach–

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

Guided by its Group mission statement to “contribute to the development of a sustainable economy and society through innovation in the areas of energy, resources and materials,” the JX Group is

aggressively pursuing technology development in each of its business domains. At the same time, we are advancing joint research and demonstration tests in collaboration with public institutions, universities and other entities. 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.

### ● Development of Paraffinic Latent Heat PCM Ecojoule®

Normal paraffin derived from the crude oil refining process is highly biodegradable, making it a widely used material, including as a raw material for surfactants. Normal paraffin has three characteristics that make it suitable as a latent heat\* storage material: (1) the ability to store heat at ordinary temperature ranges (approx. 3 to 30°C), (2) the potential to store substantial latent heat in narrow temperature bands, and (3) unchanging storage performance due to its chemical stability. Seeking to exploit these properties, JX Nippon Oil & Energy developed Ecojoule® as a paraffinic latent heat storage material.

Sales of Ecojoule® were launched in 2008. In addition to normal paraffin varieties, the material has been processed into a gel to make it available in packs and modular formats. Ecojoule® is already used in an array of fields, including in automotive parts, textiles, and controlled-temperature transport. The material is also helping promote efforts to save energy. In the building climate control field, Ecojoule® is enabling the use of nighttime power consumption, allowing for peak shifts and cuts in daytime power consumption. Similarly, use of Ecojoule® as a residential building material will make the effective utilization of solar and other natural energy sources more viable.

Based on the strength of these achievements, Ecojoule® was presented the Grand Award at the “CHO’ MONODZUKURI Innovative Parts and Components Award 2011” sponsored by the Conference for the Promotion of MONODZUKURI and Nikkan Kogyo Shimbun Ltd.

\* Latent heat is the heat energy released or absorbed when a substance changes phases from a liquid to a solid or a solid to a liquid, as seen with water and ice. Latent heat storage is the storage and usage of such heat.



Packs of Ecojoule® in gel form

A gel pack module

### ● Development of Next-generation Smelting Technology

JX Nippon Mining & Metals is aggressively developing new copper smelting processes based on a wet process to create a highly efficient, next-generation smelting technology with low environmental impact. One of those processes, the Nikko Chloride Process, is a wet smelting technology that uses hydrochloric acid, in which metal is submerged in a chloride bath. The key point of this technique is its ability to efficiently recover not only copper from low-grade copper concentrate, but also gold, silver and other precious metals.

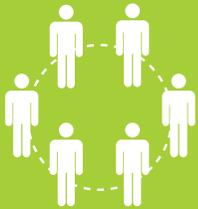
The copper concentrate produced at existing mines has seen both a sharp drop in quality and a notable increase in impurities in recent years. Use of the Nikko Chloride Process will make it possible to recover precious metals from this low-grade copper concentrate. Along with promoting effective utilization of scarce resources, this technique is an efficient way to extend a mine’s useful life, and is expected to spur the development of mine types previously considered too challenging to pursue.

Furthermore, this technology does not require the massive energy input associated with smelting. Compared to the mainstream pyrometallurgical smelting process for producing copper, this technique generates no sulfur oxides, saves a considerable amount of energy, and reduces carbon dioxide emissions. Demonstration testing ahead of commercial application of the technology is currently underway at a pilot plant in Australia.



Exterior view of pilot plant facility

Trial pilot plant equipment



# 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 support, 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 –Basic Approach–

The JX Group conducts business activities while maintaining relationships with a variety of stakeholders, among them shareholders, investors, customers, business partners and employees. By accurately

assessing the demands of these many stakeholders, and sincerely responding to them, we seek to earn society's trust.

### ● Shareholders and Investors

JX Holdings is committed to the swift, proper and fair disclosure of information to shareholders and investors in accordance with its disclosure policy. Furthermore, the company conducts highly transparent investor relations (IR) activities in line with regulations to prevent insider trading, including in-house training to promote awareness. As in the previous term, in fiscal 2011, JX Holdings won external recognition from several organizations for its IR activities.

- **The Securities Analysts Association of Japan**  
Award for Excellence in Corporate Disclosure  
First place in the Oil & Mining category
- **Nikko Investor Relations Co., Ltd.**  
Best Company Surveyed Award  
(in Nikko Investor Relations' ranking of the websites of listed companies in fiscal 2011)
- **Daiwa Investor Relations Co., Ltd.**  
Internet IR Best Company Award



### ● Business Partners

JX Nippon Procurement Corporation oversees purchasing operations for JX Group companies. Besides making purchasing information available to business partners in accordance with related laws and regulations 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 JX Group also purchases equipment and services with low environmental impact.

### ● Employees

The most vital issue for business continuity is the retention and development of human resources. JX Group companies are committed to ensuring occupational safety and offer a full menu of personnel systems. These include systems for encouraging workforce diversity, such as employment opportunities for seniors and those with disabilities, as well as systems for achieving a better work-life balance.

## Corporate Citizenship –Basic Approach–

The JX Group views CSR activities that contribute to society as an important issue, and takes proactive steps in this area. The JX Group Corporate Citizenship Committee, with members drawn from across

the JX Group, deliberates and reports on the group's social contribution efforts, while sharing information on such contributions with group companies.

### ● ENEOS Environmental Classes

JX Nippon Oil & Energy employees visit elementary schools and other sites to offer ENEOS Environmental Classes on topics such as the importance of oil to daily life, how petroleum products are created, the current state of global warming, and new environment-friendly energy sources. The employees use quizzes, experiments and observation of actual crude oil to present the material in an intuitive way to students. Classes were held at 28 schools across Japan in fiscal 2011, and were attended by roughly 1,170 children.



An ENEOS Environmental Class

### ● ENEOS Forests

In a partnership with local governments and the National Land Afforestation Promotion Organization, the JX Nippon Oil & Energy Group is involved in a field of activities supporting the stewardship of specified sections of undeveloped forests in Japan. Named ENEOS Forests, these areas are located in the eight prefectures of Hokkaido, Miyagi, Kanagawa, Nagano, Nara, Okayama, Yamaguchi and Oita. At each of the ENEOS Forests, group employees, friends and family take part in activities led by local NPOs and other groups specializing in forest stewardship. In addition to conservation activities such as tree planting, thinning and brush clearing, participants get closer to nature by observing flora and fauna, building birdhouses, and lightly harvesting forest products.

# 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.



## Quality Assurance, Product Safety and Customer Satisfaction –Basic Approach–

The JX Group is involved in a broad range of operations—from oil refining and marketing, to oil and gas exploration and production, and metals. Each group company practices quality control, and each company and business site has obtained ISO 9001 certification, the internationally recognized standard for quality management systems, as part of efforts to ensure quality.

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

### ● Trustworthy Products

The JX Group offers a range of products and services highly rated for both quality and safety that assist in the creation of low-carbon, recycling-oriented societies.

ENEOS Premium Motor Oil SUSTINA, produced and sold by JX Nippon Oil & Energy, is a type of oil that protects engines from sludge to indefinitely extend high fuel-efficiency performance. Since its debut in November 2010, the product has been well received from customers, who credit it with delivering better fuel efficiency and a quieter, smoother ride. The base oil for SUSTINA is WBASE, which has a world-class viscosity index, coupled with a fundamental

additive technology called “ZP Technology.” This combination delivers a level of fuel-efficient performance and engine protection that sets it apart from conventional motor oil. In fiscal 2011, The Chemical Society of Japan awarded ZP Technology “The CSJ Award for Technical Development” for its significant contribution to Japan’s chemical industry.

### ● Improving Customer Satisfaction

In order to have customers choose our products and services, it is vital that each employee has an adequate grasp of customer needs, and that they consider and take action to deliver products and services that meet customer expectations.

For example, JX Nippon Oil & Energy has prepared *TASUKI Spirit*, a collection of cases that have been highly rated by customers that it shares in-house. Through this activity, individual employees have a chance to reflect on their performance from the customer’s viewpoint, reaffirming that all the work they perform is tied to customers. At the same time, employees get to consider what options work best for meeting customer expectations, and can put these into practice in their work to gain even greater customer satisfaction.



**ENEOS SUSTINA**  
PREMIUM MOTOR OIL

ENEOS Premium Motor Oil SUSTINA

## Purchasing –Basic Approach–

Responsible supply chain management has become an important element in garnering trust in products and services. JX Nippon Procurement will spearhead the JX 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.

### ● JX Nippon Procurement’s Activities in Fiscal 2011

In addition to procuring supplies, materials and services with low environmental impact in line with its basic purchasing policy, JX Nippon Procurement conducted a questionnaire survey among main business partners of JX

Nippon Oil & Energy and JX Nippon Mining & Metals, in an effort to pursue environmental activities together with business partners.

 Visit the website below for more on JX Nippon Procurement’s basic purchasing policy (in Japanese only).  
<http://www.pr.jx-group.co.jp/policy/>



# 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 ensure safety and preserve the environment.

## Environment –Basic Approach–

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

Through environmental actions enabled by operation of an

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

### ● Reconfiguration into the Environment & Safety Committee

In fiscal 2012, the JX Group reconfigured the Environmental Committee into the Environment & Safety Committee. Compliance, social contribution and the environment have been positioned as key CSR issues since the establishment of JX Holdings in 2010, with action in these areas worked by three committees under the CSR Council. The recent reconfiguration reaffirms the crucial importance of occupational safety in JX Group CSR activities, providing a basis for steps to better ensure safe working environments.

As part of safety-related initiatives in fiscal 2011, we continued to implement safety education programs, held Health, Safety and Environment (HSE) meetings, and conducted environment and safety compliance checks at all core operating subsidiaries. We are committed to further steps to ensure occupational safety going forward through the exchange of information and opinions facilitated by the Environment & Safety Committee.

### ● Strict Compliance with Environmental Laws

The JX Group views compliance with environmental laws as critical to its business activities, and conducts extensive compliance checks and environmental education to this end. In fiscal 2011, compliance checks performed at JX Holdings and core operating companies turned up no major violations.

In February 2011, it was revealed that a falsified report had been submitted regarding the measurement of dust concentrations at Plant A of JX Nippon Oil & Energy's Mizushima Refinery. To prevent any recurrence of major incidents of this kind, the JX Group has set fully developed “training on environmental laws” and “more intensive environmental auditing” as two key themes. Accordingly, the Group has instituted education around specific environmental laws and compliance cases and audits by pollution prevention managers at all business sites linked to the manufacture of petroleum products.

## -COLUMN- Environmental Efforts at JX Nippon Oil & Gas Exploration

From October 2011 to February 2012, JX Nippon Oil & Gas Exploration conducted seismic exploration surveys in the vicinity of Kushiro, Japan. While the surveys took place atop local roadways, the area lies between both Kushiro Shitsugen (Kushiro wetlands) National Park (protected under the Ramsar Convention) and Akan National Park. Kushiro Shitsugen in particular is an important natural habitat, and is home to the endangered Japanese crane. In Japan, the Environmental Impact Assessment Law and the Mining Act have no provisions requiring assessment of environmental impact for seismic surveys. Nevertheless, “Harmony with the environment” is one of the JX Group Values. From this standpoint, especially given the natural environment involved, JX Nippon Oil & Gas Exploration,



Vibration trucks performing seismic work

giving priority to consideration for the environment, assessed the environmental impact of a seismic survey beforehand and then conducted the survey. Although the resulting projections showed no predicted impact across virtually all categories, these projections were verified as the work was performed. Consequently, JX Nippon Oil & Exploration can confirm that these seismic exploration surveys had no impact on the environment.

In the future, any exploration activities to be performed will be similarly assessed and verified in cases where potential environmental impact, no matter how minor, is a concern.



Japanese cranes in Kushiro Shitsugen

[Principal Activities and Progress in the JX Group Medium-Term Environmental Management Plan (FY2010–2012)]

**Petroleum Refining and Marketing Business (JX Nippon Oil & Energy Group)**

Activities	Specific energy consumption reduction	Soil contamination countermeasures	Waste reduction
<b>Targets</b>	Reduce 3% over 3 years compared with FY2009 Reduce 1% in FY2010 (compared with FY2009) Reduce 2% in FY2011 (compared with FY2009) Reduce 3% in FY2012 (compared with FY2009)	Operating properties: Prevent external leakage Decommissioned properties: Conduct deliberate surveys and treatment measures	Maintain the waste-to-landfill ratio and "Zero Emission Plus" goals <b>Maintain at 0.5%</b>
<b>FY2010 results and evaluation</b>	Reduced 1.6% compared with FY2009 <b>Target achieved</b> (refining division)	Soil surveys implemented: 352 sites Treatment measures: 103 sites <b>Target achieved</b>	<b>0.33%</b> <b>Target achieved</b>
<b>FY2011 results and evaluation</b>	Reduced 1.1% compared with FY2009 <b>Target not achieved</b> (refining division)	Soil surveys implemented: 406 sites Treatment measures: 87 sites <b>Target achieved</b>	<b>0.41%</b> <b>Target achieved</b>
<b>Planned measures for FY2012</b>	<ul style="list-style-type: none"> <li>Continuous implementation of measures including operation improvement</li> <li>Further accumulation of improvements to achieve targets</li> </ul>	<ul style="list-style-type: none"> <li>Implementation of continuous improvement</li> </ul>	<ul style="list-style-type: none"> <li>Continuous implementation of measures including operation improvement</li> <li>Further accumulation of improvements to achieve targets</li> </ul>

**Oil and Gas Exploration and Production Business (JX Nippon Oil & Gas Exploration Group)**

Activities	Reduction of CO <sub>2</sub> emissions*	Management of final waste disposal volume and oil content in produced water disposed to the sea	*CO <sub>2</sub> emissions are calculated from energy consumption. Maintenance and management of environmental management systems
<b>Targets</b>	Reduce 3% over 3 years compared with FY2009 Reduce 1% in FY2010 (compared with FY2009) to no more than 323 thousand tons Reduce 2% in FY2011 (compared with FY2009) to no more than 319 thousand tons Reduce 3% in FY2012 (compared with FY2009) to no more than 316 thousand tons	Monitor volumes, including at overseas sites (Vietnam, Malaysia)	Appropriately manage the HSE Committee, and maintain the environmental management system throughout the JX Nippon Oil & Gas Exploration Group
<b>FY2010 results and evaluation</b>	294 thousand tons <b>Target achieved</b>	<b>Implemented</b> <b>Target achieved</b>	Held 3 HSE Committee meetings, etc. <b>Target achieved</b>
<b>FY2011 results and evaluation</b>	303 thousand tons <b>Target achieved</b>	<b>Implemented</b> <b>Target achieved</b>	Held 3 HSE Committee meetings, etc. <b>Target achieved</b>
<b>Planned measures for FY2012</b>	<ul style="list-style-type: none"> <li>Control of supply vessel and helicopter operations</li> <li>Reduction of unplanned shutdowns due to facilities problems, etc.</li> </ul>	<ul style="list-style-type: none"> <li>Continuous implementation</li> </ul>	<ul style="list-style-type: none"> <li>Continuous implementation</li> </ul>

**Metals Business (JX Nippon Mining & Metals Group)**

Activities	Reduction of CO <sub>2</sub> emission intensity	Specific energy consumption improvement	Waste reduction
<b>Targets</b>	FY2010: 7.5% reduction (Compared with FY2003–2005 average) FY2011: 1.0% reduction (Compared with FY2008–2010 average) FY2012: 2.0% reduction (Compared with FY2008–2010 average)	FY2010: 5% reduction (Compared with FY2003–2005 average) FY2011: 1% reduction (Compared with FY2008–2010 average) FY2012: 2% reduction (Compared with FY2008–2010 average)	FY2010: 70% reduction in waste-to-landfill ratio (Compared with FY2003–2005 average) FY2011 and FY2012: Under 1% (non-application waste ratio)
<b>FY2010 results and evaluation</b>	Reduced 8.1% compared with FY2003–2005 average <b>Target achieved</b>	Reduced 5.4% compared with FY2003–2005 average <b>Target achieved</b>	Reduced 78% in waste-to-landfill ratio compared with FY2003–2005 average <b>Target achieved</b>
<b>FY2011 results and evaluation</b>	Increased 5.9% compared with FY2008–2010 average <b>Target not achieved</b>	Increased 5.3% compared with FY2008–2010 average <b>Target not achieved</b>	Non-application waste ratio <b>0.8%</b> <b>Target achieved</b>
<b>Planned measures for FY2012</b>	<ul style="list-style-type: none"> <li>Updating to high-efficiency equipment and reduction of power consumption</li> <li>Reduction of power consumption through waste heat recovery, etc.</li> </ul>	<ul style="list-style-type: none"> <li>Updating to high-efficiency equipment and reduction of power consumption</li> <li>Reduction of power consumption through waste heat recovery, etc.</li> </ul>	<ul style="list-style-type: none"> <li>Further accumulation of improvements</li> </ul>

**Other Businesses (Listed Subsidiaries and Other Companies)**

Activities	NIPPO CORPORATION	Toho Titanium Co., Ltd.	Other Group Companies
<b>Targets</b>	CO <sub>2</sub> emissions intensity (sales amount) reduction targets FY2010: 3% (Compared with FY2007) FY2011: 2% (Compared with FY2009) FY2012: 3% (Compared with FY2009)	CO <sub>2</sub> emissions intensity (Titanium volume) FY2010: 3% reduction (Compared with FY2005–2007 average) FY2011: 4% reduction (Compared with FY2005–2007 average) FY2012: 5% reduction (Compared with FY2005–2007 average)	Implement the JX Group EMS at each company, establish environmental targets according to business characteristics, and implement PDCA cycle
<b>FY2010 results and evaluation</b>	Reduced 6.3% compared with FY2007 <b>Target achieved</b>	Reduced 5.1% compared with average for FY2005–2007 <b>Target achieved</b>	Reviewed target achievement at each company via the JX Group Environmental Committee
<b>FY2011 results and evaluation</b>	Reduced 6.2% compared with FY2009 <b>Target achieved</b>	Reduced 4.0% compared with average for FY2005–2007 <b>Target achieved</b>	Reviewed target achievement at each company via the JX Group Environmental Committee
<b>Planned measures for FY2012</b>	<ul style="list-style-type: none"> <li>Further accumulation of improvements to achieve targets</li> </ul>	<ul style="list-style-type: none"> <li>Improvement of yields for each process</li> <li>Continuation of emissions intensity improvement activities through prevention of nonconformance</li> <li>CO<sub>2</sub> emission reductions via equipment upgrades</li> </ul>	<ul style="list-style-type: none"> <li>Appropriate operation of the JX Group EMS</li> </ul>



**Environmental Performance** –Basic Approach–

The environmental performance data on pages 33 to 34 covers a total of 52 business sites at 25 companies engaged in the Petroleum Refining and Marketing Business, the Oil and Gas Exploration and Production Business, the Metals Business, and Other Businesses.

- Petroleum Refining and Marketing Business: 15 sites at 5 companies
- Oil and Gas Exploration and Production Business: 3 sites at 1 company
- Metals Business: 25 sites at 16 companies
- Other Businesses: 9 sites at 3 companies

For the Petroleum Refining and Marketing Business, we have recorded data on business sites involved in petroleum product refining and production only. For the Oil and Gas Exploration and Production Business and the Metals Business, we have retroactively restated the figures from fiscal 2009. Consequently, the figures differ from the data for previous fiscal years in "JX Report for a Sustainable Future 2011."

**Initiatives to Prevent Global Warming**

Global warming is a problem that all humanity faces. The companies within the JX Group are addressing this issue by setting proprietary activity targets and concrete countermeasures, and energetically reducing energy consumption and taking steps to cut CO<sub>2</sub> emissions.

Energy consumption in fiscal 2011 (crude oil equivalent) was 6.83 million kL in the Petroleum Refining and Marketing Business, 0.15 million kL in the Oil and Gas Exploration and Production Business, 0.43 million kL in the Metals Business, and 0.27 million kL in Other Businesses. The JX Group total was 7.68 million kL, 0.14 million kL lower than in fiscal 2010.

CO<sub>2</sub> emissions were 17.47 million tons in the Petroleum Refining and Marketing Business, 0.38 million tons in the Oil and Gas Exploration and Production Business, 0.94 million tons in the Metals Business, and 0.54 million tons in Other Businesses. The JX Group total was 19.33 million tons, 1.21 million tons lower than in fiscal 2010.

Actual results versus targets for specific energy consumption and CO<sub>2</sub> emission reductions in the Medium-Term Environmental Management Plan and elsewhere are shown on page 32. Targets for some operations were unmet.

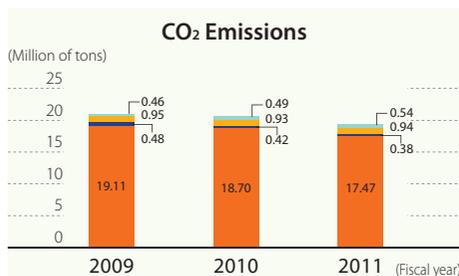
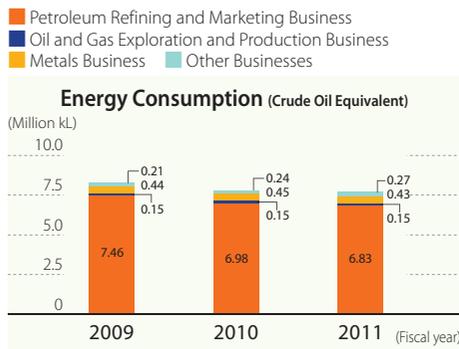
JX Nippon Oil & Energy fell short of its specific energy reduction target due to the impact of the Great East Japan Earthquake and lower capacity utilization at refineries caused by equipment trouble.

JX Nippon Mining & Metals experienced sharp increases in both CO<sub>2</sub> emission intensity and specific energy consumption. Both were the result of increased intensity attributable to sudden drops in production volume triggered by the Great East Japan Earthquake and flooding in Thailand.

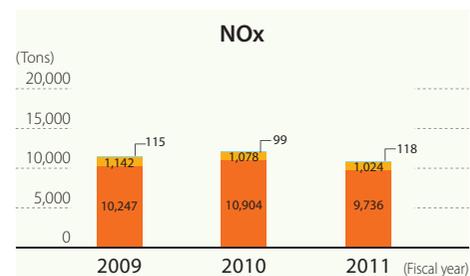
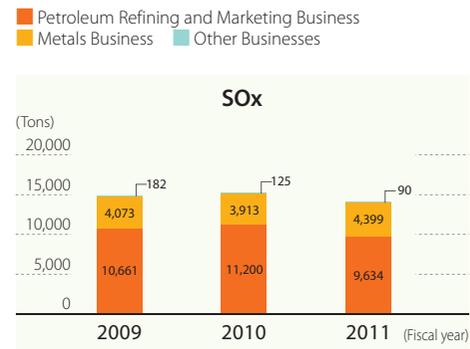
**Initiatives to Prevent Air Pollution**

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 prevent air pollution by adopting a range of equipment to enhance environmental performance and by switching to low-sulfur fuels, among other actions.

The JX Group's total SO<sub>x</sub> (sulfur oxide) emissions in fiscal 2011 were 14,123 tons, 1,115 tons lower than in fiscal 2010. The JX Group's total NO<sub>x</sub> (nitrogen oxide) emissions in fiscal 2011 were 10,878 tons, 1,203 tons lower than in fiscal 2010.



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



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

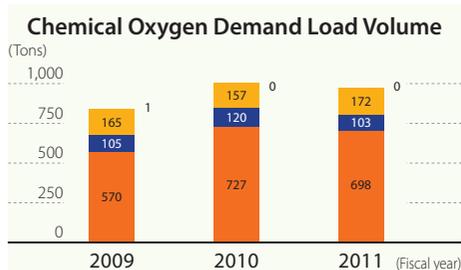
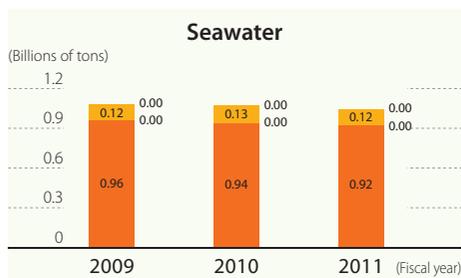
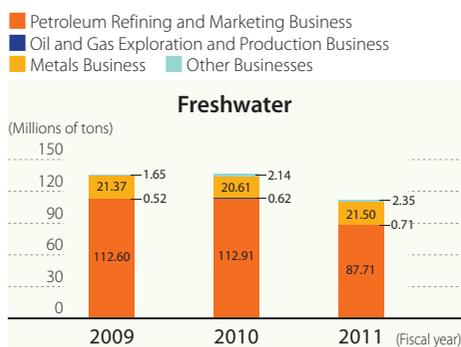
## ● Initiatives for Protecting Water Resources

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

In the water resources consumed in fiscal 2011, freshwater resources consumed were 87.71 million tons in the Petroleum Refining and Marketing Business, 0.71 million tons in the Oil and Gas Exploration and Production Business, 21.50 million tons in the Metals Business, and 2.35 million tons in Other Businesses. The JX Group total was 112.27 million tons, 24.01 million tons lower than in fiscal 2010.

Seawater consumption was 0.92 billion tons in the Petroleum Refining and Marketing Business and 0.12 billion tons in the Metals Business. The JX Group total was 1.04 billion tons, 0.03 billion tons lower than in fiscal 2010.

The chemical oxygen demand (COD) load volume, an indicator of water pollution levels, was 698 tons in the Petroleum Refining and Marketing Business, 103 tons in the Oil and Gas Exploration and Production Business, and 172 tons in the Metals Business. The JX Group total was 973 tons, 31 tons lower than in fiscal 2010.

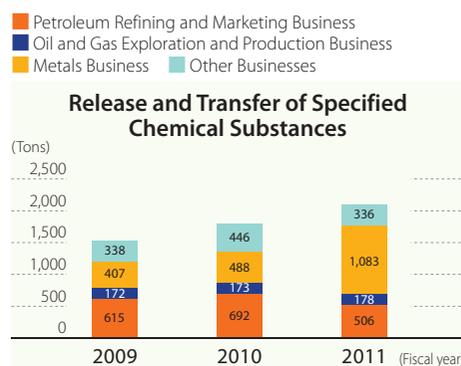


\*Figures for overseas sites (Malaysia and Vietnam) are not applicable in the figure for the Oil and Gas Exploration and Production Business.

## ● Initiatives for Management of Chemical Substances

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

The release and transfer of specified chemical substances in fiscal 2011 was 506 tons in the Petroleum Refining and Marketing Business, 178 tons in the Oil and Gas Exploration and Production Business, 1,083 tons in the Metals Business, and 336 tons in Other Businesses. The JX Group total was 2,103 tons, 304 tons higher than in fiscal 2010.

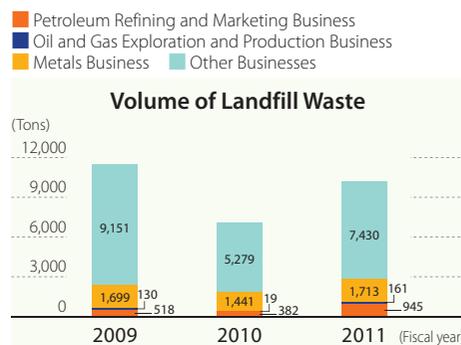


\*Figures for overseas sites (Malaysia and Vietnam) are not applicable in the figure for the Oil and Gas Exploration and Production Business.

## ● Initiatives to Reduce Waste

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.

The final waste disposal volume in fiscal 2011 was 945 tons in the Petroleum Refining and Marketing Business, 161 tons in the Oil and Gas Exploration and Production Business, 1,713 tons in the Metals Business, and 7,430 tons in Other Businesses. The JX Group total was 10,249 tons, 3,128 tons higher than in fiscal 2010.



## ● Conclusion

As outlined on page 32, the JX Group in fiscal 2011 was unable to meet certain targets in its Medium-Term Environmental Management Plan. In most cases, this shortcoming was attributable to external factors such as the Great East Japan Earthquake and the flooding in Thailand. As these impacts recede, we will redouble efforts to meet all targets in fiscal 2012.



Harmony with the environment

-COLUMN- Initiatives at the Caserones Copper and Molybdenum Deposit Development Project

JX Nippon Mining & Metals acquired interests in the Caserones Copper and Molybdenum Deposit Development Project in Chile in May 2006. Since then, the project has been evaluated for both its economic and environmental performance. Today, progress on the construction of production facilities is moving apace ahead of a production launch in 2013. In tandem, SCM Minera Lumina Copper Chile (MLCC), the operator of the project, has put a Community Management Program with three main focuses into practice. These are “local employment,” “water management” and “transportation safety measures.” Care is also given to the natural environment both within and around the project site.



Aerial view of the Caserones Copper and Molybdenum Deposit Development Project

■ Community Management Program Implementation

● Local Employment

As of March 2012, roughly 6,000 people were involved in construction work at the Caserones Project. Training programs to promote employment are underway, with the goal of having 20% of the workforce recruited locally from Region III once operations commence in 2013.

● Water Management

The Copiapo River, where the Caserones Project is located, is known for grape production and other agricultural goods, making supply and demand for water a vital issue. To achieve sustainable water management, the JX Group aims to hold water consumption to 0.3 m<sup>3</sup> per ton of ore processed, the lowest level among all copper mines worldwide. Efforts to this end will include devising ways to dramatically increase water reuse in ore processing.

MLCC, meanwhile, is working hard to safeguard water for downstream agricultural use by buying up farmland to stop hay production and removing weeds along the riverbank to control evaporation.



Copiapo River (after weed removal and steps to prevent osmosis)

● Transportation Safety Measures

Plans call for transporting the copper, molybdenum concentrate and refined copper produced by the Caserones Project to the local harbor by trucks, where they will then be shipped via marine transport. MLCC is working to ensure transportation safety for the surrounding area by instituting safety training for the drivers involved in truck transport operations, developing a robust system for monitoring truck transport status and bypass construction.

■ Care for Biodiversity

Of the expansive 385 km<sup>2</sup> parcel of land it owns, MLCC has set 0.87 km<sup>2</sup> of land impacted by construction of facilities for the Caserones Project as a preserve for the protection of native flora and fauna. Additionally, any area where trees are cleared within the preserve must be replaced by an area of new plantings 1.6 times its size. In the event that protected flora is cut down, this must be replaced by 10 times as many plantings of the same protected species.



Transplantation of vega plant

# Guide to JX Group Websites

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

## JX Holdings

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



- ▶ JX Children's Story Award
- ▶ JX Group Volunteer Activities Supporting Restoration and Recovery
- ▶ JX Group CSR Report
- ▶ CSR Activities at Core Operating Companies

### Other Related Information About JX Holdings

- > **About JX Group**
  - Establishment of JX Group
  - JX Group Mission Statement
  - Objectives and Basic Concept
  - Business Integration Disclosure Materials
- > **Corporate Profile**
  - JX Group Mission Statement
  - Group Companies
  - Management Strategy
  - Corporate Data
  - Executives
  - Organization
  - Corporate History
- > **Investor Relations**
  - Management Policies
  - Financial Highlights
  - IR Library
  - Shareholder & Stock Information

## JX Nippon Oil & Energy

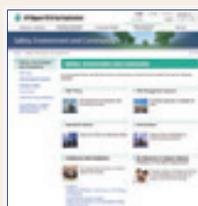
<http://www.no.e.jx-group.co.jp/english/>



- ▶ Corporate Profile
- ▶ CSR Report
- ▶ Products

## JX Nippon Oil & Gas Exploration

<http://www.nex.jx-group.co.jp/english/environment/index.html>



- ▶ HSE Policy
- ▶ HSE Management System
- ▶ Operational Safety
- ▶ Environment
- ▶ Community and Compliance
- ▶ Our Measures to Support Raising Children of the Next-Generation

## JX Nippon Mining & Metals

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



- ▶ Corporate Profile
- ▶ Business Segments
- ▶ Products
- ▶ Corporate Social Responsibility

## NIPPO CORPORATION

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

## Toho Titanium

<http://www.toho-titanium.co.jp/en/index.html>

## The UN Global Compact's Ten Principles

Human Rights		
Principle 1	Businesses should support and respect the protection of internationally proclaimed human rights; and	P26–27
Principle 2	make sure they are not complicit in human rights abuses.	P26–27
Labour		
Principle 3	Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining;	P27
Principle 4	the elimination of all forms of forced and compulsory labour;	P27
Principle 5	the effective abolition of child labour; and	P27
Principle 6	the elimination of discrimination in respect of employment and occupation.	P24–27, P29
Environment		
Principle 7	Business should support a precautionary approach to environmental challenges;	P21–23, P26, P31–32
Principle 8	undertake initiatives to promote greater environmental responsibility; and	P13–23, P26–29, P31–32, P35
Principle 9	encourage the development and diffusion of environmentally friendly technologies.	P13–20, P26, P28–31, P35
Anti-corruption		
Principle 10	Businesses should work against corruption in all its forms, including extortion and bribery.	P21–23, P26–27, P29–30

### We received comments from an outside expert on the JX Report for a Sustainable Future 2012.



#### Masaatsu Doi

Associate Professor  
Faculty of Regional Policy  
Takasaki City University of Economics

Professor Doi earned his undergraduate degree at the Hitotsubashi University Faculty of Economics, and completed his doctoral degree at the Hitotsubashi University Graduate School of Commerce and Management in March 2011. He joined the faculty of Takasaki City University of Economics in 2006, 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.

The JX Group has been off to a great start since its formation, achieving two consecutive years of record earnings. Similarly CSR initiatives, centered on the work coordinated by the three core operating companies, have been coming along steadily. At the same time, the next set of issues facing the Group has also come into focus. Below I will discuss three broad points for consideration, as well as my expectations for the JX Group in fiscal 2012.

#### Approach to Information Disclosure

The fiscal 2011 report has fewer pages compared to the previous edition, making it more compact and readable. However, it is undeniable that in some respects, this has made it a bit more difficult to get an overall view of JX Group activities. For future editions, the Group needs to explore options for more organically linked information disclosure when considering the diverse range of Group company initiatives it has to choose from. This should include linkages between the publication medium and methods, as well as the integration of financial and non-financial information, as the decision is made about what information and how it should be put forward to stakeholders as representative of the JX Group.

#### Initiatives After the Great East Japan Earthquake

The feature section makes it clear that the entire JX Group is involved in restoration and recovery efforts in the wake of the Great East Japan Earthquake. In particular, I am greatly anticipating the further upgrade and functional enhancement of the new type of earthquake-ready service station the Group is unveiling. I very much hope to see this new style of service station appear across Japan as a haven of safety and security in local communities. My expectations also extend to the JX Group's recovery support activities. The Group earns unequivocal praise for the 19 continuous rounds of volunteer activities it has sponsored since the disaster. The issue going forward will be the extent to which the JX Group can best put its strengths to use. I look forward to seeing how the Group, through these volunteer activities, will

create new connections and generate synergies among employees who have no direct ties with one another in their day-to-day duties, apart from coming together as volunteers.

#### Responding to Compliance Violations

It was very unfortunate to hear of the incident involving a safety test report at JX Nippon Oil & Energy's Mizushima Refinery, which resulted in non-compliance with the High Pressure Gas Safety Act. This was especially disappointing since the same refinery was the site of a problem involving falsification of dust level concentrations in 2011. The Group is showing that it is taking this issue seriously, immediately disclosing relevant information and establishing a new Internal Control Council. I expect that steps like these will ultimately make the JX Group a more sustainable entity.

#### Looking Ahead to Fiscal 2012

Calls have grown since the Great East Japan Earthquake for the development of new energy technologies and new lifestyle approaches that will utilize them.

Society's attention today has very much turned to the technologies that the JX Group possesses. This spans everything from residential fuel cell systems and other areas in the field of new energy, to the development of the Caserones Copper Mine, where production is slated to begin from fiscal 2013. Given its wide array of business domains, the work of ensuring that the JX Group Mission Statement penetrates through to every employee, and that CSR is embedded in the business activities of Group companies is going to take time. Part of this effort, I have heard, is the distribution to all executives and employees in April 2012 of the "Handbook for the Future (X)," a booklet on the Mission Statement being used as a workbook at Group business sites that is eliciting feedback. It will be interesting to see how these steps are utilized to result in new initiatives and create new value from fiscal 2012.

In closing, if the two years since the JX Group's founding was a phase for solidifying the fundamentals of CSR management, the Group has likely now entered a new phase. Among other things, it will now need to take advantage of stakeholder engagement that fully incorporates outsider perspectives and input. The purpose of stakeholder engagement is not simply to take in tough criticism from stakeholders, but to pursue constructive dialogue with them. The suggestions that emerge can then be incorporated into management activities, leading to better competitiveness.

Dialogue opportunities with stakeholders will give rise to new ideas and innovations that will define the JX Group. I look forward to seeing the Company lead Japanese industry as an integrated energy, resources and materials business group.

#### Response

We are very grateful for Professor Doi's valuable opinions and suggestions for the JX Group's CSR activities.

Through the business operations of Petroleum Refining and Marketing, Oil and Natural Gas Exploration and Production, and Metals, the JX Group has an integral role in everyday life. Our business efforts reflect a commitment to our social mission of ensuring the stable supply of energy, resources and materials.

The Great East Japan Earthquake was a very emphatic reminder of our social mission. The Group has worked together since to maintain and strengthen our supply chain, along with trial demonstrations of new earthquake-ready service stations and dispatching volunteers as part of 19 rounds of activities to assist in the recovery work. We are deeply honored that our initiatives around the disaster have met with such praise outside the Group.

As for the compliance violation, the criticism leveled here is deserved and well taken. We take this violation seriously, and consider it to be a problem for the entire JX Group. Among other actions, we are extensively re-enforcing our legal compliance in a determination to be more sustainable.

The JX Group is dedicated to working together with stakeholders to contribute to the development of both a sustainable economy and a sustainable society.

#### Toshihiko Ogawa

Senior Vice President, General Manager,  
General Administration Department  
JX Holdings, Inc.



(TRANSLATION)

## Independent Practitioner's Review Report

August 31, 2012

Mr. Isao Matsushita,  
Representative Director, President,  
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 2012" (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 quantitative environmental information for the period from April 1, 2011 to March 31, 2012 included in pp.31-35 of the Report was accurately measured and calculated, with reference to the Environmental Reporting Guidelines - Year 2012 version (issued by the Japanese Ministry of the Environment), GRI Sustainability Reporting Guidelines (Version 3.1) and GRI Mining and Metals Sector Supplement, in accordance with the calculation methods adopted by the Company.

### 2. Responsibility of Management and Responsibility of the Independent Practitioner

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.

### 3. 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). The review procedures performed for the material quantitative environmental information for the period from April 1, 2011 to March 31, 2012 included in pp.31-35 of the Report consisted of: 1) agreeing information to summary tables and supporting documents on a sample basis; 2) interviewing the responsible Company's personnel and the persons in charge; 3) reviewing and agreeing information to the relevant Company's minutes, the Company's regulations, and related documents, etc.; 4) site visits; and 5) comparing information with other available supporting internal and external materials of the Company.

### 4. Conclusion

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 quantitative environmental information for the period from April 1, 2011 to March 31, 2012 included in pp.31-35 of the Report was not accurately measured or calculated, with reference to the Environmental Reporting Guidelines - Year 2012 version (issued by the Japanese Ministry of the Environment), GRI Sustainability Reporting Guidelines (Version 3.1) and GRI Mining and Metals Sector Supplement, in accordance with calculation methods adopted by the Company.



**JX Holdings, Inc.**

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After you have read the JX Report for a Sustainable Future 2012, feel free to submit any opinions or comments you may have. Please write to the General Administration Department or send an email.



As of September 30, 2012, JX Holdings was a constituent of the following major SRI Indexes:



DJSI Asia Pacific: A global index of 154 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.



This report was printed using an environmentally friendly waterless printing process and vegetable oil ink. In support of the Kizukai Undo (Tree-Use Movement) promoted by Japan's Forestry Agency, JX Holdings has printed this report on "3.9 paper," made from wood produced through forest thinning in areas where the JX Group is engaged in forest maintenance. This contributes to increased absorption of CO<sub>2</sub> by Japanese forests.