

# JX Nippon Oil & Energy 2016 CSR Report



The Future of Energy, Resources and Materials

**JX Nippon Oil & Energy**

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## Message From the President

*Message from the President*

### Continually Tackling Change and Fulfilling the Expectations of Society as a Comprehensive Energy Company



**Tsutomu Sugimori**  
Representative Director  
President

#### Fulfilling Our Mission of Providing Access to Stable Supplies of Sustainable Energy

**Q :** What are your thoughts about the role that JX Nippon Oil & Energy plays in modern society?

**A :** First, our mission is to effectively utilize limited resources while supporting the foundation of people's daily lives and industrial activities, by responding to the various needs for energy. Given the fact that we supply energy that forms the basis of both consumer and industrial activities, we are keenly aware of the importance of the role we must play in all of our businesses.

Today, the reduction of greenhouse gases has become a significant goal for the entire world. Given this, we are receiving requests from society to provide access to stable supplies of lower carbon energy. In response to these customer needs, it is essential that we improve our ability to supply natural gas, electricity, hydrogen, and other forms of clean energy.

At the same time, though, the importance of petroleum, which accounts for 40% of Japan's primary energy demand, remains unchanged. As an "energy conversion company," we must fulfill our responsibility toward the realization of a sustainable society while ensuring customers' current energy needs are met. Since petroleum is such an invaluable resource, we must also look to expand the ways in which it is utilized, such as petrochemicals, from both the axis of the "energy saving" and the "value to be added,"

Additionally, one of our greatest responsibilities is to ensure a stable supply of petroleum products at all times, both on a day to day basis and during disasters or emergencies. We have established a business continuity plan (BCP) that covers our entire supply chain based on the lessons learned from the Great East Japan Earthquake in March 2011, and we have strengthened our approaches by conducting training drills and reviews so that the BCP will function at all times. Following the large earthquake that struck Kumamoto in April 2016, we responded immediately by allocating a large number of tank trucks to the affected areas, which eliminated any concerns of inventory shortages at service stations the next day.

## Strategically Engaging in Business both in Japan and Internationally

**Q :** Can you provide an update on your current business?

**A :** First, in the petroleum business, maintaining a system with excess supply in Japan where demand is shrinking is anything but efficient, so we must make changes to ensure our supply system is closely in tune with demand. In August 2016, we concluded the final agreement for our merger with TonenGeneral Sekiyu K.K.. The merger will allow us to achieve synergies and carry out structural reforms that go far beyond what a single company could accomplish. The TonenGeneral Group has a number of good traits, including streamlined and efficient manufacturing and sales systems as well as its rigorous approach to governance. These traits overlap very nicely with the JX Nippon Oil & Energy Group's scale of operations and extensive business lines, and as a result I am firmly convinced the resulting excellent group of companies will realize the two aspects of a stable supply of energy and efficiency of operations.



Meanwhile, demand for energy is steadily growing in emerging countries and mainly those in Southeast Asia. There will be many fields in these rapidly growing countries where we can contribute our long-standing experience and know-how from Japan. Toward that end, we are accelerating efforts aimed at delivering integrated services spanning from crude oil processing to sales of petroleum products. In May 2016, we made a capital investment in Petrolimex of Vietnam. As a pillar of our business strategy in Southeast Asia, we are proposing and implementing joint ventures in various fields including sales, distribution, fuel procurement, and business management. This will not only improve the corporate value of Petrolimex, but also open the door for collaboration in peripheral businesses, such as electricity, through a strategic partnership, resulting in a win-win relationship for both companies.

In Japan, we entered the electricity retail business for the home using our new brand called ENEOS Electricity. Our goal is to become comprehensive energy company which is familiar to customers by reinforcing our B-to-C business. We believe that we can deliver peace of mind to customers in providing stable supplies of electricity given our own highly cost competitive power plants and our track record in supplying fuel at some 10,000 ENEOS service stations across Japan.

## Creating a New Energy Society through Our Sponsorship of the Tokyo 2020 Olympic and Paralympic Games

**Q :** What role will JX Nippon Oil & Energy play in the Tokyo 2020 Olympic and Paralympic Games?

**A :** We would like to support the operations of this event by supplying energy (petroleum, gas, and electricity supply service) as a Tokyo 2020 Gold Partner. At the same time, we will support the Japan Olympic and Paralympic teams and spread the Olympic and Paralympic movement nationwide. For example, we will inject excitement into our employees and dealerships across Japan by hosting events for bringing the spirit to the communities of athletes and revitalizing these areas as well. Our role will take full advantage of our nationwide network to excite all of Japan and provide a sense of joy to everyone involved with the Games.

Also, we expect that the Games will serve as an excellent opportunity to expand the use of hydrogen energy as fuel for vehicles. The Ministry of Economy, Trade and Industry has established a target to build around 160 hydrogen stations by the year 2020 within its Strategic Roadmap for Hydrogen and Fuel Cells. As of August 2016, we operate the largest number of these in Japan at 37, which accounts for about half of all the hydrogen stations in Japan. Going forward, we will contribute to the creation of a new energy society based on the supply of hydrogen by reducing the cost of hydrogen stations.



## Emphasizing Dialogue and Focusing on Human Resource Development aimed at Innovative Changes

**Q :** Can you provide a message to stakeholders including employees working for the JX Nippon Oil & Energy Group?

**A :** The energy industry is in the middle of a major turning point. Today, the industry needs companies with resilient business qualities that are not affected by the outside environment. Therefore, we need to reform conventional business approaches entirely. That is, we need to change the way our employees think. To make these innovative changes, each and every employee will need to raise their awareness.

The company, too, must secure the human resources that can contribute to these innovative changes and train them accordingly. To develop human resources who have a greater multi-faceted perspective, we will actively develop globally-minded human resources and implement job rotations between divisions. We will also focus greater efforts on ensuring workplaces provide opportunities for a diverse pool

of human resources to thrive, regardless of gender, age or nationality, including employees who have time limitations due to childcare or nursing care. Therefore, we need to change the way we work to increase productivity and efficiency.

Dialogue can be found at the root of all business. I believe that we can face even enormous challenges through dialogue. The entire company will actively engage various stakeholders and work as one toward ushering in change with the goal of becoming a corporate group trusted by society.

August 2016

Interviewer: Ms. Ayako Sonoda, President, Cre-en Incorporated



## Special Feature Section – The Future of Energy

### ▶ Special Feature 1: Ensuring a Stable Supply of Petroleum



A stable supply of petroleum is an important social mission. In the value chain from selling crude oil procurement to fulfill this mission we will practice various activities.

### ▶ Special Feature 2: Responding to Diverse Energy Needs



As a comprehensive energy company, we also supply various forms of energy to meet the needs of our customers, including electricity, hydrogen and natural gas.

### ▶ Special Feature 3: Products that Help Solve Social Issues



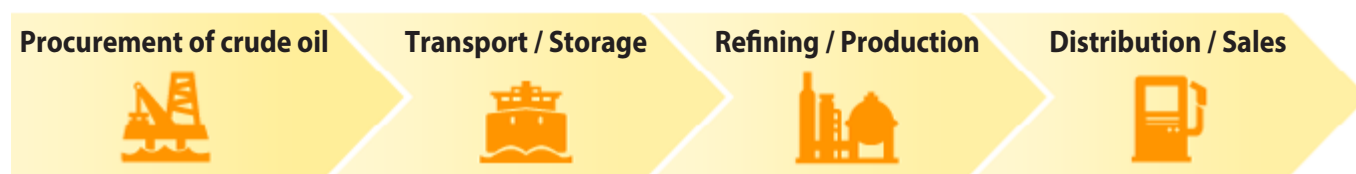
We are implementing various initiatives to find solutions to social issues, while fully utilizing the unique characteristics of petroleum, a limited resource in the world today.

## Special Feature 1 : Ensuring a Stable Supply of Petroleum

Today, Japan faces a declining population, dwindling birthrate and aging population, as well as changes in the economic and industrial structure, including people’s lifestyles, not to mention changes taking place in the energy supply-demand balance. Despite this, petroleum continues to occupy the position of primary energy source of Japan. Petroleum also represents a strongly independent and diversified energy source during a disaster because of its convenience, storability, and transportability. Therefore, ensuring a stable supply of petroleum represents one of our most important missions in society from the perspective of Japan’s energy security.

To fulfill this mission, we are implementing a host of different initiatives within the JX Nippon Oil & Energy Group’s value chain, which stretches from crude oil procurement to sales.

### The JX Nippon Oil & Energy Group’s Value Chain



## Procurement of crude oil



Nearly 100% of the crude oil we procure to make petroleum products originates from imports and we bear an important responsibility to Japanese society to ensure crude oil can be sourced in a stable manner. The JX Nippon Oil & Energy Group sources crude oil from 25 countries around the world, and among these the Middle East represents our largest supply source, as it is said to account for about half of the world’s proven reserves. In procuring crude oil, term contracts (long-term contracts) are used to ensure a stable supply, while spot contracts (contracts for each shipment) are used to source crude oil from around the world. Both contract formats are used to ensure greater flexibility and economics.



We have set up offices locally in oil producing countries in the Middle East where we strive to engage in daily engagement and interaction as well as foster positive and collaborative relationships through technical and human resources development support in these countries.

<p> <b>Environmental consideration</b></p> <ul style="list-style-type: none"> <li>● Procurement of low-sulphur crude oil</li> <li>● Support for environmental technology development in oil producing countries</li> </ul>	<p> <b>Social consideration</b></p> <ul style="list-style-type: none"> <li>● Relationship building with oil producing countries aimed at stable energy procurement</li> </ul>
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## Achieving Stable Supplies through Relationship Building with Oil Producing Countries – Abu Dhabi Office

Our Abu Dhabi Office represents the gateway to the JX Nippon Oil & Energy for the Middle East. Here, important roles and missions include building relationships with state-owned oil companies, facilitating crude oil and product transactions by correctly conveying our views, and identifying new business ventures. The office also engages in social contribution initiatives because of the importance of raising JX Nippon Oil & Energy’s status and presence in its business domains.

It is also very important to develop personal relationships in this region as well. Although the local culture and customs differ greatly from Japan, local people have a very favorable impression of Japan as a country. In the Middle East, the term “Inch’ Allah” (God willing in English) is often used after making a promise. Although written as synonymous with “irresponsible”, essentially this term means that the promise will be kept as long as some unforeseen situation does not arise. I think this is a cultural tendency that needs to be experienced firsthand to be understood. In building relationships of trust, it is important to deeply know one another and interact with your true self, instead of just thinking with your head. I try my best every day to demonstrate the Japanese ideals of integrity and diligence while also respecting the local culture and customs.

Countries in the Middle East are working diligently on social structure reform and creating new sources of income. They listen quite intently to what we outsiders have to say. While there are difficulties such as the need to confront one another’s views rather severely or that talks do not proceed at the expected speed, we continue to speak with each country to push forward to a new stage by together considering mechanisms for transactions that are beneficial to both parties.

Daisuke Hine, Representative and General Manager of Abu Dhabi Office



The dinner meeting with Abu Dhabi National Oil (right back Hine) Daisuke Hine, Representative and General Manager of Abu Dhabi Office (second from right)



Business interview with Kuwait National Petroleum Company (Hine pictured at center)

## Transport / Storage



Procurement  
of crude oil



Transport /  
Storage



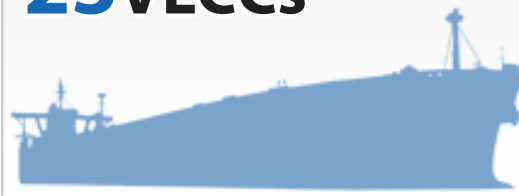
Refining /  
Production



Distribution /  
Sales

Crude oil is transported over the ocean by tanker ships. The JX Nippon Oil & Energy Group transports crude oil using 23 Very Large Crude Carriers (VLCC) with 300,000 tons of cargo and 4 tankers with 100,000 tons, for a total fleet of 27 vessels. To ensure these tankers are never delayed and the supply of crude oil is sustained, we select the best routing based on careful consideration of the weather in each region and pay careful attention to managing the operations of these vessels. Crude oil from the Middle East arrives in Japan after a roughly 20-day journey, where it is then transported to refineries across the country. Japan, which relies on imports for nearly all of its crude oil, has established an approximately 200-day reserve to prepare for unforeseen situations or sudden changes in social situation. The JX Nippon Oil & Energy Group is responsible for one-third of the private sector reserves required by law to fulfill its mission ensuring a stable supply of crude oil. Our Kiire Terminal, one of the world's largest intermediary crude oil reserve terminals\*, has a capacity to store up to 7.35 million KL which represents about 2 weeks' worth of Japan's crude oil consumption.

We own/charter  
**23 VLCCs**



\* Operated by JX Kiire Terminal Co., Ltd. in Kagoshima City, Kagoshima Prefecture.



### Environmental consideration

- ▶ Prevention of marine pollution caused by oil leaks and waste  
<http://www.noe.jx-group.co.jp/csr/environment/reduce/index.html>  
(available only in Japanese)
- ▶ Prevention of ballast water disturbing the eco system  
<http://www.noe.jx-group.co.jp/csr/environment/reduce/index.html>  
(available only in Japanese)
- ▶ Use of environmental-hormone free ship's bottom paint  
<http://www.noe.jx-group.co.jp/csr/environment/reduce/index.html>  
(available only in Japanese)



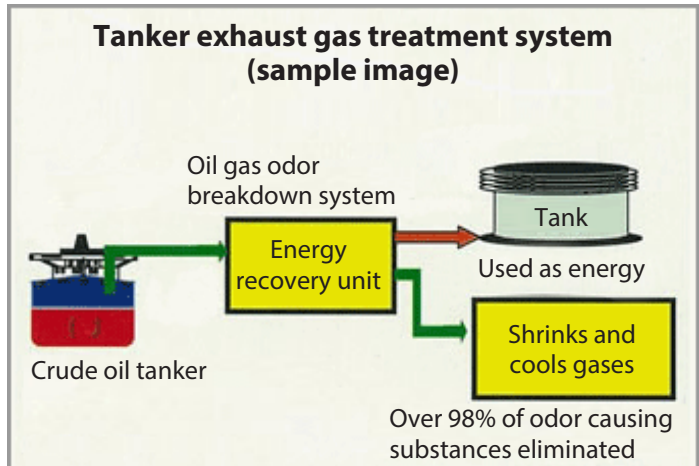
### Social consideration

- Petroleum storage for ensuring a stable supply of energy

## Japan’s First Tanker Exhaust Gas Treatment System

Kiire Terminal collects, without releases, the gases that have accumulated inside tankers when loading crude oil, and reuses Volatile Organic Compounds (VOCs) contained in these gases as a source of energy by making them absorb into the crude oil. The recovery rate of this energy is 70%, which on a crude oil converted basis is about 10,000KL per year.

Gases that were not absorbed are broken down, including odor-causing ones, which prevent the occurrence of foul odors. The JX Nippon Oil & Energy Group became the first in the world to commercialize this mechanism. This technology is now greatly contributing to environmental measures and the effective utilization of energy.





## Refining / Production



Procurement  
of crude oil



Transport /  
Storage



Refining /  
Production



Distribution /  
Sales

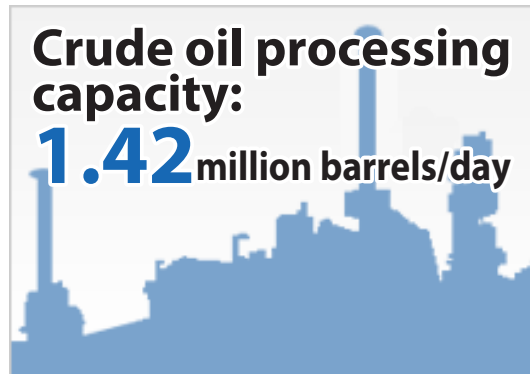
Crude oil that arrives from other countries is transformed into petroleum products, petrochemical products, electricity and other products ideally suited for people's daily lives at the JX Nippon Oil & Energy Group's seven refineries and four plants.

The JX Nippon Oil & Energy Group together with its partner companies aims to completely eliminate accidents and occupational injuries, with safety and compliance of utmost concern. Specifically, regular large-scale inspections and repair work that takes place every two or four years and thorough daily maintenance helps to prevent troubles before they occur and ensures that production never has to stop. To enhance safety activities, we also carry out regular firefighting drills and disaster preparedness drills for emergencies or natural disasters.

Based on the Government of Japan's 2015 Action Plan for National Resilience, we are currently carrying out improvement work at our refineries and plants to make them more resilient in the face of an unexpected widespread natural disaster by 2018.

**Crude oil processing capacity:**

**1.42 million barrels/day**



### Environmental consideration

- ▶ ISO 14001 environmental management systems in place at each refinery and plant  
<http://www.noie.jx-group.co.jp/csr/environment/oilfactory/index.html>  
(available only in Japanese)
- ▶ Unique biodiversity measures implemented for each operating area  
<http://www.noie.jx-group.co.jp/csr/environment/biodiversity/index.html>  
(available only in Japanese)



### Social consideration

- ▶ Safety initiatives at each refinery and plant  
<http://www.noie.jx-group.co.jp/csr/management/safety/index.html>  
(available only in Japanese)
- Engagement with local communities through refinery/plant tours

## Resource and Energy Conservation Initiatives at Refineries

The refineries of the JX Nippon Oil & Energy Group are carrying out capital investments for the purposes of streamlining operations. The Kashima Refinery has newly installed an SDA system that separates deasphalted oil and SDA pitch (super heavy extracted residue) in order to utilize heavy oil generated during the oil refining process more effectively. From deasphalted oil, we can increase production of raw materials for high value added petrochemical raw materials and gas oil. Electricity generated with SDA pitch as fuel is sold for business use, industrial use, and residential use as ENEOS Electricity.



SDA in Kashima

The Oita Refinery saves more than 20,000KL/year of crude oil equivalent through its investments that seek to recovery unused waste heat and optimize energy usage. For this success, the refinery was recognized with the Chairman Prize of ECCJ at the Fiscal 2015 Energy Conservation Awards sponsored by the Ministry of Economy, Trade and Industry.

Also, the Sendai Refinery and the Mizushima Refinery were able to conserve some 30,000KL/year of crude oil equivalent energy through investments made in fiscal 2015. JX Nippon Oil & Energy will continue to look for ways to more effectively utilize important energy resources as an energy professional.

## Sales / Distribution



Procurement  
of crude oil



Transport /  
Storage



Refining /  
Production

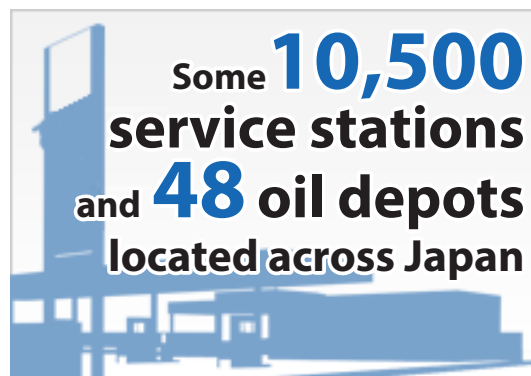


Distribution /  
Sales

JX Nippon Oil & Energy has established a system that can supply energy to every corner of Japan in a stable and expedient manner.

Petroleum products produced at our refineries are transported directly to services stations as well as to our 48 oil depots located across Japan, from which it is then supplied to our network of 10,500 service stations by tank truck. The number of service stations is at the end of March 2016.

Service stations, which handle hazardous substances, are built according to rigorous building codes and need to be fire resistant and safe during a major earthquake. JX Nippon Oil & Energy now offers disaster-resilient service stations offering a number of unique features that ensure emergency vehicles from the police, Self-Defense Forces, fire department, and hospitals will receive priority access to fuel during a disaster. Disaster-resilient service stations are equipped with emergency generators, enabling them to continue supplying products, even during power outages. Given the lesson learned during the Great East Japan Earthquake when many service stations were forced to close due to tsunami damage, we have installed flood-resistant facilities at certain disaster-resilient service stations located along the coast.



### Environmental consideration

- ▶ Vapor recovery systems at service stations  
<http://www.noe.jx-group.co.jp/csr/environment/reduce/index.html>  
(available only in Japanese)
- Service station lighting switched over to LED lighting



### Social consideration

- Service stations designed to be barrier free based on appropriate building codes
- Appropriate provision of product information
- High tech tank trucks used for shipping and unloading

## Instructing Tank Truck Drivers in Eco-friendly and Safe Driving

Every day a fleet of 2,200 tank trucks transports petroleum products within the JX Nippon Oil & Energy Group's supply chain. Ensuring that tank truck drivers, one of our important business partners, adhere to energy efficient and safe driving practices is of the utmost concern.

JX Nippon Oil & Energy hosts a training course for truck drivers every year together with truck manufacturers that teaches the theory behind eco-friendly driving and techniques. In fiscal 2015, this training course was held at 15 locations across Japan, with a total of 206 drivers participating. Each and every participant was able to learn safe driving knowledge and techniques for energy efficient driving, which helps to improve fuel economy and lower CO<sub>2</sub> emissions.



Eco-friendly and safe driving course in progress

## Crisis and Emergency Response

JX Nippon Oil & Energy has established a Business Continuity Plan (BCP) with the scenario of widespread disaster, such as the occurrence of the Inland Earthquake in Tokyo or Nankai Trough Giant Earthquake, in order for it to fulfill its mission of providing a stable supply of petroleum products even during a crises or emergency situation, based on the lessons learned from the Great East Japan Earthquake of March 2011. To improve and ensure the effectiveness of this BCP, the JX Nippon Oil & Energy Group and its partner companies take part in comprehensive drills as well as joint training involving select departments carried out based on specific themes, such as supply-demand coordination. Moving forward we will continue to carry out drills based on various scenarios.

After the enactment of the revised Oil Stockpiling Act (November 2012), we created an oil supply coordination plan involving all of our oil refineries and distributors. During a disaster, each JX Nippon Oil & Energy Group company will share information about the disaster-affected areas as well as respond to emergency requests for fuel from local governments and open up storage facilities for shared use, in an effort to fulfill its responsibility to provide a stable supply of oil products.

### **Emergency Response after the Kumamoto Earthquake following the Recommendation to Implement the Coordinated Oil Supply Plan for Disasters**

Soon after the April 14, 2016 Kumamoto Earthquake, the JX Nippon Oil & Energy Group set up an emergency response headquarters led by the President, and made every effort possible to ensure a continuous supply of fuel to the disaster-affected areas based on its experiences from the Great East Japan Earthquake.

The Oita Refinery, the only refinery (including other companies) located in the Kyushu region, momentarily stopped shipments, but by the afternoon of the day it had restarted shipments. Additionally, our seven oil depots in Kyushu continued to ship products even after the earthquake, and in particular, the Yashiro Oil Depot, which is located close to the disaster-area, increased its inventory. Shipments were also greatly increased using tank trucks from other parts of Kyushu and the Chugoku area. Tank trucks were also put on standby around Mashiki Town, which suffered serious damage. This ensured that all steps were taken to ensure a stable supply.

Moreover, shipment hours were extended at oil terminals, which cleared fuel shortages at services stations up to April 17. Going forward, the JX Nippon Oil & Energy Group will continue to support the disaster-affected area not only for its fuel supply needs, but wherever else possible.

## Special Feature 2 : Responding to Diverse Energy Needs

### As a Comprehensive Energy Company, the JX Nippon Oil & Energy Group is Meeting the Diverse Energy Needs of its Customers

As a comprehensive energy company, the JX Nippon Oil & Energy Group procures crude oil, natural gas, coal, solar energy, and other forms of primary energy in a stable manner and then converts it to the form of energy required by customers. In conjunction with changes in the overall energy supply-demand structure, we began supplying ordinary households with electricity in fiscal 2016.

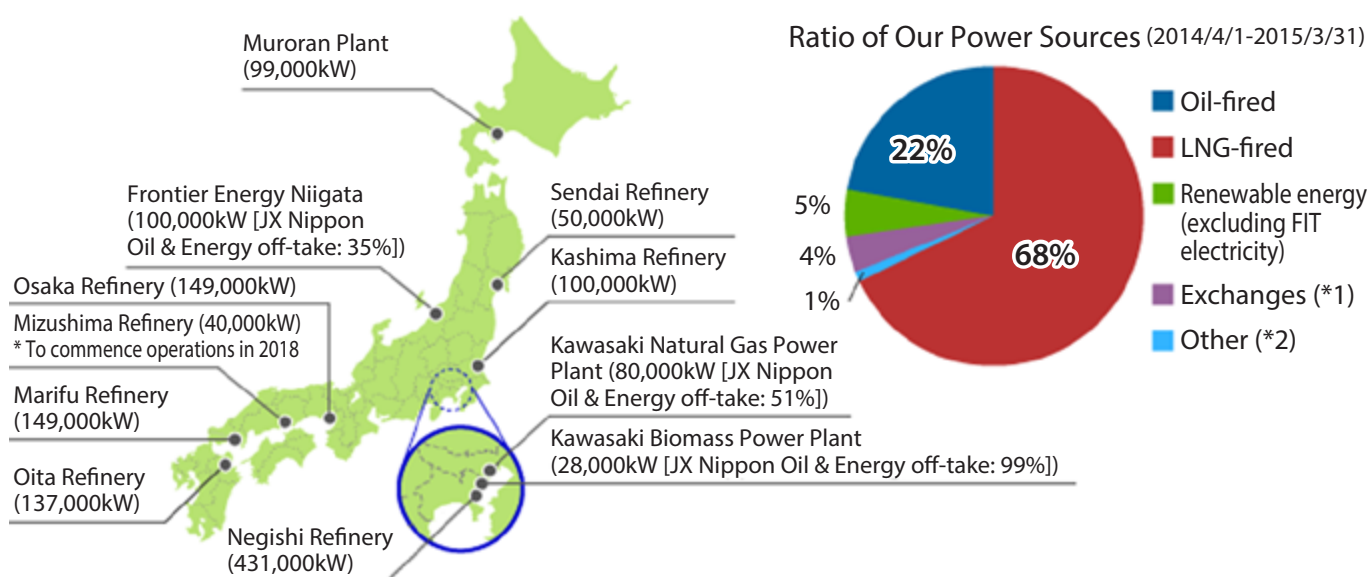
Our mission is to utilize limited resources effectively while underpinning the fundamentals of people’s living and industrial activities by responding to increasingly diverse energy needs. Another important responsibility is to take action for the future energy needs of the next generation by fully utilizing the know-how we have developed over the years to procure and supply energy based on our long-standing track record in providing stable supplies of petroleum. Our goal is to contribute to sustainable economic and social development by continually providing access to high quality energy in a stable and safe manner.

### Toward a New Business Segment that Utilizes Our Strong Track Record JX Nippon Oil & Energy’s Initiatives in the Electricity Business

#### History of JX Nippon Oil & Energy’s Electricity Business

For many years, we have used electricity generating facilities at our refineries as part of our presence in the electricity generation and electricity retail business. We have been in the electricity generation business since 1998 as an IPP\*, wholesaling the electricity we generated at our refineries and plants across Japan to power companies. Since the year 2000, Japan has pursued the deregulation of the electricity retail business using a step by step approach, and in conjunction with this we entered the electricity retail business for high voltage users in 2003. In addition to electricity generating facilities at our refineries, we are also working on the development of various other sources of electricity, such as new forms of energy and renewable energy like natural gas, wind power, and solar power. Our goal is to encourage the utilization of energy that is economical and has less environmental impacts.

\* IPP is an acronym for Independent Power Producer. A non-utility generator that wholesales electricity to an electric power company.



## Began Supplying Retail Electricity to Homes in April 2016 Under the ENEOS Electricity Business

In April 2016, the electricity retail business in Japan for homes was fully deregulated, making it possible for consumers to choose which company to obtain electricity from. Our electricity retail business for consumers called ENEOS Electricity launched services in April 2016 as well. Through this business platform, we will harness our long-standing know-how in the electricity business to provide consumers with a stable supply of electricity. ENEOS Electricity produces energy using natural gas and biomass, which have less of an impact on the environment. The mainstay Kawasaki Natural Gas Power Plant is planning on expanding its generating capabilities, with serious discussions now underway about commencing operations of these expanded facilities by 2021.

### Delivering Affordable, Safe and Reliable Electricity to Homes

The Electricity Sales Group No. 2 where I work was established in January 2015 with the mission of selling electricity to homes through ENEOS Electricity. I'm in charge of system development, sales, sales promotions, and customer service for ENEOS Electricity.

ENEOS Electricity began supplying customers in April 2016 and since then we have received a huge number of applications from new customers. Our customers particularly rave about our highly competitive prices and benefits (feeling they're saving money) as well as the reliability and peace of mind that goes with our track record in supplying electricity. Our services deliver a sense of saving money based on the tariff plan where the more you use the more you benefit and various perks made available based on how you pay. In addition to great prices, we have the know-how and track record of selling electricity to offices and schools from power plants located across Japan for more than a decade. This track record has helped to foster peace of mind and a sense of reliability among our customers.

ENEOS Electricity has only just begun. We are working hard every day to innovate our services to ensure that even more consumers select ENEOS Electricity to power their home. We will continue to dedicate our efforts to making our services affordable, safe and reliability so that customers think ENEOS Electricity when considering their electricity options.



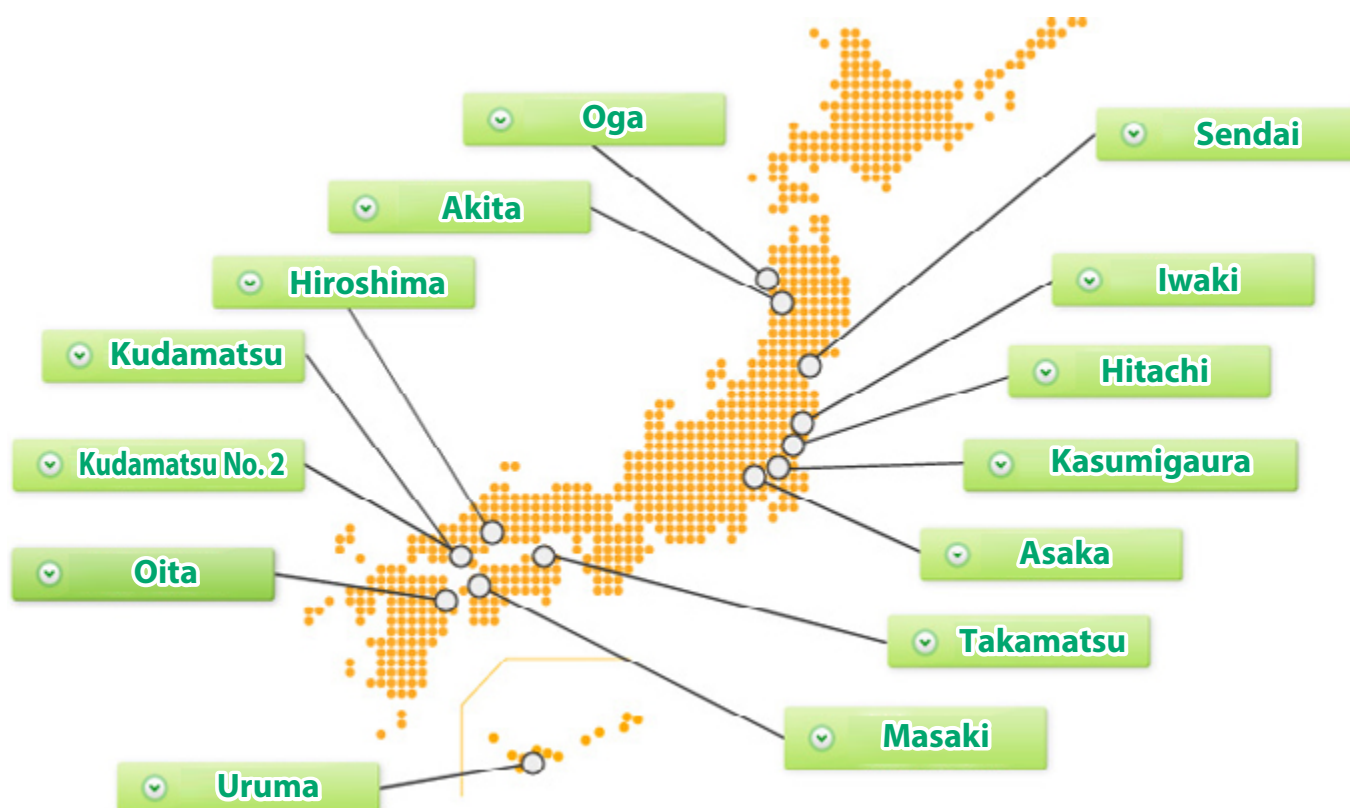
Yoshihisa Shibuya  
Resources & Power Company  
Electricity Division  
Electricity Sales Group No. 2  
JX Nippon Oil & Energy



## Expansion of the Mega Solar Power Generation Business

Ever since the feed-in tariff system for renewable energy was launched in fiscal 2012, the JX Nippon Oil & Energy Group has been actively engaged in the mega solar power generation business using its idle lands. In fiscal 2015, we began operations at four mega solar power plants located in Hiroshima, Oga (Akita Prefecture), Hitachi (Ibaraki Prefecture), and Asaka (Saitama Prefecture). As of March 31, 2016, we operate a network of 14 mega solar power plants across Japan, with a total generating capacity of around 40 million kWh per year.

### ● JX Nippon Oil & Energy's Mega Solar Power Plants in Operation



📄 Initiatives in the Mega Solar Power Generation Business  
<http://www.noe.jx-group.co.jp/megasolar/> (available only in Japanese)

## Uruma Mega Solar Power Plant – the Largest in Okinawa Prefecture

Uruma Mega Solar Power Plant, located onsite at Okinawa CTS Corporation, a member of the JX Nippon Oil & Energy Group, was constructed on part (160,000m<sup>2</sup>) of an expansive sun-drenched site. It began operations in March 2015. With a generating capacity of 12.2MW, the power plant is the largest mega solar power plant in Okinawa Prefecture. Going forward, as an important hub for supplying energy, the Uruma Mega Solar Power Plant will contribute to society through efforts to realize a low-carbon society.



### Uruma Mega Solar Power Plant by the Numbers

Generating capacity	12.2MW
Site area	approx. 160,000m <sup>2</sup>
Annual output	<p>14.60 million kWh</p> <ul style="list-style-type: none"> <li>● Enough electricity to power 4,000 homes for one year</li> <li>● CO<sub>2</sub> reduction amount is the amount absorbed by approx. 330,000 cedar trees (4,600 tons)</li> <li>● Reduces use of approx. 166 truck loads of petroleum (3,314kl) compared to thermal power plants</li> </ul>

## Initiatives for the Advancement of a Hydrogen-based Society

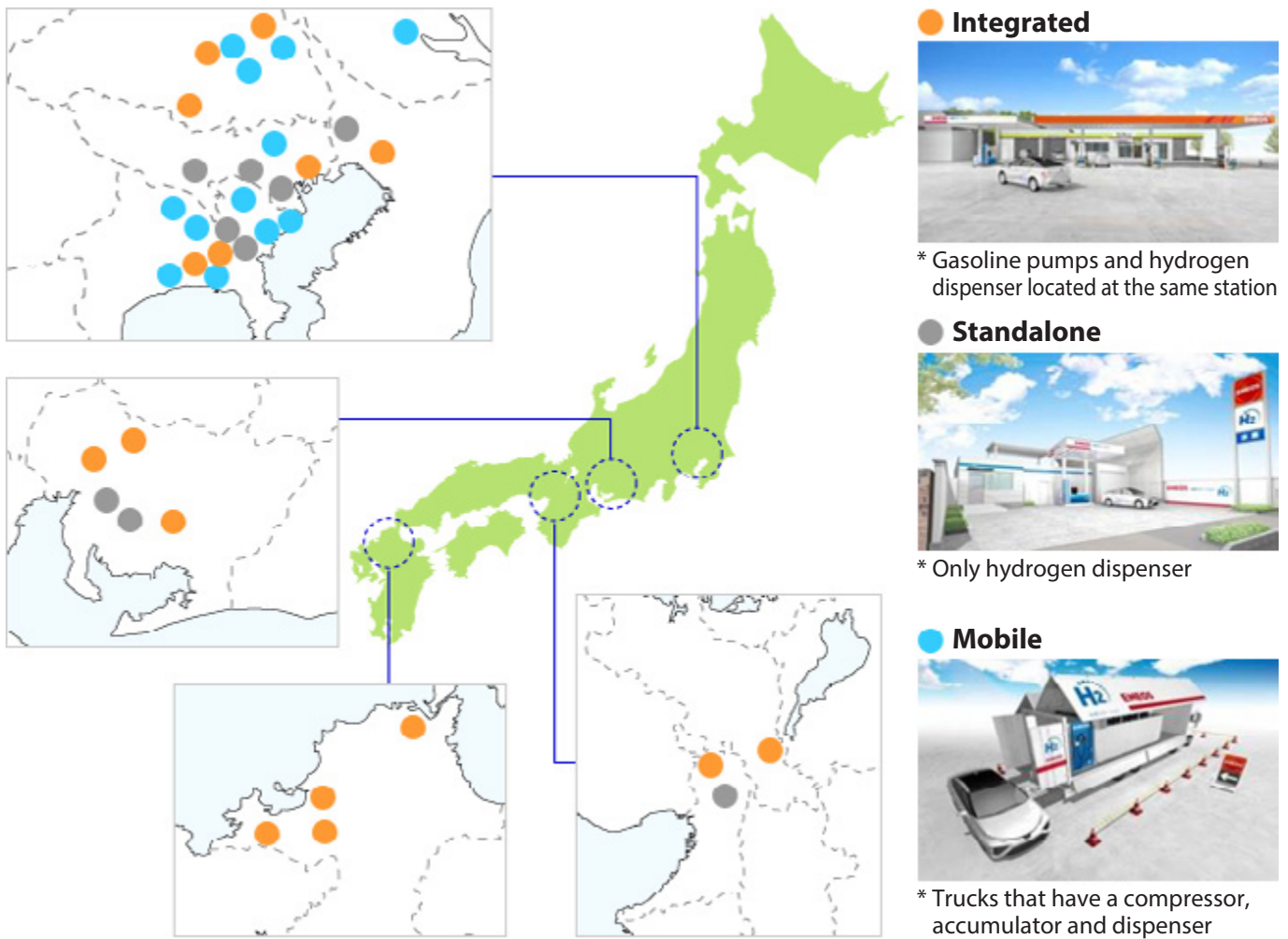
Hydrogen is a clean energy that does not produce CO<sub>2</sub> or air pollution when used. It can be produced from various energy sources using many different methods, making it a key form of energy for realizing a sustainable society that contributes to improve energy security. The Government of Japan and Tokyo Metropolitan Government have announced that they will showcase the potential of hydrogen to the world at the Tokyo 2020 Olympic and Paralympic Games\*. And thereafter they will spread the technology worldwide in order to realize a hydrogen based society.

\* The JX Nippon Oil & Energy Group is a Tokyo 2020 Gold Partner (Hydrogen).

## Infrastructure Development for a Hydrogen-based Society – Expansion of Hydrogen Station Network

As of July 31, 2016, we operate a network of 37 hydrogen stations in Japan spanning 9 prefectures. Going forward, we will contribute to the realization of a new energy society by consistent development of the hydrogen supply business, utilizing our know-how and infrastructure related to hydrogen manufacturing.

### Our Hydrogen Station Network as of July 31, 2016



## Helping to Popularize Fuel Cell Vehicles that Do Not Emit CO<sub>2</sub>

ENEOS Hydrogen Supply & Service Corporation (EH) where I work was established in October 2014 in order to provide stable supplies of hydrogen using integrated operations that span from hydrogen manufacturing to storage, shipment and sales.

The Hydrogen Manufacturing and Shipment Center operated by EH on behalf of JX Nippon Oil & Energy opened in March 2016 as Japan's very first facility for making and shipping hydrogen specifically for use in fuel cell vehicles. Our manufacturing facilities have the capacity to produce 600Nm<sup>3</sup> of 99.97% pure hydrogen every hour (enough hydrogen to fill around 12 fuel cell vehicles). Produced hydrogen is compressed and stored, and then transported by specially designed trailers to hydrogen stations in the Greater Tokyo Metropolitan Area (13 fixed sites and 12 mobile sites).

In all of our work safety is given top priority. Operators certified in high pressure gas work in relays around the clock to ensure safe operations, from receiving LP gas, the raw material for making hydrogen, to performing regular maintenance and inspections of various equipment and trailers.

Hydrogen is often viewed as a dangerous gas. If emitted into the air, it will immediately spread up and outward because it is light weight. However, as long as it is handled correctly, which includes the use of above-head ventilation, hydrogen does not pose a great deal of danger. Nevertheless, the general public has not been informed about the characteristics of hydrogen and how to handle it safely. Therefore, the Hydrogen Manufacturing and Shipment Center and hydrogen stations host tours for firefighters from inside and outside the community whenever requested and cooperates with events sponsored by local governments in order to spread the correct knowledge about hydrogen.

With hydrogen infrastructure currently being developed to popularize fuel cell vehicles, I hope to contribute to the realization of a hydrogen-based society while focusing greater efforts on improving service quality.



Masaaki Miura  
Hydrogen Manufacturing and  
Shipment Center  
ENEOS Hydrogen Supply &  
Service Corporation



## Delivering Stable Supplies of Eco-friendly Natural Gas

Compared to coal or petroleum, exhaust fumes from natural gas contains less NOx and greenhouse gas CO<sub>2</sub>, both air pollutants. Also, it does not emit SOx, a cause of acid rain, making it an eco-friendly form of energy. As a comprehensive energy company that addresses diverse energy needs, we will continue to actively engage in the natural gas business.

- ▶ Link to our page about natural gas  
[http://www.noe.jx-group.co.jp/business/industrial/lng/e71\\_buinln\\_jigyo.html](http://www.noe.jx-group.co.jp/business/industrial/lng/e71_buinln_jigyo.html)  
(available only in Japanese)

## Expanding Our Stable Supply System

Following the opening of the Mizushima LNG Terminal in Kurashiki City, Okayama Prefecture in 2006 (joint venture with Chubu Electric Power Co., Inc.), we opened the Hachinohe LNG Satellite Terminal in Hachinohe, Aomori Prefecture in 2007 as a site for receiving LNG from domestic feeder routes. The Hachinohe facility supplies to the Tohoku region with LNG.

Afterwards, given expectations for increased natural gas demand, we began reconstruction on the Hachinohe LNG Satellite Terminal for receiving large imports and the Kushiro LNG Terminal in Kushiro City, Hokkaido Prefecture, for receiving LNG from domestic feeder routes. Each of these facilities became fully operational in April 2015. (The original Hachinohe LNG Sate lite Terminal was decommissioned after the opening of the new terminal.)

These facilities have enabled the new supply of LNG to Eastern Hokkaido and the expanded supply of LNG to the Tohoku region.

- ▶ Link to our page about natural gas supply systems  
[http://www.noe.jx-group.co.jp/business/industrial/lng/e71\\_buinln\\_taisei.html](http://www.noe.jx-group.co.jp/business/industrial/lng/e71_buinln_taisei.html)  
(available only in Japanese)



## Contributing to Community Development with Eco-friendly Natural Gas and LNG

The Hachinohe LNG Terminal has two 140,000kl LNG tanks on its site of 93,000m<sup>2</sup>, making it one of the largest LNG import terminals in the Tohoku region. It receives LNG imports directly from natural gas producing areas such as Malaysia and also Sakhalin in Russia. It supplies the Tohoku region with natural gas and LNG via pipeline or LNG tank truck. LNG is also offloaded and transferred to smaller feeder vessels that transport their cargo to the Kushiro LNG Terminal and our customer, Tobu Gas K.K., in Akita. The Kushiro LNG Terminal is the only LNG terminal in Eastern Hokkaido. Both terminals commenced operations in April 2015.

In order to broaden understanding about the role of an LNG terminal among people in the local community, we actively host tours for the general public, while large numbers of employees participate in community events, such as the Hachinohe Sansha-Taisai Festival and the Kushiro Port Funakogi-Taikai boat race, which allows them to interact with local community members. Also, in November 2015, we received the Hachinohe City Scenery Award from the City of Hachinohe for being a symbol of the reconstruction from the Great East Japan Earthquake.

The Supply Section of the Hachinohe LNG Terminal where I work conducts daily inspections of the road surfaces where gas is mainly transported to check for cracks or sinkholes that could affect the pipeline in an effort to prevent accidents before they occur. On days with heavy snowfall, we need to clear the snow and ice on the road surface prior to our inspections, which we carry out daily regardless of the weather conditions, in order to continuously ensure safe and secure operations.

Going forward, we will continue to devote efforts to contributing to the development of the local community through the stable supply of environmentally friendly natural gas and LNG.



Naoki Natsusaka  
Supply Section  
Hachinohe LNG Terminal  
JX Nippon LNG Service Company, Limited



## Special Feature 3 : Products that Help Solve Social Issues

### Efficient Utilization of Limited Resources

#### Using Petroleum More Effectively

The noble use of petroleum is one approach to using petroleum more effectively. This concept involves avoiding the mass consumption of petroleum to generate primary energy that could be produced from coal or natural gas and instead focus on high value applications only possible with petroleum. For example, preventing the wasteful use of resources by focusing petroleum usage as a feedstock for petrochemicals.

Based on this approach, JX Nippon Oil & Energy is carrying out various initiatives in order to fully utilize the properties of petroleum, which is a limited resource.



HS-FCC demonstration testing unit

#### ● Initiatives for Maximizing the Value of Petroleum

Refining crude oil, which is the raw material for petroleum products, simultaneously yields gasoline, heating oil, gas oil and fuel oil. Moreover, the ratio of each of these products is determined by how much weight of the crude oil they take up. In recent years, demand in Japan for heavy oil used as a fuel in industry and power generation has fallen considerably. Addressing this drop in demand for fuel oil is a shared issue for not only JX Nippon Oil & Energy, but the entire petroleum industry. Therefore, the entire industry has adopted fluid catalytic cracking (FCC) process, which breaks down heavy oil to produce gasoline and other products. However, domestic demand for not only heavy oil but gasoline, kerosene, gas oil and other fuels is expected to continue falling going forward because of changes in industrial structure and society, including lifestyles, underpinned by Japan's declining birthrate and aging population.

Based on this, since the 1990s JX Nippon Oil & Energy has been implementing initiatives to utilize excess products and materials from the petroleum refining process as feedstock for petrochemicals, which can expect to see growing demand overseas in the future.

One such focused initiative is the development of the high-severity fluid catalytic cracking (HS-FCC) process that efficiently produces high added value propylene and butene, among others, as feedstock for petrochemicals by breaking down low-value-added residual oil (bottom oil), including heavy oil, produced during the crude oil refining process.

The conventional FCC process is mainly used to produce the raw material for gasoline by breaking down bottom oil with catalysts at high temperature. HS-FCC, however, breaks down bottom oil more efficiently at a higher temperature and shorter period of time using catalysts, which produces petrochemical products such as propylene with a high yield. JX Nippon Oil & Energy was the first in the world to commercialize this technology.

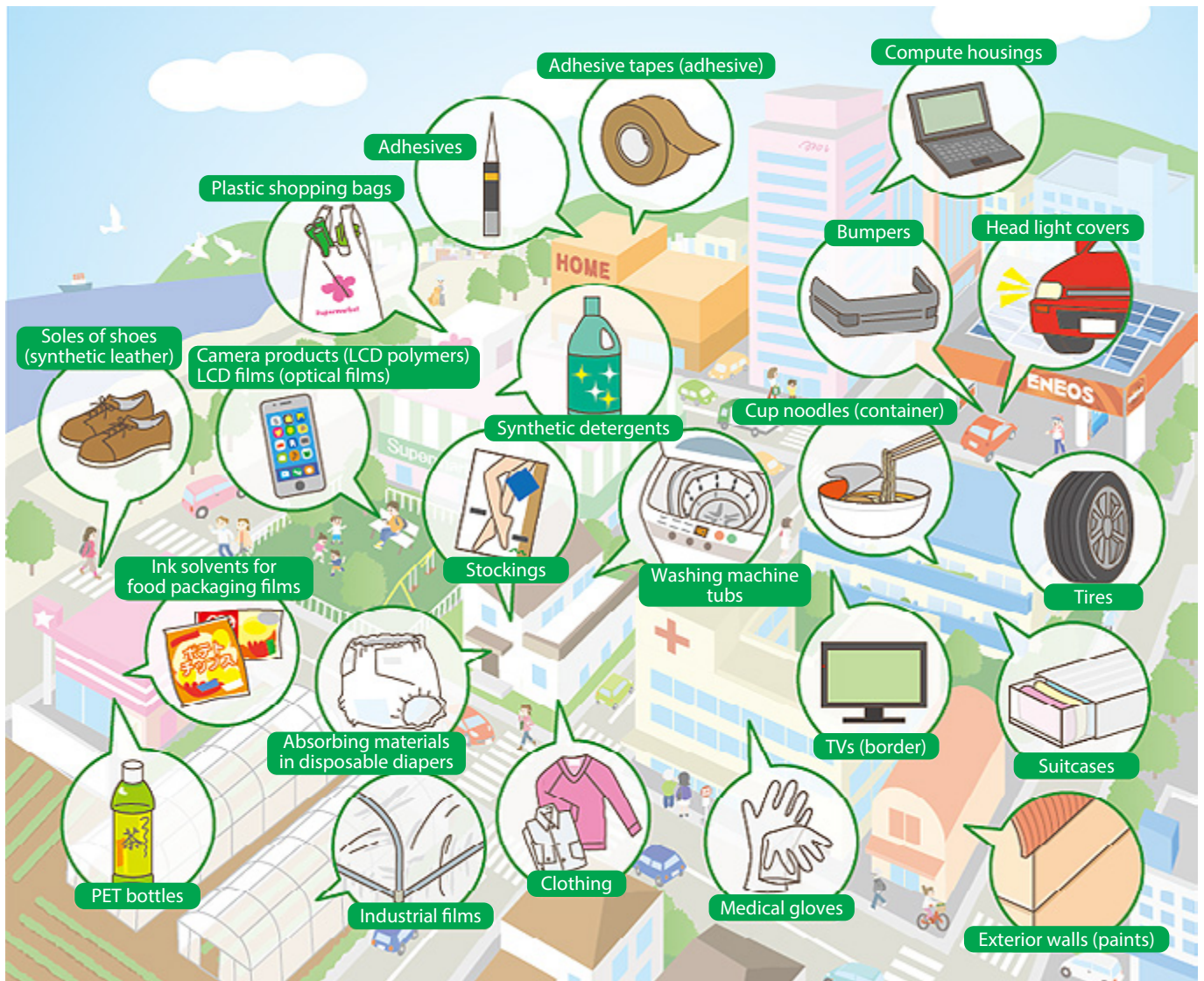
Additionally, the cracked gas oil resulting from the FCC process cannot be used in diesel or other combustion engines because of its qualities, making uses very limited in nature. Therefore, JX Nippon Oil & Energy is also working on the development of the fluid catalytic aromaforming (FCA) process that produces petrochemical feedstock for benzene, toluene and xylene from cracked gas oil with high efficiency. Once the FCA process is commercialized, greater advancements will be made in the effective utilization of excess products and materials.

JX Nippon Oil & Energy is committed to making progress in the commercialization of next generation bottom to chemical technologies that efficiently produce high-value added petrochemical feedstock from bottom oil.



## ● Petrochemical Products Essential to Our Lives

Petrochemical products are made through chemical reactions with naphtha extracted from crude oil and bottom oil. These products form an important part of our convenient and comfortable lifestyles.



### Main Petrochemical Products and Uses

#### Ethylene

Polyethylene: Plastic shopping bags, various bottles  
PVC: Agricultural films and pipes

#### Paraxylene

Polyester fibers: Dress shirts  
PET: PET bottles

#### Cyclohexane

Nylon fibers: Stockings

#### Isopropyl alcohol

Ink solvents for food packaging films and extraction solvents for pharmaceutical/agricultural intermediates

#### Propylene

Polypropylene: Bumpers, washing machine tubs, suitcases  
Acrylic fibers: Sweaters  
Superabsorbent resins: Absorbing materials in disposable diapers

#### Benzene

Polystyrene: TVs (border), cup noodle containers  
ABS resin: Computer housings

#### Polybutene

Adhesives  
Lubricating oil additives

#### Linear Alkylbenzene

Synthetic detergents

#### Butadiene

Synthetic rubber: Tires, medical globes, soles of shoes

#### Cumene

Polycarbonate: Head light covers

#### Polyisobutylene

Chewing gum base  
Poultice

#### C9 petroleum resin

Adhesives, inks, road paving materials

## Familiar Petrochemical Products

### ● **Plastics**

Plastics account for about 60% of all petrochemical product demand. Plastics are light weight, don't rust, are highly water and chemical resistant, and don't break if dropped. Generally, heat is considered to be a weakness of plastics, but heat-resistant plastics are also being developed.

Plastics can be utilized in a broad range of applications, from consumer to industrial, based on characteristics of the plastic used. This means you will find plastics used in everything from daily essentials such as PET bottles and containers to the housings of computers and home electronics as well as mobile telephone and smartphone components and medical equipment like contact lenses.

### ● **Synthetic rubber**

Synthetic rubber is made by chemically synthesizing substances that have a similar structure as natural rubber. Compared to natural rubber, synthetic rubber can be supplied with stable prices and quality, and depending on the type it can be more resistant to friction and heat than natural rubber. Synthetic rubber is mainly used in a broad range of applications, from automobile tires, and automotive components like hoses and tubes, to industrial parts, shoes, toys and sporting goods.

Petrochemical products can also be transformed into a number of familiar products we use, including synthetic fiber used in dress shirts and sportswear as well as paint, and synthetic detergents for the kitchen and laundry.

- ▶ Petrochemical products
- ▶ Providing Products and Services Beneficial to Our Customers Petrochemical Products  
<http://www.noe.jx-group.co.jp/english/products/petrochemicals/index.htm>

# Management Report

## ▶ JX Nippon Oil & Energy's CSR

- JX Group Mission Statement and JX Group Values
- Basic Policy and Promotion System
- JX Nippon Oil & Energy Group's Stakeholders
- United Nations Global Compact
- The SDGs and JX Nippon Oil & Energy's Initiatives

## ▶ Corporate Governance and Internal Control

- 📄 JX Holdings, Inc.'s page on corporate governance

## ▶ Compliance

- Fundamental Approach
- Message from the President
- Understanding Applicable Laws and Risks
- Developing and Implementing Regulations based on Risks
- Legal Compliance Status Checks
- Training and Development
- Discipline for Compliance Violations
- Whistle-blower System (Compliance Hotline)
- Advice and Support concerning the Establishment of Compliance Systems at Subsidiaries

## ▶ Safety Measures

- Safety Policy and Examples of Safety Activities
- Occurrences of Industrial Injuries
- Earthquake Measures for Refineries and Plants
- Measures to Cope with Accidents and Problems
- Safety Initiatives at Refineries and Plants

## ▶ Risk Management

- ▶ Crisis Management
- ▶ Information Security

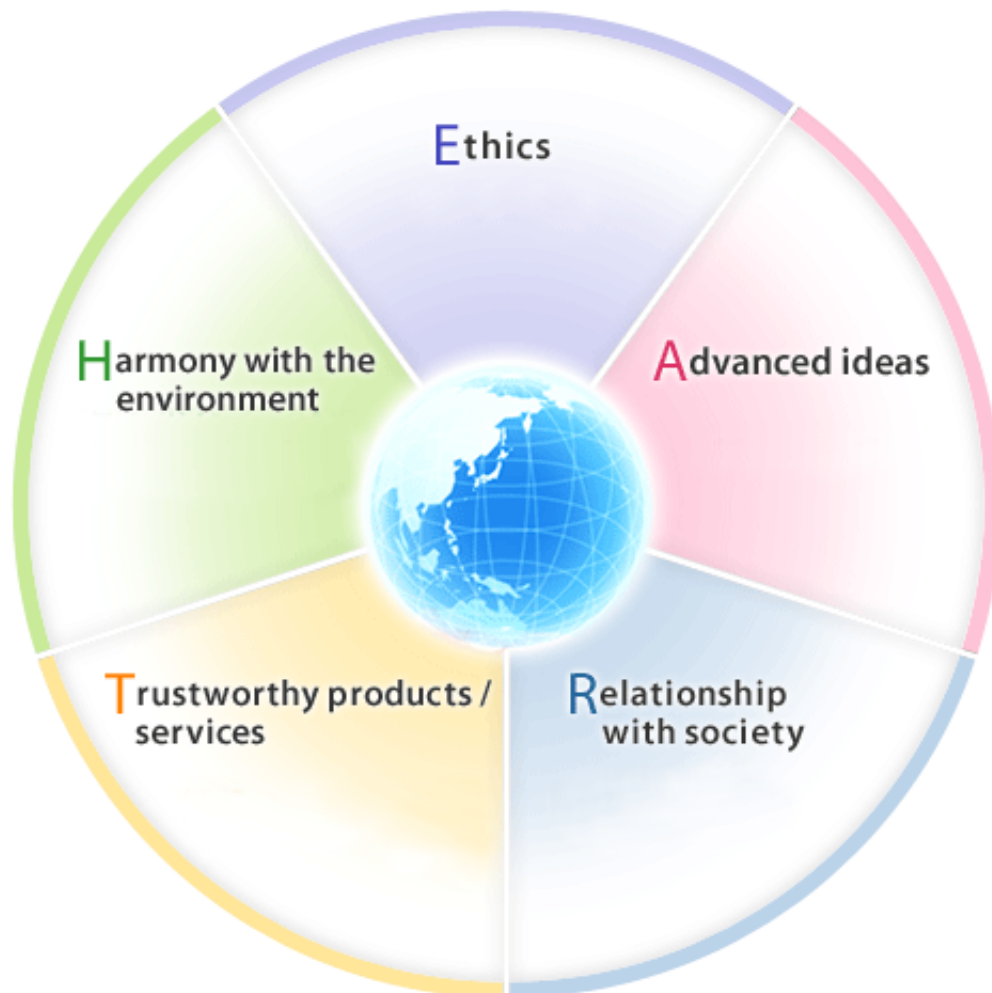
# JX Nippon Oil & Energy's CSR

## JX Group Mission Statement and JX Group Values

### JX Nippon Oil & Energy's Initiatives under "EARTH"

JX Nippon Oil & Energy engages in its corporate activities based on EARTH, the five values of "Ethics," "Advanced ideas," "Relationship with society," "Trustworthy products/services," and "Harmony with the environment," as well as in accordance with the JX Group Mission Statement of "contributing to the development of a sustainable economy and society through innovation in the areas of energy, resources and materials."

- ▶ JX Group Mission Statement  
(<http://www.hd.jx-group.co.jp/english/company/philosophy.html>)



## Basic Policy on CSR and Promotion System

We have established CSR rules for fostering society's trust in the JX Nippon Oil & Energy Group and have created the following basic policy on CSR, priority fields and a promotion system in accordance with the JX Group Mission Statement.

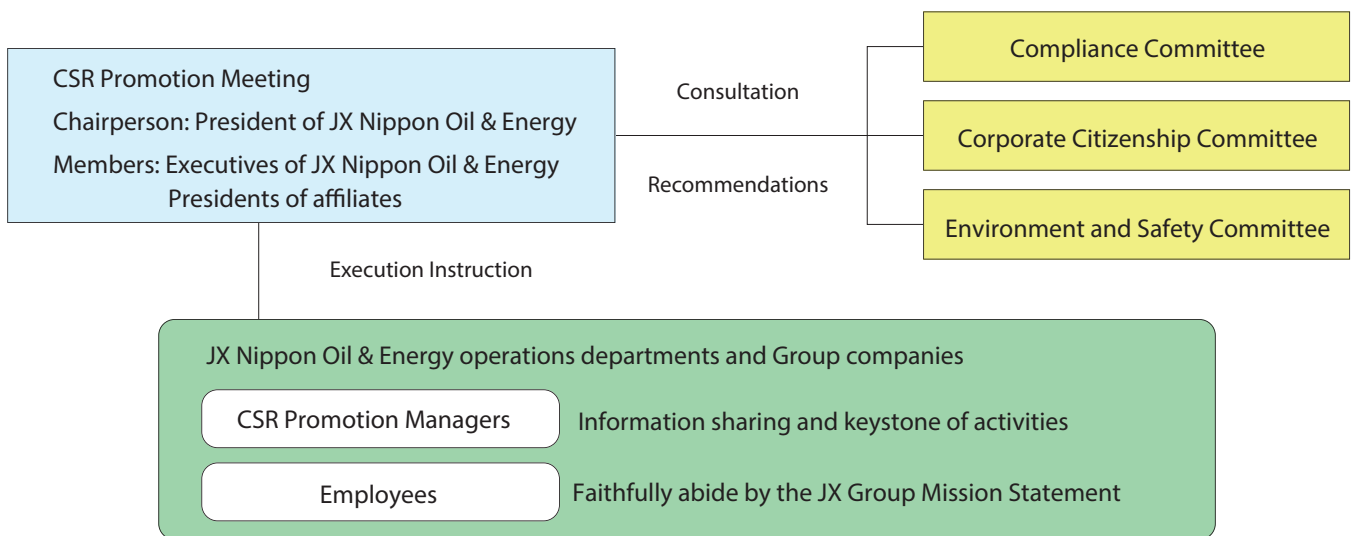
### Basic Policy

The JX Nippon Oil & Energy Group will steadily fulfill its responsibilities to society by ensuring that each and every employee abides by the JX Group Mission Statement as part of its aim to become a corporate group of companies trusted by its stakeholders.

### CSR Activity Priority Fields and Promotion System

The JX Nippon Oil & Energy Group has established "compliance (including information security and human rights)," "corporate citizenship," and "environment and safety," as the priority fields for its CSR activities.

We have established a CSR Promotion Meeting to oversee our CSR activities. This meeting includes the following three CSR committees that have been placed in a charge of each priority field respectively.



## JX Nippon Oil & Energy Group's Stakeholders

The JX Nippon Oil & Energy Group actively considers the views and expectations of its various stakeholders and is committed to reflecting this feedback in its business activities.

Going forward, we will continue to serve as a group of companies that fulfills the trust of its stakeholders through ongoing dialogue and engagement.

### Customers

JX Nippon Oil & Energy Group solicits the requests and expectations of customers using various means, including customer service centers and sales contacts. This feedback is then shared with relevant business divisions for prompt and sincere responses.

### NPOs/NGOs

JX Nippon Oil & Energy Group is building relationships with NPOs and NGOs in an effort to proactively take part in environmental conservation and community contribution activities. We are taking part in activities for the conservation of endangered species and to establish green belts at our business sites for the conservation of local biodiversity.

### Local Communities/International Society

JX Nippon Oil & Energy Group addresses the needs and expectations of society through its business activities and is actively involved in local events and proactively engages local communities through volunteer activities. We are working to be a responsible member of the local communities where we operate.

### Employees

JX Nippon Oil & Energy Group considers its employees to be an important stakeholder. We have put in place various systems and programs so that employees can contribute their skills and work in a comfortable environment.

### Suppliers

Suppliers are an important business partner for the JX Nippon Oil & Energy Group. We strive to continually engage in fair and equitable transactions across our entire supply chain and we are working to build positive and sound relationships through dialogue achieved with various forms of engagement.

## United Nations Global Compact

JX Nippon Oil & Energy supports the 10 principles on human rights, labor, the environment and anticorruption advocated by the United Nations Global Compact. As a member of the Global Compact Network Japan, we are working to resolve international issues through our own business activities as well as to share the results of activities with other member companies and organizations.



Network Japan  
WE SUPPORT

Global Compact Network Japan  
<http://www.ungcjin.org/>  
(available only in Japanese)



## The 10 Principles of the United Nations Global Compact

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

## The 10 Principles and JX Nippon Oil & Energy's Initiatives

### ● 4 Fields and 10 Principles

#### Human Rights

Principle 1: Support human rights advocacy and respect human rights; and

Principle 2: never be complicit in human rights abuses.

#### Labour Standards

Principle 3: Uphold freedom of association and effectively recognize collective bargaining;

Principle 4: eliminate all forms of forced labour;

Principle 5: effectively abolish child labour; and

Principle 6: eliminate discrimination in employment and occupation.

#### The Environment

Principle 7: Take precautionary approach to environmental challenges;

Principle 8: take initiatives to promote greater environmental responsibility; and

Principle 9: develop and diffuse environmentally friendly technologies.

#### Anti-corruption

Principle 10: Work against corruption including extortion and bribery.

### ● Main Measures

- ▶ Respect for Human Rights (page xx)
- ▶ Encouragement of Human Rights Awareness (page xx)
- ▶ Providing Workplaces where Employees can Thrive (page xx)
- ▶ Business Ethics Training (page xx)
- ▶ Legal Compliance Status Checks (page xx)
- ▶ Providing Employee-friendly Workplaces (page xx)
- ▶ Providing Workplaces where Employees can Thrive (page xx)
- ▶ Environmental Management (page xx)
- ▶ Global Warming Prevention Measures (page xx)
- ▶ Biodiversity Preservation Measures (page xx)
- ▶ Activities for Reducing Our Environmental Impacts (page xx)
- ▶ Developing and Supply Environmentally-Friendly Products and Services (page xx)
- ▶ Development and Administration of Regulations on Identifying Risks
- ▶ Business Ethics Training (page xx)
- ▶ Legal Compliance Status Checks (page xx)
- ▶ Whistle-blower System (Compliance Hotline)




## The SDGs and JX Nippon Oil & Energy's Initiatives

In September 2015, "Transforming our world: the 2030 Agenda for Sustainable Development" was adopted at the United Nations Sustainable Development Summit 2015. The Sustainable Development Goals (SDGs) represent an action plan and targets for people, the earth and prosperity to be achieved by the year 2030.

The SDGs represent a worldwide effort consisting of 17 goals and 169 targets that the entire world must work toward so that no one is left behind.



 Global Compact Network Japan (SDGs)  
 (<http://ungcjin.org/gc/sdgs.html>) (available only in Japanese)

## JX Nippon Oil & Energy's Initiatives

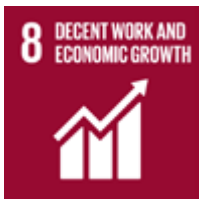
The JX Nippon Oil & Energy Group is committed to broadening understanding and giving priority to those goals that have the closest connect to its business activities.



Goal 5: Achieve gender equality and empower all women and girls



Goal 7: Ensure access to affordable, reliable, sustainable and modern energy for all



Goal 8: Promote sustained inclusive and sustainable economic growth, full and productive employment and decent work for all



Goal 13: Take urgent action to combat climate change and its impacts




Goal 14: Conserve and sustainably use the oceans, seas and marine resources for sustainable development



Goal 15: Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss

## Corporate Governance and Internal Control

Please see the Investor Relations page on JX Holdings, Inc.'s website for information about our corporate governance and internal control systems.

 JX Holdings, Inc.'s page on corporate governance  
(<http://www.hd.jx-group.co.jp/english/ir/system/governance.html>)

# Compliance

## Fundamental Approach

The JX Nippon Oil & Energy Group pursues fair business activities and has established various rules to govern the compliance of each group company in order to foster greater trust with society. Employees are also required to comply with all relevant laws, articles of incorporation and rules in every aspect of their work duties.

\* JX Nippon Oil & Energy's Mizushima Refinery (B Plant) had its "Accredited Completion Inspection Executor" and "Accredited Safety Inspection Executor" certifications in accordance with the provisions of the High Pressure Gas Safety Act revoked by the Ministry of Economy, Trade and Industry on December 25, 2012 for certain deficiencies found under the High Pressure Gas Safety Act.

JX Nippon Oil & Energy recognized the seriousness of this situation and as such we worked diligently to rebuild our compliance system. Consequently, we were able to re-obtain our "Accredited Completion Inspection Executor" and "Accredited Safety Inspection Executor" certifications from the Minister of Economy, Trade and Industry on March 25, 2016.

## Message from the President

The President shares a message with employees of the JX Nippon Oil & Energy Group stating that legal compliance is mandatory for all business activities and violations will not be tolerated. The message also emphasizes that the President assumes responsibility for ensuring the company thoroughly practices compliance.

## Understanding Applicable Laws and Risks

Executive officers and employees of the JX Nippon Oil & Energy Group regularly check for changes to laws and regulations applied to our operations and measure the risk related to legal violations.

## Developing and Implementing Regulations based on Risks

Executive officers and employees of the JX Nippon Oil & Energy Group identify risks related to legal violations in order to ensure effective compliance. Company rules are also in place to prevent such risks from emerging, and these rules are implemented effectively.

In fiscal 2015, we developed regulations on compliance with anti-trust laws at JX Nippon Oil & Energy Group subsidiaries in order to establish a system for full compliance with such anti-trust laws. Additionally, we created guidelines on the handling of Japan's new tax payer identification numbers and further reinforced our information security system in compliance with the My Number Act.

## Legal Compliance Status Checks

Legal compliance status checks are performed annually at JX Nippon Oil & Energy Group companies and include interviews conducted by supervisors in each business division. This approach enables us to check whether company operations or employee actions are in line with laws and regulations. If any problems are found during the course of these inspections, we immediately take action to remedy the situation.

In fiscal 2015, legal compliance status checks were held at all JX Nippon Oil & Energy Group sites as well as 21 designated affiliates between July and September.

At each site and affiliate, business operations were checked on a group basis. Problems found during the course of these checks will be resolved by creating and executing a response plan.

## Training and Development

We organize training and development sessions on compliance and legal matters in order to foster greater awareness in each and every one of the executive officers and employees of JX Nippon Oil & Energy Group companies to take responsibility in practicing good business ethics and compliance activities in their daily work duties.

### Legal Affairs Training

We regularly hold compliance training sessions for the executive officers and employees of JX Nippon Oil & Energy Group companies as well as other training sessions on a wide range of subject matter, including various laws such as competition law, the Subcontract Act, Anti-Bribery Law, the insider trading regulations of the Financial Instruments and Exchange Act, the Personal Information Protection Act, the Trademark Act as well as response anti-social forces, company rules and how to draft contracts, among others.

### Information Sharing

1. **Providing Updates on Revisions to Laws**  
Information pertaining to revisions made to various laws related to operations is provided as it becomes available to employees via email.
2. **Sharing the Results of Legal Compliance Status Checks**  
The results of legal compliance status checks related to each site and important subsidiary of JX Nippon Oil & Energy are published on the company's intranet to share this information, which helps to raise awareness at subsidiaries and provide different vantage points.
3. **Promoting Basic Legal Knowledge in the Workplace**  
Documents used for legal training are published on the company's intranet so that all employees in the workplace can gain basic legal knowledge.
4. **"The Fundamentals of Contracts" – Compilation of Sample Contracts and Commentary**  
We have created a wide range of contract templates required for business purposes and commentary for each in order to improve knowledge of business agreements and streamline operations. This collection of templates and commentary is made available to all employees through our intranet system.

## Business Ethics Training

"Ethics" forms part of the JX Group Values because we believe that employees with highly esteemed ethics are essential to fulfilling our corporate social responsibilities.

To enhance our ethics, we need to identify what is correct and pursue the essence of things. This begins from the basic stance of questioning everything we do. That is, we question right and wrong in our daily work and ensure our employees take a resolute stance against problems, which enables us to fulfill the needs of society

### ● Case Method Training

The JX Nippon Oil & Energy Group has created a business ethics training program with the cooperation of experts in business ethics that teaches using the case method. During this program, both executive officers and employees alike learn how to question their actions and their surroundings as well as strengthen their ability to make ethical decisions.

The program aims to foster correct ethical decision making in participants by identifying in advance the impact their actions during their daily work duties can have on our stakeholders. A group discussion format is used to encourage participants to share their true feelings and provide a platform for communication with their peers.

### ● Training Results and Future Initiatives

In fiscal 2015, we conducted business ethics training by rank at the time of promotion as well as business ethics training at the department level that focused on case methods and examples of corporate scandals. These training sessions were held on 10 occasions, with a total of about 250 employees in attendance. We will continue to hold similar training going forward and plan on providing more efficient curriculum.

## Discipline for Compliance Violations

Accountability is made clear and strict discipline is enforced in accordance with the Companies Act or other laws for compliance violations to an executive officer or in accordance with employment regulations and company regulations for compliance violations to an employee.

## Whistle-blower System (Compliance Hotline)

A whistle-blowing hotline has been established both inside and outside the company to enable the executive officers and employees of JX Nippon Oil & Energy (including contract, part-time and temporary workers) as well as the executive officers and employees of its outsourcing and subcontracting partners to report legal violations. This is in addition to our system for employees to report such violations to managers for remedial action. We immediately investigate the facts behind all whistle-blower reports and if legal violations were found to have occurred, we take prompt steps to resolve the situation. Information related to whistle-blower reports is managed strictly as confidential information, while the names of the whistle-blower and employees involved in the response are only disclosed or provided to those protecting these individuals. Whistle-blowers are never subject to disadvantageous treatment for filing a report.

To improve the usability of our whistle-blower system, starting from January 2013 we made anonymous reporting possible and we have set up individual hotlines at the Central Technical Research Laboratory and all of our branch office, refineries and plants, with efforts devoted to improving access and the appropriate implementation of these hotlines.

## Advice and Support concerning the Establishment of Compliance Systems at Subsidiaries

We provide advice and support to subsidiaries with regard to the establishment of compliance systems tailored to the unique nature and characteristics of their business operations.

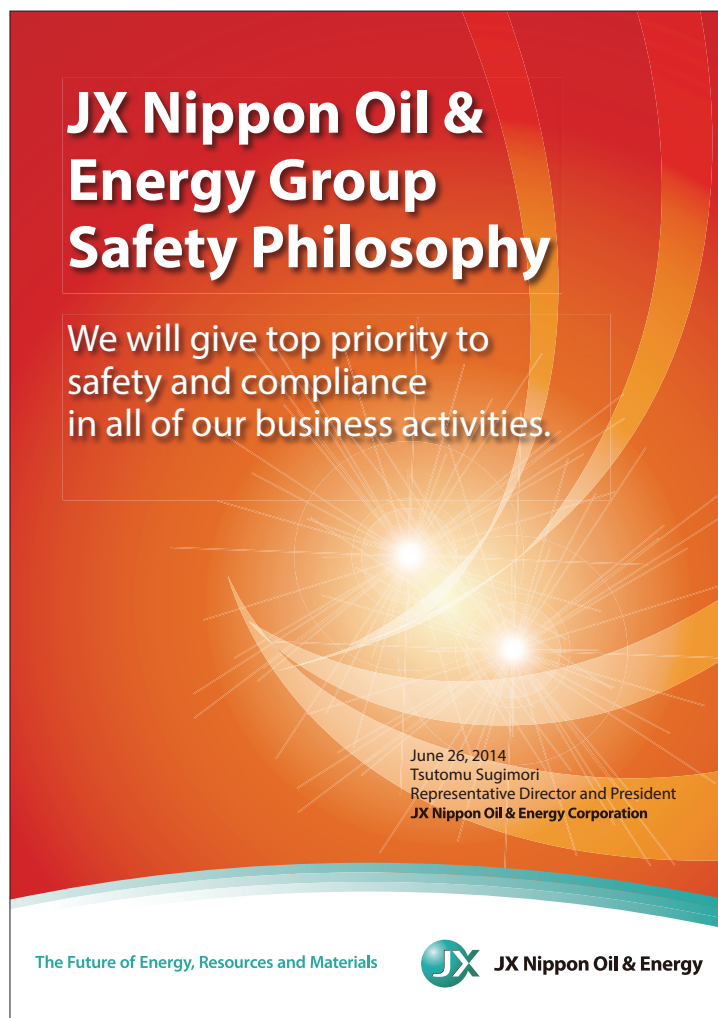
In fiscal 2015, we assisted subsidiaries to establish company regulations, supported efforts to make revisions to such regulations, and held various training opportunities.



## Safety Measures

Our safety philosophy states “We will give top priority to safety and compliance in all of our business activities”. Under this commitment, we are working to achieve zero industrial injuries by initiating various safety measures and offering safety training for all of our employees, including those of our partner companies.

We have also implemented measures at our refineries, plants and stockpiling terminals to prevent accidents as well as launched an operational reform initiative at our refineries and plants to reduce potential equipment problems.



## Safety Policy and Examples of Safety Activities

Every fiscal year each of our divisions formulate key targets based on the JX Nippon Oil & Energy Group Safety Policy in order to implement safety activities to prevent accidents and injuries before they happen.

### ● JX Nippon Oil & Energy Group Safety Policy

We of the JX Group will follow the basic policy outlined below as part of its efforts to eliminate accidents and industrial injuries:

1. Thoroughly abide by all rules
2. Consistently implement all safety activities; and
3. Enhance crisis management capabilities.

## Enhancing Safety Management

We operate our refineries and plants each and every day with a particular emphasis on our Group Safety Philosophy that states safety and compliance are the top priorities in all of our business activities.

Under our Group Safety Policy that emphasizes “consistently implement all safety activities,” we take various preventive approaches to occupational safety that include safety meetings, activities to detect possible dangers, and activities to prevent human errors, all in order to achieve zero industrial injuries.

These measures are being promoted not only by our employees, but the employees of our partner companies as well.

Every year we organize the Environmental and Safety Forum to promote higher quality environmental and safety management by reporting on common company-wide themes related to the environment and safety.



A workplace discussion on safety (safety meeting)



Safety check before work



Environmental and Safety Forum

## Occurrences of Industrial Injuries

The following chart shows occurrences of industrial injuries at our refineries and plants over the previous fiscal years.

### Number of Industrial Injuries per Fiscal Year

	Lost Worktime	No Lost Worktime
Fiscal 2009	2	13
Fiscal 2010	1	20
Fiscal 2011	4	11
Fiscal 2012	3	10
Fiscal 2013	2	8
Fiscal 2014	4	6
Fiscal 2015	3	13

## Earthquake Measures for Refineries and Plants

We are implementing various initiatives as earthquake measures for our refineries and plants where we handle hazardous materials and high pressure gases.

### Measures to Protect Lives

We are implementing the following measures with priority given to protecting lives in case of an earthquake or tsunami.

We have taken voluntary steps to seismically reinforce administrative offices where employees work and machinery rooms that control equipment. These works will be complete by the end of fiscal 2016.

We have also designed locations and methods for an evacuation in case of an earthquake or tsunami and carry out disaster preparedness training every year.



Seismic reinforcement of buildings Example

### Measures to Seismically Reinforce Facilities

We are implementing the following measures to seismically reinforce equipment and facilities.

For tanks that store hazardous materials, we are moving forward with the legally required seismic reinforcement work. So far we have completed work on 156 of our 218 floating-roof tanks subject to this requirement. We plan on completing work on the remaining tanks prior to the statutory deadline of the end fiscal 2016. In addition, we plan on completing seismic reinforcement work on 119 of our internal floating-roof type tanks subject to legislation enacted in fiscal 2011 by the statutory deadline of the end of fiscal 2023.

As for high pressure gas facilities, we have carried out seismic performance evaluations based on administrative directives and following the Great East Japan Earthquake we are now retrofitting spherical tanks with braces and carrying out seismic measures on critical facilities.



Example of brace retrofitting for a spherical tank

### Measures to Mitigate Damages from a Disaster

We have installed a system with seismographs at all of our refineries and plants that automatically shuts down equipment in speedy and safe manner during an earthquake depending on the intensity.

## Measures to Cope with Accidents and Problems

### Disaster Prevention Facilities

We have installed a wide range of disaster prevention facilities and developed measures at our refineries, plants and stockpiling terminals in order to prepare ourselves for potential accidents or disasters.

#### ● Oil Spill Countermeasures

We are able to quickly respond to any oil leak, either on land or at sea. This is because we have multiple oil dikes surrounding our storage tanks and if a tank were to spring an oil leak, we have a system in place to stop the leak from spreading offsite. We also have oil fences and oil recovery vessels in place to respond to oil leaks at sea.



Extending an oil fence as part of a drill to stop marine pollution

#### ● Fire Countermeasures

Refineries that handle dangerous substances or high pressure gas also have large ladder trucks with hazardous material response capabilities, compressed air foam system (CAFS) tankers, high capacity water cannons, foam extinguishing systems, sprinkler systems, and large extinguishers onsite. In addition, these facilities also have disaster response vessels with firefighting capabilities to respond to accidents or disasters at sea



Various fire trucks

#### ● Mutual Assistance System for Refineries

We have established a system with emergency response measures to enable organized support within the JX Nippon Oil & Energy

Group during situations where single or multiple refineries are damaged in a major earthquake. This system ensures that we can execute a fast and agile response.



## Disaster Drills

### ● Comprehensive Disaster Drill

We hold comprehensive disaster drills regularly that involve our own disaster response organization to ensure that we can respond in a quick and agile manner should an actual accident or disaster strike. We also hold several other drills, including joint disaster preparedness drills involving joint disaster response organizations that include local fire departments and companies.



Firefighting during a comprehensive disaster drill



Water discharge drill using a high capacity sprayer

### ● We are working to enhance our crisis management capabilities and collaboration with local communities to prepare for potential disasters



Disaster training involving local community members

#### Initiatives at JX Nippon Oil & Energy Staging Terminal Corporation

The Kiire Terminal receives and ships crude oil as the JX Nippon Oil & Energy Group's front line storage terminal in Japan. It serves as a hub at the terminus of an "oil road" that connects oil producing countries to our refineries, with some 500 oil tankers entering and departing its port every year. We focus a great deal of our energy on ensuring safety both at sea and on land to maintain the smooth flow of traffic on this oil road.

We hold more than 300 disaster drills each year in order to prepare for potential disasters and guarantee safety under the slogan "Safety is not complete or possible in the real world without a score of 120". These drills are held on a standalone basis at the Kiire Terminal and jointly with local governments, agencies and community members. Going forward, we will continue to strengthen collaboration with local community members and establish a system that ensures we can immediately respond in the event of a disaster.

### ● Firefighting Skills Competitions

Our employees proactively take part in firefighting skills competitions organized by fire departments to maintain and enhance their abilities as part of their commitment to be prepared in the event of an accident or disaster.



A skills competition held at the Negishi Refinery



## ● Site Visits to Firefighting Drills

Employees in charge of the initial response to a disaster visit the Maritime Disaster Prevention Center to observe firefighting training drills for industrial complexes. During their visit, they learn about the correct initial response and firefighting strategies.

## ● Communications Training

JX Nippon Oil & Energy Group refineries, plants and stockpiling terminals regularly hold drills conducted using real time simulations in order to prepare them to disclose information on changing conditions following an accident or disaster to the media and stakeholders in an appropriate manner.

During communications training, employees act as reporters or local community members to prepare our response team to handle telephone enquiries and press conferences in the event of a disaster. This training helps us to identify challenges and take steps to make improvements prior to an actual accident or disaster occurring.



Response headquarters during the communications training drill

## Safety Initiatives at Refineries and Plants

- ▶ Sendai Refinery (<http://www.noe.jx-group.co.jp/company/about/gaiyou/jigyousho/sendai/safe/index.html>)
- ▶ Negishi Refinery (<http://www.noe.jx-group.co.jp/company/about/gaiyou/jigyousho/negishi/safe/index.html>)
- ▶ Mizushima Refinery (<http://www.noe.jx-group.co.jp/company/about/gaiyou/jigyousho/mizushima/safe/index.html>)
- ▶ Marifu Refinery (<http://www.noe.jx-group.co.jp/company/about/gaiyou/jigyousho/marifu/safe/index.html>)
- ▶ Oita Refinery (<http://www.noe.jx-group.co.jp/company/about/gaiyou/jigyousho/oita/safe/index.html>)
- ▶ Muroran Plant (<http://www.noe.jx-group.co.jp/company/about/gaiyou/jigyousho/muroran/safe/index.html>)
- ▶ Kawasaki Plant (<http://www.noe.jx-group.co.jp/company/about/gaiyou/jigyousho/kawasaki/safe/index.html>)
- ▶ Yokohama Plant (<http://www.noe.jx-group.co.jp/company/about/gaiyou/jigyousho/yokohama/safe/index.html>)
- ▶ Chita Plant ([http://www.noe.jx-group.co.jp/company/about/gaiyou/jigyousho/chita/eco\\_safe/index.html](http://www.noe.jx-group.co.jp/company/about/gaiyou/jigyousho/chita/eco_safe/index.html))
- ▶ Kashima Refinery (<http://www.noe.jx-group.co.jp/company/about/gaiyou/jigyousho/kashima/safe/index.html>)
- ▶ Osaka Refinery (<http://www.noe.jx-group.co.jp/company/about/gaiyou/jigyousho/osaka/safe/index.html>)

(available only in Japanese)

# Risk Management

JX Nippon Oil & Energy has developed a robust risk management system that is capable of foreseeing crisis management needs and potential risks in order to ensure that the company can provide society with stable supplies of the energy that is essential to our everyday lives.

## ▶ Crisis Management

- Crisis and Emergency Response
- Comprehensive Disaster Preparedness Measures

## ▶ Information Security

- Information Security

## Crisis Management

JX Nippon Oil & Energy has established a basic policy to continue to supply its products during a large-scale disaster and fulfill its corporate social responsibilities as a supplier of petroleum products essential to Japan's economy and consumer lifestyles and as business that makes wide-reaching contributions to society. To fulfill these critical responsibilities, we have formulated a disaster management operation plan, as designated public corporation based on the Disaster Countermeasures Basic Act. We have established a comprehensive disaster management system that includes business continuity plans for the occurrence of the Inland Earthquake in Tokyo or Nankai Trough Giant Earthquake, or the occurrence of pandemic influenza and new infectious diseases.

### Crisis and Emergency Response

Daily preventive activities are fundamental to crisis management, and JX Nippon Oil & Energy strives to prevent accidents and problems before they occur by using operations manuals and training programs with an emphasis on compliance. We have also established a system that enables us to respond to a crisis or emergency in a timely and appropriate manner.

Our crisis management rules stipulate that a response headquarters led by the president whenever an incident occurs that significantly impacts the management of the company, such as disaster, accident or misconduct. Under these rules, the five points listed below will be followed as a basic response.

1. Priority must be given to protecting human life and/or the environment
2. Information must be conveyed in timely manner and centrally managed
3. Decide, implement and monitor the best solution as quickly as possible
4. Communicate smoothly and transparently
5. Prevent all reoccurrences

If an accident or problem does occur, we are ready to quickly announce details to the public through a news release or via our corporate website and to initiate all means necessary to prevent any and all reoccurrences.

### Crisis Management Rules

1. Either of the following situations that require a company-wide response or a coordinated response involving relevant departments shall be considered a crisis or emergency situation.
  - (1) Serious situations in which people suffer or might suffer injuries/damages
  - (2) Situations in which significant damage is caused or may be caused to a third party's property
  - (3) Situations in which a serious legal violation occurs or may occur
  - (4) Situations where our company name or brand name is reported or may be reported in mass media, including TV, newspapers and the Internet
  - (5) Situations in which the management of the company is significantly impacted or might be significantly impacted due to the nature, scale, urgency or societal interest of the situation
2. If a crisis or emergency situation occurs, the person in charge of the location where the situation occurred will immediately report to the President through the General Manager of the Crisis Management Department.
3. After receiving this report, the President will establish a response headquarters led by him/herself when determined to be necessary. This organization will lead the company's emergency response.
4. The response headquarters will centrally manage all information related to the crisis or emergency situation as well as determine and order measures be executed. It will also investigate the cause(s) and take steps to prevent any and all reoccurrences.

## Comprehensive Disaster Management Measures

### Disaster Management Operating Plan

Effective April 1, 2015, JX Nippon Oil & Energy was authorized as a designated public corporation in accordance with the Disaster Countermeasures Basic Act. Designated public corporations maintain an obligation to cooperate in facilitating the formulation and implementation of Japan's national disaster management plans. Such corporations must formulate a disaster management operation plan, establish a disaster management system and take steps to prevent damages from a disaster, including those in accordance with related laws and regulations. Designated public corporations also carry out emergency measures and disaster recovery measures to prepare for future disasters.



Disaster Management Operation Plan (PDF: 875KB/15 pages) (available only in Japanese)

### Earthquake Measures

In April 2014, the Government of Japan enacted the Strategic Energy Plan in order to implement long-term, comprehensive and systematic measures for the supply and demand of energy. In this plan, oil companies, along with LP gas providers, must establish a BCP/BCM for their supply network including affiliated service stations and distribution processes from refineries and oil depots as well as increase their capacity to respond so that necessary volumes of supply can be secured even in the aftermath of a major earthquake because of their role as the last line of energy defense.

JX Nippon Oil & Energy has established an in-house system for a major earthquake and BCPs based on the scenario of the Nankai Trough Giant Earthquake and Inland Earthquake in Tokyo that ensure it can maintain the supply of fuel oil during such an emergency. Additionally, together with related departments and partner companies, we repeatedly carry out training drills based on this scenario for each phase of the disaster, from immediately after a quake to the recovery period. This ensures that we are constantly improving the effectiveness of our BCPs.

#### 1. Preliminary Preparation

We have a safety confirmation service covering all of our employees, stockpile emergency supplies, and conduct disaster response drills at our refineries. We have created a mutual support system linking our refineries and established an emergency transport and sales system for our petroleum products. At the same time, we have taken measures to mitigate damages from a disaster at our refineries and oil depots that serve as important shipment points.

#### 2. Post-quake Response

In the event a major earthquake with a seismic intensity of 6-weak or larger strikes, a disaster response headquarters led by the president will be set up immediately at the head office of JX Nippon Oil & Energy. This organization is in charge of (1) confirming the safety of employees and their families, (2) checking for damages at JX Nippon Oil & Energy facilities, (3) accommodating emergency demand for products from rescue activities implemented by the national government and local governments, and (4) releasing information to stakeholders.

#### 3. Response during the Recovery Effort

During this stage, we will (1) implement measures to restore damaged business infrastructure, (2) quickly establish a product supply system, (3) provide support for employees affected by the disaster and to the community, and (4) release information to stakeholders.

### Measures Against Pandemic Influenza and New Infectious Diseases

The Act on Special Measures for Pandemic Influenza and New Infectious Diseases Preparedness and Response was enacted in April 2013 in order to protect the health and lives of the people of Japan and minimize impacts on people's lives and the economy in the event of a highly pathogenic pandemic influenza or new infectious diseases with a similar threat level. In June 2013, the National Action Plan for Pandemic Influenza and New Infectious Diseases and Guidelines for Pandemic Influenza and New Infectious Diseases were revised.

JX Nippon Oil & Energy has established a BCP following this action plan and these guidelines to ensure the safety of employees and their family as well as the continuity of its business operations.

## Information Security

In accordance with the company's Basic Rules on Information Security, information security at JX Nippon Oil & Energy involves the prevention of improper access, disclosure or divulgence of corporate information, which is an important corporate asset, and the protection of corporate information against illegal access both from within and outside the company. This enables us to maintain corporate information in a complete and secure manner as well as provide approved users access to this corporate information whenever it may be needed.

We have also enacted the JX Nippon Oil & Energy Privacy Policy as a basic policy governing our protection of personal information.

Going forward, we will continue to engage in educational activities including holding briefings on company rules pertaining to information security as well as conducting a survey on information security covering all business sites and using the results to provide feedback on the company's efforts, in order to foster greater awareness and improve employee knowledge of information security practices.

# Corporate Citizenship Report

## ▶ Customer Relations

- ▶ Fundamental Approach
- ▶ Providing Products and Services Beneficial to Our Customers
- ▶ Quality Assurance

## ▶ Employee Engagement

- ▶ Fundamental Approach - Diversity Promotion
- ▶ Providing Workplaces where Employees can Thrive
- ▶ Providing Employee-Friendly Workplaces
- ▶ Human Rights Initiatives



# Customer Relations

## Fundamental Approach

JX Nippon Oil & Energy constantly infuses its business activities with new ideas and stands committed to pioneering the future of energy for the benefit of its customers.

To act as a trusted as well as indispensable partner for our customers, we continually strive to improve the quality of our products and services and to fulfill society's expectations toward us.

### ▶ Providing Products and Services Beneficial to Our Customers

- ENEOS New & Renewable Energy Business
- Efforts to Establish Infrastructure for the Hydrogen Society of Tomorrow
- Petrochemical Products
- Customer-centric R&D

### ▶ Quality Assurance

- JX Nippon Oil & Energy Group Quality Policy
- Customer Service Center (Call ENEOS) Initiatives
- Customer Satisfaction and Quality Month
- ISO9001 Certification
- Initiatives for Legal Compliance

## Providing Products and Services Beneficial to Our Customers

We constantly infuse our business activities with new ideas and are committed to pioneering the future of energy and natural resources for the benefit of our customers.

### ENEOS New & Renewable Energy Business

Based on the three pillars of “energy efficiency”, “renewable energy” and “independence”, JX Nippon Oil & Energy is advancing the ENEOS New & Renewable Energy Business to accommodate its customers’ energy efficiency and renewable energy goals in line with the changing energy landscape.

We are working to realize a society with independent and distributed energy systems and one that uses more renewable energy through the popularization of photovoltaic power generation systems as well as through mega solar power plant projects built on idle land owned by the JX Group.


- ▶ Photovoltaic power generation systems (<http://www.no.e.jx-group.co.jp/lande/product/solar/index.html>) (available only in Japanese)

 Mega solar power plant business (<http://www.no.e.jx-group.co.jp/megasolar/>) (available only in Japanese)

### Dr. Ouchino Energy

Dr. Ouchino Energy is a household energy consulting service, which proposes ways to optimize energy usage for the home, started in June 2012. This service uses an assessment to encourage the use of devices best suited to each particular home, to promote energy efficient habits and to help improve overall energy performance. Today, the service has more than 1000 energy consultants spread across Japan.

- ▶ Dr. Ouchino Energy (<http://www.no.e.jx-group.co.jp/lande/product/doctor/index.html>) (available only in Japanese)

 Dr. Ouchino Energy Dedicated Website (<http://www.no.e.jx-group.co.jp/uchiene/index.html>) (available only in Japanese)

### Efforts to Establish Infrastructure for the Hydrogen Society of Tomorrow

In December 2014, Toyota Motor Corporation launched sales of the very first fuel cell vehicle, followed by Honda Motor Company in March 2016. As a result, the number of fuel cell vehicles on the road is gradually increasing. JX Nippon Oil & Energy has plans to open a total of 40 hydrogen stations in Japan’s four major metropolitan areas, and as of December 31, 2015, we had already opened a total of 37 hydrogen stations, consisting of 25 fixed stations and 12 mobile stations. Additionally, in March 2016, we opened a hydrogen production and shipment center in order to supply hydrogen to offsite hydrogen stations and mobile hydrogen stations in the Greater Tokyo Metropolitan Area.

As a result, we now have a fully integrated hydrogen supply chain in the Greater Tokyo Metropolitan Area spanning from production to transport and sales.

The hydrogen production and shipment center is operated by ENEOS Hydrogen Supply & Services Co., Ltd.

ENEOS Hydrogen Supply & Services will continue to utilize the infrastructure and know-how for hydrogen production and the supply of automotive fuels to establish an efficient business model covering hydrogen production, transport and sales, with the aim of contributing to the realization of a hydrogen society.

## Petrochemical Products

Many of the things that support our way of life and economy, from plastics and textiles to rubber, paint and detergents are made from petrochemical products.

JX Nippon Oil & Energy manufactures chemical products for both basic chemicals, such as ethylene which forms the foundation for highly versatile products and specialty chemicals, which are processed to have their own unique qualities and functions required by customers.

In recent years demand for basic chemicals has skyrocketed, especially in the high growth markets of Asia. As a result, JX Nippon Oil & Energy completed construction on a paraxylene plant in South Korea in early 2014 and began commercial production in June 2014. Paraxylene is used to make polyester, with end uses including apparel and PET bottle.

JX Nippon Oil & Energy is working to build a global supply system while pursuing new possibilities for oil to meet the broad range of needs facing society and leveraging our long-standing technological expertise developed through the manufacturing of petrochemicals.



Ethylene manufacturing equipment at the Kawasaki Plant

This equipment is used to create petrochemical products by breaking down naphtha, kerosene or gas oil fractions together with steam at high temperature. Equipment used to make each derivative from basic chemicals produce here such as ethylene and propylene is connected with pipelines as part of a broader petrochemical manufacturing complex.

## Customer-centric R&D

As a comprehensive energy company, JX Nippon Oil & Energy is working to create new sources of energy as well as research and develop products and fuels that make life better in order to fulfill the needs of both customers and society alike.

- ▶ R&D ([http://www.no.e.jx-group.co.jp/english/company/research\\_and\\_development/index.html](http://www.no.e.jx-group.co.jp/english/company/research_and_development/index.html))

## Quality Assurance

Today more than ever companies must have an unwavering commitment toward quality. JX Nippon Oil & Energy's fundamental approach and philosophy on quality assurance in the provision of products and services to its customers is outlined below.

### JX Nippon Oil & Energy Group Quality Policy

We of the JX Group will practice the following in order to ensure our products and services are reliable and satisfy customers.

1. Always act from the standpoint of the customer;
2. Continually strive to enhance and maintain quality; and
3. Strive to ensure products and services are safe and reliable.

Under this policy on quality, the Quality Assurance Department spearheads our proactive efforts to manage quality across every product category.

### Customer Service Center (Call ENEOS) Initiatives

JX Nippon Oil & Energy receives feedback from its valued customers through the ENEOS Customer Service Center.

Our customer service center handles enquiries using easy-to-understand, considerate explanations and addresses complaints honestly and appropriately.

In fiscal 2015, we received a total of about 23,597 enquiries and customer service center representatives answered a wide range of questions that included everything from ENEOS credit card program benefits to our products.

### Customer Satisfaction and Quality Month | FY2015

JX Nippon Oil & Energy Group has set each November as "Customer Satisfaction and Quality Month" as part of our commitment to maintain heightened company-wide awareness towards customer satisfaction and quality.

#### Theme for Fiscal 2015

## Acting as "Team ENEOS" for Customers by Returning to the Basics

#### Fiscal 2015 Slogan

**Every Individual is in Charge of Quality. The Fundamental Behavior is our Original Point. Our Unwavering Efforts will Provide Genuine Assurance to Customers**

(created by Jiro Maruyama of the Muroran Plant)

In fiscal 2015, we solicited slogans for Customer Satisfaction and Quality Month from employees of the JX Nippon Oil & Energy Group and its partner companies. The slogan above was selected from a total of some 12,000 entries that were submitted.

## Fiscal 2015 Poster



## Message from the President to Employees of the JX Nippon Oil & Energy Group and its Partner Companies

On November 2, the President of JX Nippon Oil & Energy shared a message with employees of group companies and partner companies to call for solid initiatives to be undertaken during this month.

### ● President's Message (quick summary)

In recent years, the JX Nippon Oil & Energy Group has accelerated its business expansion not only in Japan, but internationally as well. In order to sustain trust in our brand, we will need to maintain and improve the quality of the products and services we deliver. Therefore, during CS and Quality Month, let's return to the basics once again and ensure that each and every employee takes ownership as Team ENEOS to maintain and improve quality in order to achieve greater customer satisfaction.

## Independent Activities Planned for Each Workplace

Each JX Nippon Oil & Energy Group workplace carried out their own innovative and independent initiatives.

### ● Examples of activities:

- Training drills for initial response to quality issues and patrols covering tank truck deliveries
- Training session and discussion on quality assurance and quality control
- Visits to affiliates and information sharing sessions as well as participation in lectures by external organizations

In addition to the above, we host lectures at the head office building led by guest speakers and disseminate information on customer satisfaction and quality.

## ISO 9001 Certification

JX Nippon Oil & Energy has acquired ISO 9001 certification for its quality management system under which it continues to make improvements to quality control and quality assurance practices for its products.

As of March 31, 2016

Business Sites Having Obtained Certification		Month of Certification
Specialty Chemicals & Materials Company	Advanced Polymers Business Unit	September 2001
	CF Composites Unit	December 2010
Refineries / Plants	Sendai Refinery	December 1998
	Negishi Refinery	February 1995
	Mizushima Refinery	April 1996
	Marifu Refinery	April 1996
	Oita Refinery	May 1997
	Muroran Plant	May 1995
	Kawasaki Plant	May 1995
	Yokohama Plant	March 1995
	Chita Plant	February 1994
Terminals	Sodegaura Terminal	October 1996
Osaka Refinery, Osaka International Refining Company, Limited.		April 1996
Kashima Refinery, Kashima Oil Co., Ltd.		November 1995



## Initiatives for Legal Compliance

### Guidelines on Chemical Substances in Our Products

JX Nippon Oil & Energy has established its own proprietary standards for managing the chemical substances used in its products.

We have defined prohibited or phased out substances (PCBs, asbestos, lead compounds, etc.) and substances that require monitoring (metallic compounds and VOCs such as xylene) to better manage their use in hazardous products that could negatively effects the environment or people's health. Through these efforts we are working to mitigate any harmful affects attributed to chemical substances.

### EU REACH Compliance

In June 2007, the European Union enacted a new regulation on chemical substances called REACH\*.

\* Registration, Evaluation, Authorization and Restriction of Chemicals

This regulation requires that companies register safety performance data for nearly every chemical substance that was either produced in or imported to the European Union with a volume of more than one ton per year.

JX Nippon Oil & Energy has completed the registration of all chemical substances that it will likely export to the European Union as follows.

Export Volume (tons/year)	Registration Timeframe
More than 1,000	November 2010
More than 100 and less than 1,000	May 2013

Currently, we are preparing to register those chemical substances exports that do not exceed 100 tons per year by the year 2018.

## GHS Compliance

GHS\* is a worldwide system that standardizes the categorization and labeling of the threat level associated with specific chemical products.

\* The Globally Harmonized System of Classification and Labeling of Chemicals

This system identifies the inherent danger posed by chemical substances and compounds and conveys this information to people (consumers and workers) who handle chemicals. This safeguards people's health and safety as well as helps protect the environment

In conjunction with revisions made to Japan's Industrial Safety and Health Act in 2006, JX Nippon Oil & Energy now ensures that container labels and the Safety Data Sheet (SDS) for products stipulated in this law are fully compliant with GHS. Additionally, we began using of container labels that have two-colored pictorial symbols from January 2016 in conjunction with modifications made to the Act's rules and regulations.

Sample label used for automotive gasoline




00001

内燃機関用

# ENEOSレギュラーガソリン

成分: ガソリン (ベンゼン、トルエン、キシレン、フルマルヘキサンを含む)  
有機溶剤中毒予防規則 第2種有機溶剤

**危険**

- 極めて引火性の高い液体及び蒸気
- 眼刺激
- 肺、腎臓の障害
- 空気中のめいしのおそれ
- 水生生物に有害
- 長期的影響により水生生物に有害
- 皮膚刺激
- 発がんのおそれの疑い
- 長期又は反復暴露による神経の障害
- 長期又は反復暴露による血管の障害のおそれ
- 飲み込み、気道に侵入すると生命に危険のおそれ

**火気厳禁**

危険等級Ⅱ

第4類第1石油類

200L

**【予防】**

- ガソリンエンジンのみ使用する。
- 他の石油製品と混用しないこと(車検及びエンジン換装の際も同様)。
- 燃焼時はエンジンを停止させること。
- すべての安全注意(燃料缶等)を読み理解するまで取り扱わないこと。
- 燃焼を停止しておくこと。
- 熱、火花、高温燃焼の着火源から遠ざかること。禁煙。
- 自動車用の電気機器、電気配線、燃料配線、火花のたいてい工具を使用すること。
- 燃焼状態に対する予めの検査を要すること。他の燃料に替える場合は、必ずアースをすること。
- ホース等を使用前に目視で確認し上げないこと。
- 燃焼停止、保護装置、保護具、保護衣を着用すること。
- 燃料または燃気の強い場所でのみ使用し、モーター、蒸気の吸入を避けること。
- この製品を使用する時に注意を怠らないこと。
- 可燃性液体はよく手を洗うこと。
- 可燃物に近づかないこと(燃焼の恐れがあるため)。
- 燃焼を避へ、互換、穴あけまたは空動しない機器物が燃焼、火花する恐れがあるため、又は、転倒や落下させたり、衝撃を加えたり、引きずる等の危害なないで扱うこと。

**【保管】**

- 燃焼器具を避けて、涼しく燃焼の強い場所に保管すること。
- 燃焼を避へ、保管場所に換気すること。
- 中核の半のほかにない場所に保管すること。

**【禁止】**

- 火気厳禁。器具には粉末消火器を使用すること。
- 引火した場合は、直ちに放水すること。
- 火災または爆発に付着した場合は、直ちに消火された後、皮膚を大量の水で洗い流すこと。汚染された衣服を脱ぎ捨てる場合は、洗濯すること。
- 皮膚が燃焼した場合は、直ちに冷却し、直ちに病院へ送付すること。
- 目に入った場合は、水で数分間洗眼し流すこと。目には、コンタクトレンズを装着していても除去し内せる場合は必ず、その後も洗浄を続けること。医師の診断を待たずして受診すること。
- 皮膚が燃焼した場合は、直ちに冷却し、直ちに病院へ送付すること。
- 吸入した場合は、直ちに新鮮な場所に搬送し、呼吸を中止し、呼吸器を装着させること。
- 飲み込んだ場合は、直ちに医師に連絡すること。嘔吐は行わないこと。
- 長期に渡って必要に応じて、製品情報またはマニュアルを参照すること。

**【廃棄】**

- 内容物や容器を、製造元または販売元の許可を得た専門の廃棄物処理業者に廃棄させること。

**【連絡先】**



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TEL: 0120-958-8794 (ENEOSお客様センター)

## JX日鉱日石エネルギー株式会社

東京/千代田区

成分: ガソリン (ベンゼン、トルエン、キシレン、フルマルヘキサンを含む)  
有機溶剤中毒予防規則 第2種有機溶剤

**危険**

- 極めて引火性の高い液体及び蒸気
- 眼刺激
- 肺、腎臓の障害
- 空気中のめいしのおそれ
- 水生生物に有害
- 長期的影響により水生生物に有害
- 皮膚刺激
- 発がんのおそれの疑い
- 長期又は反復暴露による神経の障害
- 長期又は反復暴露による血管の障害のおそれ
- 飲み込み、気道に侵入すると生命に危険のおそれ

# Employee Engagement

## Fundamental Approach - Diversity Promotion

Our employees are the key driver behind our CSR activities and also stand as our most important stakeholder. To enhance its corporate vitality, JX Nippon Oil & Energy recognizes that it must provide workplace environments where each and every employee can fully utilize as well as further develop their skills, regardless of gender, age, nationality or when and how they joined. To that end, we are creating workplaces where our diverse workforce can thrive and workplaces that are employee friendly in response to the greater diversity of work-styles today.

### ▶ Providing Workplaces where Employees can Thrive

- Personnel System and Hiring Activities
- Employee Composition
- Training Programs for Human Resource Development
- Advent of Professional Track Designation
- Developing Locally Hired Employees Overseas
- Promoting Career Opportunities for Women
- Promoting Career Opportunities for the Disabled
- Re-employment Program for Retired Workers
- Re-employment Program for Workers who Retired to Accompany a Spouse on an Overseas Assignment
- Health Management

### ▶ Providing Employee-Friendly Workplaces

- Developing the Next Generation
- Flextime Program
- Discretionary Labor System
- Shortened Working Hours Program
- Childcare Assistance Programs
- Care Giver Assistance Programs
- Proper Management of Working Hours
- Encouraging Employees to take Annual Paid Leave
- Reducing Total Annual Working Hours
- Dialog with Labor Union

### ▶ Human Rights Initiatives

- Respect for Human Rights
- Encouragement of Human Rights Awareness

## Providing Workplaces where Employees can Thrive

### Personnel System and Hiring Activities

Employees are the key driver behind any company's actions and as such they need to be able to develop and fully utilize their skills in the workplace.

JX Nippon Oil & Energy has developed remuneration and personnel evaluation systems in order to help develop and energize its human resources.

### Reflecting the Latest Performance (Current Value) in Remuneration

We recognize that it is important to properly evaluate each individual employee's results and reflect these in remuneration in a timely manner in order to drive their motivation and energize their efforts further.

### Improving the Transparency, Fairness and Acceptance of Our Personnel Evaluation System

To ensure remuneration and personnel evaluation systems function effectively, we understand that we need to maintain transparency, fairness and acceptance. To that end, we provide regular training for managerial staff, which play a key role within our personnel evaluation system, and strive to provide appropriate feedback on evaluation results to each and every employee.

## Providing Opportunities for Employees to Shine

We provide opportunities for each and every employee to utilize their skills and have developed the following programs to help our human resources thrive.

### ● Open Entry Program

Our open entry program reflects the strong desires and conviction employees have in their current work in transfers.

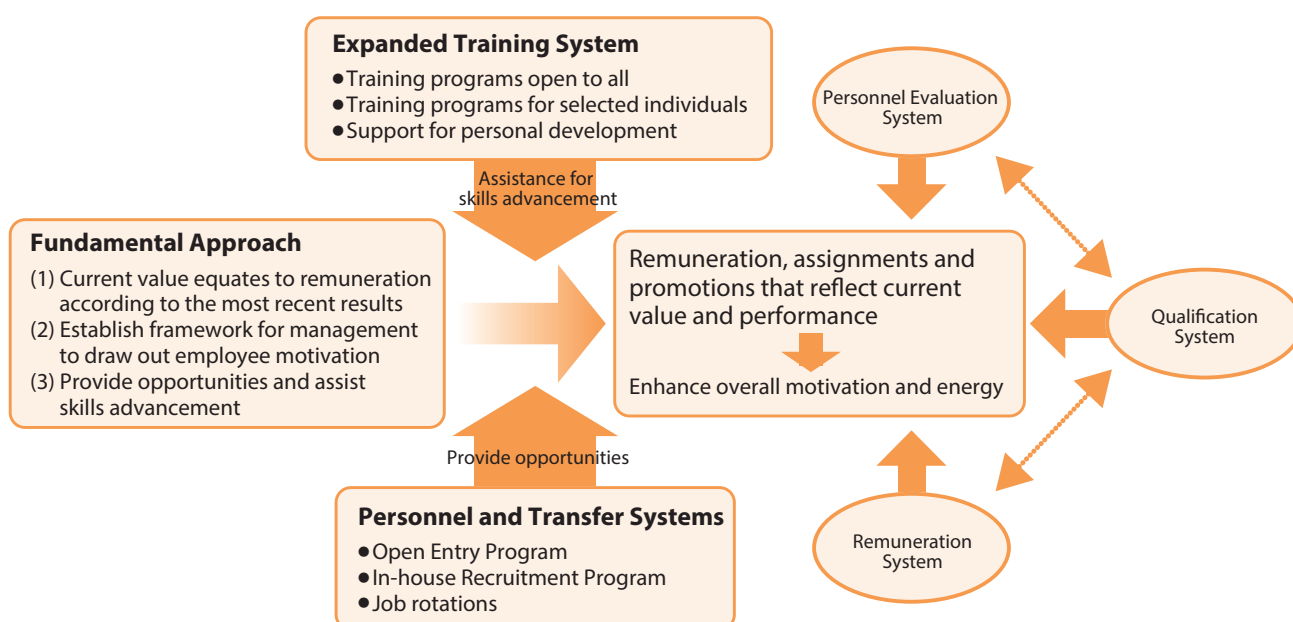
### ● In-house Recruitment Program

Our in-house recruitment program enables employees to apply for positions that open up for new business fields and projects.

### ● Job Rotation System

We provide opportunities for inter-department or inter-division personnel transfers in order to develop junior employees and maximize our human resources.

### Personnel System Overview



We provide information to prospective employees through our website, which includes the type of people we are looking to hire and The fields in which they can work.

We use a fair selection process that focuses on the aspirations and motivation of prospective employees, and not gender or other personal qualities. Our interviews are held in a professional manner to ensure that both the company and the prospective employee fully understand one another.

### Number of Recent Graduates Recruits (non-consolidated, FY2015) and Turnover Rate

Total headcount	200
Male university graduates	78
Female university graduates	19
Junior college / vocational school graduates	28
Senior high school and other graduates	75
Turnover rate	2.96%

\* The turnover rate is the percentage of recent graduates hired as new employees in fiscal 2013 who left the company within three years

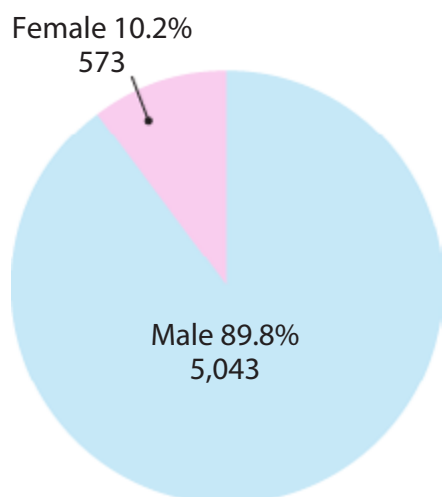
## Employee Composition

As of March 31, 2015, JX Nippon Oil & Energy had the following number of employees.

Regular employees (Total headcount)	5,616 (Domestic: 5,599, Overseas: 17)
Employees forwarded from other companies	126
Part-time workers	15

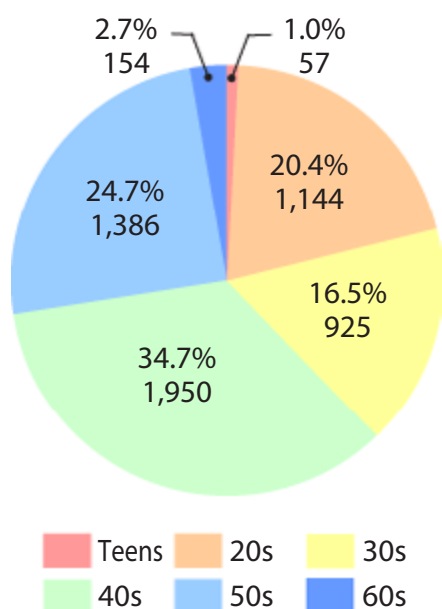
### Composition of regular employees

#### By Gender



	Headcount	Average age	Average years	Managerial staff
Male employees	5,043 persons	41.9 years	20.1 years	1,472 persons
Female employees	573 persons	42.2 years	20.2 years	14 persons

#### By Age Group



Employee by age group	Headcount
Teens	57
20s	1,144
30s	925
40s	1,950
50s	1,386
60s	154

## Training Programs for Human Resource Development

JX Nippon Oil & Energy considers human resource development to be one of management's most important tasks, and as such it offers a broad range of training programs under the basic policy on human resource development outlined below.

### Basic Policy on Human Resource Development

- The company will support the voluntary capacity building efforts of employees and provide opportunities for employees to grow through work.
- Employees will exhibit motivation toward capacity building and will contribute their skills and personality to the development of the company.

### Educational Programs

#### ● Rank-based training

Employees learn about and acquire skills, knowledge and approaches required as employees or for qualifications.

#### ● Core human resource development courses

Employees learn the necessary skills and approaches as a member of management or as key drivers behind an organization or business.

#### ● Career development courses

Employees check the progress of their career and plan for the next stage.

#### ● Study abroad in Japan and overseas

Employees attend a university or other educational institution to acquire advanced skills and knowledge. Employees also interact with different cultures outside the company to broaden their perspective and knowledge.

#### ● Study abroad for language learning

Employees study about outside of Japan to learn advanced language skills that can be applied to doing business internationally on a daily basis and employees have the opportunity to experience cosmopolitan cultures and people.

#### ● Self-directed training

Employees take the lead in reinforcing their strengths or compensating for weaknesses, required for their daily work.

In addition, as part of our international business expansion plans, starting from fiscal 2016, we have begun dispatching employees who are four or five years removed from university (all administrative staff) to an overseas destination for around a one-month period to conduct market research based on the level of their foreign language abilities.

 Educational Programs  
(<http://www.no.ejx-group.co.jp/recruit/recruit/kyoiku.html>) (available only in Japanese)



## Advent of Professional Track Designation

We have established the professional track designation for employees that are capable of contributing to society or the company's business performance by leveraging an advanced skill or creativity.

## Developing Locally Hired Employees Overseas

We have established a common rank and evaluation system at our overseas sites to clearly identify key development tasks and the career path of employees hired locally overseas. We also organize group training sessions for local managers and team leaders (one-week courses offered in English or Chinese). Through this rank and evaluation system and training program, our goal is to develop the next generation of senior leadership at our overseas sites.

## Promoting Career Opportunities for Women

JX Nippon Oil & Energy promotes diversity in order to transform itself into an organization that incorporates more diverse and flexible thinking to meet the broad ranging needs of customers. As part of these efforts, we are assisting female employees to have greater opportunities at work.


We provide the necessary support to ensure female employees are motivated, think about their future career, and can continually contribute as a member of our workforce. At the same time, changing the way our employees think and transforming our corporate culture are also pressing needs. The foundation of these efforts can be found in changing the way we think about males and females working together and establishing work styles where employees are able to maximize the limited time they spend at work.


Since fiscal 2014, we have increased the ratio of females hired out of university or high-school, used training and other awareness-raising activities to change our mindsets, supported the formation of a female employee network, and reviewed our work styles and methods to make the company more friendly to employees who have time constraints due to childcare or other personal obligations.

In accordance with the Act of Promotion of Women's Participation and Advancement in the Workplace enacted on April 1, 2016, we created the JX Nippon Oil & Energy Action Plan on the Advancement of Women in the Workplace and are now implementing measures toward fulfilling this action plan.



Employee discussion about the advancement of women in the workplace

 JX Nippon Oil & Energy Action Plan on the Advancement of Women in the Workplace (PDF: 125KB/1 page)  
[http://www.noie.jx-group.co.jp/csr/social/staff/pdf/active\\_woman01.pdf](http://www.noie.jx-group.co.jp/csr/social/staff/pdf/active_woman01.pdf) (available only in Japanese)

 Status of the Advancement of Women in the Workplace (PDF: 117KB/1 page)  
[http://www.noie.jx-group.co.jp/csr/social/staff/pdf/active\\_woman02.pdf](http://www.noie.jx-group.co.jp/csr/social/staff/pdf/active_woman02.pdf) (available only in Japanese)

## Promoting Career Opportunities for the Disabled

JX Nippon Oil & Energy is working to achieve an employment rate of persons with disabilities that exceeds the statutory employment rate of 2.0%.

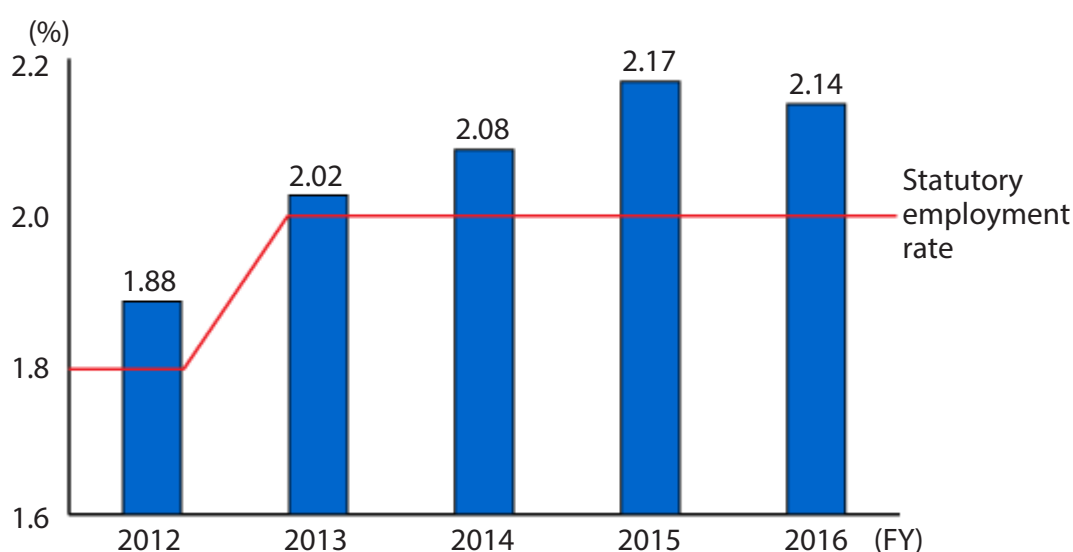
As of June 1, 2016, our employment rate of persons with disabilities stood at 2.14%.

We recognize that from the perspective of achieving diversity in the workplace a disability is just a single trait of an employee and the importance of helping employees with a disability to thrive in the workplace by enabling them to be in charge of operations that fit their personality and skill set.

In addition, as part of our efforts to achieve workplace diversity, training programs for entry-level employees also feature blind soccer\*, while several of our departments also offer sign language classes.

\* Blind soccer played with five people with visual impairment.

### Our employment rate of persons with disabilities (As of June 1, 2016)



## Re-employment Program for Retired Workers

We offer a re-employment program for retired workers that have the desire and motivation to continue working. This program provides these employees another opportunity to share their valuable knowledge, skills and experience with the company.

- Number of Employees Re-Hired after Retirement  
163  
(Number of retired workers newly re-hired in fiscal 2015)

## Re-employment Program for Workers who Retired to Accompany a Spouse on an Overseas Assignment

As part of our efforts to promote the advancement of women in the workplace, we introduced a new program in which employees who are forced to retire to accompany a spouse on an overseas assignment can register prior to their retirement in order to be rehired at a later day at their request within a five-year period from retirement. This program was introduced in order to provide opportunities for these employees to work with the company again after returning to Japan where they can continue their career advancement (gender is not considered in the requirements to utilize this program).

## Health Management

We recognize that the physical and mental wellbeing of our employees is a key to their success.

To that end, JX Nippon Oil & Energy offers regular health check-ups as well as other unique health management initiatives such as a health hotline and help in preventing adult-onset diseases.

We have placed particular focus on our mental health care measures, which include self care by employees, line care by managers, an organized support system and hotlines both inside and outside the company, each of which is used to advance the physical and mental health of employees..

We also provide mental health care training to entry-level employees.

Going forward, we will continue to implement our mental health care measures under the following system.

### Mental Health Promotion System

		Self Care	Line Care
Prevention	Information provision	via intranet	
	Stress checks	Health counseling for employees working long hours	
	Training and education	General employee training (Self management)	Managerial training (Workplace management)
	Hotlines	In-house hotline (Human Resources Department) Regular exams (industrial physician) Counselors (external organization)	
Actual response	Return to work	-	Rework Assistance Program

## Providing Employee-Friendly Workplaces

### Developing the Next Generation

JX Nippon Oil & Energy has formulated its sixth action plan under Japan’s Act for Measures to Support the Development of the Next Generation and is implementing measures to support a work-life balance aimed at achieving its targets set out in this plan.

#### Details of the 6th Action Plan (April 1, 2015 to March 31, 2017)

Target 1	Develop and run a program that provides peace of mind to employees that will be having and raising a baby
Target 2	Provide a workplace environment that warmly looks after employees that are pregnant or raising a child/children

#### Next Generation Accreditation Mark “KURUMIN”

Japan’s Ministry of Health, Labour and Welfare recognized that we have achieved our 1st General Business Owner Action Plan (April 1, 2005 to March 31, 2007), 2nd General Business Owner Action Plan (April 1, 2007 to March 31, 2009), 3rd General Business Owner Action Plan (April 1, 2009 to March 31, 2011), 4th General Business Owner Action Plan (April 1, 2011 to March 31, 2013), and 5th General Business Owner Action Plan (April 1, 2013 to March 31, 2015). As a result, we have acquired the right to use the next generation accreditation mark “KURUMIN”. Going forward, we will continue to proactively encourage a work-life balance as well as provide a variety of measures to ensure our employees can enjoy and get the most of their jobs.



#### ● Childcare Assistance Guidebook Uploaded

We have compiled the Childcare Assistance Guidebook – Comprehensive Information for Employees Having a Baby or Raising Children and published it on our in-house intranet.

This guidebook provides an overview of our in-house programs as well as the applications for these programs that are available for employees having a baby or raising children. Our initiatives in support of the next generation and employees’ work-life balance are not limited to female employees, as male employees are also expected to play a role whether they are a spouse, father, supervisor or colleague. It is our hope that this guidebook will help broaden employee understanding of our work-life balance support measures and help us develop a workplace environment where all employees are motivated and can thrive.

### Flextime Program

We offer a flextime program where employees can choose what time they start and end work as long as they are present for core work hours.

## Discretionary Labor System

JX Nippon Oil & Energy uses a discretionary labor system for employees engaged in corporate planning and R&D at its head office and Central Technical Research Laboratory. This is because in searching for options that can be applied to the diverse individual needs of today's employee we found that employees engaged in these -fields should be afforded the discretion to determine how they execute their work duties and allocate their time.

We also offer a flextime program, shortened working hours program and childcare as well as care giver assistance programs to accommodate the increasingly more diverse individual requirements of our employees.

## Shortened Working Hours Program

Employees that are pregnant, raising a child, acting as a care giver, or disability can select from 5.5 hour, 6.0 hour or 6.5 hour work days.

## Childcare Assistance Programs

We offer a parental leave program, childcare leave, nursing care leave, and a shortened working hours program to help employees achieve a work-life balance.

We have also introduced a new initiative aimed at encouraging all eligible employees, including men, to take childcare leave in an effort to ensure all workplaces enable those eligible to take childcare leave systematically.

Total number of employees who took childcare leave	83
Number of men	58
Percentage of employees who returned to work after childbirth and childcare leave	100%
Retention rate 12 months after returning to work	94.1%

## Care Giver Assistance Programs

We provide a care giver leave program, care giver leave and a shortened working hours program to help employees balance their professional and private lives.

Number of employees who took care giver leave	5
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## Proper Management of Working Hours

JX Nippon Oil & Energy is committed to eliminating unpaid work. We strive to properly manage employee working hours and have established a system that correctly monitors these hours.

## Encouraging Employees to Take Annual Paid Leave

1. First consecutive leave: Employees are encouraged to take five consecutive days of annual paid leave
2. Second consecutive leave: Employees are encouraged to take three consecutive days of annual paid leave
3. Two days per year are set to encourage employees to take annual paid leave
4. Employees are given paid leave on a day they commemorate

Number of paid leave days granted	19.5 days
Number of paid leave days taken	15.1 days
Percentage of paid leave taken	77.2%

## Reducing Total Annual Working Hours

### The “Goodbye Overtime – Action 8” Initiative

We have instituted the “Goodbye Overtime – Action 8” initiative in order to reduce the total working hours of our employees. The purpose of this initiative is to make it possible for employees to maximize their skill sets and work hard by achieving a high degree of work-life balance. In turn, this will improve the company’s productivity and enable a positive relationship between the company and its employees.

### Overview of “Goodbye Overtime – Action 8”

Name	Description
I. “8 O’clock Rule” Campaign	Leave work by 8:00 p.m.
II. “No Sunday Work” Campaign	Prohibits work on Sundays
III. “No Overtime Day” Campaign	One day a week set separately for each department (group)
IV. “Minus 30 Minutes” Campaign	Leave work 30 minutes before the end of regular working hours at least once per month
V. “Compliance with Overtime Rules” Campaign	Leave at the end of regular working hours when there is no order to work overtime
VI. “Whenever Wherever” Campaign	(Supervisors) Issue work orders by clearly stipulating purpose, delivery and quality (whenever wherever) (Employees) Approve orders after conveying other work Responsibilities
VII. “Lead by Example” Campaign	Managers foster an environment where it is easy to take annual paid leave
VIII. “Do It Yourself” Campaign	To every extend possible managers are to create their own briefing materials, etc.

## Dialog with Labor Union

JX Nippon Oil & Energy holds discussions with its labor union that cover a wide range of topics that include revisions to labor conditions as well as updates on business trends, environment and safety and health management. No labor disputes occurred in fiscal 2015.

## Human Rights Initiatives

### Respect for Human Rights

JX Nippon Oil & Energy strives to elevate its employees' awareness of human rights issues and under the basic policy to "eliminate all types of discrimination through respect for human rights", we are working to raise awareness about human rights matters. Additionally, we are implementing a wide range of measures from the standpoint of respect for human rights.

During human rights week, which runs from December 4 to 10, we call on employees of JX Nippon Oil & Energy and affiliates and their families to propose a human rights slogan. We hold this contest every year as an opportunity to encourage employees and their families to think more about human rights issues. In fiscal 2015, there were a total of 3,822 submissions, including 237 from family members of employees. We selected a total of 13 winners and 82 honorable mentions in the employee category as well as 4 winners and 16 honorable mentions for the family category.

### Encouragement of Human Rights Awareness

Respect for human rights represents a core concept behind the JX Group's mission statement and JX Group Values. It is important that each and every employee make business decisions, act and speak based on a fair and equitable understanding of human rights. As a result, we provide training to various groups of employees, including entry-level employees, mid-career employees, managers and senior executives, to help raise awareness about human rights issues.

JX Nippon Oil & Energy together with 18 of its affiliates has established the Human Rights Awareness Promotion Contact Meeting

to tackle issues related to raising awareness of human rights matters. For example, this contact meeting solicits slogan submissions from employees and their families each year in advance of human rights week in December. It also utilizes the company's intranet to implement e-learning training programs on human rights to foster greater understanding in a wide range of human rights issues.

### Sign Language Classes

Employees with a hearing disability teach sign language to employees at our head office and certain business sites. Although there are many ways to communicate with someone who has a hearing disability, such as a memo, verbal language, or email, sign language is a convenient option even if you can do a little.

Employees with a hearing disability teach sign language classes after work to a large number of employees. There are many ways that aid in the memorization of signs. For example, for the name Sasaki, a gesture is used that looks like the person is carrying sword on their back to mimic the image of famous Japanese swordsman Kojiro Sasaki. For the name Kato, a gesture is used where both hands appear to be holding a spear, based on the image for Japanese daimyo Kiyomasa Kato.

The photograph shows one of the sign language classes held at our head office in progress. These classes have been held continually at our head office for more than a decade. These classes have continued for this long because they are needed for communication during actual work situations, they offer easy to understand curriculum created by the employee instructors, and they are fun. Another reason that cannot be overlooked is that previous supervisors set an example that was worth following. That is, the proactive stance of our supervisors has played an important role in making these classes possible.





## Social Contribution Activities

### Social Contribution Activities Policy

JX Nippon Oil & Energy proactively engages in social contribution activities to realize the JX Group Values of “Relationship with society” and “Harmony with the environment” and to help build a sustainable society.

In April 2016, the priority fields and keyword phrases have been changed according to the recommendation of the company’s corporate citizenship committee. After this, we promote activities in the fields closely related with our business.

#### Keyword Phrases

**Energy**

**Environment**

**Sports and  
Culture**

#### Priority Field

**Next Generation  
Development and Support**

**Support Activities Rooted  
in the Local Community**

**Support for Employees’  
Volunteer Activities**

## ▶ Energy / Environment

- Public Trust “ENEOS Hydrogen Trust Fund”
- ENEOS Forests
- Other Forestation Topics
- ENEOS Credit Card Donation Program for the National Land Afforestation Promotion Organization
- Click-to-donate for Protection of Enegori-kun Forest
- Tokyo Greenship Action
- Hibiya Wildlife Flowerbed Development Activities
- The Reintroduction of the Oriental White Stork Plan Support Activities

## ▶ Sports and Culture

- Basketball Promotion Activities
- ENEOS’ Baseball Support Activities
- Inviting Children to Attend FC Tokyo Soccer Matches
- JX Nippon Oil & Energy is an Avid Supporter of Wheelchair Basketball in Japan
- JX-ENEOS Children’s Story Award / The Bouquet of Children’s Stories
- JX-ENEOS Children’s Story Fund
- Book Report Painting Contest

## ▶ Next Generation Development and Support

- ENEOS Environmental Classes
- ENEOS Children’s Science Classes
- ENEOS Forests School
- ENEOS Living Creature School
- Summer Holiday Science Bus Tour

## ▶ Community Engagement and Disaster Relief

- CSR Activity Topics
- Disaster Response Coordination Agreement with the City of Kawasaki

## ▶ Overseas Activities

- Donated Funds for the Construction of New Kindergartens in Vietnam
- Training for Engineers in Oil and Gas Producing Countries
- Friendship Committee for Women Career Development between Japan and the UAE
- Community Contribution Activities in China
- Community Contribution Activities in the Philippines

## ▶ Volunteer Activities

- Supporting Employees that Take Part in Volunteer Activities
- Volunteer Collection Drive Activities
- Bread Sales Drive in Support of Persons with Disabilities

## Energy / Environment

JX Nippon Oil & Energy proactively engages in social contribution activities in the area of energy and environment to realize the JX Group Values of “Harmony with the environment”.

### Public Trust “ENEOS Hydrogen Trust Fund”

#### Reasons for Establishing the Fund

Today, a variety of environment issues such as global warming are in the spotlight and many have called for the development of a sustainable society that grows responsibly with new energy systems that do not produce CO<sub>2</sub> or hazardous substances.

Hydrogen, which is used in fuel cells and other new energy solutions, has garnered attention as a new energy source that can help create the sustainable society of tomorrow. However, major technological advancements are still needed in the fields of hydrogen production, transport, and storage as well as carbon capture and reduction in order for this potentially revolutionary technology to be used more widely in energy systems.

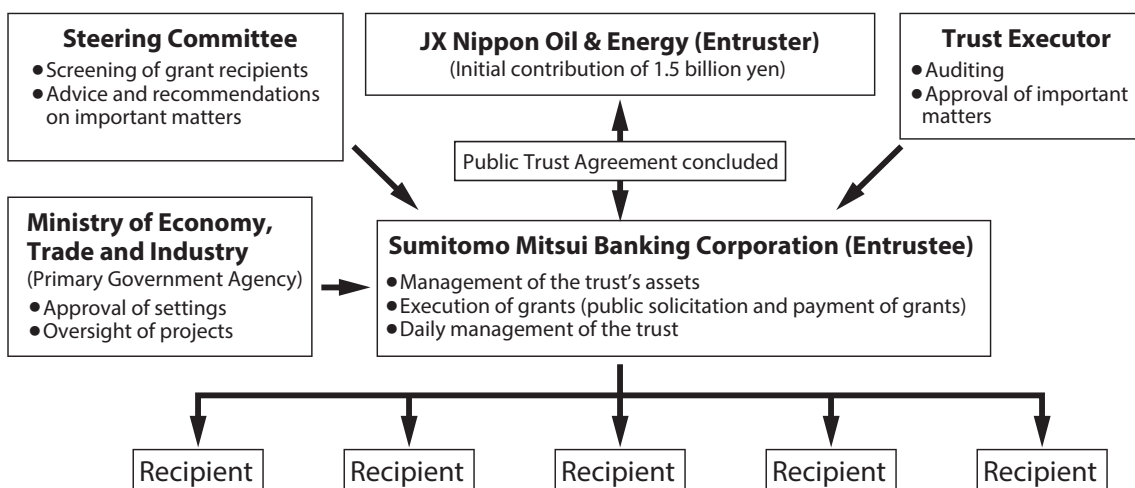
In this context, JX Nippon Oil & Energy established the ENEOS Hydrogen Trust Fund in March 2006 in order to help speed up the realization of a hydrogen energy society through grants to fund basic research that is both innovative and pioneering.

Each year this trust fund provides up to 50 million yen (up to 10 million yen per project) in grants to support basic research into hydrogen energy supply systems that is innovative and pioneering. Our initial contribution of 1.5 billion yen to this fund means that we will be able to fund research continually for the next 30 years.

This funding will encourage basic research for establishing and verifying new scientific principles that transcend existing ideas.

This will build the foundation for technological advancements and help to quickly realize the hydrogen society of tomorrow.

Of the 63 projects that applied in fiscal 2015, we provided grants to five researchers based on a careful screening performed by the fund’s steering committee.



#### About Public Trusts

In Japan, a public trust is a program for the benefit of the public in which an entruster provides assets to a trust bank (trustee) for a defined purpose and the trust bank then manages the trust’s assets in accordance with the Public Trust Agreement concluded between the two parties. This scheme is used by a wide range of public interest projects to provide funding for scholarships, grants for research into the natural sciences, art and science, grants for environmental protection activities, and the promotion of international cooperation and international exchange. Public trusts can only be established with the approval of the primary government agency with jurisdiction.

## Overview of the ENEOS Hydrogen Trust Fund

Name:	ENEOS Hydrogen Trust Fund
Entrustee:	Sumitomo Mitsui Trust Banking Limited
Primary Government Agency:	Ministry of Economy, Trade and Industry
Purpose:	Provide grants for basic research into hydrogen energy supply solutions and contribute to the realization of the hydrogen-based society of tomorrow because hydrogen is an energy source that is in harmony with the environment
Total Trust Assets:	1.5 billion yen
Annual Grants Awarded:	Up to 50 million yen (maximum grant of 10 million yen per project)
Research Supported:	Basic research that is both innovative and pioneering in the fields of hydrogen energy production, storage, transport as well a carbon capture and reduction.
Grant Eligibility:	Persons belonging to non-profit national research institutions, such as universities or public research organizations, and that are researching eligible fields.
Solicitation and Selection Process:	Solicitation shall be open to the public, with screenings performed by the steering committee of the trust.

- ▶ Application Guidelines (Overview)  
(<http://www.noe.jx-group.co.jp/csr/society/environment/aid/index.html>)
- ▶ 10th Research Grant Awards and List of Research Awardees  
(<http://www.noe.jx-group.co.jp/csr/society/environment/aid/aid10.html>)
- ▶ 9th Research Grant Awards and List of Research Awardees  
(<http://www.noe.jx-group.co.jp/csr/society/environment/aid/aid09.html>)
- ▶ 8th Research Grant Awards and List of Research Awardees  
(<http://www.noe.jx-group.co.jp/csr/society/environment/aid/aid08.html>)
- ▶ 7th Research Grant Awards and List of Research Awardees  
(<http://www.noe.jx-group.co.jp/csr/society/environment/aid/aid07.html>)
- ▶ 6th Research Grant Awards and List of Research Awardees  
(<http://www.noe.jx-group.co.jp/csr/society/environment/aid/aid06.html>)
- ▶ 5th Research Grant Awards and List of Research Awardees  
(<http://www.noe.jx-group.co.jp/csr/society/environment/aid/aid05.html>)
- ▶ 4th Research Grant Awards and List of Research Awardees  
(<http://www.noe.jx-group.co.jp/csr/society/environment/aid/aid04.html>)
- ▶ 3rd Research Grant Awards and List of Research Awardees  
(<http://www.noe.jx-group.co.jp/csr/society/environment/aid/aid03.html>)
- ▶ 2nd Research Grant Awards and List of Research Awardees  
(<http://www.noe.jx-group.co.jp/csr/society/environment/aid/aid02.html>)
- ▶ 1st Research Grant Awards and List of Research Awardees  
(<http://www.noe.jx-group.co.jp/csr/society/environment/aid/aid01.html>)

(available only in Japanese)

## ENEOS Forests

Forests play a vital role in absorbing CO<sub>2</sub>, maintaining biodiversity, and conserving watersheds, but in order to do so they need to be continually maintained responsibly. As a result, the JX Nippon Oil & Energy Group is implementing forest stewardship activities led by its employees and their family on fields located near its refineries and plants across Japan. The platforms for these activities are referred to as ENEOS Forests.

In a partnership with local governments or 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 unmaintained forests in Japan. These areas are located in the eight prefectures of Hokkaido, Miyagi, Kanagawa, Nagano, Osaka, Okayama, Yamaguchi and Oita.



ENEOS Forests

At each of these ENEOS Forests, group employees and their 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.

In fiscal 2015, we conducted activities 17 times at eight locations, with a total of 1,615 participants that included employees and their family. Since 2005, we have held activities a total of 186 times at sites across Japan, with participants numbering 14,426. These activities have spanned from thinning to brush clearing, pruning and trail development.

▶ ENEOS Forests

(<http://www.noe.jx-group.co.jp/csr/society/environment/activity/index.html>) (available only in Japanese)

▶ View a video (51 seconds) on ENEOS Forests at:

([http://www.noe.jx-group.co.jp/csr/society/environment/movie/index\\_mv01.wmv](http://www.noe.jx-group.co.jp/csr/society/environment/movie/index_mv01.wmv)) (available only in Japanese)

Windows Media Player is required to view this video. You can download this software free of charge from the following link.  
Download Windows Media Player:

<http://windows.microsoft.com/ja-jp/windows/windows-media>

## Other Forestation Topics

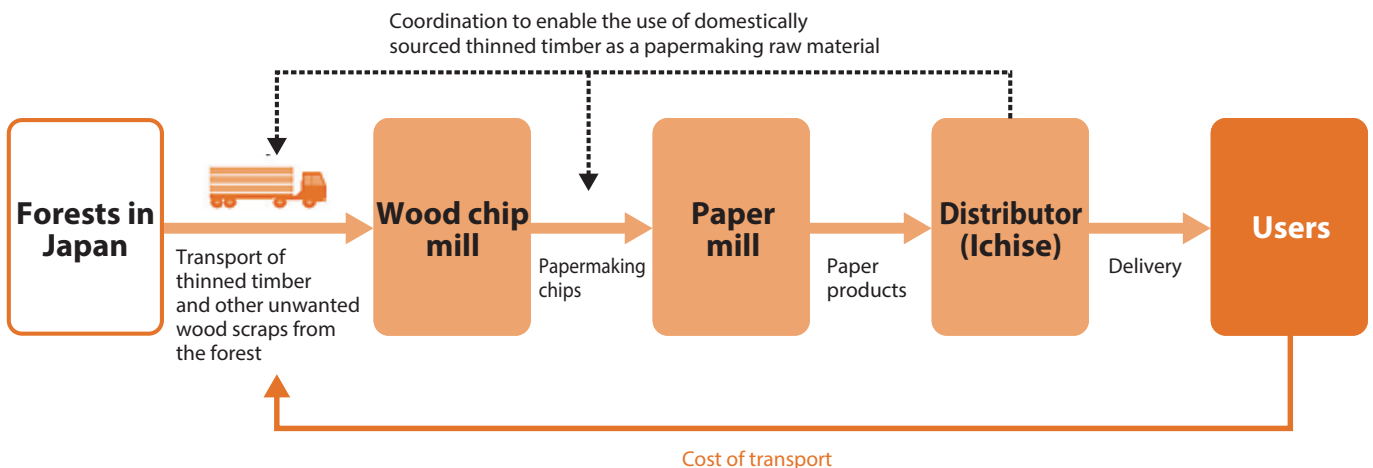
### Turning Thinned Timber from Responsibly Managed Forests into “3.9 Paper”

Many of Japan’s forests are not being fully managed in a responsible manner due to a lack of funding or shortage of people. The proceeds from the sale of thinned timber can be used to help manage forests, but transportation makes it cost prohibitive to carry the timber down from mountainous areas. This either means that a lack of thinning makes it harder for trees to mature or thinned timber has to be left behind causing the forest itself to deteriorate. With this in mind, a product called “3.9 paper” was launched in an effort to help support local forestation activities and make use of thinned timber. This forestation initiative not only protects the local environment, but also helps trees mature, whereby increasing the rate of CO<sub>2</sub> absorption and mitigating global warming.

JX Group proactively use 3.9 paper for printed material distributed to our stakeholders, including The Bouquet of Children’s Stories and JX Group’s CSR report.

#### What is 3.9 paper?

3.9 paper is made from domestically sourced thinned timber. Making full use of thinned timber helps to promote proper forest maintenance. Yet, the price of thinned timber is low and the cost of transportation high, meaning that in many cases thinned timber is simply left behind in the forest, which can impact the growth of saplings. In order to resolve this situation, paper wholesaler Ichise Co., Ltd. and Oji Paper Co., Ltd. developed a business model known as “3.9 paper” to ensure thinned timber is being effectively utilized and to encourage proper forest maintenance practices. Paper users bear the cost of transportation for thinned timber, which makes it possible to use this as a raw material in papermaking.



## ENEOS Credit Card Donation Program for the National Land Afforestation Promotion Organization

Ever since we began offering ENEOS credit cards in October 2001, we have donated 0.01% of the amount charged on these cards by customers at ENEOS service stations to the National Land Afforestation Promotion Organization. These funds are being used to help support a host of programs both inside and outside of Japan, including youth forestation activities, the revitalization of tropical forests, and the prevention of desertification. Until now we have donated more than 390 million yen through this initiative.



- ▶ ENEOS credit card information  
<http://www.no.e.jx-group.co.jp/carlife/card/index.html>  
 (available only in Japanese)

## Click-to-donate for the Protection of Enegori-kun Forests

We donate 1 yen per every click on our click-to-donate site to support the activities of Japan Wildlife Conservation Society (JWCS). JWCS is a nonprofit organization that endeavors to establish a new relationship between humans and wildlife through theoretical study, sharing of information, education and dissemination. Donation from our click-to-donate site is utilized to save wild gorillas as JWCS's habitat protection projects conducted by Wildlife Conservation Society Congo and Pole Pole Foundation. In fiscal 2015, we received 2,767,548 clicks and donated 1 yen per click to JWCS.

- ▶ Click-to-donate for the Protection of Enegori-kun Forests  
<http://www.noe.jx-group.co.jp/csr/click/index.html>  
 (available only in Japanese)

## Tokyo Greenship Action

Tokyo Greenship Action is an environmental conservation initiative involving Tokyo Metropolitan Government, private-sector companies and NGOs that aims to protect the remaining natural woodland areas of Tokyo. JX Nippon Oil & Energy has been involved in this initiative since fiscal 2004. Under the lead of the Machida Historical Environment Management Union, JX Nippon Oil & Energy employees and their families are taking part in a Satoyama Initiative to restore arid fields using traditional agricultural methods in the Zushi Onoji Historical and Environmental Conservation Area of Machida City in Tokyo.

In fiscal 2015, activities were held on six occasions, with 175 participants taking part. Additionally, since 2004 we have held activities on a total of 79 occasions that have attracted 2,259 participants. In July 2009, we received the Fiscal 2009 Tokyo Metropolitan Government Environmental Award (Director-General's Award) in recognition of these activities, while in 2010 a panel of experts commended these activities for matching the goals of the Satoyama Initiative for biodiversity conservation being shared around the world by Japan.



Commemorative photo taken after the harrowing of a rice field

- ▶ What is Tokyo Greenship Action?  
<http://www.noe.jx-group.co.jp/csr/society/environment/green/index.html> (available only in Japanese)
- ▶ Activities in fiscal 2015  
<http://www.noe.jx-group.co.jp/csr/society/environment/green/index.html> (available only in Japanese)
- ▶ Activities in fiscal 2014  
<http://www.noe.jx-group.co.jp/csr/society/environment/green/2014.html> (available only in Japanese)
- ▶ Activities in fiscal 2013  
<http://www.noe.jx-group.co.jp/csr/society/environment/green/2013.html> (available only in Japanese)
- ▶ Activities in fiscal 2012  
<http://www.noe.jx-group.co.jp/csr/society/environment/green/2012.html> (available only in Japanese)
- ▶ Activities in fiscal 2011  
<http://www.noe.jx-group.co.jp/csr/society/environment/green/2011.html> (available only in Japanese)



## Hibiya Wildlife Flowerbed Development Activities

Starting in October 2005, we began building and maintaining a flowerbed in one corner of Hibiya Park, which is located in Tokyo's Chiyoda Ward near our head office. As part of this project, employees and their families volunteer to plant seasonal flowers, weed, cleanup and water in order to make the park even more appealing to visitors. In addition to our efforts to make the heart of Tokyo greener, starting in 2011 we created a small garden filled with plants that attract butterfly larva in the flowerbed to help enrich Tokyo's biodiversity. These activities were held on four occasions in fiscal 2015, attracting a total of 108 volunteers.



Employees and their families pruning flowers

- ▶ Activities in fiscal 2015  
<http://www.noe.jx-group.co.jp/csr/society/environment/hibiya/hibiya2015.html> (available only in Japanese)
- ▶ Activities in fiscal 2014  
<http://www.noe.jx-group.co.jp/csr/society/environment/hibiya/hibiya2014.html> (available only in Japanese)
- ▶ Activities in fiscal 2013  
<http://www.noe.jx-group.co.jp/csr/society/environment/hibiya/hibiya2013.html> (available only in Japanese)
- ▶ Activities in fiscal 2012  
<http://www.noe.jx-group.co.jp/csr/society/environment/hibiya/hibiya2012.html> (available only in Japanese)
- ▶ Activities in fiscal 2011  
<http://www.noe.jx-group.co.jp/csr/society/environment/hibiya/hibiya2011.html> (available only in Japanese)
- ▶ Activities in fiscal 2010  
<http://www.noe.jx-group.co.jp/csr/society/environment/hibiya/hibiya2010.html> (available only in Japanese)

## The Reintroduction of the Oriental White Stork Plan Support Activities

We have been supporting the Reintroduction of the Oriental White Stork Plan since 2006. This project is based out of Toyooka City, Hyogo Prefecture and aims to help a variety of living creatures thrive once again. Since fiscal 2009, we have been holding ENEOS Living Creatures School classes for children in the Kansai area that teach about the theme of wild oriental white stork protection using a variety of hands-on learning curriculum focused on biodiversity conservation.



## ENEOS Living Creatures School

We hold ENEOS Living Creatures School classes for elementary school students in Toyooka City, Hyogo Prefecture. This hands-on learning program focuses on biodiversity conservation using the topic of wild oriental white stork protection.

In fiscal 2015, we organized a two day and one night program for a total of 30 participants that included 15 pairs consisting of elementary school students and guardians.



### ● 2016

- ▶ Activities in June 2016 (news release)  
([http://www.noe.jx-group.co.jp/newsrelease/2016/20160418\\_01\\_0941583.html](http://www.noe.jx-group.co.jp/newsrelease/2016/20160418_01_0941583.html))  
(available only in Japanese)

List of past activities

<http://www.noe.jx-group.co.jp/csr/society/environment/kounotori/index.html>  
(available only in Japanese)

- ▶ View a video (31 seconds) on ENEOS Living Creatures School at:  
(available only in Japanese)

- ▶ Oriental White Stork CSR  
(<http://www.noe.jx-group.co.jp/kounotori/index.html>)  
(available only in Japanese)

Windows Media Player is required to view this video. You can download this software free of charge from the following link.

Download Windows Media Player:

<http://windows.microsoft.com/ja-jp/windows/windows-media>

## Sports and Culture

### Basketball Promotion Activities

JX Nippon Oil & Energy sponsors the JX-ENEOS Sunflowers women's basketball team. We have also organized a select team consisting of current JX-ENEOS Sunflowers members and former members of Japan's Olympic women's basketball team for the purpose of traveling across Japan to hold basic basketball skills clinics. These clinics were held 81 times in fiscal 2015 with a total of 3,196 people taking part.

🔗 JX-ENEOS Sunflowers  
(<http://www.jx-group.jp/sunflowers/>) (available only in Japanese)

🔗 JX-ENEOS Basketball Clinic  
(<http://www.jx-group.jp/clinic/>) (available only in Japanese)

### ENEOS' Baseball Support Activities

JX Nippon Oil & Energy sponsors the JX-ENEOS Baseball Team and also takes part in activities aimed at advancing Japan's national pastime of baseball. As part of these activities, we sponsor the Japan Rubber Baseball ENEOS Tournament of Emperor's Cup, the Japan Dream Baseball League, and the Women's Baseball Federation of Japan and other baseball related events.

#### JX-ENEOS Baseball Team

The JX-ENEOS Baseball Team is an amateur team based in Yokohama that is part of the Japan Amateur Baseball Association. The team began as the Nippon Oil CALTEX Baseball Club back in 1950 and since then it has established a solid history of success, having won the Intercity Baseball Tournament 11 times.

🔗 JX-ENEOS Baseball Team  
(<http://www.jx-group.jp/baseball/>) (available only in Japanese)

### Inviting Children to Attend FC Tokyo Soccer Matches

ENEOS is the official sponsor of FC Tokyo of Japan's professional soccer league, the J-League. Beginning in 2005 we set up special ENEOS Friend-Crew Seats at FC Tokyo home matches so that we can invite children and escorts from foster-care facilities, single-mother support facilities and the NPO Tokyo Yoikukatei-No-Kai to attend.

In fiscal 2015 we invited a total of 2,000 people (100 persons for each of the 20 matches) to attend FC Tokyo home matches, and in fiscal 2016 we plan on hosting another 1,700 people (100 persons for each of the 17 matches).




Sponsorship of Wheelchair Basketball Championships

## JX Nippon Oil & Energy is an Avid Supporter of Wheelchair Basketball in Japan

We sponsor the Japan Wheelchair Basketball Championship Tournament every May. Employee volunteers take part in the tournament to provide operational support and assistance.

## JX-ENEOS Children's Story Award / The Bouquet of Children's Stories

The JX-ENEOS Children's Story Award organized by JX Holdings is a contest that recognizes the best works from among submissions of original children's literature on the theme of "heart-to-heart contact". Fiscal 2015 represented the 46th time these awards were handed out. The award has three categories, including "general", "junior high school" and "elementary school and under", providing an opportunity for persons of all ages, from adults to young children, to submit their original children's literature. The best works are also published in a collection called The Bouquet of Children's Stories for all to read. Copies of The Bouquet of Children's Stories are donated to educational institutions and child welfare facilities across Japan through the Tokyo Zen-i Bank and other social welfare organizations.

 The Bouquet of Children's Stories  
(<http://www.jx-group.co.jp/hanataba/>) (available only in Japanese)

## JX-ENEOS Children's Story Fund

JX Holdings transfers all proceeds from copies of The Bouquet of Children's Stories purchased by dealerships operating ENEOS service stations as well as executives and employees of the JX Group to the JX-ENEOS Children's Story Fund, which in turn makes donations to the Japan Council of Social Welfare. These donations are used to fund the JX-ENEOS Scholarship Program, which provides financial assistance to children from child welfare facilities and foster homes who graduate from high school and will pursue higher education.

## Book Report Painting Contest

The West Japan Book Report Painting Contest has been held for more than half a century since it started back in 1957. Every year some 400,000 students from schools on the island of Kyushu and in Yamaguchi Prefecture submit their works. A book report painting involves creating a painting, woodcut or collage to depict a memorable scene from a book. This form of art has been incorporated into school education because it helps to spur children's interest in reading regularly. The quality of submissions for the contest has often been noted by those in the arts and past award winners are now active in many fields, including education and the arts. JX Nippon Oil & Energy has helped sponsor this book report painting contest since 1969.

 Book Report Painting Contest  
(<http://www.no.e.jx-group.co.jp/kansouga/>) (available only in Japanese)

## Next Generation Development and Support

JX Nippon Oil & Energy supports the development of future generations in a variety of ways.


### ENEOS Environmental Classes (School Visits)

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 environmentally-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 have been held since fiscal 2008 reaching a total of 208 schools nationwide and some 11,570 students.

Experiments that compare hydrogen and carbon dioxide and experiments are always a favorite of participants, providing an enjoyable environment to learn about the environment and energy.



 Video of an ENEOS environmental class  
([https://www.youtube.com/watch?v=\\_uZSMYJZ8AM](https://www.youtube.com/watch?v=_uZSMYJZ8AM)) (available only in Japanese)

- ▶ Feedback from ENEOS environmental classes  
([http://www.no.ejx-group.co.jp/csr/society/next\\_generation/information/index.html#voice](http://www.no.ejx-group.co.jp/csr/society/next_generation/information/index.html#voice)) (available only in Japanese)

\* We have not taken any applications currently.

### ENEOS Children's Science Classes

Our Central Technical Research Laboratory has been holding the ENEOS Children's Science Class for local elementary schools since January 2005 in order to broaden understanding of energy and the environment among children. By the end of fiscal 2015, these classes have been held a total of 74 times and have been attended by some 3,750 elementary school students.

Research topics from the Central Technical Research Laboratory are rearranged for participants in late elementary school grades and the curriculum of every session is tailored to the learning needs and levels of participating students. Some of the positive feedback from students included, "It was really fun because we did things that we don't normally do in class."





## ENEOS Forests School

We have been holding ENEOS Forests School classes since fiscal 2007 in order to provide elementary school students with an opportunity to learn about, enjoy and immerse themselves in forests. These classes serve to educate these students the importance of nature preservation and energy through fun and hands-on curriculum, such as forest expeditions and games.

- ▶ ENEOS Forests School  
(<http://www.noe.jx-group.co.jp/csr/morikids/index.html>)  
(available only in Japanese)

This activity ended in FY 2015.



## ENEOS Living Creature School

We hold ENEOS Living Creature School classes for elementary school students in Toyooka City, Hyogo Prefecture. These hands-on classes help to teach students about biodiversity conservation using the theme of oriental white stork protection activities.

- ▶ ENEOS Living Creature School  
(<http://www.noe.jx-group.co.jp/csr/society/environment/index.html#anc05>)  
(available only in Japanese)



## Summer Holiday Science Bus Tour

Each of our refineries works together with a newspaper company to hold the Summer Holiday Science Bus Tour for elementary school students and their guardians. Participants learn about how energy is related to their everyday life in a fun format, which helps children to broaden their awareness toward the environment.

The group is taken on a tour of a refinery on board a bus where they learn about the processes involved from the import of crude oil and refining to product shipment. They also get to see a water-discharge exercise performed by fire trucks and fireboats. Participants always provide a great deal of feedback on the program, including "It served as a great opportunity for me to think about the environment and energy".

These bus tours were held at eight of our refineries and plants in fiscal 2015, attracting some 620 participants, including children and their guardians.

- ▶ Summer Holiday Science Bus Tour  
(<http://www.noe.jx-group.co.jp/bustour/>) (available only in Japanese)



## Community Engagement and Disaster Relief

The JX Nippon Oil & Energy Group takes part in a wide range of activities and actively broadens its engagement with local community members to live up to the expectations of the local communities in which it operates.

### CSR Activity Topics

The JX Nippon Oil & Energy Group implements a host of community contribution activities across Japan. These activities are introduced on the CSR Activity Topics page of our corporate website twice each month.

- ▶ CSR Activity Topics  
(<http://www.noe.jx-group.co.jp/csr/topics/index.html>)  
(available only in Japanese)



### Disaster Response Coordination Agreement with the City of Kawasaki



Large inflatable shelter for emergency assistance

JX Nippon Oil & Energy and JX Holdings have concluded an agreement with the City of Kawasaki to provide assistance to those affected by a disaster.

Under this agreement, facilities at the ENEOS Todoroki Ground located in Kawasaki's Nakahara Ward will be opened to local residents in need as a temporary site of refuge in the event of a disaster. We will supply a large inflatable shelter for emergency assistance free of charge, while required relief supplies will be provided by the City of Kawasaki. This will enable both parties to assist those in need immediately after a disaster through a unique partnership involving local government and a private sector company.

- ▶ Agreement signing ceremony  
([http://www.noe.jx-group.co.jp/csr/society/area\\_activity/sealkawasaki/index.html](http://www.noe.jx-group.co.jp/csr/society/area_activity/sealkawasaki/index.html)) (available only in Japanese)
- ▶ Inflatable shelter  
([http://www.noe.jx-group.co.jp/csr/society/area\\_activity/shelter/index.html](http://www.noe.jx-group.co.jp/csr/society/area_activity/shelter/index.html)) (available only in Japanese)
- ▶ Involvement in the City of Kawasaki's comprehensive disaster-preparedness drill  
([http://www.noe.jx-group.co.jp/csr/society/area\\_activity/protectkawasaki/index.html](http://www.noe.jx-group.co.jp/csr/society/area_activity/protectkawasaki/index.html)) (available only in Japanese)



## Overseas Activities

### Donated Funds for the Construction of New Kindergartens in Vietnam

JX Nippon Oil & Energy together with JX Nippon Oil & Gas Exploration donated approximately 13 million yen for the construction of a new Xuat Tac kindergarten in the Võ Nhai district of Thái Nguyên Province in Vietnam. The completion ceremony for this kindergarten was held on September 21, 2015.

The community where this kindergarten is located sees temperatures reach near freezing in the winter time, but until now pupils had to withstand this cold inside their old kindergarten building which was quite drafty. This donation was made possible by a referral from a local NPO and during the completion ceremony stakeholders shared their happiness about the new kindergarten.

We will continue to actively engage in community contribution activities in order to practice our commitment to being in “Relationship with Society” in Vietnam as well.



At completion ceremony of the new kindergarten

### Training for Engineers in Oil and Gas Producing Countries

As part of technical cooperation with oil and gas producing countries, JX Nippon Oil & Energy provides training to engineers of state-owned oil companies with the support from the Japan Cooperation Center, Petroleum (JCCP). We have been conducting training for several hundred trainees (refinery engineers and operators) from Iraq, Kuwait, Vietnam and Myanmar. These training sessions covered various themes including safety operation & maintenance and inspections of refinery plant facilities/equipment, environmental-responsive and energy-saving technologies, and production and business management, among others. In fiscal 2015, five training courses were offered. Our goal is to promote human resources exchange and to foster friendly relations by helping human resources development and improving production and operational management in these countries.



Trainees from Myanmar learning about effluent handling

### Friendship Committee for Women Career Development between the UAE. and Japan

The Friendship Committee for Women Career Development (FCW) was established in May 2015 between the Abu Dhabi National Oil Company (ADNO) and the Japan Cooperation Center, Petroleum (JCCP) in order to empower women working in the petroleum industry in both the United Arab Emirates (UAE) and Japan. Junior female employees of the JX Nippon Oil & Energy Group are involved in the FCW as members. The FCW organized a forum in Tokyo in November 2015, which was attended by Dr. Maitha Salem Al Shamsi, Minister of State of the UAE, as well as experts and corporate representatives with knowledge of women’s career development. Also in attendance were Mr. Takeshi Kurosaki, Executive Vice President of JX Nippon Oil & Energy, as well as other executive officers and junior female employees. They shared their views on the greater involvement of female employees in the petroleum industry together with participants from the UAE side.



Open forum held in Tokyo

## Community Contribution Activities in China

JX Nippon Oil & Energy supports exchange programs held in Japan for Chinese university students with the goal of broadening understanding about the country of Japan among Chinese youth. This program is run primarily by the Japanese Chamber of Commerce and Industry in China and receives support from Japanese companies in China and the Japan-China Economic Association. JX Nippon Oil & Energy provides support in the form of donations and also hosted a group of Chinese university students for a visit of its Negishi Refinery in June 2014 as part of the program.

In addition to this program, various business sites of the JX Nippon Oil & Energy Group in China give back to the community and society through donations to benefit schools, people with disabilities, and seniors.

## Community Contribution Activities in the Philippines

In February 2016, JX Ocean Co., Ltd. organized medical assistance activities in the city of Bogo on Cebu Island in the Philippines, which still is recovering from the aftermath of Typhoon Yolanda that struck the area in 2013. Assistance involved general exams, medical consultations, prescriptions of drugs, and dental exams provided by a medical assistance team comprised mainly of eight volunteer physicians. Employees from JX Ocean's head office and its ship management company in Singapore, and Filipino crew members also took part. A total of 650 people received exams, despite the short duration of the activity, and many words of thanks were extended to the company for arranging this assistance.



People waiting for medical exams.

## Volunteer Activities

JX Nippon Oil & Energy proactively engages in social contribution activities as a member of society to help realize the JX Group Value of "Relationship with Society."

### Supporting Employees that Take Part in Volunteer Activities

We have implemented a program that enables employees to take time off from work to participate in volunteer activities. In fiscal 2015, 16 employees used this program to take a total of 27 days off for volunteer work.

### Volunteer Collection Drive Activities



Items collected by employees as volunteer activities

We have been collecting and donating unusable postcards, unused prepaid cards and other items to NGOs since 1997 to provide an opportunity for anyone to easily take part in volunteer activities. Starting in fiscal 2015, JX Holdings is now spearheading these efforts as part of its community contribution targets involving the entire JX Group.

### Bread Sales Drive in Support of Persons with Disabilities



Bread sales drive in progress

As part of our activities to foster greater awareness about persons with disabilities among our employees, in 2015, we have started to hold bread sales drive at the JX Building, our head office, in cooperation with "Koro-Koro," a bakery where persons with disabilities work. Employees can easily interact with people from "Koro-Koro" when buying the bread, too. The sales drive was held two times, once each in October and November 2015.

The sales drive was crowded with employees on both days it was held and sales broke a new record for "Koro-Koro." Moreover, employees were impressed with how delicious the breads were and the persons with disabilities who sold the bread were greatly encouraged to receive this positive feedback. We will continue to hold similar sales drives in the future as a means to supporting persons with disabilities.

# Environmental Report

## ▶ Environmental Management

- Fundamental Approach
- JX Nippon Oil & Energy Group Environmental Policy
- JX Nippon Oil & Energy Group Second Medium-Term Environmental Management Plan (Fiscal 2013 to 2015)
- Environmental Management System (EMS)

## ▶ Overview of our Environmental Impacts

- Material Balance
- JX Nippon Oil & Energy's Supply Chain Emissions (Scope 3)
- Environmental Impacts of Our Refineries and Plants

## ▶ Global Warming Prevention Measures

- Fundamental Approach
- Efforts to Reduce CO<sub>2</sub> Emissions
- Promoting Environmental Contribution Activities
- Utilizing the Kyoto Mechanisms

## ▶ Biodiversity Preservation Measures

- Fundamental Approach
- JX Nippon Oil & Energy Group Guidelines on Biodiversity
- Measures to Preserve Biodiversity

## ▶ Activities for Reducing Our Environmental Impacts

- Fundamental Approach
- Soil Contamination Studies and Countermeasures
- VOC Reduction Measures
- Waste Reduction Measures
- Air Pollution Prevention Measures
- Water Contamination Prevention Measures
- Management of Chemical Substances
- Reducing the Environmental Impacts of Our Offices

## ▶ Developing and Supplying Environmentally-Friendly Products and Services

- Fundamental Approach
- Environmentally-friendly Products and Services

## ▶ Environmental Measures at Our Refineries and Plants

- Measures at Each Refinery and Plant

# Environmental Management

## Fundamental Approach

The JX Nippon Oil & Energy Group is committed to striking a harmonious balance between our business activities and the global environment by constantly being aware of the impacts these activities have or may have on the natural environment. To define this commitment, we have formulated a Medium-term Environmental Management Plan based on the JX Nippon Oil & Energy Group Environmental Policy, and in order to steadily execute its management plan, we have established the JX Energy Group Environmental Management System (EMS). These plans, policies and systems represent our integrated and consistent group-wide approach to environmental management.

## JX Nippon Oil & Energy Group Environmental Policy

We of the JX Group will follow the basic policy outlined below as part of its efforts to be in harmony with the natural environment:

1. Comply with environmental laws and ordinances;
2. Develop technologies, products and services that help create a better global environment;
3. Work diligently to prevent global warming and be mindful of preserving biodiversity; and
4. Constantly strive to reduce environmental impacts.

## JX Nippon Oil & Energy Group Second Medium-Term Environmental Management Plan (Fiscal 2013 to 2015)

JX Nippon Oil & Energy has drafted a Second Medium-Term Environmental Management Plan in accordance with the JX Group Values, or "EARTH," which was created to help us realize the JX Group Mission Statement. The following four fundamental approaches were used to draft this plan, while more specific targets and initiatives were set for each key theme.

- Set long-range environmental target
- Achieve greater energy savings in business activities
- Help reduce CO<sub>2</sub> emissions through environmentally-friendly products
- Reinforce environmental management system, including at overseas sites and plants

Long-range Environmental Target (Fiscal 2020)

Aim to reduce CO<sub>2</sub> emissions from the company and customers by 4 million tons\* compared to fiscal 2009 by the year 2020 through the promotion of energy saving measures at refineries and plants and increased sales and development of environmentally-friendly products.

\* Equivalent to 20% of JX Nippon Oil & Energy Group CO<sub>2</sub> emissions in fiscal 2009 (20 million tons)



## I. Promote measures to prevent global warming and preserve biodiversity

Specific Measures	Specific Initiatives Aimed at Fiscal 2015	Results from Fiscal 2015	Assessment
(1) Promote energy saving measures at refineries and plants	<ul style="list-style-type: none"> <li>● Cut CO<sub>2</sub> emissions 800,000 tons compared to fiscal 2009 by promoting energy saving measures</li> </ul>	<ul style="list-style-type: none"> <li>● Results: reduced 860,000 tons compared to fiscal 2009</li> </ul>	○
(2) Encourage the development and popularization of environmentally-friendly products to help realize a low carbon society	<ul style="list-style-type: none"> <li>● Promote development of environmentally friendly products</li> <li>● Cut customer CO<sub>2</sub> emissions 1.3 million tons compare to fiscal 2009 through expanded sales of our environmentally-friendly products</li> </ul>	<ul style="list-style-type: none"> <li>● Results: reduced 830,000 tons compared to fiscal 2009</li> </ul>	×
(3) Activities that help preserve biodiversity	<ul style="list-style-type: none"> <li>● Utilize green spaces at refineries and plants and promote conservation activities to protect rare species</li> </ul>	<ul style="list-style-type: none"> <li>● Participating in Japan Business Initiative for Biodiversity (JBIB) and studied domestic trends</li> <li>● Quantitatively assessed the efforts of the Chita Plant using assessment tools developed by JBIB</li> </ul>	○

## II. Reduce environmental impacts

Specific Measures	Specific Initiatives Aimed at Fiscal 2015	Results from Fiscal 2015	Assessment
(1) Perform soil contamination studies and take relevant measures	<ul style="list-style-type: none"> <li>● Promote measures to prevent oil leaks from happening at service stations in operation</li> <li>● Continue with systematic studies and countermeasures at decommissioned facilities</li> <li>● Roll out low cost soil remediation technology</li> </ul>	<ul style="list-style-type: none"> <li>● Results: investigated 149 matters</li> <li>● Results: measures taken against 77 matters</li> </ul>	○
(2) Take steps to reduce VOCs	<ul style="list-style-type: none"> <li>● Maintain VOC emissions at 50% of fiscal 2000 levels</li> </ul>	<ul style="list-style-type: none"> <li>● Results: 54% reduction</li> </ul>	○
(3) Take steps to reduce waste	<ul style="list-style-type: none"> <li>● Maintain the Zero Emission Plus goals (waste-to landfill ratio of less than 0.5%)</li> </ul>	<ul style="list-style-type: none"> <li>● Results: 0.247%</li> </ul>	○
(4) Strive to reduce the environmental impacts of offices	<ul style="list-style-type: none"> <li>● Improve efficiency of office lighting at company owned facilities by 50% in total</li> <li>● Reduce paper usage per employee per year to 5,000 sheets</li> <li>● Follow through on electricity conservation activities and waste sorting</li> </ul>	<ul style="list-style-type: none"> <li>● Results: efficiency improved 57%</li> <li>● Results: 3,744 sheets/year per person</li> </ul>	○

### III. Enhance the environmental management system

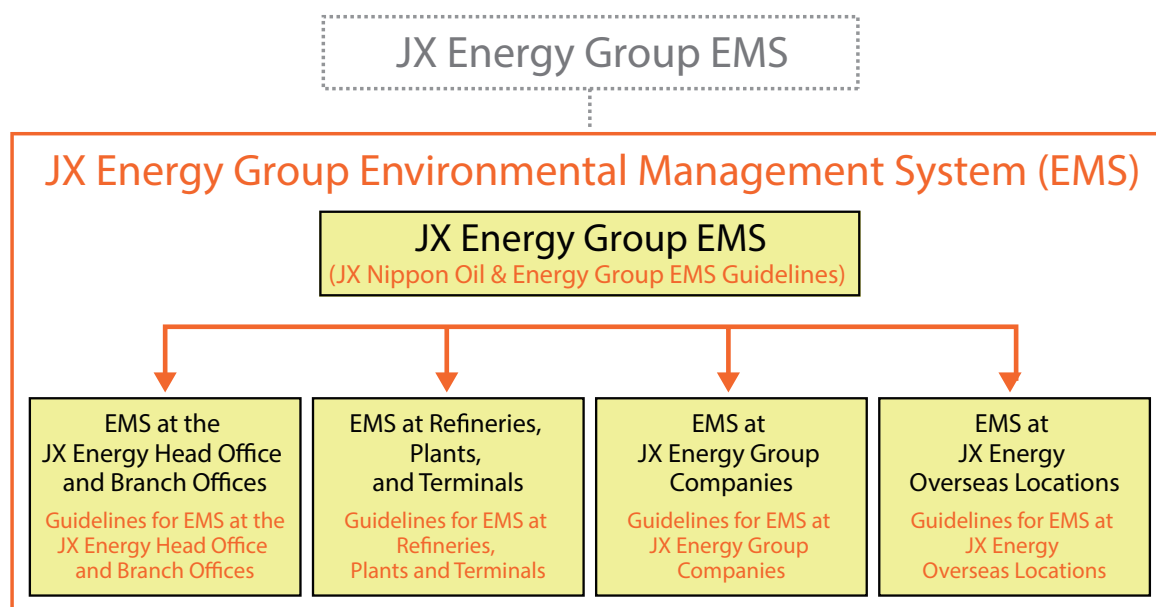
Specific Measures	Specific Initiatives Aimed at Fiscal 2015	Results from Fiscal 2015	Assessment
(1) Strengthen environmental management system, including at overseas plants and sites	<ul style="list-style-type: none"> <li>● Expand scope of environmental management to major overseas plants and sites</li> <li>● Provide support for dealerships to establish EMS</li> </ul>	<ul style="list-style-type: none"> <li>● Seven overseas production sites commenced operations in January 2015</li> <li>● Domestic affiliated companies to which the scope of environmental management was expanded commenced operations in fiscal 2014</li> </ul>	○
(2) Activities to better the environment	<ul style="list-style-type: none"> <li>● Implement environmental protection activities</li> <li>● Develop the next generation and provide support as needed</li> </ul>	<ul style="list-style-type: none"> <li>● ENEOS Forests 16 times and Tokyo Greenship Action 6 times</li> <li>● Hibiya Wildlife Flowerbed 4 times and ENEOS Wildlife Flowerbed Classes 3 times</li> <li>● ENEOS Environmental Classes 1 time</li> </ul>	○

Only one item under the Second Medium-Term Environmental Management Plan was not achieved, while all others were, indicating steady progress is being made in general.

#### Environmental Management System (EMS)

The JX Nippon Oil & Energy Group has established the following Environmental Management System (EMS) in order to steadily execute the Medium-term Environmental Management Plan created based upon the JX Nippon Oil & Energy Group Environmental Policy.

As part of our EMS operations, we have established environmental targets for each company and each department based on our Medium-term Environmental Management Plan. Actions are being taken to achieve these targets following the plan-do-check-action (PDCA) cycle.

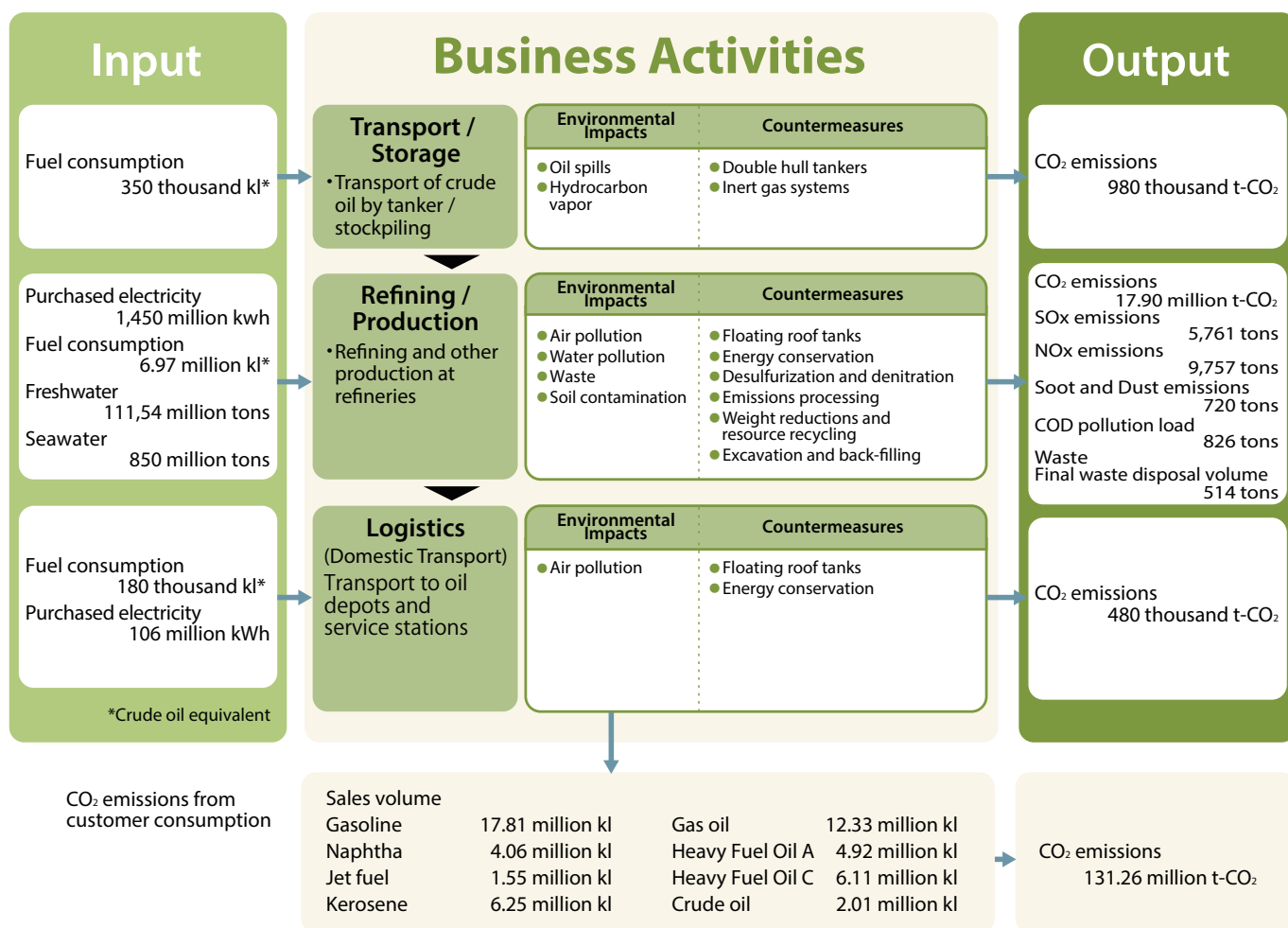




# Overview of our Environmental Impacts

## Material Balance

The following figure illustrates our environmental impacts throughout the entire supply chain, spanning from transport and storage through to consumption, in fiscal 2014. As a comprehensive energy company, the JX Nippon Oil & Energy Group is proactively working to reduce its CO<sub>2</sub> emissions in light of the impacts energy consumption has on the Earth's environment. (The target scope includes JX Nippon Oil & Energy and its main affiliates) JX Ocean Co., Ltd. was included in the scope of data from this fiscal year, and therefore, fuel consumption from tanker transport and CO<sub>2</sub> emissions both increased.



## JX Nippon Oil & Energy's Supply Chain Emissions (Scope 3)

Supply chain emissions include not only a company's own emissions (Scope 1 + Scope 2), but also all greenhouse gas emissions across the entire supply chain, including other indirect emissions (Scope 3) from both a company's upstream and downstream operations. Starting in fiscal 2013, we began estimating and disclosing the target scope of JX Nippon Oil & Energy's petroleum division supply chain.

			Category	CO <sub>2</sub> emissions (10thousand tons)	Ratio (%)
Scope 3	Upstream	1	Purchased goods and services	1,343	8.0
		2	Capital goods	-	-
		3	Fuels not included in Scope 1 or Scope 2	-	-
		4	Upstream transportation and distribution	234	1.4
		5	Waste generated in operations	1	0.0
		6	Business travel	0	0.0
		7	Employee commuting	0	0.0
		8	Upstream leased assets	-	-
Scope 1 and Scope 2	Company emissions			1,936	11.6
Scope 3	Downstream	9	Downstream transportation and distribution	41	0.3
		10	Processing of sold products	-	-
		11	Use of sold products	13,126	78.5
		12	End-of-life treatment of sold products	-	-
		13	Downstream leased assets	-	-
		14	Franchises	-	0.2
		15	Investments	33	-
			Total	-	100.0
				16,715	

## Environmental Impacts of Our Refineries and Plants

The JX Nippon Oil & Energy Group operates a total of 11 refineries and plants. The following tables present their combined environmental impacts.

Please visit this website for the environmental load data of each refinery and plant.

(<http://www.noe.jx-group.co.jp/csr/environment/perspective/index.html>) (available only in Japanese)

### Air and Water

	Extent of Environmental Impacts (tons)	2011	2012	2013	2014	2015
Air	SOx	9,469	8,392	7,053	6,326	5,663
	NOx	9,444	10,040	9,790	9,255	9,156
	Soot and Dust	770	799	806	880	679
Water	COD	694	839	886	775	798

### PRTR

Total Volume of Release and Transfer (tons)	2011	2012	2013	2014	2015
Benzene	55	30	35	38	35
Toluene	97	98	80	81	119
Xylene	94	66	94	92	102

### Waste

	2011	2012	2013	2014	2015
Volume of waste generated (tons)	225,858	235,308	253,551	252,808	240,918
Final waste disposal volume (tons)	941	293	603	420	487

# Global Warming Prevention Measures

## Fundamental Approach

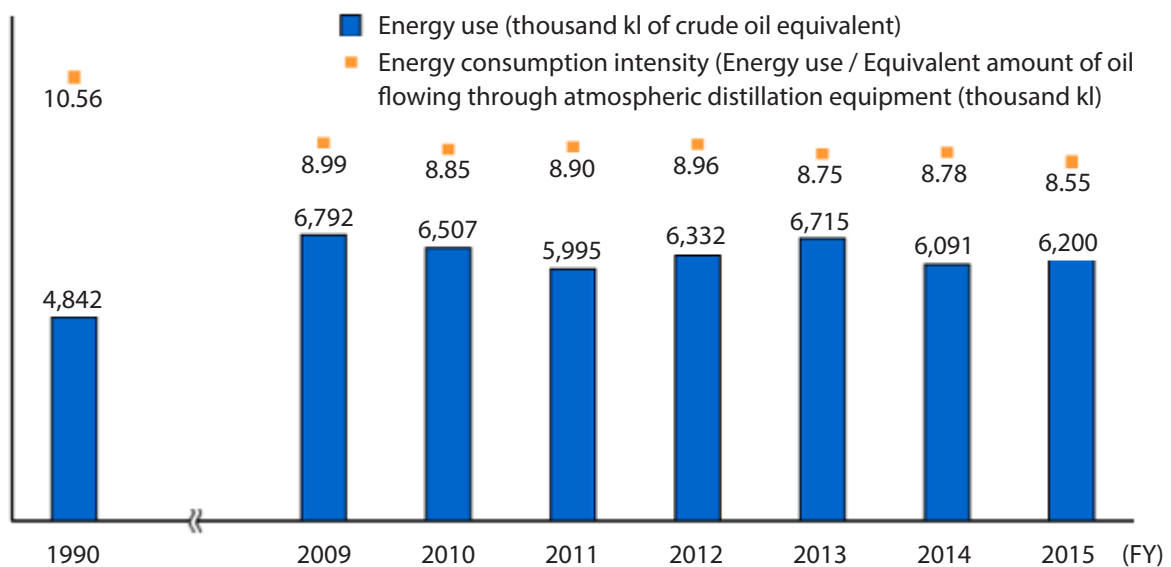
The JX Nippon Oil & Energy Group is constantly aware of environmental impacts throughout its entire supply chain. In addition to improving energy efficiency in refining and production phases, which represent our core business activities, and reducing fuel consumption during the transport of products, we are striving to reduce greenhouse gas emissions and prevent global warming by supplying products such as biogasoline. We also actively work to preserve biodiversity through environmental contribution activities.

## Efforts to Reduce CO<sub>2</sub> Emissions

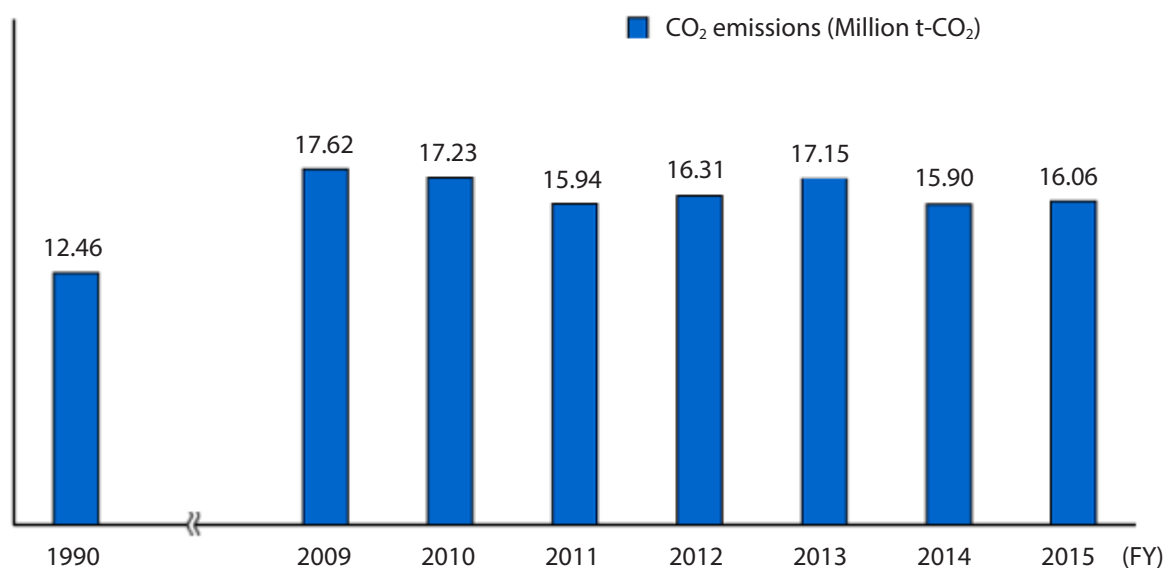
### Measures during Refining

Approximately 80% of the JX Nippon Oil & Energy Group's CO<sub>2</sub> emissions occur during the refining process. Therefore, we reconsider improving the efficiency of energy consumption during refining to be an extremely important issue, which we are addressing using various energy conservation activities, including development and introduction of the latest technologies, improving production processes and reducing heat loss, among other efforts. In fiscal 2015, we achieved our target of an 800,000 ton reduction in CO<sub>2</sub> emissions compared to fiscal 2009 by achieving a total reduction of 860,000 tons. We will continue working harder to reduce our carbon footprint in order to reach our target for fiscal 2016.

#### Change in Energy Use and Intensity\*1



#### CO<sub>2</sub> Emissions\*1



\*1: Includes only the oil refining divisions of the JX Nippon Oil & Energy Group

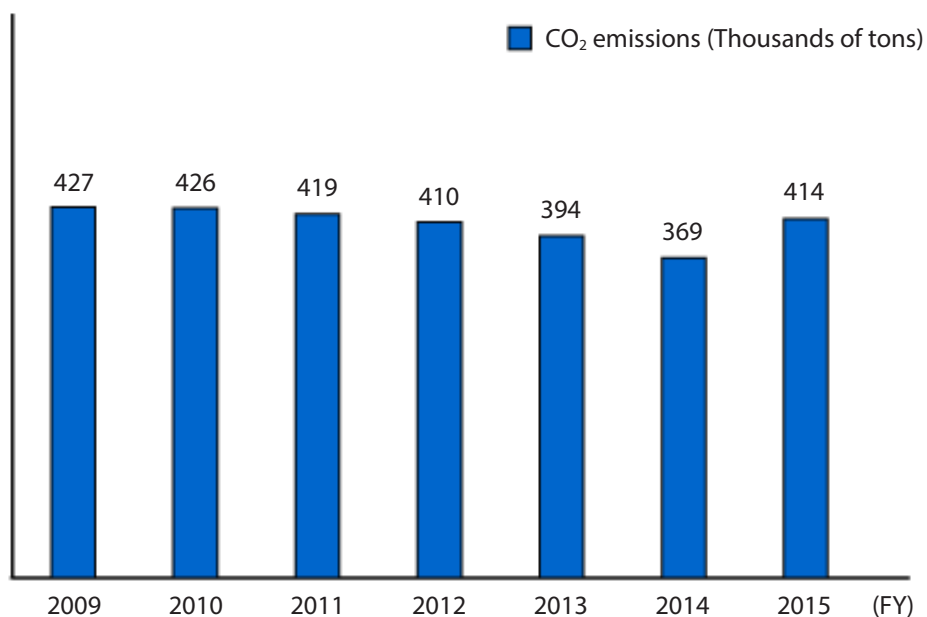
## Measures in Logistics

The JX Nippon Oil & Energy Group has compiled a mid- and long-term energy reduction plan (target reduction of 1% annually) for its logistics operations based on Japan's revised Energy Saving Act. Specific measures under this plan focus on efficiencies in logistics, such as optimizing transport routes, consolidating oil depots, and increasing the size of tank trucks and oil tankers, as well as on reducing fuel consumption, such as with idling stops.

### ● CO<sub>2</sub> Emissions from Domestic Transport

In fiscal 2015, our CO<sub>2</sub> emissions associated with fuel consumption in domestic transport totaled 414 thousand tons, representing a 3.9% drop over baseline fiscal 2009 levels, despite an increase year on year due to changes in transport volume.

#### ■ CO<sub>2</sub> Emissions from Domestic Transport



\* The above represents quantitative data reported as a specified consigner under Japan's revised Energy Saving Act.

## Promoting Environmental Contribution Activities

The JX Nippon Oil & Energy Group actively supports employees volunteering in activities for the betterment of the environment as well as provides environmental education opportunities for children and employees.

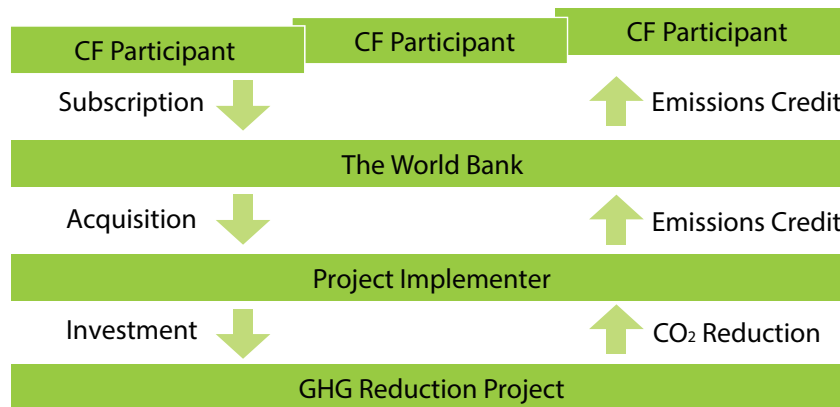
- ▶ See Environmental Protection section P.XX.

## Utilizing the Kyoto Mechanisms

### Involvement in the World Bank’s Community Development Carbon Fund

JX Nippon Oil & Energy participates in the World Bank’s Community Development Carbon Fund (CDCF). Through this fund, monetary subscriptions collected by the World Bank from governments and corporations are used to support small-scale projects (renewable energy projects such as wind or solar power generation) initiated by developing countries to reduce their greenhouse gas emissions and improve the standard of living for their people. Participating parties are allocated emissions credits equivalent to the CO<sub>2</sub> reduction amount achieved by these projects.

#### Community Development Carbon Fund



### Investment in Japan CCS Co., Ltd.


The acronym CCS\* refers to technologies for separating and capturing large amounts of CO<sub>2</sub> produced from oil and gas fields, plants or thermal power plants, and then injecting this CO<sub>2</sub> at a depth of below 1,000 meters underground for storage.

These technologies help to reduce large amounts of CO<sub>2</sub> emissions before they enter the atmosphere, making them both highly practical and fast-acting. Nevertheless, research still is necessary on development of low cost CO<sub>2</sub> separation and capturing technologies as well as the assessment of geological strata that can safely and securely store the carbon. As a result, verification testing projects are now underway around the world.

In May 2008, under the initiative of Japan’s Ministry of Economy, Trade and Industry, Japan CCS Co., Ltd. was established. JX Nippon Oil & Energy made an investment in Japan CCS Co., Ltd. as its founding corporate investor in order to support the commercialization of CCS technologies that help reduce CO<sub>2</sub> emissions in Japan. Today we continue to be involved in its business operations. Japan CCS now has a total of 35 corporate investors, which include companies from the power and petroleum development sectors.

Work has been completed on the construction of facilities at Tomakomai, Hokkaido, to separate and capture CO<sub>2</sub> and of excavating the wells for the injection of CO<sub>2</sub> that had taken place since FY 2012. Work has also been completed on two storage layers at depths of around 1,000 meters and 3,000 meters under the seabed within the coastal region of Tomakomai Port. In April 2016, injections commenced into one of these layers, with a total of 100,000 tons of CO<sub>2</sub> set to be encased annually.

\* CCS: Carbon Dioxide Capture and Storage

 Japan CCS Co., Ltd.  
<http://www.japanccs.com/?lang=en>



# Biodiversity Preservation Measures

## Fundamental Approach

The JX Nippon Oil & Energy Group established the "JX Nippon Oil & Energy Group Guidelines on Biodiversity" in 2010. Based on our fundamental policy that states, "We will take measures considerate of biodiversity in every aspect of our business activities under the recognition that our business activities are deeply related to the Earth's biodiversity," we will ascertain and analyze the impacts of our business activities on biodiversity, strive to make improvements, as well as take part in activities that contribute to biodiversity preservation, such as nature protection and environmental education.

## JX Nippon Oil & Energy Group Guidelines on Biodiversity

### ● JX Nippon Oil & Energy Group Guidelines on Biodiversity

#### ● Basic Stance

We will take measures considerate of biodiversity in every aspect of our business activities under the recognition that our business activities are deeply related to the Earth's biodiversity

#### ● Action Policy

1. We will ascertain and analyze the impacts of our business activities on biodiversity as well as strive to make improvements
2. We will promote activities that contribute to biodiversity preservation, such as nature protection and environmental education
3. We will present and share information on our efforts to preserve biodiversity

## Measures to Preserve Biodiversity

### Measures at Our Refineries and Plants

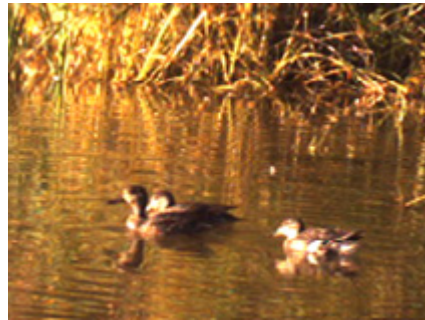
The Chita Plant is a member of the “Ecological Network Formation and Leadership Development Program for Corporate Green Spaces in the Coastal Area of Chita Peninsula” and the “Project Linking Life with One Another” as part of its efforts to protect biodiversity through green space management. This initiative seeks to utilize corporate greenbelts and other areas to provide a safe and secure habitat for local flora and fauna, and involves a partnership between Aichi Prefecture, Chita City, NPOs, students and companies located along the coastal area.

The Chita Plant has set up a biotope on unutilized land onsite (marshland) and provides a place and occasion for fieldwork. The plant also hosts nature observation tours organized by the City of Chita. Going forward, the Chita Plant will responsibly manage this greenbelt and its biotope in order to help improve local biodiversity.

Additionally, the Negishi Refinery located in Kanagawa Prefecture has initiated work on a green belt with the goal of conserving biodiversity in the area. The Negishi Refinery is surrounded by the vibrant Sankei-en Garden, hilly areas that maintain the natural topography, and Tokyo Bay. The refinery is aiming to be a hub for the local ecosystem in the future.



Biotope (Chita Plant)



A spot-billed duck visiting the biotope (Chita Plant)



A Butterfly Skimmer, *rhythemis fuliginosa*, visiting the biotope (Chita Plant)

## Working Together with Other Companies (Involvement in the JBIB)

JX Nippon Oil & Energy has been a member of the Japan Business Initiative for Biodiversity (JBIB), a leading business initiative for biodiversity in Japan, since 2013. As part of our involvement, we are researching guidelines and tools that companies can effectively make use of to protect biodiversity together with a number of other companies from the energy sector.

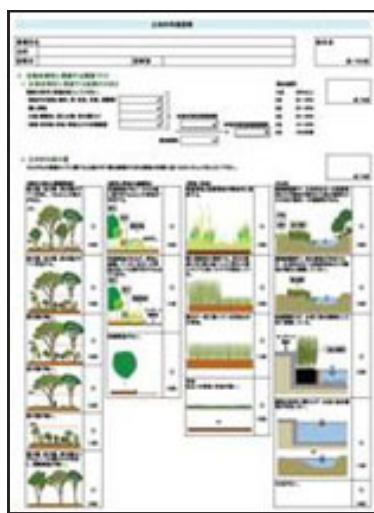
\* Japan Business Initiative for Biodiversity (JBIB): Established in 2008 as an organization for companies to work together proactively toward common goal of biodiversity protection.

Currently, improvements are being made to greenery at the Chita Plant based on a biodiversity assessment carried out in compliance with the JBIB Guidelines for Sustainable Businesses Sites developed by the Japan Business Initiative for Biodiversity.

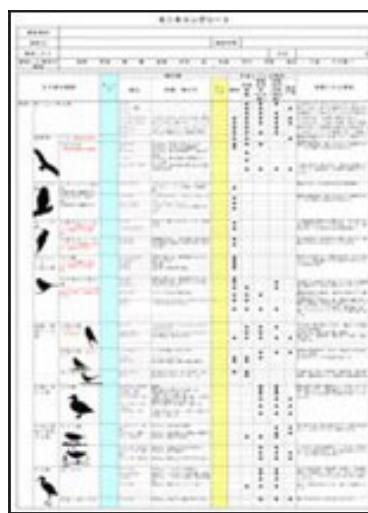
### JBIB Guidelines for Sustainable Business Sites



JBIB Guidelines



JBIB Land Use Score Card (TM)



JBIB Monitoring Sheet

### ● About ABINC Certification

In February 2015, the initiatives of the Chita Plant were recognized with ABINC certification as a business in harmony with nature and community from the Association for Business Innovation in Harmony with Nature and Community. This certification program is a third-party certification based on the evaluation criteria from the JBIB Guidelines for Sustainable Business Sites developed by foundations and the JBIB.



ABINC certification mark

# Activities for Reducing Our Environmental Impacts

## Fundamental Approach

The JX Nippon Oil & Energy Group engages in business operations fully cognizant of the impacts they have on the Earth's environment and is proactively working to reduce waste and its burden on the natural environment, including the soil, the air and the water.

## Soil Contamination Studies and Countermeasures

The JX Nippon Oil & Energy Group performs systematic studies on all land that carries the potential for soil or groundwater contamination and initiates proper countermeasures when needed to address pollution. We are also working hard to prevent soil contamination before it occurs by enhancing daily and regular inspections of our equipment as well as upgrading facilities where applicable.

## Track Record of Studies and Countermeasures

### Soil Surveys and Countermeasures in Fiscal 2015

(millions of yen)

Category	Surveys		Countermeasures	
	Number of Case	Expenditure	Number of Case	Expenditure
Service stations	132	349	76	1,248
Oil depots	9	111	1	37
Refineries / Terminals	8	3	0	0
Total	149	463	77	1,285

### Soil Contamination Reporting and Published Properties in Fiscal 2015

Category	Location	Survey Results				Status
		Soil		Groundwater		
		Substance	Scale Factor	Substance	Scale Factor	
Idle Land	Tochigi	-	-	Benzene	2.1	Countermeasures completed
	Hyogo	Lead	1.7	-	-	Countermeasures completed
	Ibaraki	Lead	2.2	Lead	4.2	Countermeasures currently being implemented
		-	-	Benzene	220	
	Aichi	Lead	5.1	Lead	13	Countermeasures completed

## Measures for the Future

As part of the JX Nippon Oil & Energy Medium-term Environmental Management Plan for fiscal 2013 to Fiscal 2015, we are continually working to reduce our environmental impacts by performing soil contamination studies and implementing countermeasures. Two specific examples of our efforts are presented below.

1. At operating facilities, we continually ensure that service stations complete daily management surveys on their facilities to prevent spills off site before they happen. We are also taking steps to raise awareness among operators and enhance the scope of daily inspection work.



Tank replacement work in progress

2. We are structurally reinforcing storage tanks at service stations that have exceeded a certain period of use in accordance with the Fire Service Act in an effort to prevent external spills before they occur with infrastructure improvements.
3. We carry out systematic surveys and measures for facilities that are no longer operating. We are also moving forward with research and development of cleanup technologies that are low cost and have less impact on the environment. The phytoremediation (cleanup method using the actions of vegetation to remediate soil contamination) soil improvement technology we co-developed with Sumitomo Forestry Co., Ltd. was recognized with the Environment Minister Award for the model Initiative on Environment Measures at the 2012 organized by the Ministry of the Environment. Going forward, we will utilize this technology as well as other proprietary technologies to help spread a safe and sound environment for all.



Soil survey work in progress



Receiving the 2012 Environment Minister Award for Model Initiatives on Environment Measures from Japan's Ministry of the Environment.



## VOC Reduction Measures

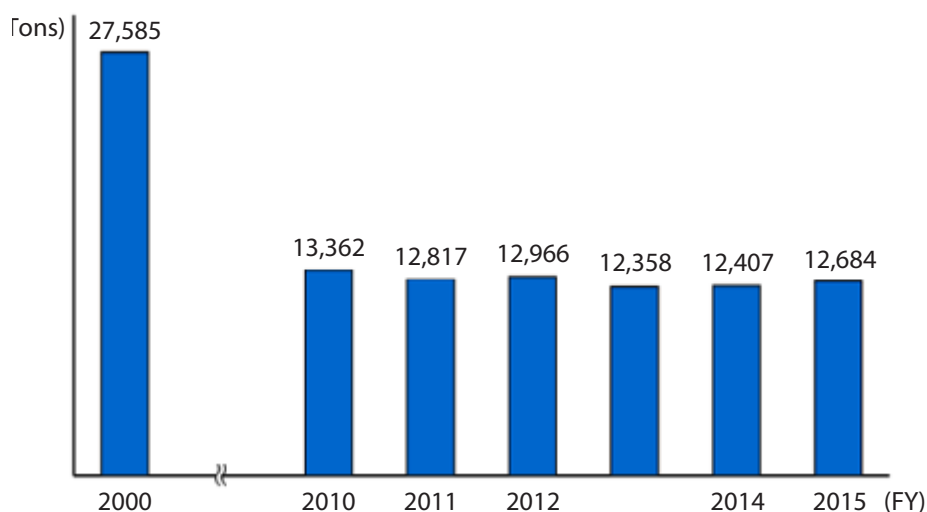
The JX Nippon Oil & Energy Group continually implements measures at its facilities and for its equipment to help prevent the release of volatile organic compounds (VOCs).

### Measures at Refineries

#### Measures to Reduce VOC Emissions

The Government of Japan established a target for fixed sources of VOC emissions, including factories, to reduce their emissions 30% compared to fiscal 2000 levels by fiscal 2010. To that end, each industrial sector set a voluntary action plan by which they implemented measures. As a result, each was able to reduce emissions by more than 30% (overall Japan was able to reduce emissions by 40%). Since fiscal 2011 we have pursued a goal to maintain the same levels as fiscal 2010 in accordance with government policy, and JX Nippon Oil & Energy's results for fiscal 2015 were a 54% reduction.

#### VOC Emissions from Our Refineries and Oil Depots

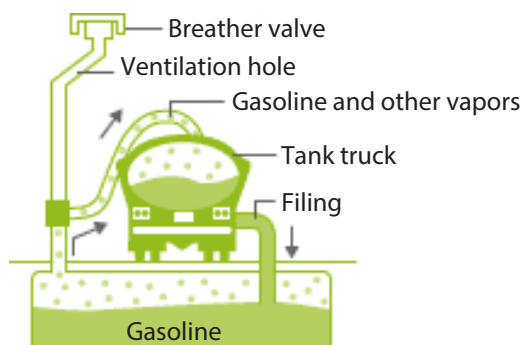


### Measures at Our Service Stations

#### Fuel Oil Vapor Capture

Vapors that contain hydrocarbons are released into the air whenever gasoline is pumped from a tank truck into a storage tank at a service station. These vapors are not only a source of photochemical smog, but also cause irritating odors in the neighboring communities and can have negative health consequences on both customers and employees alike. Therefore, we have installed recovery apparatuses on the ventilation ducts of service station storage tanks that enable tank trucks to collect these vapors.

#### Vapor recovery system at our service stations



Capturing hydrocarbon vapors



## Waste Reduction Measures

The JX Nippon Oil & Energy Group is working to reduce its waste-to-landfill ratio by properly managing waste and recycling in order to fulfill the vision of a sustainable recycling-oriented society.

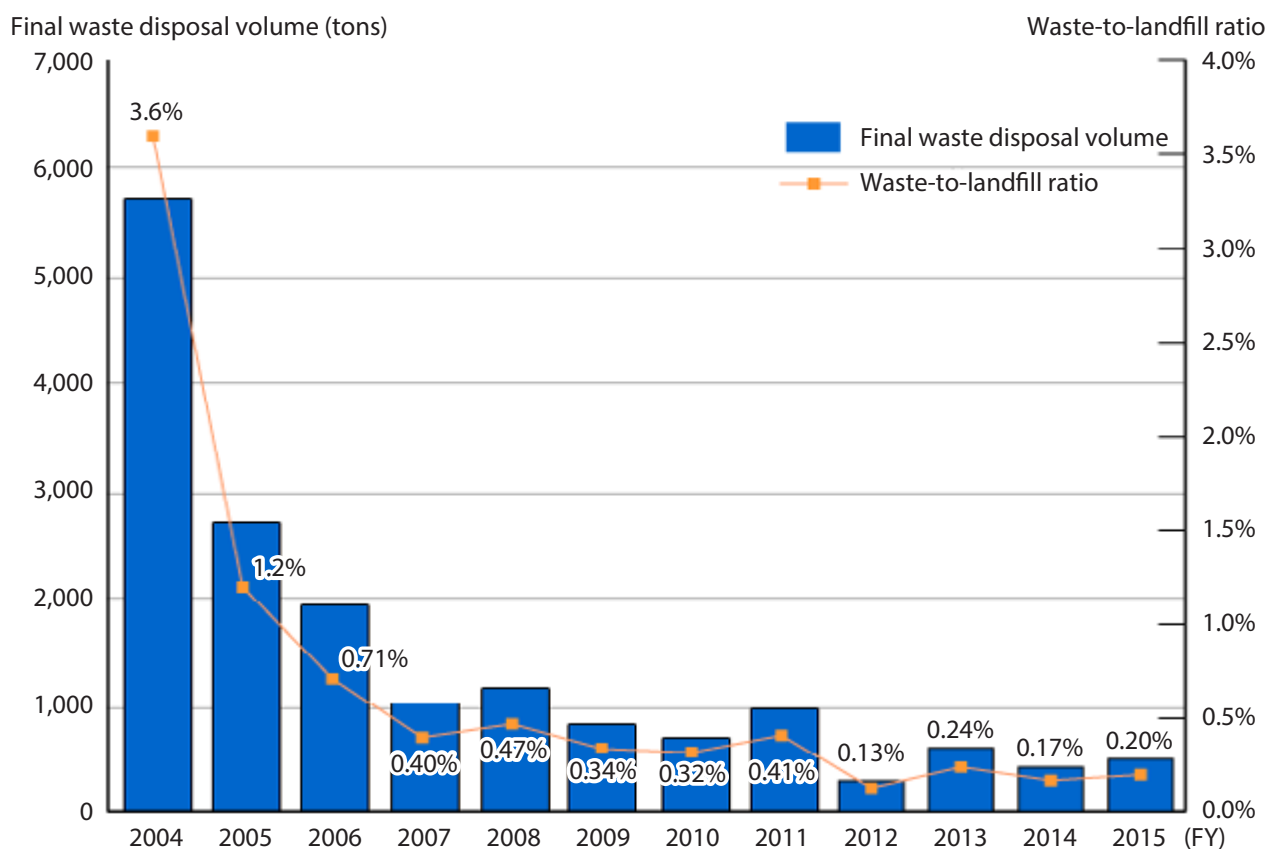
### Reducing Our Waste-to-Landfill Ratio

The JX Nippon Oil & Energy Group engages in Zero Emission Plus\* activities that help reduce its waste-to-landfill ratio through proper waste management and recycling programs in order to fulfill the vision of a sustainable recycling-oriented society.

Our refining division, which produces the largest volume of waste, is actively working to recycle sludge, waste acid, collected particulate matter, and waste catalysts. In fiscal 2015, our final disposal rate was 0.25%, indicating we have continued to achieve our goal of zero emissions plus.

\* Zero Emission Plus: Final waste disposal volume / Total waste produced < 0.5

### Final Waste Disposal Volume and Waste-to-Landfill Ratio of Refining Division



## ● Waste Recycling

We recycle the following waste using the most ideal method for each.

1. Sludge  
Sludge produced from water treatment processes is mainly recycled as a raw material for cement after it is dehydrated and dried.
2. Waste acid (waste vitriol)  
Vitriol used to make high-octane gasoline is recycled at special recycling service providers after use.
3. Collected particulate matter  
Particulate matter contained in flue gas is collected using an electrostatic precipitator and recycled as a raw material for cement.  
After undergoing thermal recycling\*, collected particulate matter can also be recycled for use in roadbed materials.  
  
\* The act of capturing energy emitted during the waste incineration process and utilizing it to generate electricity.
4. Waste catalysts  
Catalysts used during the desulfurization process for crude oil eventually lose activity and become waste catalysts. Useful metals such as vanadium and molybdenum contained in waste catalysts are collected and recycled to every extent possible by special metal collection and processing companies.
5. Waste asbestos  
Insulation containing asbestos collected during the maintenance and repair of equipment is melted down to render it harmless and then recycled in roadbed materials.

### Implementation of Electronic Manifests

JX Nippon Oil & Energy began encouraging the full-scale shift to electronic manifests in fiscal 2007. Since then, we have installed electronic manifest systems at each of our business sites and called on our waste transport as well as contract processing partners to cooperate with us in this regard. As a result, in fiscal 2015, we were able to switchover all manifests to electronic manifest systems.

## Air Pollution Prevention Measures

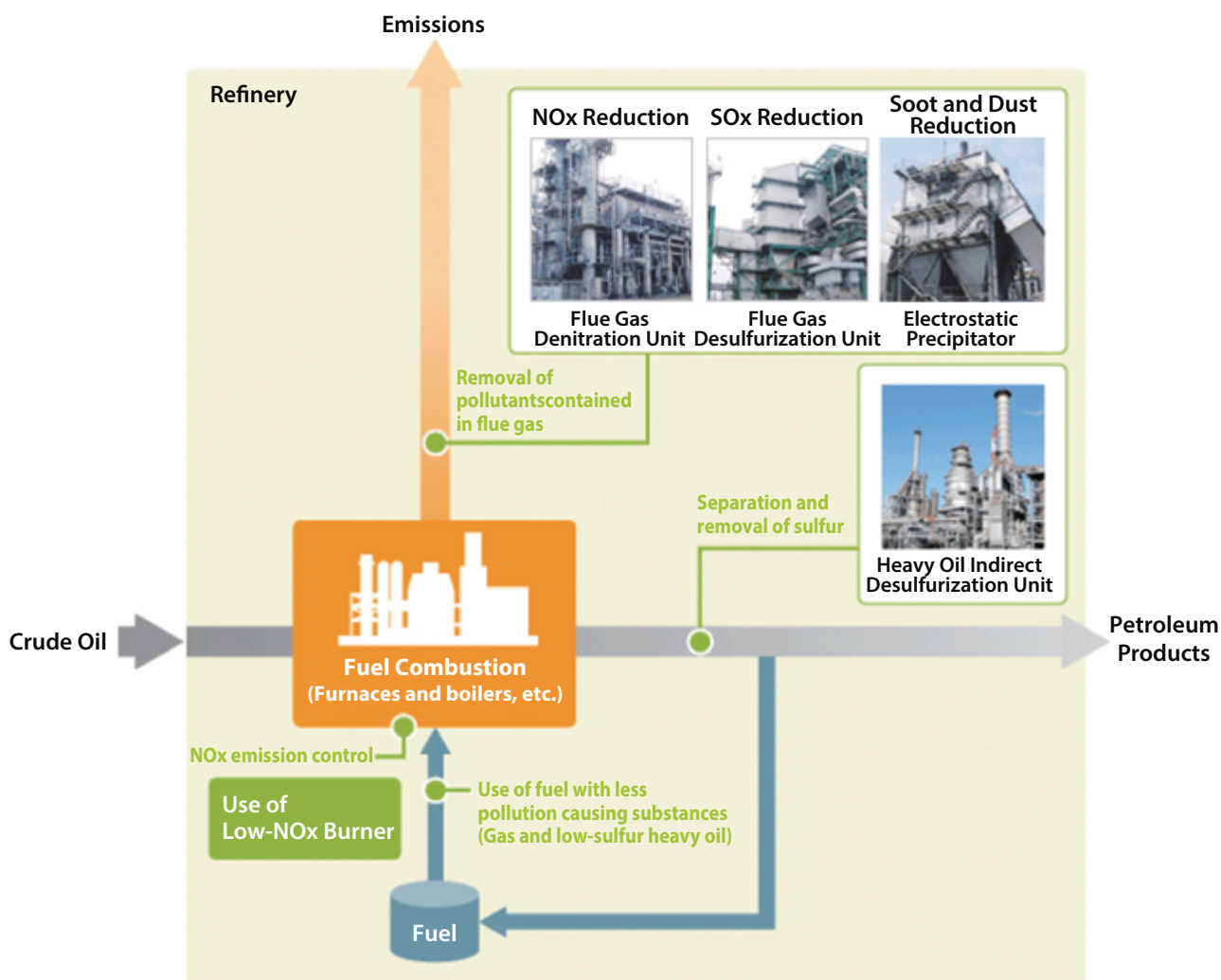
The JX Nippon Oil & Energy Group has initiated a wide range of measures to help control its release of air pollutants into the atmosphere, such as SO<sub>x</sub>, NO<sub>x</sub> and soot and dust.

### Controlling the Release of Air Pollutants

The petroleum product manufacturing process consumes fuel as the necessary energy for distillation and chemical reactions. As a result, sulfur oxides and other air pollutants are released when incinerating impurities found in this fuel. Refining, storage and shipment facilities for crude oil and petroleum products are essentially closed to the environment, but transferring products to fixed roof tanks or filling tank trucks causes VOCs, one of the causes of photochemical smog, to be released into the air.

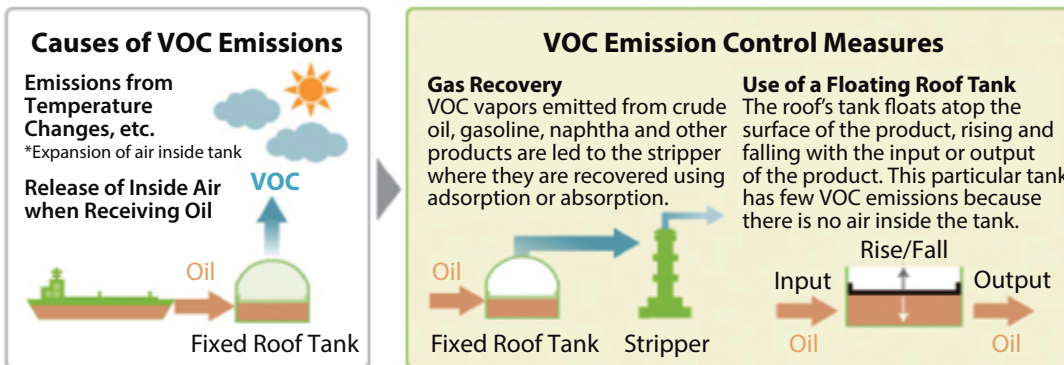
The JX Nippon Oil & Energy Group constantly monitors emissions of these air pollutants and takes the following steps to control their release into the atmosphere.

#### Controlling the Release of Air Pollutants from Flue Gas

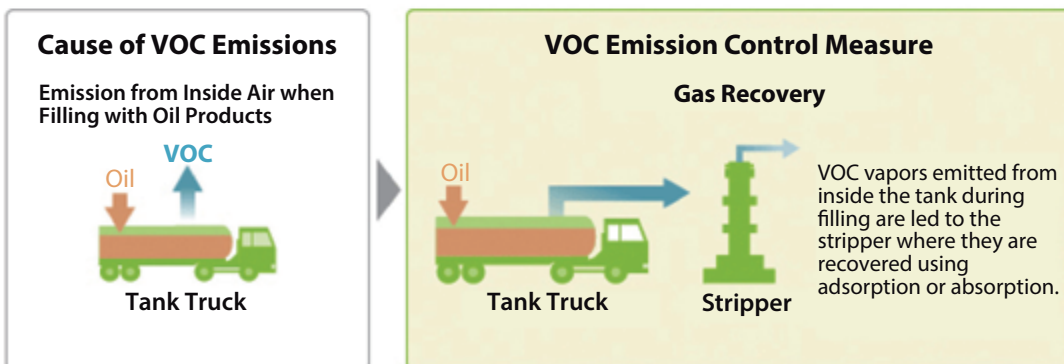


### VOC Emissions at Refineries and Control Measures

#### Storage Tank



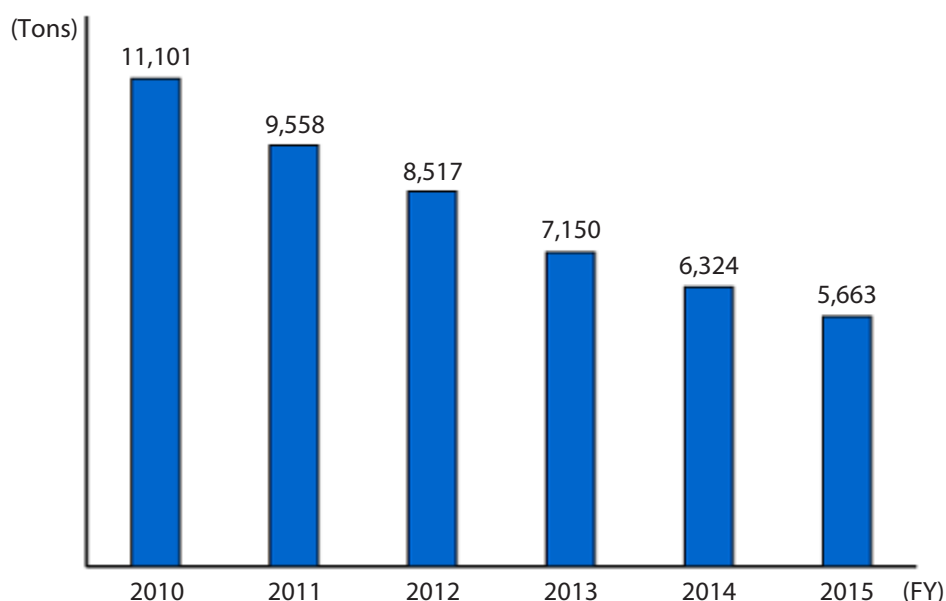
#### Shipment Facilities



### Reducing Sulfur Oxide (SOx) Emissions

We use low-sulfur content gas in our furnaces. We also use desulfurization unit to cleanse sulfur oxide in flue gas produced from our furnaces and boilers, which has enabled us to reduce our emissions significantly below legal limits.

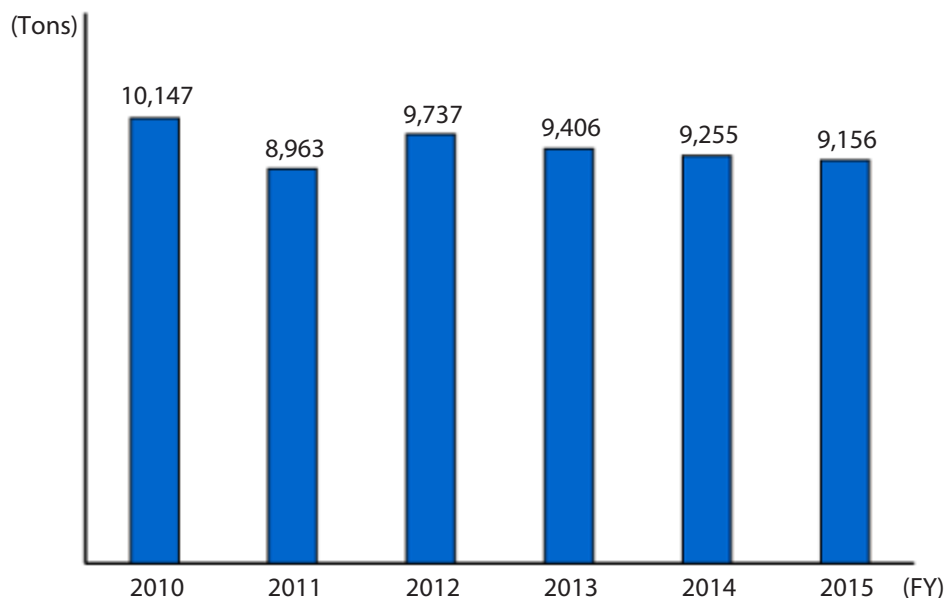
#### SOx Emissions at Our Refineries



## Reducing Nitrogen Oxide (NOx) Emissions

We use low-nitrogen content fuel in our furnaces and boilers as well as low-NOx burners that prevent the generation of NOx in combustion furnaces. We also use desulfurization unit to cleanse flue gas, which has enabled us to reduce our emissions significantly below legal limits.

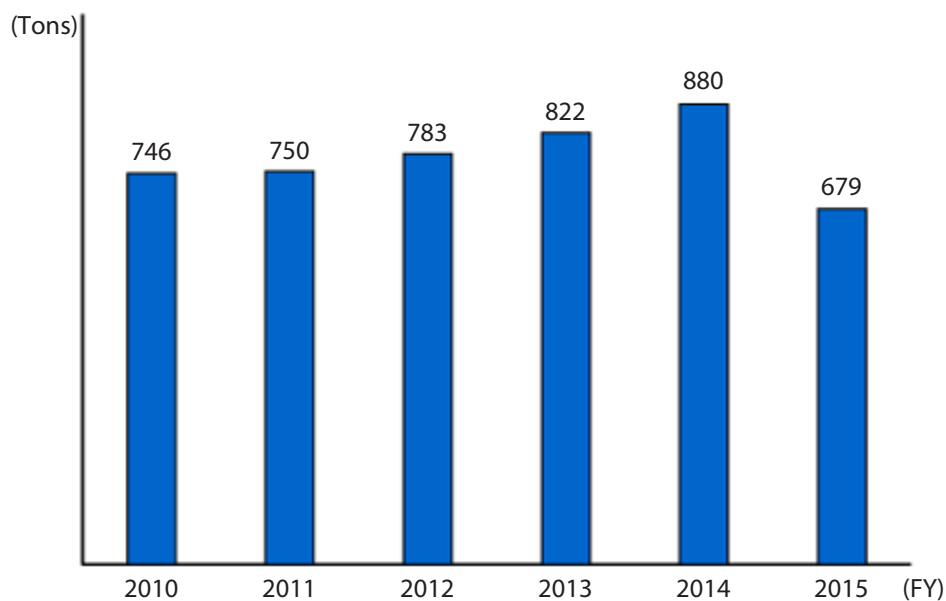
### ■ NOx Emissions at Our Refineries



## Reducing Soot and Dust Emissions

We have installed electrostatic precipitators on boilers that use large amounts of heavy oil in order to reduce soot and dust emissions.

### ■ Soot and Dust Emissions at Our Refineries



## Water Contamination Prevention Measures

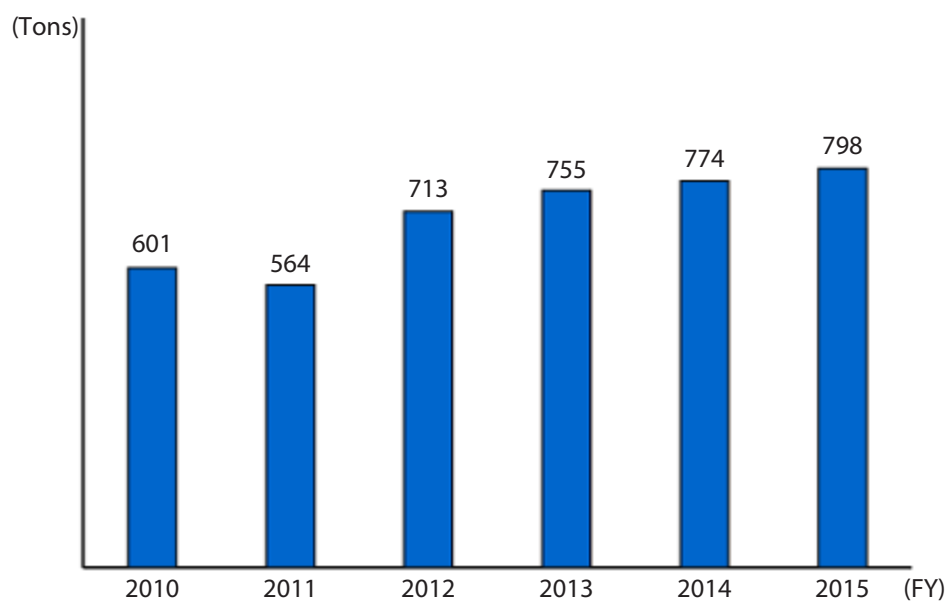
The JX Nippon Oil & Energy Group has initiated a wide range of measures for preventing water contamination.

### Measures at Refineries

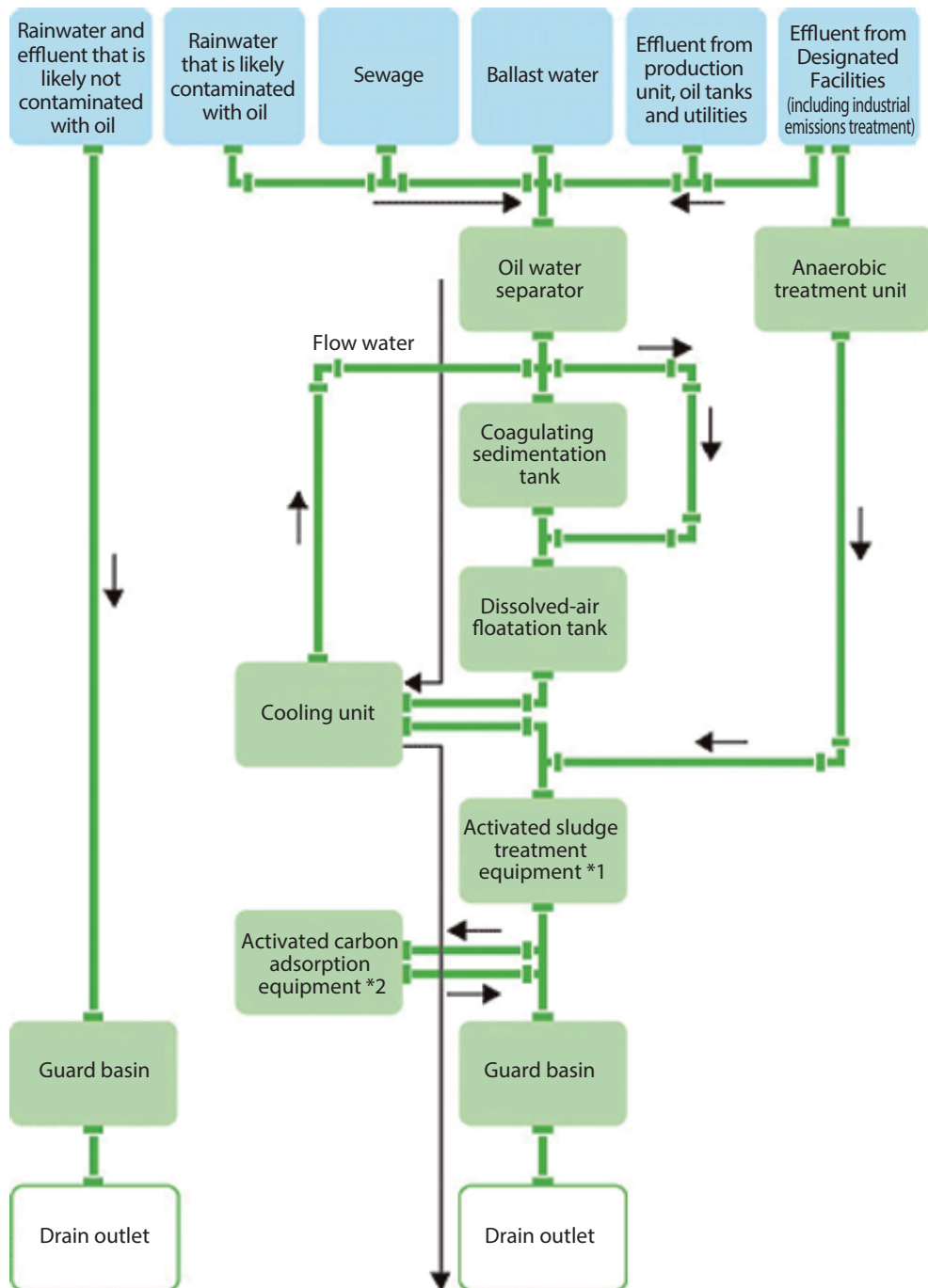
#### ● Effluent Control

Effluent from our refineries is treated according to the system illustrated in the figure below. We carefully monitor the status of effluent treatment using indicators that show pollution concentration such as chemical oxygen demand (COD).

#### ■ COD Pollution Load at Refineries



### Water Treatment System



\*1: Activated sludge treatment unit



2: Activated carbon adsorption unit





## Measures during Transport

### ● Stepping up Our Fight to Prevent Marine Pollution

MARPOL73/78 adopted by the International Maritime Organization (IMO) prohibits the dumping of waste into the world's oceans and requires that signatories take steps to prevent environmental pollution caused by oil.

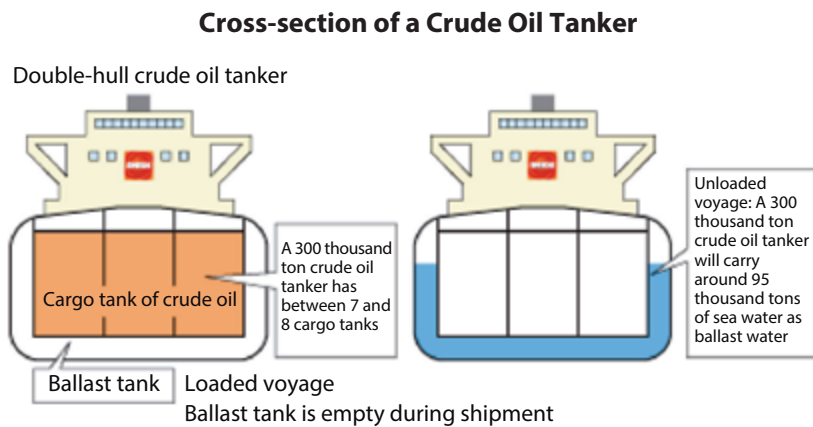
The JX Nippon Oil & Energy Group fully complies with this convention. In addition, we do not dump incinerator ash defined in the convention into the sea, and instead take it back to land for proper disposal. These actions form a part of our much broader commitment to reduce our environmental impacts.

### ● Preventing Ballast Water from Disturbing Local Ecosystems

Oil tankers from Japan bound for oil producing countries carry ballast water (sea water) as weight to maintain stability for unloaded voyages. Yet, this ballast water contains microorganisms and plankton that are in turn carried to the faraway waters off oil producing countries, where if released they can disturb the balance of the local ecosystem.

Since 2004, the JX Nippon Oil & Energy Group has replaced this ballast water while still on the open ocean and installed water treatment systems\* for ballast water on its new vessels in an effort to avoid disturbing the coastal waters of oil producing countries.

(\*A system that keeps the amount of aquatic life in ballast water below certain predetermined standards prior to release.)



### ● Using Ship Bottom Paint that Does Not Contain Endocrine-disrupting Chemicals

We have switched to zinc-based paints after it was pointed out that tributyltin used in our ship bottom paint may be an endocrine-disrupting chemical. Although somewhat less effective against corrosion, we made the change because zinc-based paint has less of an impact on our marine ecosystems.

## Measures at Service Stations

### ● Recycling Car Wash Water

Our service stations consume large amounts of water for car washes. This is why we decided to install recycling equipment to reutilize between 80% and 90% of what was once disposed of as wastewater, ensuring an effective use of our limited water resources. Statistics show that each car wash uses about 150 liters of water, but when recycling 80% of this water, one car's worth of water can now be used to wash upwards of five cars.

### ● Wastewater Treatment

All surface drainage at our service stations passes through an oil separator to remove oil and sludge prior to discharge.



Car washing machine with water recycling function

## Management of Chemical Substances

The JX Nippon Oil & Energy Group is firmly committed to the proper management of chemical substances.

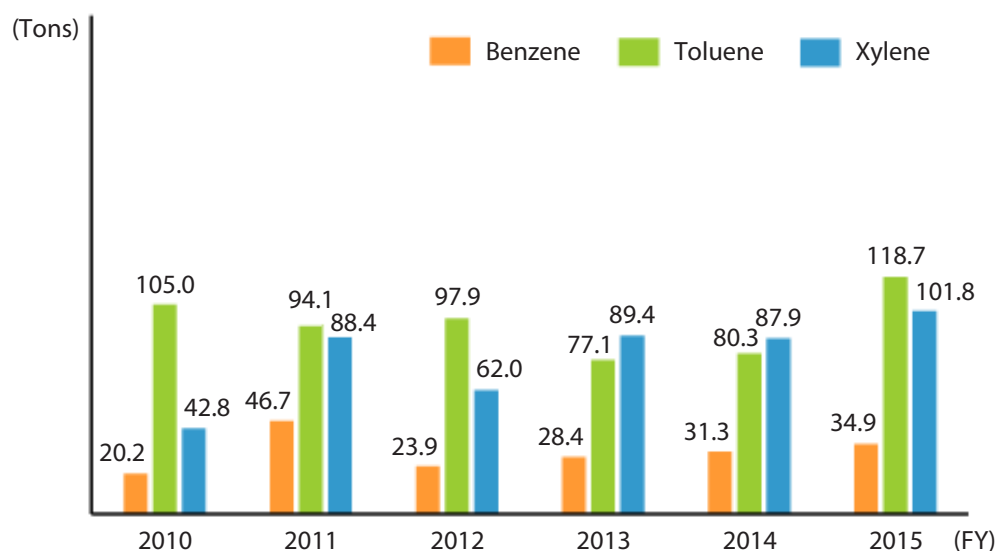
### Monitoring and Managing the Release and Transfer Amounts of Chemical Substances

#### ● Reporting under Japan's Pollutant Release and Transfer Register Act

We have been reporting the release and transfer amounts of designated chemical substances under Japan's Act on Confirmation, etc. of Release Amounts of Specific Chemical Substances in the Environment and Promotion of Improvements to the Management Thereof (Pollutant Release and Transfer Register Act) since April 2001.

In fiscal 2015, 11 of our refineries and plants released and transferred a total of 868.0 tons of these substances, which mainly included benzene, toluene, and xylene, each an additive in gasoline. These chemicals were mainly released and transferred into the air or water.

#### ■ Release Amounts of Benzene, Toluene and Xylene\*



\* Includes 11 refineries and plants of the JX Nippon Oil & Energy Group.

## Reducing the Environmental Impacts of Our Offices

The JX Nippon Oil & Energy Group is actively working to reduce the environmental impacts of its offices by promoting energy conservation, reducing waste and implementing green procurement.

### Measures in Our Offices

#### ● Energy Conservation in Our Offices

Our offices have initiated a variety of energy conservation measures, including automatic turning of lights during lunchtime and in empty rooms, curbing electricity consumption of equipment not being used, changing room temperature settings and dressing down in the summer as part of our Cool Biz program.

#### ● Reducing Waste from Our Offices

In addition to our refineries and plants, we are also actively working to reduce waste produced at our head office and branch offices, which includes following proper sorting and collection practices as well as reducing paper waste. We strive to reduce paper waste by adopting short focus projectors and large sized displays for conference. We also collect waste oil and used oil filters at our service stations.

### Promoting Green Procurement

The JX Nippon Oil & Energy Group promotes green procurement as part of its commitment to reducing environmental impacts across its entire supply chain.

#### ● Green Purchasing

We give priority to purchases of environmental-friendly office equipment and office supplies as well as have actively purchased lower emission vehicles for company use.

#### ● Sourcing Greener Materials

We are sourcing greener materials under our Green Materials Procurement Guidelines.

We have created a list of designated substances to prevent purchases of production materials that contain hazardous substances.

We have also established standards for construction materials that dictate the use of recycled materials and avoidance of materials that contain hazardous substances.

#### ● Encouraging Our Business Partners to Go Green


We continue to work together with our business partners to reduce their impacts on the environment. Specifically, we ask that our business partners implement ISO14001 compliant or equivalent environmental management systems based on our ENEOS Green Procurement Guidelines.

## Developing and Supplying Environmentally-Friendly Products and Services

### Fundamental Approach

The JX Nippon Oil & Energy Group has established its own unique environmentally friendly standards in order to help contribute to environmental protection, and it is also working diligently to reduce impacts on the environment through the development and sale of environmentally-friendly products and services.

### Environmentally-friendly Products and Services

 Visit the following link to learn more about JX Nippon Oil & Energy's environmentally-friendly products and services. (<http://www.noe.jx-group.co.jp/ecoproducts/>) (available only in Japanese)

## Environmental Measures at Our Refineries and Plants

Each of our refineries and plants is working hard to prevent air and water pollution by formulating their own environmental policy, obtaining ISO certification for the environment, and working as a partner with local communities to protect the environment.

### Measures at Each Refinery and Plant

- ▶ Sendai Refinery (<http://www.noe.jx-group.co.jp/company/about/gaiyou/jigyousho/sendai/eco/index.html>)
- ▶ Negishi Refinery (<http://www.noe.jx-group.co.jp/company/about/gaiyou/jigyousho/negishi/eco/index.html>)
- ▶ Mizushima Refinery (<http://www.noe.jx-group.co.jp/company/about/gaiyou/jigyousho/mizushima/eco/index.html>)
- ▶ Marifu Refinery (<http://www.noe.jx-group.co.jp/company/about/gaiyou/jigyousho/marifu/eco/index.html>)
- ▶ Oita Refinery (<http://www.noe.jx-group.co.jp/company/about/gaiyou/jigyousho/oita/eco/index.html>)
- ▶ Muroran Plant (<http://www.noe.jx-group.co.jp/company/about/gaiyou/jigyousho/muroran/eco/index.html>)
- ▶ Kawasaki Plant (<http://www.noe.jx-group.co.jp/company/about/gaiyou/jigyousho/kawasaki/eco/index.html>)
- ▶ Yokohama Plant (<http://www.noe.jx-group.co.jp/company/about/gaiyou/jigyousho/yokohama/eco/index.html>)
- ▶ Chita Plant (<http://www.noe.jx-group.co.jp/company/about/gaiyou/jigyousho/chita/eco/index.html>)
- ▶ Kashima Refinery (<http://www.noe.jx-group.co.jp/company/about/gaiyou/jigyousho/kashima/eco/index.html>)
- ▶ Osaka Refinery (<http://www.noe.jx-group.co.jp/company/about/gaiyou/jigyousho/osaka/eco/index.html>)

(available only in Japanese)

# JX Nippon Oil & Energy CSR Report

## Editorial Policy for the 2015 Edition

CSR Report 2016 uses special feature sections to inform stakeholders about the most important CSR topics of the JX Nippon Oil & Energy Group, which include "Ensuring a Stable Supply of Petroleum," "Responding to Diverse Energy Needs," and "Products that Help Solve Social Issue,"

In addition, specific details pertaining to the company's activities can be found in the Management Report, Corporate Citizenship Report, Social Contribution Activities and Environmental Report sections of this publication. Our goal is to always provide concise, easy-to-understand and honest disclosures. This is why information is also available on the JX Nippon Oil & Energy corporate website. Going forward, JX Nippon Oil & Energy will continue to proactively disclose information and address feedback provided by society and all of its stakeholders so that it can become a trusted company that contributes to the future of energy as well as the establishment of a sustainable society.

## Scope and Timeframe

### Scope

JX Nippon Oil & Energy and its 23 main affiliates (including refineries and plants of the company and its affiliates)

### Timeframe





April 2015 to March 2016

However, certain activities and plans that took place prior to March 2015 or after April 2016 have also been included.

## Published

November 2016

Previous CSR Reports

-  CSR Report 2015 (PDF:9.1MB / 107 pages)  
([http://www.noe.jx-group.co.jp/english/company/current\\_csr\\_report/pdf/report-2015-en.pdf](http://www.noe.jx-group.co.jp/english/company/current_csr_report/pdf/report-2015-en.pdf))
-  CSR Report 2014 (PDF:16.2MB / 103 pages)  
([http://www.noe.jx-group.co.jp/english/company/current\\_csr\\_report/pdf/report-2014-en.pdf](http://www.noe.jx-group.co.jp/english/company/current_csr_report/pdf/report-2014-en.pdf))
-  CSR Report 2013 (PDF:12.7MB / 89 pages)  
([http://www.noe.jx-group.co.jp/english/company/current\\_csr\\_report/pdf/report-2013-en.pdf](http://www.noe.jx-group.co.jp/english/company/current_csr_report/pdf/report-2013-en.pdf))
-  CSR Report 2012 (PDF:13.2MB / 89 pages)  
([http://www.noe.jx-group.co.jp/english/company/current\\_csr\\_report/pdf/report-2012-en.pdf](http://www.noe.jx-group.co.jp/english/company/current_csr_report/pdf/report-2012-en.pdf))
-  CSR Report 2011 (PDF:0.7MB / 20 pages)  
([http://www.noe.jx-group.co.jp/english/company/current\\_csr\\_report/pdf/report-2011-en.pdf](http://www.noe.jx-group.co.jp/english/company/current_csr_report/pdf/report-2011-en.pdf))



Data appearing in this report is from the period spanning April 2015 to March 2016.  
(This also includes certain activities and plans that took place prior to March 2015 or after March 2016)