

# JX Nippon Oil & Energy 2014 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*

### Responding to Diversifying Expectations of Society as a Comprehensive Energy Company

**Tsutomu Sugimori**  
Representative Director and President

## Our Mission is to meet the Diversifying Demands for Energy

The demand structure of energy has undergone significant changes in recent years, marked by a rapid decline in domestic demand for petroleum fuel products, while at the same time we have observed growing demand for new type of energy. JX Nippon Oil & Energy, as a comprehensive energy company and energy conversion company, with its group companies, converts hydrocarbons such as crude oil, coal and natural gas obtained from our planet into forms of energy such as gasoline for cars, kerosene, liquefied petroleum gas used in our homes, and further into electricity itself. We recognize these types of energy are indispensable for every aspect of our lives, from our daily living to industrial activities. Amidst a surge in the transformation of business environment surrounding energy sector, we are now facing the request from our customers to meet the diversifying needs in responsible and stable way.



## Pillars Supporting Sustainable Growth

Our financial results in fiscal year 2013, i.e. the first year of the Second Medium-Term Management Plan (Fiscal 2013 to Fiscal 2015), were unfortunately disappointing one. The mission assigned to me as the president of JX Nippon Oil & Energy is to produce steady results by achieving the plan and ensure strong progress toward further growth. To fulfill this mission, I have positioned the “reinforcement of energy conversion businesses” and “reinforcement of overseas businesses” as central pillars of our driving force to the goal.

As to the “Reinforcement of energy conversion businesses”, electricity business is of particular emphasis within the initiatives because now Electricity System Reform in Japan is ongoing and all of the energy resources of our group, such as crude oil, petroleum fuels coal, natural gas, and other natural energy resources which we are handling can be converted into electricity. So I believe this reform is a good opportunity for our group to extend our advantages over competitors in this sector. Currently, we have a power generation capacity of some 1.5 million kilowatts and we anticipate this to grow further as one of our next core businesses.

In addition, we are focusing on the development of a supply infrastructure of hydrogen, because of its potentials as a clean energy resource in the future. Many automakers today are working on the development of fuel cell vehicles as a next-generation of eco-friendly cars, and I believe that developing a production and sales structure of hydrogen for these fuel cells can make a role best served by JX Nippon Oil & Energy, since we have experiences, know-hows in fuel supply business and a nation-wide supply infrastructure for cars for hundred years. Our goal is to contribute to realization of carbon-free, hydrogen based society by promoting hydrogen filling stations and establishing an efficient hydrogen supply infrastructure.

With regard to the “reinforcement of overseas businesses” as another central pillar for our future growth, there is growing importance for us to expand our presence in overseas lubricants and petrochemicals markets including paraxylene of which we are now holding No.1 supplier position in Asia. We will continue to exert our efforts to acquire the growing demands on global base. In particular for countries in Southeast Asia that have seen accelerating advancements in motorization, we will make the most of our long-standing expertise in refining, energy conservation, distribution and sales to meet this rampant demand for fuel oil, while expanding our presence by grasping new business opportunities.

## Assigning the Utmost Priority to the Safety and Environment

“The Great East Japan Earthquake” has reminded us all about the indispensable role that petroleum products play in our everyday lives. As an energy supplier, we recognize our urgent task is to utilize the lessons learned from the disasters from past earthquakes and tsunamis to reinforce our risk management system with an eye on the possible major natural disasters in the future and to improve the system by incorporating an advanced supply chain mechanism to ensure a stable nation-wide supply even during the time of emergency situation.

Currently, all of our business sites are preparing emergency manuals and have conducted regular training to make our business continuity plan (BCP) more effective from the standpoint of restoring production and shipments as quickly as possible following any major disaster. Furthermore, we have taken measures at our service stations located in regions where a tsunami is likely to strike to prevent water damage, including the installation of waterproof pumps. We are also taking steps to employ mechanisms to support the lives of community residents during a disaster.

At our nationwide network of service stations, we are working on developing these outlets to better serve the diversifying needs of customers. Currently we are focusing on establishing such service stations as to provide our customers with excellent technical support and comfort mainly at our “Dr. Drive” outlets, which are equipped with strong car maintenance service functions. However, in the future, we also believe that service stations will need to supply not only gasoline, diesel oil and kerosene but also hydrogen and electricity as multi energy service stations in response to diversifying needs for energy. In response to our customers’ need, while we continue to expand our network of efficient self-serve stations, we also recognize the need to make the service stations more user-friendly for elderly people and people with disabilities. From the view point of stable supply as a nationwide energy supplier, we will think and work together with local governments in order to solve the problem of securing stable supply in depopulated areas which we are unable to give solution alone.

Reducing environmental impacts through our business is an extremely important issue for us because our mainstay products are made from precious fossil fuel. In order to contribute to the realization of a low-carbon society, we continue to make our refineries more and more energy-efficient and actively develop and market environmentally-friendly products that help reduce carbon emissions, such as biogasoline and lubricants of long-term fuel-saving efficiency.

The basis of above initiatives is safe and stable operations of production facilities and attainment of thorough compliance founded on highly esteemed ethics. We know that this basis cannot be established without daily simple and honest efforts and practice, not by just words anyway, and only after demonstrating the utmost priority to safety, security and the environment in our daily activities, can we earn the trust and support of our stakeholders.

## “Dialogue”, “Trust” and “Challenge” are the Key Words Paving the Way for the Future of Energy

We are now embarking to formulate our long-term future vision that defines our goals for the year 2030. In this process, I regard the dialogue as a very important step when it comes to drawing up a grand design for innovation in the area of energy. I believe more dialogue breeds more trust, and such trust established through dialogue from our various stakeholders will make the only basis for us to challenge to reform society in terms of energy.

Also within our company, establishing mutual trust through frequent communications among employees and officers working together will form the foundation of best performance of all jobs. I believe that the formulation of our long-term future vision will make a precious opportunity for all employees and officers to communicate and deepen the quality of dialogue, and nourish the corporate culture which evaluate sincere communication through dialogue and respect each other.

The key to sustainable growth of our group lies in a working environment where all of our people can fully utilize their skills, expertise and abilities. Responding to changes in the structure of energy demand will require an organization where a diverse pool of human resources can thrive while sharing their unique views and ideas. As a part of such response, we have been



focusing on improving the ratio of female employees and officers and helping them to establish careers in our group, and for that purpose we are tackling the issue of reforming conservative way of thinking of all employees and officers. To respond properly to changes in the energy environment and continue to be a strong entity which gains trust and support from stakeholders and society, we ourselves must keep trying our best to continuously adapt and evolve. The entire JX Nippon Oil & Energy Group will work as one to pave the way for the future of energy, by quickly and flexibly responding to the expectations and demands of society as well as to boldly address the many issues facing us today.

(Reponses to an in-house interview conducted in August 2014)

# Special Feature 1 Building a Resilient Value Chain



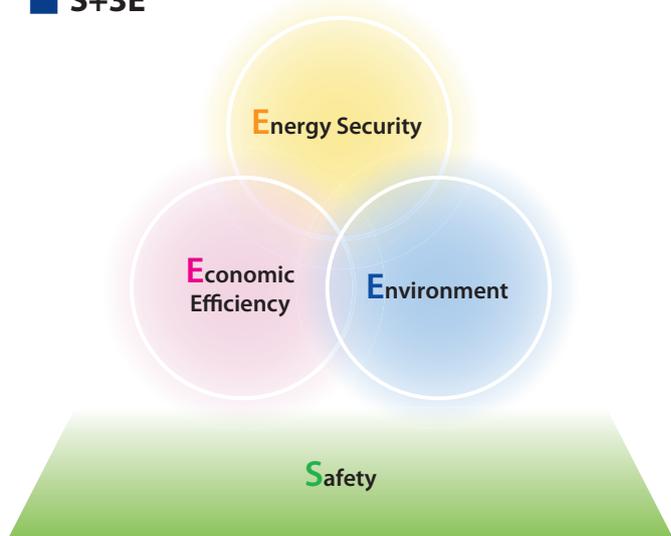
## Energy Situation and Challenges in Japan

The fundamental goal of Japan’s energy policy has been the best mix of the 3Es, or energy security, economic efficiency, and environment. However, the Great East Japan Earthquake of March 2011 and ensuing nuclear accident brought safety to the forefront, resulting in a new S+3E approach.

In fiscal 2012, Japan’s energy self-sufficiency ratio was only around 5% (excluding nuclear power), meaning that Japan depends on imports from overseas for an overwhelming majority of its energy needs. Since Japan was forced to shut down its nuclear power plants, the country’s dependence on fossil fuels such as petroleum (crude oil), coal and natural gas has risen, reaching more than 90% of its energy mix in fiscal 2012.

Given this situation, it has become imperative for Japan to not only procure primarily fossil energy in a stable manner and use it efficiently, but also for the country to strengthen its capacity to handle disasters by making facilities more resilient as well as creating a more independent and diversified energy portfolio. At the same time, Japan must also pursue the development and implementation of new forms of energy, including renewable energy, in order to realize a low-carbon society.

### S+3E



## Achieving Stable Procurement

JX Nippon Oil & Gas Exploration, a core operating company of the JX Group, is developing petroleum, natural gas and other resources in locations around the world, and its operations span from oil field concessions to exploration, development and production. JX Nippon Oil & Energy engages in a wide range of business segments, from importing to refining and marketing. By leveraging these Group-wide synergies, we are striving to realize a stable procurement and supply system.

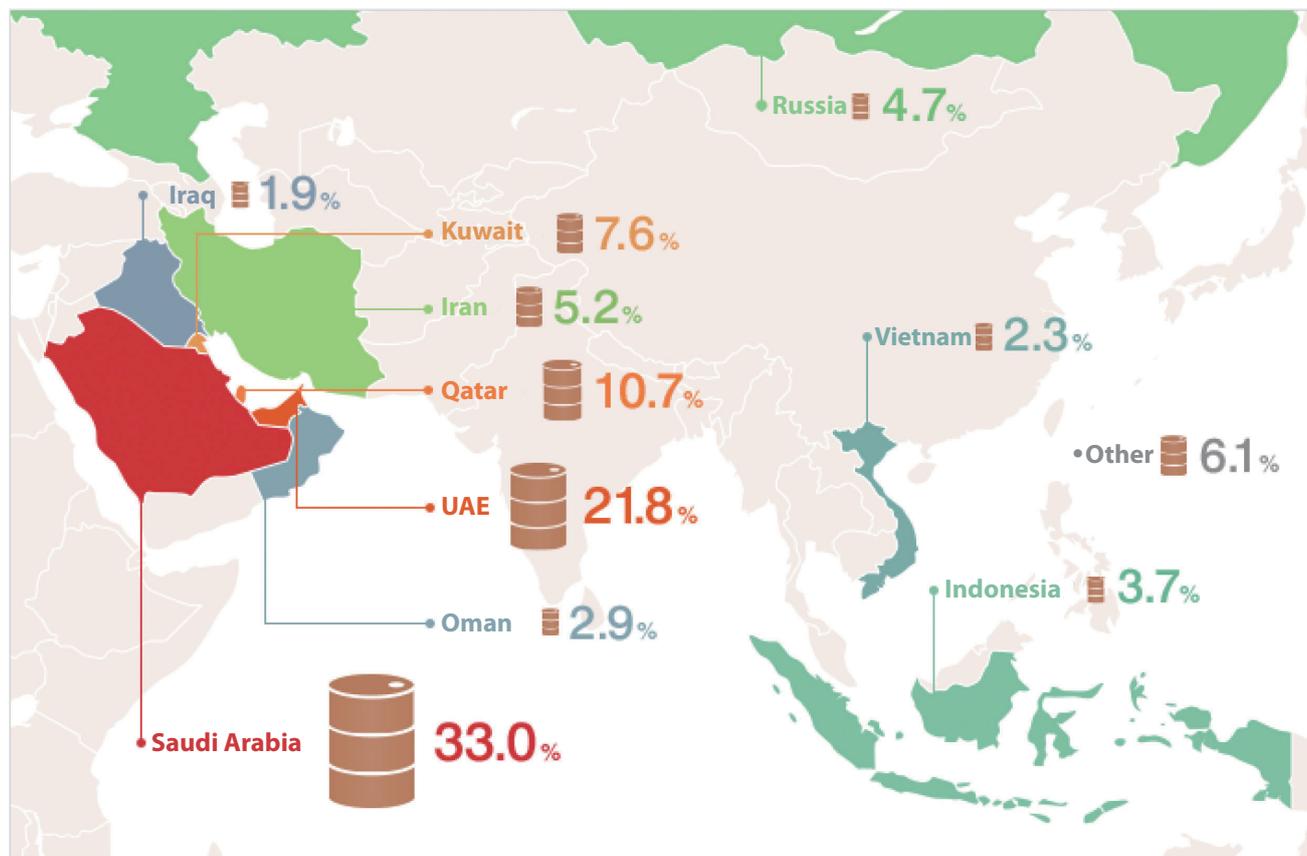
JX Nippon Oil & Energy also runs training programs on petroleum product manufacturing for Middle Eastern countries and other petroleum producing countries as part of its relationship building efforts. These training programs cover the themes of production management, business management and environmental technologies, including our long-standing safe operation and energy conservation practices for refining equipment. Our goal is to build positive and friendly relationships with these countries by contributing to their human resource development initiatives.

Crude oil from the Middle East is transported to Japan aboard Very Large Crude Carriers (VLCC), with the journey taking about 20 days. The amount of crude oil carried in one VLCC only accounts for a little over half a day's worth of the crude oil consumed in Japan, so to ensure stable energy procurement these vessels need to be operated around the clock between petroleum producing countries and Japan.

The worldwide fleet of VLCC is said to be around 630 vessels and currently we operate a fleet of 24 VLCC owned or long-term chartered by ourselves for procuring crude oil.



## Sources of Japan's Crude Oil and Raw Oil Imports (2012)



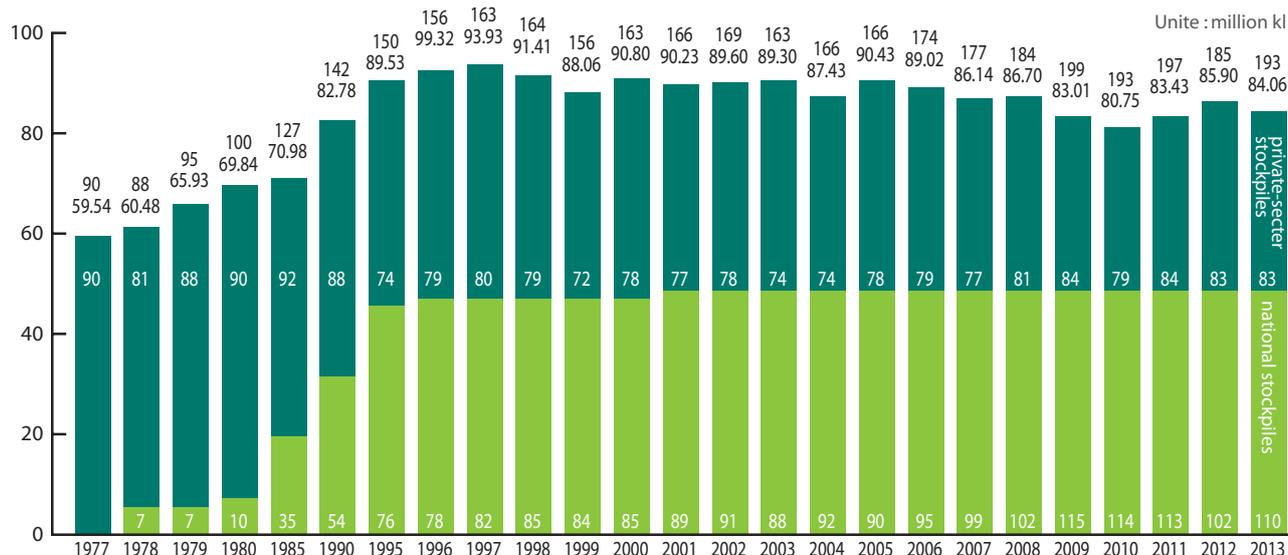
Source: Compiled based on Trade Statistics published by the Ministry of Finance

## Petroleum Stockpiling Initiatives

Given the past experience of two oil crises and the Persian Gulf conflict, Japan requires that private sector oil companies stockpile petroleum from the standpoint of national security. Stockpiling is an important social mission for oil companies because it helps prepare for sudden upheavals in society or other contingencies. JX Nippon Oil & Energy fulfills this obligation by stockpiling petroleum at its refineries and stockpiling terminals.

Japan's total petroleum stockpile at the end of fiscal 2013 comprised 47.96 million kiloliters in national stockpiles (110 days worth of demand) and 36.1 million kiloliters in private-sector stockpiles (83 days worth of demand). Our stockpiles account for about a 30% share of this private-sector stockpile. We fulfill our duty to ensure a stable supply of energy by faithfully meeting our stockpiling mandate through the maintenance of necessary stockpiling facilities.

### Trends in Japan's Petroleum Stockpiling Volume and Days (End of Each Fiscal Year)



Note 1: Stockpiling volume converted to product, and stockpiling days are counted according to the Oil Stockpiling Act method

Note 2: The number of stockpiling days may not match the total sum of days due to rounding

Source: Agency for Natural Resources and Energy

## Kiire Terminal – One of the World's Largest Petroleum Stockpiling Terminal

Kiire Terminal located in Kagoshima City, Kagoshima Prefecture is one of the world's largest intermediary crude oil stockpiling base. The terminal is operated by JX Nippon Oil & Energy Staging Terminal Corporation, which is a subsidiary of JX Nippon Oil & Energy. The facility has the tank capacity to store up to 7.35 million kiloliters of crude oil, which is equivalent to roughly two weeks' worth of the petroleum consumed in Japan. Of this capacity, 2.24 million kiloliters is allocated as national stockpiles (inventory as of the end of fiscal 2013), which is about 5% of Japan's entire national stockpiles.



Kiire Terminal also serves as an intermediary site in which VLCC from petroleum producing countries mainly in the Middle East offload all or part of their crude oil load into the tanks and then this oil is reloaded onto smaller coastal tankers to be transported to refineries. This volume accounts for about 13% of Japan's oil consumption.

The transport of large quantities of crude oil from petroleum producing countries aboard VLCC helps to reduce environmental impacts and lower transport costs.

In fiscal 2013, Kiire Terminal received about 26 different types of crude oil from 12 different countries. The terminal also blends several types of crude oil together based on the needs of each refinery and then ships it out to our refineries across Japan. This makes it possible to refine crude oil to meet changes taking place in the market.

## Building a Reliable Supply Network

Imported crude oil is refined at our refineries into various types of petroleum products and then delivered to customers via depot or service station after being transported by coastal tanker, tank truck or tank car (rail freight).

### Coastal Tanker

Depots located along the coast receive various petroleum products from refineries by coastal tanker.

The coastal tankers used to transport these products to depots can carry a maximum load of between 2,000 kiloliters and 6,000 kiloliters. In some cases, it can take up to five days to transport product from a refinery to a depot.



### Tank Car

Inland depots receive various petroleum products from refineries by tank car. A single freight train can carry between 10 and 20 tank cars at a time and each tank car can carry a maximum load of between 36 tons and 45 tons. Freight trains operate according to a schedule and in some cases it can take up to two days for the product to reach an inland depot.



### Tank Truck

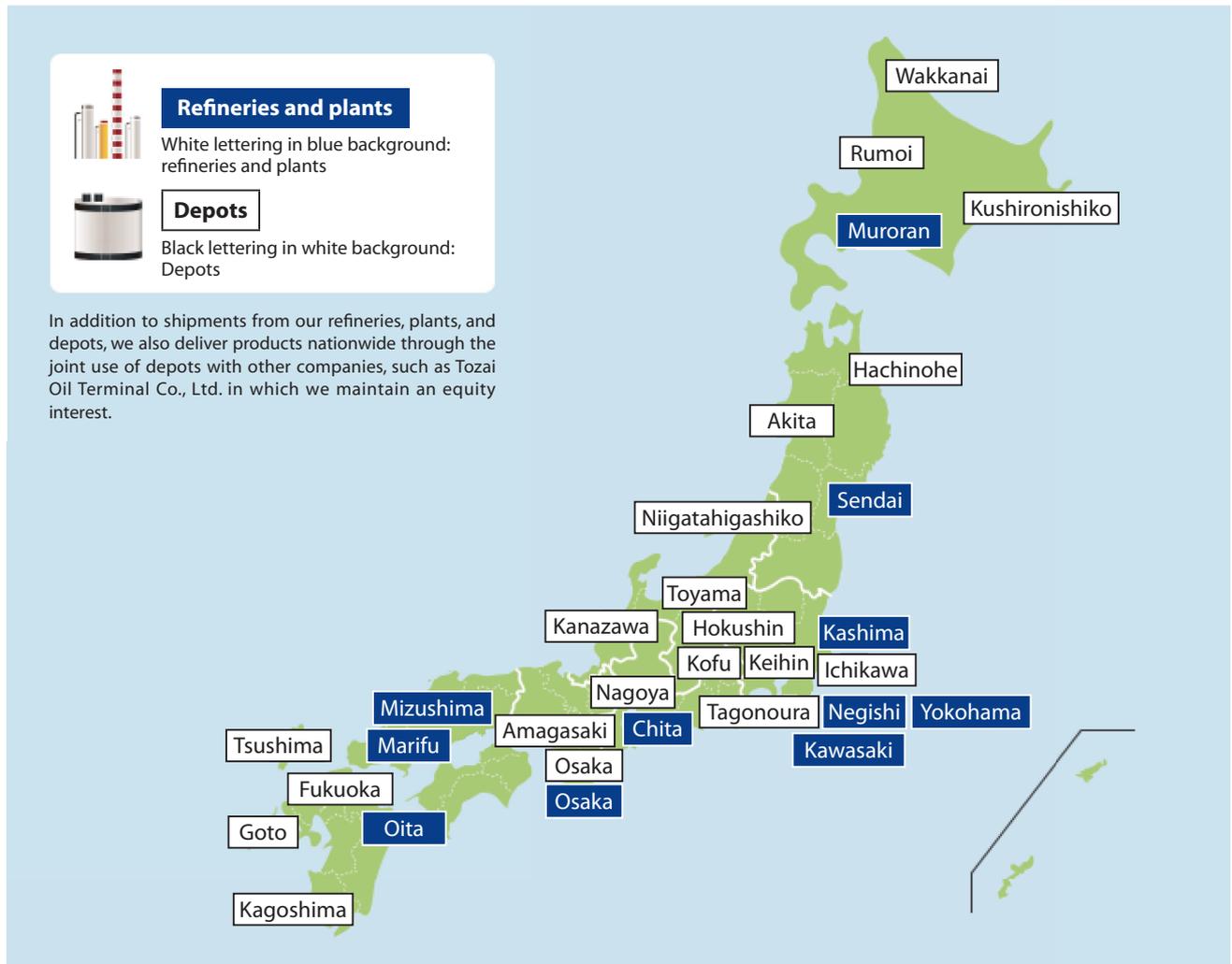
Our tank trucks are equipped with a contamination prevention system\* that reinforces both quality and safety. For efficiency purposes, we also use planned shipments based on service station inventory and previous sales volume data, instead of orders from service stations, and operate larger size semi trailers capable of carrying between 18 and 26 kiloliters.

We are working to enhance our logistics network to achieve greater efficiencies and ensure quality and safety so that petroleum products essential to our daily lives and industry can be delivered nationwide in Japan.



\* Contamination prevention system: A computer controlled system used at service stations that carry gasoline, diesel and other fuel types that prevents offloading after the delivery hose is connected if the product in the tank truck is different from the product in the service station tank.

## Our Primary Manufacturing and Shipment Bases



### Supporting the Warmth and Comfort of Hokkaido

Facilities fueled by kerosene are widely used in Hokkaido for everything from residential to water and road heating. The shipping of kerosene, an important product in demand during the winter months, is one of the most important operational pillars of Hokkaido Energetic, which has played an extensive role in supplying fuel to Hokkaido since it was founded.

Kerosene shipments are sometimes at the mercy of mother nature. On some days heavy snowfall snarls traffic and we end up working from the early morning hours to late at night to get our shipments out. There are many times when we cannot get the mini tank for deliveries close to the home tank of our customer due to snow accumulations, so we have to carry the hose to the tank while trudging through snow that can be more than waist deep. These are precisely the times when we leverage our long-standing experiences and network to fulfill customer expectations and ensure they never run out of fuel.

Our delivery operations involve more than just getting kerosene to the customer. We need to regularly check tanks, pipe work and strainers to ensure kerosene can be used safely and with peace of mind. Going forward, we will continue to contribute to the comfortable living and peace of mind of our customers.



Hokkaido Energetic Co., Ltd.  
 Higashi Sales Office  
 (Left) Hiroyuki Shimoma, Manager  
 (Right) Naruhito Kuzuoka, Delivery Staff

## ● Supporting Japan's Logistics through Detailed Communication with Customers

Truck stations (TS) are located in logistics bases along major arterial roads across Japan and supply diesel to large trucks. ENEOS WING Corporation of the JX Energy Group operates a network of more than 400 service stations nationwide in Japan and it plays a large role in Japanese logistics. This particular TS is located close to the Kobe Maya Pier and everyday some 200 trucks from throughout Japan come here to fill up.

Long-distance driving causes a great deal of physical and mental fatigue. This is precisely why we want drivers to be refreshed after visiting our TS. This TS has a large parking lot that can be used to standby or rest, and the onsite store offers an open and spacious design to relax and rejuvenate. We also want to encourage driver peace of mind by offering a place to perform oil and tire checks. Above all else we want drivers to leave our TS feeling relaxed after talking with our staff and depart happy and ready for the road ahead.

During the morning and evening when there is a rush of customers, we pay particularly close attention to everything we do to avoid potential mistakes while providing seamless customer service. To ensure safe and reliable operations, we conduct regular training exercises and have made many innovations by sharing information and views among staff members.

We believe that smooth and regular communication among staff is the secret behind a happy customer. This is because we have connections with our people, with customers and with society through logistics. Our corporate philosophy is embodied in the catchphrase "Connections." With this in mind, we will continue to support Japanese logistics through our core business.



Isao Kinose  
Kobe-Maya Truck Station Manager  
Kansai Branch  
Sales Division  
ENEOS WING Corporation



## Structural Improvements to Prepare for Emergency Situations

During the Great East Japan Earthquake, Japan's energy supply system for power and utility gas was rendered useless, but petroleum demonstrated its capability in emergency response as a distributed form of energy that can be easily carried and stored. The importance of petroleum was reaffirmed as the last bastion of energy supporting our lives. At the same time, however, this disaster showed that there were challenges to strengthening the supply structure further to ensure stable supplies could be delivered in an emergency situation.

After the earthquake and tsunami, we constructed drum shipment facilities, secured emergency power sources, developed information collection systems, and carried out work on important facilities to prevent damages from tsunami or flooding, in order to strengthen the ability of our refineries, plants and depots to withstand earthquakes and tsunami and to build a stable supply system for areas hit by a disaster.

In terms of logistics, following Japan's Amended Oil Stockpiling Act in November 2012, a plan of supply cooperation at the time of disaster was created jointly among oil refiner-distributors in each of 10 regions spread across Japan detailing ways to work together to provide stable supplies of petroleum in case of disaster. Under this plan, which was submitted to the Ministry of Economy, Trade and Industry, participating companies will work together to ensure stable supplies by sharing information on disaster-affected areas, enabling joint use of storage facilities, and accommodating local government requests for emergency shipments of fuel. With our nationwide sales network, we are a participating member in all 10 of these regions and have prepared for any disaster.

Going forward, we will continue to work closely with our partners to make our value chain even more resilient, both in hard and soft aspects, to prepare for the possible disaster.



Drum can shipments during the Great East Japan Earthquake

## Increasing the Number of Service Stations that Can Supply Fuel after an Earthquake

Because they handle hazardous materials, service stations are subject to rigorous building standards that require their structures to withstand major earthquakes or fires. Among ENEOS-affiliated service stations, we are increasing the number of services that can supply gasoline or diesel even during power outages after an earthquake, with priority given to first responder vehicles used by the police, Japan Self-Defense Forces, fire departments, and hospitals. As of June 2014, 677 of our services stations across Japan had an emergency generator and mobile emergency pumps in place to ensure fueling could be performed even during a blackout.

## New Earthquake Resilient Service Stations that can Withstand Flooding

The Great East Japan Earthquake brought to light the new issue where water damaged from a tsunami damaged electrical equipment and made it impossible to pump fuel. From this lesson and to respond to the broader risks associated with future disasters, we have been rolling out new earthquake-resilient service stations since fiscal 2011 that can pump fuel during a blackout or even after flooding and that provide various forms of support to local communities. These new earthquake-resilient service stations can be found in seven locations in Japan. The first was in Ishinomaki (Miyagi Prefecture), followed by Sendai (Miyagi Prefecture), Onomichi (Hiroshima Prefecture), Yaizu (Shizuoka Prefecture), Sakai (Osaka Prefecture), Sennan (Osaka Prefecture), and Kagoshima (Kagoshima Prefecture). We plan on opening an additional one in Asahi (Chiba Prefecture) before the end of fiscal 2014.

Earthquake resilient	<b>Flooding</b>	Water proof pumps (easily replaceable motors) Emergency generator and fuel cell installed on the 2F
	<b>Power outage</b>	Emergency generator (securing of independent power source)
Energy efficient operations	<b>Photovoltaic power generation</b>	Photovoltaic power generation system (use of renewable energy)
	<b>LED lighting</b>	Use of LED lighting in canopy and indoors (energy efficient light fixtures)
	<b>Fuel cell</b>	High performance power generation and water heating system (ENE-FARM: SOFC type)
Community contributions	<b>Charging station for mobile phones</b>	Provide power source with emergency generator
	<b>Drinking water</b>	Stockpiling of PET bottles (around 2,000)
	<b>Emergency evacuation site</b>	2F and above (temporary evacuation during flooding)

## Special Feature 2 Responding to the Diverse Energy Needs



### How do You Define a Comprehensive Energy Company, which We are Aiming to Become?

JX Nippon Oil & Energy, as a comprehensive energy company and energy conversion company, converts primary energy such as crude oil, coal, natural gas and other natural forms of energy that exists in nature into optimal forms of energy for consumers such as gasoline for cars, heating oil, liquefied petroleum gas used in our homes, and further into electricity itself. We recognize these types of energy are indispensable for every aspect of our lives, from our daily living to industrial activities. We are devoting a great deal of efforts to benefiting people's lives and industrial activities by supplying energy in a stable and efficient manner based on the diverse needs of customers today and in the future.

We are also fully aware of just how important it is to reduce environmental impacts through our business because our mainstay products are made from precious fossil energy. We will continue to pursue the broad possibilities of energy, which span from the advanced and effective use of petroleum to efforts aimed at realizing a low-carbon society.

### Developing a Hydrogen Supply System

Hydrogen is garnering much attention as a new environmentally-friendly form of energy. Hydrogen can be manufactured in several ways, such as by reforming fossil energy or by electrolysis of water, among others, and when consumed hydrogen is a clean form of energy that does not produce CO<sub>2</sub>. In particular, when used in fuel cells, hydrogen can produce electricity through a chemical reaction with oxygen. This results in high energy efficiency and no waste heat associated with the incineration process.

Today, heightening expectations have been directed toward fuel cell vehicles as the ultimate clean energy vehicle of the future. These vehicles will be powered by hydrogen and with a number of major automakers expected to launch fuel cell vehicles one after another in fiscal 2014 and beyond, there is an urgent need to quickly build a hydrogen supply system.

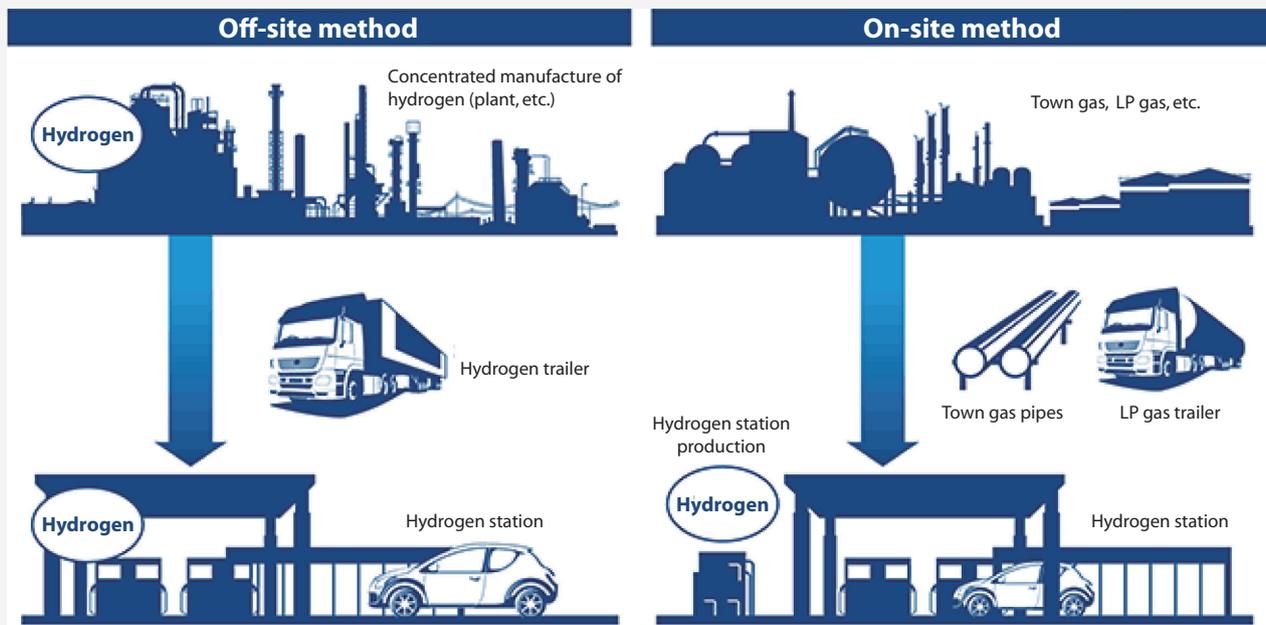
JX Nippon Oil & Energy has developed a number of technologies for the popularization of the fuel cell vehicle, spanning from the manufacture, storage and transport of hydrogen to hydrogen station operations. Supply hydrogen is highly compatible with our conventional business of stably and safely supplying petroleum and natural gas, and represents a field where we can apply our long-standing technological prowess.

Leveraging the knowledge gained from demonstration trials carried out at six test stations set up in six locations across Japan, we began preparations in fiscal 2013 aimed the eventual construction of commercial hydrogen service stations. We are currently reviewing building about 40 of these stations primarily around Japan's four largest urban areas. In October 2014 we established ENEOS Hydrogen Supply & Service Corporation to head up our efforts toward building a hydrogen supply system.

## Japan's First Hydrogen Supply Stations Combined with Service Stations

Following the operation of test stations in Yokohama, Kitakyushu and Suginami (Tokyo), we opened Japan's first hydrogen supply stations combined with service stations in Ebina (Kanagawa Prefecture) and Kaminokura (Aichi Prefecture) as part of a joint research project with New Energy and Industrial Technology Development Organization (NEDO) and the Research Association of Hydrogen Supply/Utilization Technology (HySUT).

The hybrid station in Ebina uses the off-site method where hydrogen is transported in by dedicated trailers, while the hybrid station in Kaminokura uses the on-site method where hydrogen is produced on-site at the service station from LP gas using hydrogen manufacturing equipment. Using these facilities, we have verified the technology for a supply infrastructure and accumulated the expertise needed to create a nationwide network in the future.



### ● Thoughts from the Developer - Aiming to Realize a Clean Hydrogen-based Society -

At the Central Technical Research Laboratory, We have been involved for many years in the development of highly efficient hydrogen manufacturing, transport and refining technologies as well as safety trials at hydrogen stations. Today, one of the greatest challenges is manufacturing high quality hydrogen in a stable manner and supplying it to fuel cell vehicles.

Since hydrogen supplied at stations must pass strict quality standards before it can be provided to the customer, we have repeatedly carried out hydrogen sampling and analysis at hydrogen stations while working to establish quality control methods and practices.

The year 2015 represents a new beginning for hydrogen in that the first hydrogen stations will open to the public following the release of fuel cell vehicles. I hope to inform a large number of customers about the clean energy of hydrogen and encourage them to use it so that they can see the future potential of hydrogen energy.

To establish hydrogen stations as a new form of energy infrastructure closely rooted in the community and our lives, I am working on using my viewpoint as a woman to create innovations that will ensure all customers can use hydrogen stations in a safe, comfortable and convenient manner.



Nanako Obata  
Central Technical Research  
Laboratory

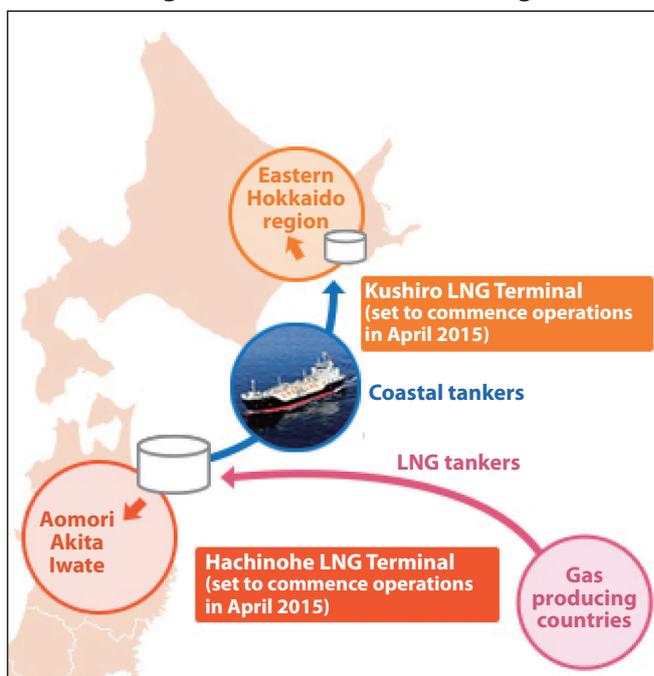
### LNG Terminals Supporting Clean Energy

Natural gas is garnering attention as one form of clean energy for powering a low-carbon society because compared to petroleum there are a wealth of natural gas reserves around the world, it can be supplied in a stable manner, and it produces less CO<sub>2</sub> emissions. To respond to rising demand for natural gas from power generation, utility gas, and industrial applications, JX Nippon Oil & Energy has been expanding its network liquefied natural gas (LNG) terminals.

Following the opening of the Mizushima LNG Terminal (joint investment with The Chugoku Electric Power Co., Inc.) in Kurashiki City, Okayama Prefecture in 2006, we opened the Hachinohe LNG Satellite Terminal in Aomori Prefecture in 2007, which now supplies to three prefectures in the Tohoku region (Aomori, Iwate and Akita). Currently, we are constructing the expanded Hachinohe LNG Terminal that will open in April 2015 as a large-scale import terminal and the Kushiro LNG Terminal in Kushiro, Hokkaido that will serve as a satellite receiving terminal of LNG from coastal tankers.

Once operational, these terminals will expand LNG supplies to Hachinohe, a major industrial area in the Tohoku region, and open up a new supply channel to eastern Hokkaido region, where demand is expected to increase. We also believe this presents us an opportunity to make contributions to the rebuilding effort from the Great East Japan Earthquake and to the development of local economies through our core business.

#### ■ Natural Gas and LNG Supply System for the Northern Tohoku Region and Eastern Hokkaido Region



## Power Generation Business Accommodating Diverse Needs

JX Nippon Oil & Energy is working to address Japan's diversifying electricity needs through its electricity supply business as an independent power producer (IPP) and its electricity sales business as a power producer and supplier (PPS).

### Supporting Electricity Retailing with the Kawasaki Natural Gas Power Generation

We have operated the Kawasaki Natural Gas Power Generation (51% stake) jointly with Tokyo Gas Co., Ltd. since fiscal 2008 after installing state-of-the-art gas turbine combined cycle generators. This large power plant has a generating capacity of 800,000 kilowatts (400,000 kilowatts x 2 turbines) and forms the heart of JX Nippon Oil & Energy's power business.

### Nationwide Network of Mega Solar Power Plants

JX Nippon Oil & Energy has proactively launched mega solar projects utilizing the company's idle lands as part of its ENEOS New Energy Business since fiscal 2012. Currently, we operate mega solar power plants in six locations, including Sendai (Miyagi), Kasumigaura (Ibaraki), Kudamatsu and Kudamatsu No.2 (Yamaguchi), Iwaki (Fukushima), and Akita (Akita). We are also in the process of building 3 more plants located in Ehime, Kagawa and Okinawa prefectures, with the aim of bringing them all online within fiscal 2014. Once new plants are operational, we will operate a total of nine mega solar power plants with a total generating capacity of about 27 megawatts. Going forward, we will continue to expand the generation and use of renewable energy to help realize a low-carbon society.

☞ The operational status of JX's mega solar power plants  
(<http://www.no.ejx-group.co.jp/megasolar/#lastweek>)(available only in Japanese)

## Proposing Comfortable Lifestyles that Utilize Energy More Effectively

### Promoting the Spread of the ENE-FARM Residential Use Fuel Cell and Photovoltaic Power Generation Systems

JX Nippon Oil & Energy, as a comprehensive energy company, is helping to promote the more effective use of energy in people's lives through its efforts to popularize its ENE-FARM residential use fuel cell and photovoltaic power generation systems. These energy systems for the home are steadily being purchased by consumers thanks to subsidies provided at the national and local government level as well as Japan's feed-in tariff system for renewable energy.

ENE-FARM generates electricity using a chemical reaction between hydrogen extracted from gas and oxygen in the air and uses the heat from this process to create hot water, making it very energy efficient.

### Dr. Ouchi-no Energy Household Energy Consulting Service

Under the Dr. Ouchi-no Energy program, ENEOS-certified energy consultants offer free in-home visits to gauge how energy is being used and to propose ways to optimize energy usage for the home. Energy consultants investigate about 60 different items and use interviews to evaluate the energy efficiency of the home's energy systems and home appliances. This information is then used to propose ways to make the home more energy efficient. Started in June 2012, the Dr. Ouchi-no Energy program has 870 energy consultants in every corner of Japan as of September 30, 2014.

The program was also selected as a trial implementation project as part of the Ministry of the Environment's 2014 Home Eco Consulting Promotion Platform Development Project, a distinction it also received in fiscal 2012 and fiscal 2013. In October 2013, we concluded a business partnership agreement with housing equipment and building materials manufacturer LIXIL Corporation and going forward we will cooperate to help consumers lead comfortable lives that are also more energy efficient and environmentally friendly.

## ● Thoughts from an Energy Consultant

I always make it a point to highlight past examples of our work whenever I visit a customer's home in order to capture possible opportunities for repair, installation or maintenance work. I recommend specific ways to reduce energy usage to customers that showed an interest and actually received an energy consultation after hearing about the benefits of energy saving, and I also talk about energy efficient equipment if requested. I've even been asked about remodeling a bathroom before.

Many of my customers already are passionate about energy saving, since they make it a point to avoid unnecessary electricity usage on a daily basis, but they are always happy to learn that there is still more they can do after receiving an energy consultation.

This makes me feel that I am now able to offer even more precise energy saving plans that best suit the needs of the customer's lifestyle through my energy consultations.



Ryo Ogura  
Assistant Manager  
Sales Section, Matsuzaka Office  
West Japan Branch  
ENEOS Globe Energy Co., Ltd.

## ENEOS SOENE Renovations

We propose ENEOS SOENE renovations that incorporate independent and diversified energy systems for existing multi-unit residential buildings. These renovations involve installing ENE-FARM, a photovoltaic power generation system and fuel cells during large-scale remodeling projects to greatly improve the energy efficiency of units. By promoting the energy independence and diversification of each unit, the entire building can be transformed into a energy security minded smart community that is environmentally friendly and resilient in the face of disasters

## Technology Verification through Demonstration Trials at Existing Multi-unit Residential Buildings

In June 2012 we conducted Japan's first ever SOENE renovation experiment in which we installed ENE-FARM, a photovoltaic power generation system and battery on a close to 50 year old building for employee housing. Through this project, we verified primarily three themes.

First is the local generation of energy for local consumption. The goal is to store and maximize surplus electricity produced by photovoltaic power generation systems to reach an electricity self sufficiency ratio of 80%. Currently this figure stands at a little less than 70%, but improvements in system operations should enable us to reach this target.

Second is energy independence. We are verifying the functions needed to achieve energy independence for electricity and hot water in case of power system interruptions. In March 2013 when our employee housing experienced a blackout, we were still able to supply power and hot water.

Third is the efficient supply of energy. We are also examining demand response where system operations are made more efficient and users are encouraged to conserve electricity as well. During the winter of 2013 we were able to reduce peak electricity consumption by about 20% using demand response.

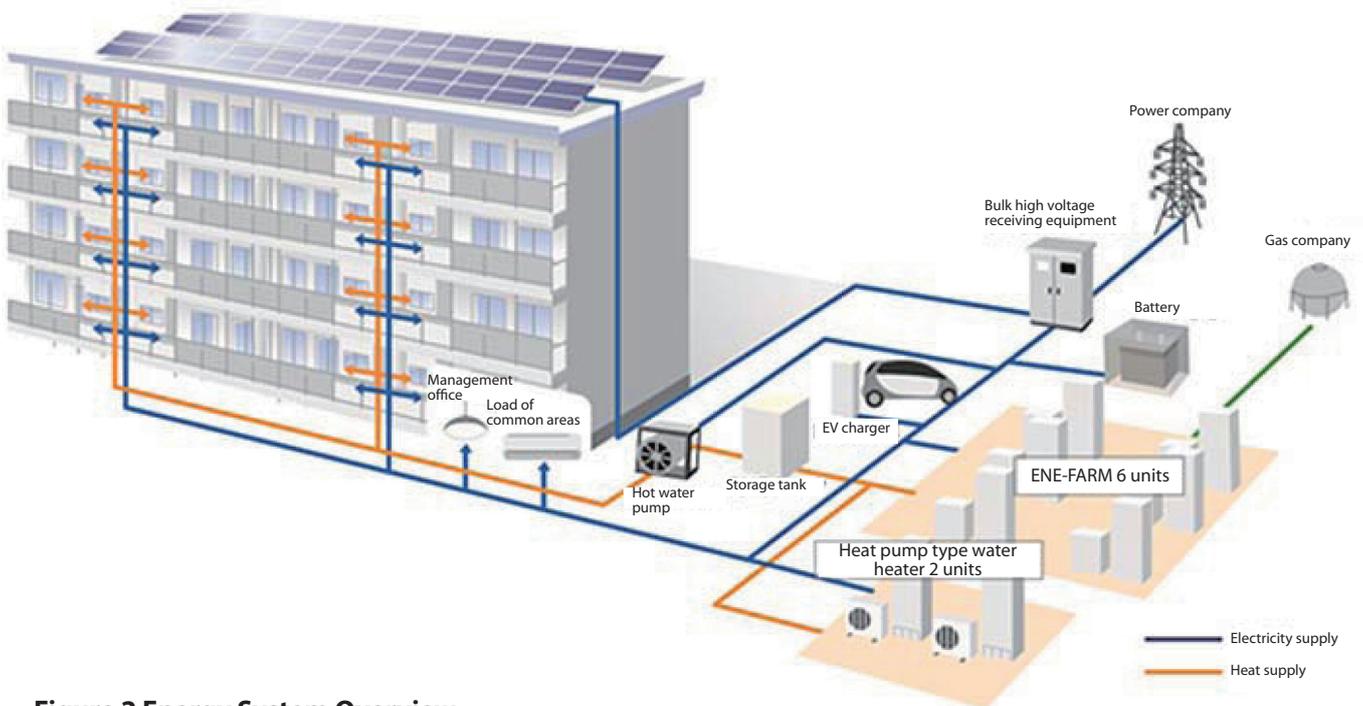
Moving forward, we will continue to verify these technologies and seek to realize environmentally friendly smart communities adept at energy security.



\*1: Visualization of operational status of energy equipment, electricity, LP gas, kerosene and water usage using an HEMS terminal. This makes it possible to monitor energy within the home and control energy efficiency.

\*2: Low-E pair glass cuts the amount of sunlight (infrared light) that enters a room.

**Figure 1 SOENE Renovation Overview**



**Figure 2 Energy System Overview**

## Special Feature 3 Products that Contribute to Develop the Sustainable Society



### Petrochemical Products Supporting Our Lives and the Economy

Petrochemical products play an essential role in the comfort of our daily lives and the growth of economies. Petrochemicals are used in myriad products, from clothing and daily essentials to automobiles and buildings. JX Nippon Oil & Energy leverages its broad expertise spanning from crude oil procurement to oil refining and petrochemical manufacturing to utilize resources effectively and maximize the added-value found in crude oil.

### Established One of the World's Largest Paraxylene Production Base in South Korea Buildings

In recent years demand for paraxylene has grown on the back of robust economic growth in Asia. Paraxylene is used as a basic raw material in polyester, which is used to make textile goods and PET bottles, among other items. JX Nippon Oil & Energy commenced construction on one of the world's largest paraxylene production plant in 2012 in Ulsan Metropolitan City, South Korea. This plant began commercial production in June 2014. Currently, JX Nippon Oil & Energy boasts Asia's largest supply capacity at 3.12 million tons, which is being used to meet an expansive array of market needs.



Paraxylene plant (Ulsan Metropolitan City, South Korea)



Paraxylene's main applications

## ENB – Essential for Manufacturing Synthetic Rubber Used in Auto Parts

One of the most prominently utilized petrochemical products that JX Nippon Oil & Energy produces is ENB, or ethylidene norbornene, which is essential to the manufacture of EPDM synthetic rubber, or ethylene propylene diene methylene linkage rubber. EPDM is highly heat resistant and weather resistant, making it widely used in rubber parts for automotive radiator hoses and window sealing. ENB is also utilized as a raw material for high performance resins and it has proven useful in the development of new materials. Employing our proprietary developed manufacturing technology, we are one of the largest manufacturers of ENB in the world with a leading market share. We are continually working to improve our manufacturing technology and augment production further to continually deliver a stable supply of this important petrochemical as demand increases going forward.



Examples of EPDM rubber in use

## Products and Services Considerate of the Environment and Safety

Various petroleum products help to reduce environmental impacts in various facets, from making production processes for efficient at plants to promoting energy efficient lifestyles. JX Nippon Oil & Energy is committed to developing and supplying more products and services that are environmentally friendly as part of its efforts to protect the environment.

### Lubricants Considerate of the Environment and Safety

Lubricants, which prevent friction between the connecting parts of machinery and improve efficiency, are widely used in an array of places, from automobiles and ship hulls to homes and factories. Lubricants used in automobile bodywork improve efficiency and enhance fuel economy, and lubricants used in home equipment and industrial equipment contribute greatly to energy efficiency.

Lubricants have been transformed together with the evolution of machinery. Today, lubricants are made by carefully controlling their molecular structure. The right type of lubricant is needed to ensure machinery can perform as designed. JX Nippon Oil & Energy is pursuing research and development into a wide range of lubricant products to respond to myriad needs.

In fiscal 2014, we released a number of new lubricants that are consideration of the environment and safety. Our Food Machine Series of lubricants for food machinery are made only from raw materials approved by the US Food and Drug Administration, which guarantees the highest level of food safety in all food manufacturing processes.



Lubricant for high performance food machinery that fulfills rigorous requirements for the food manufacturing process

Research and development on lubricants

(<http://www.no.e.jx-group.co.jp/company/rd/special/story03-1.html>) (available only in Japanese)

## Ecojoule – Latent Heat Thermal Storage Material Widely Used in Houses and Automobiles

Ecojoule is one of the broad lineups of petroleum products developed and marketed by JX Nippon Oil & Energy. Ecojoule is paraffin-based latent heat thermal storage material that stores or releases heat at a set temperature, never over-cooling or over-heating. Ecojoule provides the effective use of heat energy in a broad range of applications, since it bridges the time gap between heat generated and heat used.

For example, when used as building materials for housing, Ecojoule can effectively utilize solar heat and enable a house to store heat when it is used together with conventional building materials. In automotive applications, Ecojoule can be used to supply cool air to passengers even when the start-stop system is active, which extends the time the engine stops.

Ecojoule has been highly valued and appreciated from the industry, and received the grand award of the “CHO” MONODZUKURI Innovative Parts and Components Award 2011, organized by the MONODZUKURI Nippon Conference and Nikkan Kogyo Shimibun, Ltd. (Business & Technology Daily News).



Ecojoule

## Biogasoline Shipment Infrastructure

Biomass fuel made from agricultural crops or wood have received a great deal of attention as an effective energy source to combat global warming because CO<sub>2</sub> emissions produced when burning this fuel have a carbon neutral effect that is not counted as CO<sub>2</sub> emissions. JX Nippon Oil & Energy has devoted a great deal of effort, together with the Government of Japan and petroleum industry, to developing a manufacturing and shipment infrastructure for ETBE blended biogasoline made from plant-derived bioethanol.

Since commencing biogasoline production at our Negishi Refinery in 2009, we have steadily rolled out production and shipment capabilities at our Kashima, Oita, Osaka, Mizushima, Marifu and Muroran refineries, and expanding sales areas in unison. In May 2013, we began selling biogasoline made at our Sendai Refinery, which marked the completion of a Group-wide network of biogasoline manufacturing and shipment infrastructure at all of our refineries.

Although we changed the name of the Muroran Refinery to the Muroran Plant and underwent an organizational restructuring effective April 1, 2014, the new plant continues to manufacture and ship biogasoline.

## Contributing to a Low-carbon Society with Environmentally-Friendly Products

The JX Nippon Oil & Energy Group’s Second Medium-Term Environmental Management Plan (fiscal 2013 to fiscal 2015) has established a target to reduce CO<sub>2</sub> emissions resulting from customer consumption by rolling out more environmentally-friendly products. We stand committed to helping realize a low-carbon society through the continual development and provision of environmentally-friendly products and services.

The JX Nippon Oil & Energy Group’s Second Medium-Term Environmental Management Plan (fiscal 2013 to fiscal 2015) (<http://www.noe.jx-group.co.jp/csr/environment/managment/>) (available only in Japanese)

📄 Environmentally-friendly products

(<http://www.noe.jx-group.co.jp/ecoproducts/>) (available only in Japanese)

# 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.

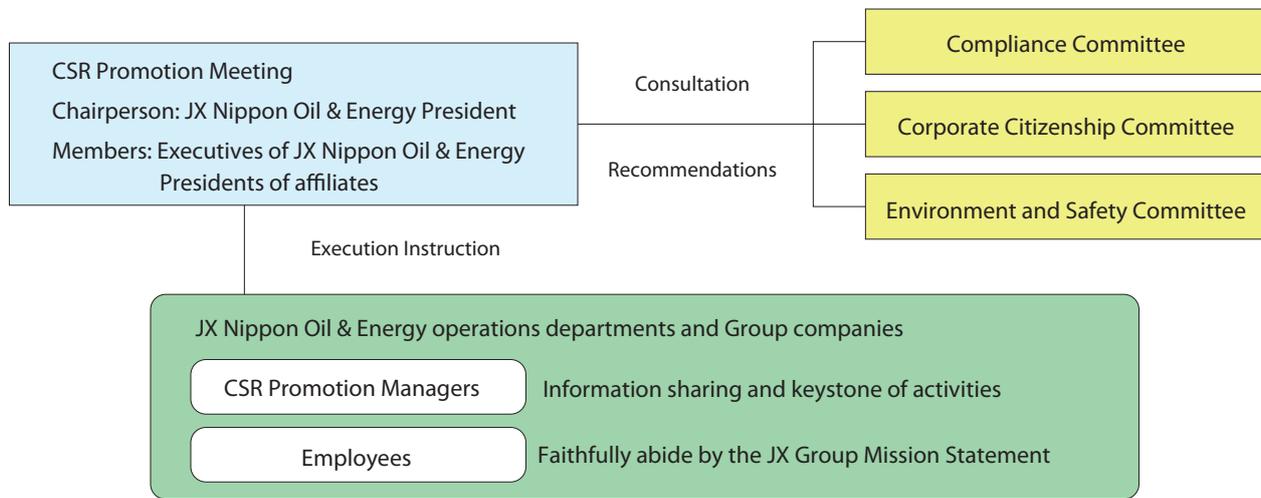
### Basic Policy

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.



## 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 Japan Network, 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.



## 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 72)
- ▶ Encouragement of Human Rights Awareness (page 72)
- ▶ Providing Workplaces where Employees can Thrive (page 65)
- ▶ Business Ethics Training (page 25)
- ▶ Legal Compliance Status Checks (page 24)
- ▶ Providing Employee-friendly Workplaces (page 69)
- ▶ Providing Workplaces where Employees can Thrive (page 65)
- ▶ Environmental Management (page 73)
- ▶ Global Warming Prevention Measures (page 80)
- ▶ Biodiversity Preservation Measures (page 84)
- ▶ Activities for Reducing Our Environmental Impacts (page 86)
- ▶ Developing and Supply Environmentally-Friendly Products and Services (page 98)
- ▶ Business Ethics Training (page 25)
- ▶ Legal Compliance Status Checks (page 24)
- ▶ Whistle-blower System (page 24)

## 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.

### Deficiencies related to the High Pressure Gas Safety Act

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 Press 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.

As a certified business under the High Pressure Gas Safety Act, we have a duty to perform rigorous voluntary safety inspections and as such, we take this situation very seriously and once again offer our deepest regrets to everyone affected.

The JX Nippon Oil & Energy Group will take company-wide measures to rebuild its compliance system so that it can regain the trust of its stakeholders as soon as possible.

- ▣ Measures to Address Deficiencies related to the High Pressure Gas Safety Act  
 (<http://www.noe.jx-group.co.jp/company/about/gaiyou/jigyousho/mizushima/observance/index.html>)  
 (available only in Japanese)

## 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 2013, legal compliance status checks were held at all JX Nippon Oil & Energy Group sites as well as 22 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.

## Whistle-blower System (Compliance Hotline)

A whistle-blowing hotline has been established both inside and outside the company to enable the employees of JX Nippon Oil & Energy (including contract, part-time and temporary workers) as well as the 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 whistleblower system, starting from January 2013 we have made anonymous reporting possible and we have set up new hotlines at the Central Technical Research Laboratory and all of our branch office, refineries and plants.

## 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 our employees 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 employees and other training sessions on a wide range of subject matter, including various laws such as Japan's Anti-Monopoly Act, the Act Against Delay in Payment of Subcontract Proceeds, etc., to Subcontractors, the Securities and Exchange Act (insider trading portion), the Personal Information Protection Act, the Trademark Act as well as response anti-social forces, company rules and how to draft contracts, among others.

## Intranet-based Training

### 1. Updates on revisions to laws

Information on revisions made to various laws is made available to all through the company's intranet system in list form.

### 2. Improving knowledge of legal matters

We publish a single A4-sized file on our intranet that contains an easy-to-understand summary of basic legal knowledge, social norms and company rules.

### 3. "The Fountain of Compliance Knowledge" – Legal Communication

We regularly publish a single A4-sized page that contains an easy-to-understand summary of company rules, social manners, current events and basic legal knowledge on our intranet system.

### 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 help foster greater 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 2013, we held a number of business ethics training sessions, including as part as rank-based training programs for promotions and also business ethics training using case studies and examples of where corporate scandals were prevented for every workplace at our departments, refineries, and branch offices. All told, 34 sessions were held with a total of around 900 participants. We will continue to organize and plan effective training sessions moving forward.

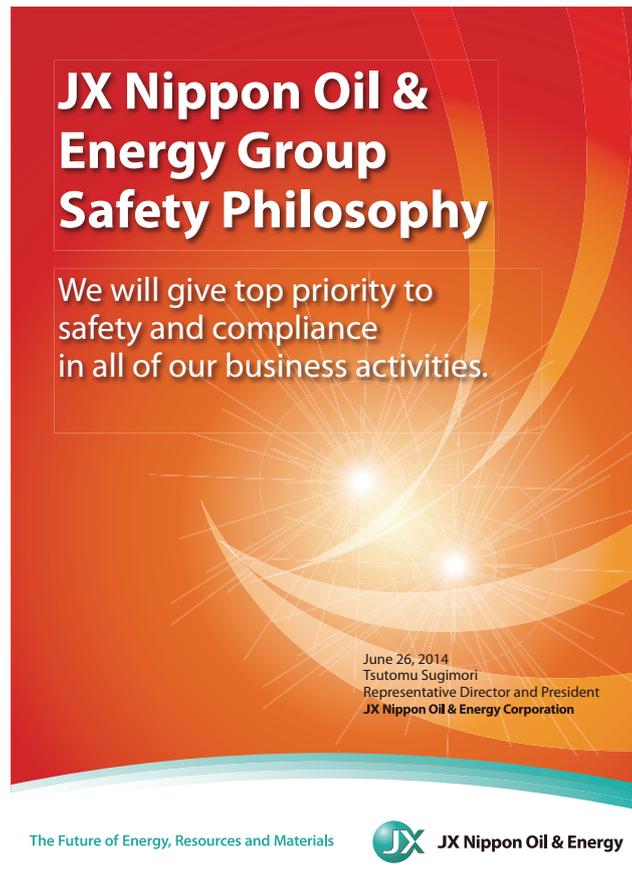
## Initiatives Targeting Our Overseas Subsidiaries

Personnel from the head office visited our overseas subsidiaries in China and South Korea in fiscal 2013 to check the status of compliance and provide guidance where necessary. In fiscal 2014, we plan on organizing the same compliance inspection program for our overseas subsidiaries in Southeast Asia and Australia.

## 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

## Earthquake Measures for Refineries and Plants

We are implementing the following initiatives as earthquake measures for our refineries and plants.

### 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 2015.

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

### 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 100 of our 220 floating-roof tanks subject to this requirement. We plan on completing work on the remaining tanks prior to the statutory deadline of the end of 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 performance evaluations on critical facilities.



Example of brace retrofitting for a spherical tank

### Measures to Mitigate Damages from a Disaster

We have installed a system at all of our refineries and plants that automatically shuts down equipment during an earthquake depending on the intensity. This system uses seismographs to ensure equipment is shutdown in speedy and safe manner should a major earthquake strike.

## 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

● **We are working to enhance or 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 (Available only in Japanese)

- ▶ 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>)

# 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 (page 33)**

- Crisis and Emergency Response
- Comprehensive Disaster Preparedness Measures

## **Information Security (page 35)**

- Raising Awareness and Improving Knowledge of 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 established a comprehensive disaster preparedness system that includes a business continuity plan for the occurrence of a major earthquake directly below the Greater Tokyo Metropolitan Area or a Nankai Trough Mega thrust earthquake, or the occurrence of a new strain of influenza.

## 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 an emergency situation.
  - (1) 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 an 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 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 Preparedness Measures

### Earthquake Measures

We have created three scenarios for a major earthquake that strikes directly under the Greater Tokyo Metropolitan Area or a Nankai Trough mega thrust earthquake and have established a response plan for each.

#### 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 also created a mutual support system linking our refineries and are also in the process of establishing an emergency transport and sales system for our petroleum products.

#### 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, and (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.

We have formulated a new basic policy on earthquake and tsunami measures given the challenges that arose during the repeated disaster response activities implemented in the wake of the Great East Japan Earthquake. Under this policy, measures to safeguard human life will be implemented, regardless of probability, while other measures will be implemented in consideration of the probability and scale of damages.

### Measures Against New Strains of Influenza

We have prepared a manual called Response Guidelines for New Strains of Influenza in order to be prepared to deal with the threat of a possible pandemic of a highly-pathogenic avian influenza. These guidelines will help us to check the safety of employees and their families as well as ensure the continuity of our businesses in the event of a pandemic.

In addition, we are currently working on drafting a supply chain continuity plan for petroleum and other products following the enactment of the Act on Special Measures to Counteract New Strains of Influenza in April 2013 as well as the Pandemic Influenza Preparedness Action Plan of the Japanese Government and Guidelines for the Prevention and Control of Pandemic Influenza in June 2013.

## 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 divulcation 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.

# 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 (page 37)

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- ENEOS SOENE Renovations
- Efforts to Establish a Hydrogen Supply Infrastructure in Advance of the Launch of Fuel Cell Vehicles
- Petrochemical Products
- Customer-centric R&D

### ▶ Quality Assurance (page 39)

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## 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 Energy Business

Based on the three pillars of “energy efficiency”, “renewable energy” and “independence”, JX Nippon Oil & Energy is advancing the ENEOS New 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 through the popularization of the ENE-FARM residential use fuel cell and photovoltaic power generation systems as well as through mega solar power plant projects built on our idle land.

- ▶ ENE-FARM (<http://www.no.ejx-group.co.jp/lande/product/fuelcell/index.html>)  
(available only in Japanese)
- ▶ Photovoltaic power generation systems (<http://www.no.ejx-group.co.jp/lande/product/solar/index.html>)  
(available only in Japanese)
- ☒ Mega solar power plant business (<http://www.no.ejx-group.co.jp/megasolar/>)  
(available only in Japanese)

### Dr. Ouchi-no Energy

Dr. Ouchi-no 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 new energy 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 800 energy consultants spread across every prefecture in Japan.

- ▶ Dr. Ouchi-no Energy (<http://www.no.ejx-group.co.jp/lande/product/doctor/index.html>) (available only in Japanese)
- ☒ Dr. Ouchi-no Energy Dedicated Website (<http://www.no.ejx-group.co.jp/uchiene/index.html>) (available only in Japanese)

### ENEOS SOENE Renovations

JX Nippon Oil & Energy proposes ENEOS SOENE renovations that incorporate independent and distributed energy systems for existing multi-unit residential buildings that are installed during large renovations. We are currently carrying out a demonstration test at one of our company-owned employee housing buildings.

- ☒ ENEOS SOENE Renovations (<http://www.no.ejx-group.co.jp/newenergy/service/soene-rv/index.html>)  
(available only in Japanese)

## Efforts to Establish a Hydrogen Supply Infrastructure in Advance of the Launch of Fuel Cell Vehicles

JX Nippon Oil & Energy has begun constructing hydrogen stations at 19 bases and 23 locations in the Greater Tokyo and Chukyo metropolitan areas in advance of the anticipated market launch of fuel cell vehicles slated for sometime in fiscal 2014\*.

As part of its efforts to build a hydrogen supply system, we established ENEOS Hydrogen Supply & Service Corporation in October 2014.

▶ [http://www.noe.jx-group.co.jp/newsrelease/2014/20140716\\_01\\_0794529.html](http://www.noe.jx-group.co.jp/newsrelease/2014/20140716_01_0794529.html) (available only in Japanese)

Hydrogen is expected to become a prominent energy source that contributes to energy security and the realization of a low-carbon society. Therefore, we are striving to establish a foundation for a new hydrogen supply business and to popularize independent and distributed energy systems rooted in local communities.

\* Selected for the Ministry of Economy, Trade and Industry's Fuel Cell Vehicle Hydrogen Supply Facility Installation Grant Program.

## Petrochemical Products

Many of the things that support our way of life and economy, from apparel and daily necessities to airplanes and buildings, are made from petrochemical products, which use crude oil or natural gas as feedstock. Petrochemical products include most notably ethylene as well as basic chemicals used in a wide range of applications and processed specialty chemicals that have their own unique qualities and functions.

In recent years, demand for paraxylene, a basic component in polyester used to make textile products and PET bottles, has seen a sharp increase in the high growth markets of Asia. As a result, JX Nippon Oil & Energy completed construction on a paraxylene plant in South Korea earlier in 2014 and began commercial production in June 2014 in order to respond to rising demand for the product in Asia.

JX Nippon Oil & Energy is working to build a petrochemical production system for ethylene, propylene, benzene and paraxylene, in order to maximize added value in the petroleum refining process.

Additionally, in our pursuit of new possibilities for crude oil, we will leverage our long-standing strengths, technologies and expertise in chemical manufacturing for the supply of sophisticated materials that meet the diverse needs of customers. To accomplish this, we will work together with our partners and address R&D and stable supply systems using a global approach.



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 contribute to energy conservation in order to fulfill the needs of both customers and society alike.

▶ R&D ([http://www.noe.jx-group.co.jp/english/company/research\\_and\\_development/index.html](http://www.noe.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.

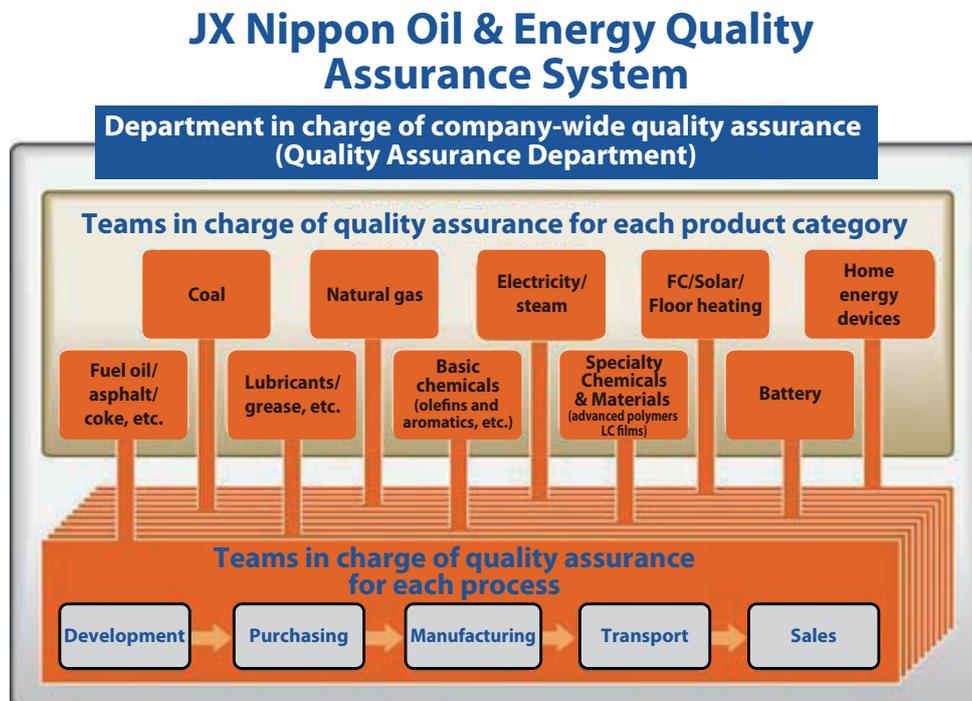
### JX Nippon Oil & Energy Group Quality Policy

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.

### Quality Assurance System

Under our policy on quality, the Quality Assurance Department monitors the entire company's quality assurance practices, while separate quality assurance teams have been set up to monitor quality control processes for each product category.



## Quality Control

### Activities on the Production Floor

Our refineries and plants have initiated comprehensive activities aimed at eliminating quality complaints and troubles before they happen.

#### 1. Activities to share information on quality complaints or troubles across all departments

We have created a database on quality complaints and troubles that have occurred at our refineries and plants to share this information across all of these sites in order to prevent these issues from happening again.

#### 2. Activities to standardize work processes and technical standards

We encourage the sharing of best work practices from each of our business sites at our refineries and plants, and we are promoting standardization and visualization in the workplace to prevent quality troubles before they occur.

In addition, we have established technical certification standards to maintain and enhance the technical prowess of examiners as well as visualize their skill levels.

#### 3. Activities to inspect the quality control system

We inspect the quality control systems in place at our refineries and plants to identify and share their strengths and weaknesses, which in turn helps us improve quality control practices at each site.

We conduct special inspections on new processes whenever new unit is installed to mitigate risks associated with the occurrence of quality troubles.

### Measures on the Frontlines of Logistics

We work together with our transportation partners to control quality, maintain safety as well as prevent mistakes throughout the entire logistics value chain, from product loading to final delivery.

One of our main activities is the use of tank trucks equipped with high-tech\* contamination prevention equipment to carry gasoline, kerosene and diesel fuel. We are also stepping up comprehensive onsite checks involving both customer and tank truck driver at the delivery site. This shows that we are taking both hard and soft measures to prevent accidents. During the ground transport of lubricant products we ensure that our customer and the driver double check the destination, product name, mode of packing, number of units and appearance at the time of delivery to prevent potential issues from arising.

Additionally, we have created detailed training manuals and informative textbooks for tank truck drivers to promote full compliance with work procedures and safe operations..

\* High tech contamination prevention equipment forms part of a comprehensive system for preventing accidental mixing in which product information is centrally managed from when it is loaded at the shipment terminal to when it is offloaded at a service station or customer's site. At the time of delivery, the product type is identified with the petroleum product key on the receiving tank and offloading only begins after a sensor on the tank trunk matches the product type with the connected tank.

### Measures on the Frontlines of Sales

At service stations, where our products are delivered to end customers, we work together with service station operators to closely manage product quality and enhance customer satisfaction.

As part of our quality control practices, we utilize our service station facility safety inspection record sheets to perform daily, weekly and monthly inspections on service station facilities, including measuring devices and underground tanks, to ensure quality.

We also utilize an educational DVD for service stations called "Preventing Water Contamination" and the "Service Station Quality Training Manual" to improve the knowledge and skills of attendants in order to respond quickly and appropriately in the event of trouble.

To enhance customer satisfaction, we implement customer satisfaction training programs and perform customer-centric checks using mystery shoppers. Our latest mystery shopper survey conducted in fiscal 2013 targeted 4,581 service stations across Japan, with 3,184, or 70%, receiving the highest possible score of S/A.

## Customer Satisfaction and Quality Month

Since FY 2013, JX Nippon Oil & Energy Group has changed name of designated each November as "Customer Satisfaction and Quality Month" as part of our commitment to maintain heightened company-wide awareness towards customer satisfaction and quality.

During November each and every workplace works together with partner companies through a wide range of activities to enhance customer satisfaction and quality.

### Theme for Fiscal 2013

## Faithfully carrying out common practices to secure new growth

### Fiscal 2013 Slogan

### *Link with the TASUKI Spirit, Connect with SHINRAI— ENEOS Quality Paving the Way for the Future*

*(TASUKI means baton in Japanese and refers to the act of passing on one's efforts to the next person.  
\*SHINRAI means trust in Japanese)*

*(Created by: Hitoshi Miyazaki, General Administration Group, Kashima Refinery, Kashima Oil Co., Ltd.)*

In fiscal 2013, 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 11,600 entries that were submitted.

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

On November 1, the President of JX Nippon Oil & Energy shared the following message with employees of group companies and partner companies to call for solid initiatives to be undertaken during Customer Satisfaction and Quality Month.

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

Starting this year we changed the name of Quality Month to Customer Satisfaction and Quality Month as part of a new initiative to combine our TASUKI spirit activities, carried out company-wide to share and act on our customer satisfaction philosophy adopted in fiscal 2011, with Quality Month.

To enhance customer satisfaction, first we need to fully and thoroughly practice the TASUKI spirit across the company connect these efforts up with our next goal.

In addition, to solve quality, safety and compliance issues, each and every employee needs to return to our roots and be firmly aware of their workplace, work duties, and current conditions to continually pass on the TASUKI spirit through their work. I look forward to everyone's proactive efforts toward achieving new growth in the future.

### 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
- Visits to affiliates and information sharing sessions as well as participation in lectures by external organizations

In addition to the above, we hosted lectures at the head office building led by guest speakers as well as solicited employees for humorous poems and disseminated information on customer satisfaction and quality.

## ISO9001 Certification

JX Nippon Oil & Energy has acquired ISO9001 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 April 2014

Business Sites Having Obtained Certification		Month of Certification
Specialty Chemicals & Materials Company	Advanced Polymers Business Unit	September 2001
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
Terminals	Chita Plant	February 1994
	Sodegaura Terminal	October 1996
Osaka Refinery, Osaka International Refining Company, Limited.		April 1996
Kashima Refinery, Kashima Oil Co., Ltd.		November 1995

## 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 2013, we received a total of about 23,500 enquiries and customer service center representatives answered a wide range of questions that included everything from ENEOS credit card program benefits to our products.

### As for enquiries about our service stations

ENEOS service stations can be found in approximately 11,000 locations (as of July 31, 2014) across Japan, but each is operated by a separate corporate entity.

As a result, enquiries about the operations of individual service stations are handled by the company in charge of operations. However, this information is shared with JX Nippon Oil & Energy to ensure that we can monitor each company's commitment to enhancing customer satisfaction.

# Pursuing Safety and Compliance for Quality Reassurance

## Quality Reassurance at JX Nippon Oil & Energy

JX Nippon Oil & Energy considers safety\* and compliance in quality to be one of the most important factors for the peace of mind of its customers.

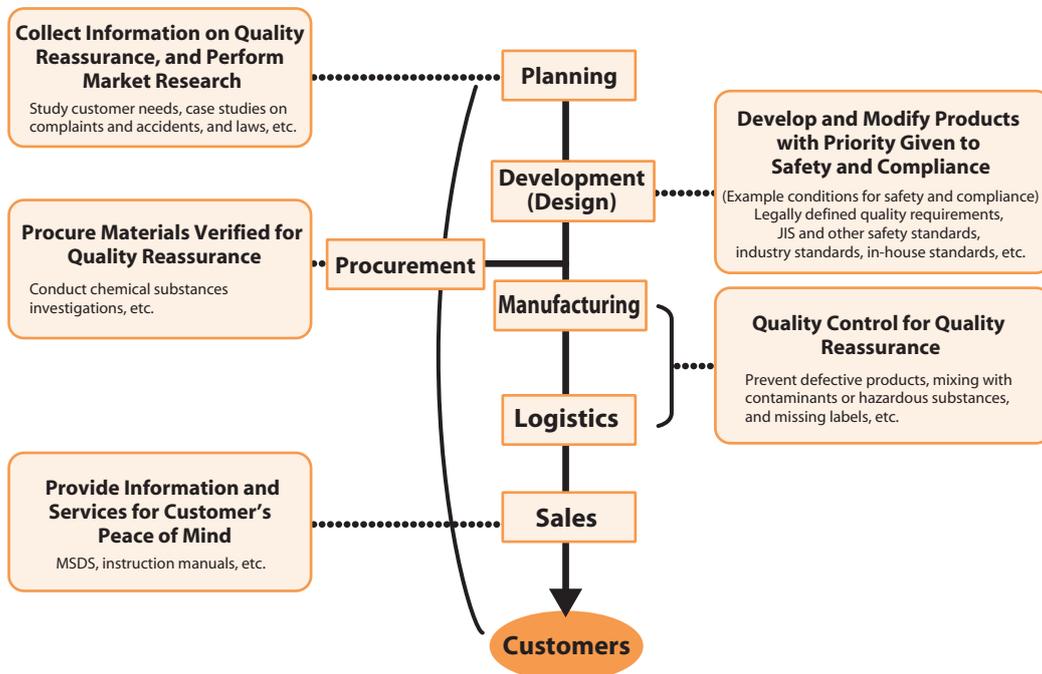
\* Safety at JX Nippon Oil & Energy means that a product is safe for people and the environment during its use, re-use and after disposal. The proper provision of safety measure information also serves to complement overall safety.

In order to reassure quality, we have established a basic policy, rules for each process and standards for the chemical substances used in our products. We are also working to strengthen our systems and initiatives in safety and compliance.

### Basic Policy on Quality Reassurance

- (1) Engage in new product development and/or modify existing products with a focus on quality reassurance
- (2) Select raw materials and components that fulfill guidelines on quality reassurance
- (3) Determine product specifications based on quality reassurance
- (4) Thoroughly monitor quality in manufacturing processes
- (5) Thoroughly monitor quality in logistics processes
- (6) Provide easy-to-understand and appropriate safety measure information
- (7) Quickly respond to troubles with the utmost priority given to customer safety
- (8) Pursue safety through proactive communication with customers and society

### Activities in Each Process



## 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 affect the environment or people's health. Through these efforts we are working to mitigate any harmful effects 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 works closely with related industry groups such as the Petroleum Association of Japan and the Japan Petrochemical Industry Association and has launched a contact meeting involving all of its departments to foster greater understanding of REACH regulations as well as encourage the sharing of related information and response expertise.

We have completed the registration of all chemical substances that 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.

## 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 peoples' 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 are encouraging the use of container labels that have two-colored pictorial symbols in conjunction with modifications made to the Act's rules and regulations in 2012.

### Example of Automotive Gasoline Container Label

00001

内燃機関用  
**ENEOSレギュラーガソリン**

<p>成分:ガソリン (ベンゼン、トルエン、キシレン、ノ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</p> <p><b>危険</b></p> <div style="display: flex; justify-content: space-around;"> </div> <ul style="list-style-type: none"> <li>・極めて引火性の高い液体及び蒸気</li> <li>・眼刺激</li> <li>・肺、腎臓の障害</li> <li>・吸気やめまいのおそれ</li> <li>・水生生物に有害</li> <li>・長期的影響により水生生物に有害</li> <li>・皮膚刺激</li> <li>・発がんのおそれの疑い</li> <li>・長期又は反復暴露による神経の障害</li> <li>・長期又は反復暴露による血管の障害のおそれ</li> <li>・飲み込み、気道に侵入すると生命に危険のおそれ</li> </ul>	<p><b>火気厳禁</b> 危険等級Ⅱ 第4類第1石油類 200L</p>
<p><b>【予防措置】</b></p> <ul style="list-style-type: none"> <li>・ガソリンエンジンにのみ使用すること。</li> <li>・他の石油製品と混合使用しないこと(事故及びエンジン故障の原因となるため)。</li> <li>・取扱時はエンジン等を停止させること。</li> <li>・すべての安全注意(MSDS等)を読み理解するまで取り扱わないこと。</li> <li>・容器を密閉しておくこと。</li> <li>・熱、火花、高温体等の着火源から遠ざかること、禁煙。</li> <li>・可燃性の電気機器、換気装置、照明機器、火花の出ない工具を使用すること。</li> <li>・静電気発生に対する予防措置を講ずること。他の容器に移し替える場合は必ずアースすること。</li> <li>・ホース等を使用して口で吸い上げないこと。</li> <li>・保護手袋、保護眼鏡、保護靴、保護衣を着用すること。</li> <li>・ spillまたは吸気の良い場所でのみ使用し、入らぬ。蒸気の吸入を避けること。</li> <li>・この製品を使用する時に飲食をしないこと。</li> <li>・可燃性液体はよく平を扱うこと。</li> <li>・空容器は注ぎかたがないこと(漏れの原因となるため)。</li> <li>・容器を凍結、加熱、穴あけまたは切削しない(残存物が爆発、発火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、引きずる等の乱暴な扱いをしないこと。</li> </ul>	<p><b>【対応】</b></p> <ul style="list-style-type: none"> <li>・火災の場合: 消火には粉末消火器を使用すること。</li> <li>・引火した場合: 直ちに拭き取る。</li> <li>・皮膚(若しくは髪)に付着した場合: 直ちに汚染された衣服を脱ぎ、皮膚を大量の水でよく洗うこと。汚染された衣服を再使用する場合には洗濯すること。</li> <li>・皮膚刺激が重篤な場合: 医師の診断・手当てを受けること。</li> <li>・目に入った場合: 水で充分洗い流すこと。次に、コンタクトレンズを装着している容器に汚れる場合は除外すること。その後も洗浄を続けること。医師の診断・手当てを受けること。</li> <li>・腫瘍が疑われる場合は、又は発がんが疑われる場合: 医師の診断・手当てを受けること。</li> <li>・吸入した場合: 空気の新鮮な場所に移し、呼吸しやすい姿勢で休息させること。</li> <li>・飲み込んだ場合: 直ちに医師に連絡すること。無理に吐かせないこと。</li> <li>・漏れの原因が不明な場合は、製品の種類またはラベルを参考に処理すること。</li> </ul>
<p><b>【保管】</b></p> <ul style="list-style-type: none"> <li>・直射日光を避け、涼しく換気の良い場所に保管すること。</li> <li>・容器を密閉し、保管場所に保管すること。</li> <li>・子供の手の届かない場所に保管すること。</li> </ul>	<p><b>【連絡先】</b></p> <p>JX日鉱日石エネルギー株式会社 東京都千代田区大塚二丁目4番3号 TEL:0120-56-8704 (ENEOSお客様センター)</p>

**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、ノ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
- ・吸気やめまいのおそれ
- ・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

# Social Engagement

## 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.

### Priority Fields

Advancement of  
Sports and Culture

Next Generation  
Development and  
Support

Environmental  
Protection

### Keyword Phrases

Support Activities Rooted  
in the Local Community

Support Activities Led Voluntarily  
by Employees

#### ▶ Advancement of Sports and Culture (page 47)

- 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 (page 49)

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

#### ▶ Environmental Protection (page 51)

- Public Trust “ENEOS Hydrogen Trust Fund”
- ENEOS Forests
- Other Forestation Topics
- Tokyo Greenship Action
- Hibiya Wildlife Flowerbed Development Activities
- The Reintroduction of the Oriental White Stork Plan Support Activities
- ENEOS Living Creatures School
- ENEOS Credit Card Donation Program for the National Land Afforestation Promotion Organization

#### ▶ Community Engagement and Disaster Relief (page 58)

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

#### ▶ CSR Activities Overseas (page 59)

- Donated Funds for the Construction of New Elementary Schools in Vietnam
- Medical Aid Activities on Leyte Island in the Philippines
- Technical Training for Engineers in Petroleum and Gas Producing Countries
- Community Contribution Activities in China
- Community Contribution Activities in Ghana

#### ▶ Volunteer Activities (page 61)

- Supporting Employees that Take Part in Volunteer Activities
- Volunteer Collection Drive Activities

## Advancement of 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 79 times in fiscal 2013 with a total of 3,453 people taking part.

☞ JX-ENEOS Basketball Clinic (<http://www.jx-group.co.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 a wide range of activities aimed at advancing and developing the next generation of players for Japan's national pastime of baseball. As part of these activities, we host little league baseball clinics together with the Tohoku Rakuten Golden Eagles of Nippon Professional Baseball as well as sponsor the Japan Rubber Baseball ENEOS Tournament of Emperor's Cup, the NPB12 Team Junior Tournament ENEOS Cup, Women's Baseball Association 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.co.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 2013 we invited a total of 2,000 children and escorts (100 persons for each of the 20 matches) to attend FC Tokyo home matches. In fiscal 2014, we plan on hosting a total of 2,000 children and escorts (100 persons for each of the 20 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, the National Select Junior Wheelchair Basketball Tournament every July, the Japan Women's Wheelchair Basketball Tournament every November and wheelchair basketball clinics.

Employee volunteers take part in the tournament in every 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 2014 represented the 45th 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 360,000 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 for more than 40 years since 1969.

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

## Next Generation Development and Support

JX Nippon Oil & Energy supports the development of children 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 were held at 29 schools across Japan in fiscal 2013, and were attended by roughly 1,790 children.

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

([http://www.eneos-tv.jp/?movie\\_id=wakuwaku\\_env\\_class](http://www.eneos-tv.jp/?movie_id=wakuwaku_env_class)) (available only in Japanese)

▶ Apply for an ENEOS environmental class

([http://www.no.e.jx-group.co.jp/csr/social/society/next\\_generation/information.html](http://www.no.e.jx-group.co.jp/csr/social/society/next_generation/information.html)) (available only in Japanese)

▶ Feedback from ENEOS environmental classes

([http://www.no.e.jx-group.co.jp/csr/social/society/next\\_generation/information.html#voice](http://www.no.e.jx-group.co.jp/csr/social/society/next_generation/information.html#voice)) (available only in Japanese)

### 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. Thus far, these classes have been held a total of 66 times and have been attended by about 3,080 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."



An ENEOS Children's Science Class in progress

### 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.no.e.jx-group.co.jp/csr/morikids/index.html>) (available only in Japanese)



## 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/social/society/environment.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 in fiscal 2013, attracting a total of 634 participants, including children and their guardians.

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



## Environmental Protection

“Harmony with the environment” is one component of the JX Group Values. As a result, we are proactively taking actions to protect the environment in order to fulfill this value.

### Public Trust “ENEOS Hydrogen Trust Fund”

#### Reasons for Establishing the Fund

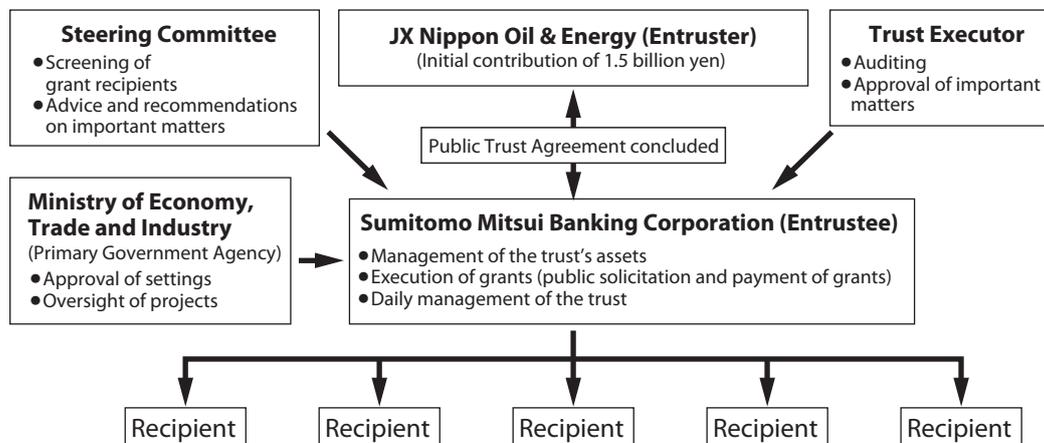
Today, a variety of environment issues such as global warming are in the spotlight and many have called for the development of a sustainable society that grows responsibly with new energy systems that do not produce CO<sub>2</sub> or hazardous substances.

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 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 43 projects that applied in fiscal 2013, we provided grants to a six 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 Banking Corporation
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, transport and storage as well as carbon capture.
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.
	<ul style="list-style-type: none"> <li>▶ Application Guidelines (Overview) (<a href="http://www.noe.jx-group.co.jp/csr/social/society/environment/index.html">http://www.noe.jx-group.co.jp/csr/social/society/environment/index.html</a>)</li> <li>▶ 8<sup>th</sup> Research Grant Awards and List of Research Awardees (<a href="http://www.noe.jx-group.co.jp/csr/social/society/environment/aid08.html">http://www.noe.jx-group.co.jp/csr/social/society/environment/aid08.html</a>)</li> <li>▶ 7<sup>th</sup> Research Grant Awards and List of Research Awardees (<a href="http://www.noe.jx-group.co.jp/csr/social/society/environment/aid07.html">http://www.noe.jx-group.co.jp/csr/social/society/environment/aid07.html</a>)</li> <li>▶ 6<sup>th</sup> Research Grant Awards and List of Research Awardees (<a href="http://www.noe.jx-group.co.jp/csr/social/society/environment/aid06.html">http://www.noe.jx-group.co.jp/csr/social/society/environment/aid06.html</a>)</li> <li>▶ 5<sup>th</sup> Research Grant Awards and List of Research Awardees (<a href="http://www.noe.jx-group.co.jp/csr/social/society/environment/aid05.html">http://www.noe.jx-group.co.jp/csr/social/society/environment/aid05.html</a>)</li> <li>▶ 4<sup>th</sup> Research Grant Awards and List of Research Awardees (<a href="http://www.noe.jx-group.co.jp/csr/social/society/environment/aid04.html">http://www.noe.jx-group.co.jp/csr/social/society/environment/aid04.html</a>)</li> <li>▶ 3<sup>rd</sup> Research Grant Awards and List of Research Awardees (<a href="http://www.noe.jx-group.co.jp/csr/social/society/environment/aid03.html">http://www.noe.jx-group.co.jp/csr/social/society/environment/aid03.html</a>)</li> <li>▶ 2<sup>nd</sup> Research Grant Awards and List of Research Awardees (<a href="http://www.noe.jx-group.co.jp/csr/social/society/environment/aid02.html">http://www.noe.jx-group.co.jp/csr/social/society/environment/aid02.html</a>)</li> <li>▶ 1<sup>st</sup> Research Grant Awards and List of Research Awardees (<a href="http://www.noe.jx-group.co.jp/csr/social/society/environment/aid01.html">http://www.noe.jx-group.co.jp/csr/social/society/environment/aid01.html</a>) (available only in Japanese)</li> </ul>

## 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 near-by 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.



Volunteers activities in an ENEOS Forest

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 2013, we conducted activities 18 times at eight locations, with a total of 1,612 participants that included employees and their family. Since 2005, we have held activities a total of 149 times at sites across Japan, with participants numbering 11,144. These activities have spanned from thinning to brush clearing, pruning and trail development.

- ▶ ENEOS Forests (<http://www.noe.jx-group.co.jp/csr/social/society/environment/activity.html>) (available only in Japanese)
- ▶ View a video (51 seconds) on ENEOS Forests at: ([http://www.noe.jx-group.co.jp/csr/social/society/environment/movie/index\\_mv01.wmv](http://www.noe.jx-group.co.jp/csr/social/society/environment/movie/index_mv01.wmv)) (available only in Japanese)

## Other Forestation Topics

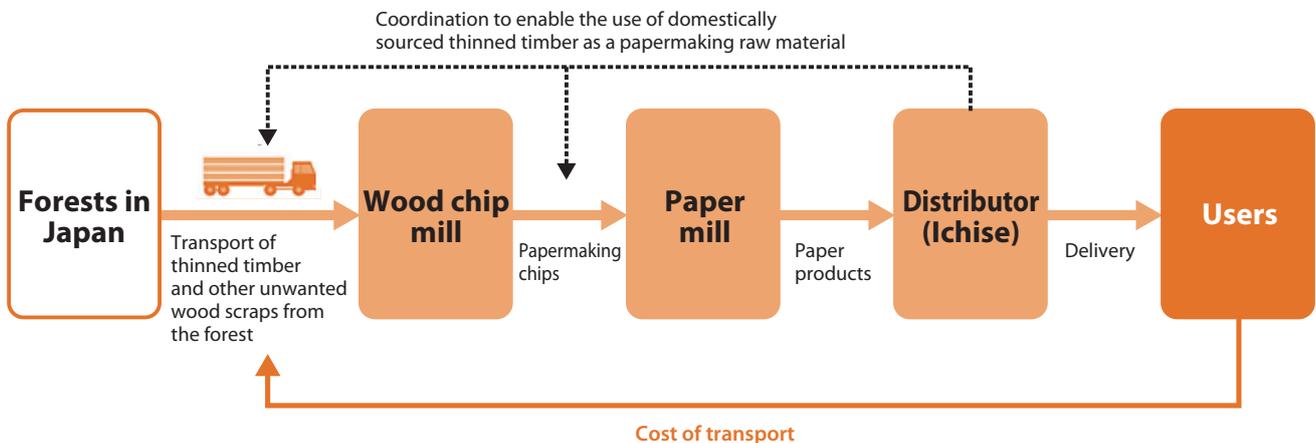
### Turning Thinned Timber from Responsibly Managed Forests into “3.9 Paper”

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.

We 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.



### About the Afforestation and Environmental Contribution Certification System run by the National Land Afforestation Promotion Organization

The National Land Afforestation Promotion Organization has carried out objective evaluations and certification of afforestation activities carried by volunteer organizations since fiscal 2009 using carbon dioxide absorption amounts and other indicators.

Evaluations and certification is performed following an application submitted by forest volunteer organizations and an organization will be issued an environmental contribution certification based on the results of an evaluation.

Forest cooperatives and other partner organizations to our ENEOS forests activities in fiscal 2013 received the environmental contribution certification. The evaluation results for seven of our forests nationwide, excluding Kanagawa Prefecture, are shown below.

Afforestation Environmental contribution check Ver2.0				
Results				
ENEOS forests activities in fiscal 2013 the environmental contribution (Annual)				
<p><b>Carbon dioxide absorption function</b></p> <p>Amount of material <b>83.0 t</b></p> <p>Emissions from <b>259.5 people</b> (carbon dioxide)</p> <p>Note: Annual per capita generation of carbon dioxide 320kg-CO<sub>2</sub></p>	<p><b>Surface erosion prevention function</b></p> <p>Amount of material <b>599.0 m<sup>3</sup></b></p> <p>10t dump truck <b>108.9 loads from a 10 t dump truck</b></p> <p>Note: load capacity is 5.5m<sup>3</sup></p>	<p><b>Water quality retain function</b></p> <p>Amount of material <b>59,608 m<sup>3</sup></b></p> <p>25m length pool <b>238.4 pools</b></p> <p>Note: Ordinary pool 25 m × 10 m × 1 m</p>	<p><b>Water resource-saving function</b></p> <p>Amount of material <b>59,608 m<sup>3</sup></b></p> <p>25m length pool <b>238.4 pools</b></p> <p>Note: Ordinary pool 25 m × 10 m × 1 m</p>	<p><b>Flood alleviation function</b></p> <p>Amount of material <b>0.359 m<sup>3</sup>/second</b></p>

## 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 2013, activities were held on eight occasions, with 273 participants taking part. Additionally, since 2004 we have held activities on a total of 69 occasions that have attracted 1,916 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 rice reaping

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

Tokyo's biodiversity. These activities were held on three occasions in fiscal 2013, attracting a total of 71 volunteers.



Employees and their families planting new seasonal flowers

- ▶ Activities from fiscal 2013 (<http://www.noe.jx-group.co.jp/csr/social/society/environment/hibiya2013.html>) (available only in Japanese)
- ▶ Activities from fiscal 2012 (<http://www.noe.jx-group.co.jp/csr/social/society/environment/hibiya2012.html>) (available only in Japanese)
- ▶ Activities from fiscal 2011 (<http://www.noe.jx-group.co.jp/csr/social/society/environment/hibiya2011.html>) (available only in Japanese)
- ▶ Activities from fiscal 2010 (<http://www.noe.jx-group.co.jp/csr/social/society/environment/hibiya.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 2014, 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 a guardian.



### ▶ Activities in June 2014

([http://www.noe.jx-group.co.jp/newsrelease/2014/csr/20140423\\_01\\_0944355.html](http://www.noe.jx-group.co.jp/newsrelease/2014/csr/20140423_01_0944355.html)) (available only in Japanese)

### ▶ ENEOS Living Creatures School activities (June 2014)

(<http://www.noe.jx-group.co.jp/csr/social/society/environment/kounotori/201406.html>) (available only in Japanese)

### ▶ ENEOS Living Creatures School participant feedback

(<http://www.noe.jx-group.co.jp/csr/social/society/environment/kounotori/201406voice.html>) (available only in Japanese)

### ▶ Activities in June 2013

([http://www.noe.jx-group.co.jp/newsrelease/2013/20130425\\_01\\_0930204.html](http://www.noe.jx-group.co.jp/newsrelease/2013/20130425_01_0930204.html)) (available only in Japanese)

### ▶ ENEOS Living Creatures School activities (June 2013)

(<http://www.noe.jx-group.co.jp/csr/social/society/environment/kounotori/201306.html>) (available only in Japanese)

### ▶ ENEOS Living Creatures School participant feedback

(<http://www.noe.jx-group.co.jp/csr/social/society/environment/kounotori/201306voice.html>) (available only in Japanese)

### ▶ Activities in September 2012 (PDF:63KB)

(<http://www.noe.jx-group.co.jp/csr/social/society/environment/pdf/201209.pdf>) (available only in Japanese)

### ▶ ENEOS Living Creatures School activities (September 2012)

(<http://www.noe.jx-group.co.jp/csr/social/society/environment/kounotori/201209.html>) (available only in Japanese)

### ▶ ENEOS Living Creatures School participant feedback

(<http://www.noe.jx-group.co.jp/csr/social/society/environment/kounotori/201209voice.html>) (available only in Japanese)

- ▶ Activities in October 2011  
([http://www.no.ejx-group.co.jp/newsrelease/2011/20110915\\_01\\_0960492.html](http://www.no.ejx-group.co.jp/newsrelease/2011/20110915_01_0960492.html)) (available only in Japanese)
- ▶ ENEOS Living Creatures School activities (October 2011)  
(<http://www.no.ejx-group.co.jp/csr/social/society/environment/kounotori/201110.html>) (available only in Japanese)
- ▶ ENEOS Living Creatures School participant feedback  
(<http://www.no.ejx-group.co.jp/csr/social/society/environment/kounotori/201110voice.html>) (available only in Japanese)
- ☑ A pond created as part of the program's small nature restoration activity (Toyooka City website)  
(<http://www.city.toyooka.lg.jp/www/contents/1323051476011/index.html>) (available only in Japanese)
  
- ▶ Activities in July 2010  
([http://www.no.ejx-group.co.jp/newsrelease/2010/20100517\\_01\\_0794529.html](http://www.no.ejx-group.co.jp/newsrelease/2010/20100517_01_0794529.html)) (available only in Japanese)
- ▶ ENEOS Living Creatures School activities (July 2010)  
(<http://www.no.ejx-group.co.jp/csr/social/society/environment/kounotori/201007.html>) (available only in Japanese)
  
- ▶ Activities in March 2010  
([http://www.no.ejx-group.co.jp/newsrelease/noc/2009/20100209\\_01\\_0952366.html](http://www.no.ejx-group.co.jp/newsrelease/noc/2009/20100209_01_0952366.html)) (available only in Japanese)
- ▶ ENEOS Living Creatures School activities (March 2010)  
(<http://www.no.ejx-group.co.jp/csr/social/society/environment/kounotori/201003.html>) (available only in Japanese)
  
- ☑ Oriental White Stork CSR  
(<http://www.no.ejx-group.co.jp/kounotori/index.html>) (available only in Japanese)

## 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 310 million yen through this initiative.



- ▶ ENEOS credit card information (<http://www.no.ejx-group.co.jp/carlife/card/index.html>) (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/social/society/area\\_activity/sealkawasaki.html](http://www.noe.jx-group.co.jp/csr/social/society/area_activity/sealkawasaki.html)) (available only in Japanese)
- ▶ Inflatable shelter  
([http://www.noe.jx-group.co.jp/csr/social/society/area\\_activity/shelter.html](http://www.noe.jx-group.co.jp/csr/social/society/area_activity/shelter.html)) (available only in Japanese)
- ▶ Involvement in the City of Kawasaki's comprehensive disaster-preparedness drill  
([http://www.noe.jx-group.co.jp/csr/social/society/area\\_activity/protectkawasaki.html](http://www.noe.jx-group.co.jp/csr/social/society/area_activity/protectkawasaki.html)) (available only in Japanese)

### Emergency Relief Assistance

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

The JX Group and many of its employees have taken part in volunteer activities in support of the recovery effort following Great East Japan Earthquake.

- ✉ JX Group Volunteer Activities Supporting Restoration and Recovery  
(<http://www.hd.jx-group.co.jp/english/csr/volunteer/>)

## CSR Activities Overseas

### Donated Funds for the Construction of New Elementary Schools in Vietnam

JX Nippon Oil & Energy conducts a host of different community contribution activities in Vietnam together with JX Nippon Oil & Gas Exploration, including making donations to fund the construction of new elementary schools across the country. In December 2013, the completion ceremony for the brand new Nguyen Truong To Elementary School in Ba Ria Vung Tau Province was held. Both companies donated a total of 130 thousand US dollars for the project. During the completion ceremony, both companies also presented donations of school supplies, and local government representatives, the principal and student representatives lauded our financial support for constructing the new school.



Commemorative photo taken with the students in front of the brand new school

Nguyen Truong To Elementary School was designated as an official project of the Japan-Vietnam friendship year marking the 40th anniversary (2013) of diplomatic ties between the countries, as was our donations to fund the construction of Nguyen Binh Khiem High School in Hai Phong City that was completed in January 2013.

We stand firmly committed to continuing our community contribution activities in Vietnam to realize the JX Group Value of "Relationship with society".

### Medical Aid Activities on Leyte Island in the Philippines

In March 2014, JX Ocean provided medical aid at four locations to the victims of Typhoon Haiyan, which caused extensive damage to Leyte Island in the Philippines in November 2013. These activities, which were funded by JX Ocean, provided medical exams to more than 1,800 island residents over a two-day period. After the completion of these activities, many people expressed their thanks to JX Ocean and the city issued an official letter of appreciation.

JX Ocean has also provided donations to disaster victims aid groups and assistance to crewmembers and their families who were affected by the disaster.



## Technical Training for Engineers in Petroleum and Gas Producing Countries

As part of its technical cooperation with petroleum and gas producing countries, JX Nippon Oil & Energy provides training to engineers of state-owned oil companies through its support for the Japan Cooperation Center, Petroleum (JCCP). Over the past several years several hundred engineers from Iraq and Kuwait have traveled to Japan to receive training.

In fiscal 2013, at the request of Myanmar Petrochemical Enterprise, JX Nippon Oil & Energy, JX Engineering, and JX Nippon Research Institute dispatched instructors to lead training sessions for refinery engineers on the themes of oil refinery equipment repairs and inspections, refining equipment operations, and oil refinery operations.

These training sessions also covered the themes of production management and business management and environmental technologies, including our long-standing safe operation and energy conservation practices for refining equipment. Our goal is to build positive and friendly relationships with these countries by contributing to their human resource development initiatives.



Trainees from Myanmar

## 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 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 Ghana

JX Nippon Oil & Energy Middle East & Africa FZE, which covers the Middle East, Africa and Pakistan, provided donations through NGO Plan Japan to support activities that benefit pregnant mothers living in poverty-stricken areas of Ghana.



© Plan Japan

## 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 2013, 28 employees used this program to take a total of 41 days off for volunteer work.

### Volunteer Collection Drive 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. All of our business sites across Japan and JX Group companies took part in the volunteer collection drive activities held in January 2014. Donations of items were provided to the following organizations.



Items collected by volunteers

### Unusable Postcards and Unused Stamps



Records marking the progress of children receiving support from the Darunee Scholarship Project

These items were donated to the Darunee Scholarship Project being implemented by EDF-Japan where they will be used to fund scholarships for junior high school students in Thailand.

## Unused Prepaid Cards and Gift Certificates



Presenting gifts

These items were donated to Hunger Free World, an NPO working to eliminate hunger around the world, to help fund its operations and activities.

## Picture Books

We made a donation to the picture book bus program run by the incorporated foundation Chikyu no Gakkou to benefit the areas affected by the Great East Japan Earthquake. Donated picture books were delivered to children in the disaster-affected areas.



Donation of picture books



Letter of thanks

## ■ Charity Book Drive

Books collected through our collection drive activities were made available for employees to purchase at a charity book drive held at the JX Building in February 2014. The proceeds of these sales were donated to Peace Winds Japan, a specified non-profit corporation.

The charity book drive's mission was twofold. First, we wanted to encourage employees to think more about reusing resources through an event where they donated their unwanted books to benefit a charity. Secondly, we wanted to donate all of the proceeds from these sales to help support environmental activities in East Timor and fund recovery efforts for the Great East Japan Earthquake.

For this book drive, employees from JX Nippon Oil & Energy and other JX Group companies donated a total of 2,936 books. Many employees, including senior executives, visited the charity book drive venue to purchase a book.

Charity organizations Peace Winds Japan, Hungry Free World and EDF Japan also held a meeting to report on their activities and a hands-on volunteer experiences at the same time, which provided an opportunity for all to broaden understanding about citizenship activities.



The charity book drive in progress



Presentation by Hungary Free World



Presentation by Peace Winds Japan



Hands-on volunteer experience hosted by EDF-Japan

# Employee Engagement

## Fundamental Approach

Our employees are key driver behind our CSR activities and also stand as our most important stakeholder. 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. To that end, we have created a wide range of programs to support our people.

### ▶ Providing Workplaces where Employees can Thrive (page 65)

- Personnel System and Hiring Activities
- Employee Composition
- Discretionary Labor System
- Advent of Professional Track Designation
- Developing Locally Hired Employees Overseas
- Promoting Career Opportunities for Women
- Promoting Career Opportunities for the Disabled
- Health Management

### ▶ Providing Employee-Friendly Workplaces (page 69)

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

### ▶ Human Rights Initiatives (page 72)

- 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.

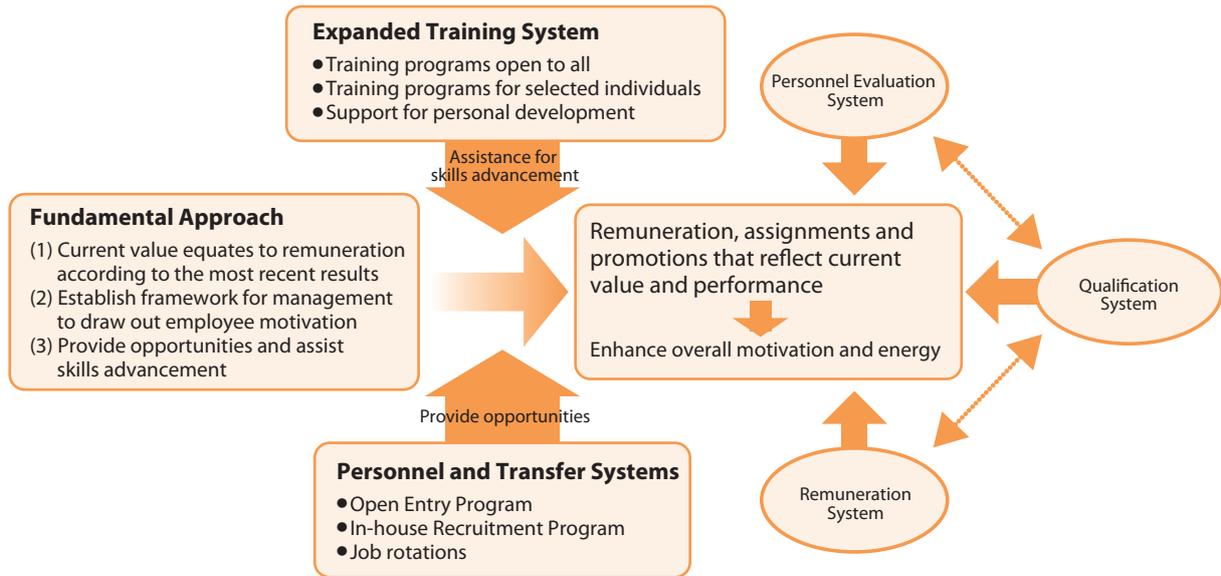
#### ● In-house Recruitment Program

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.

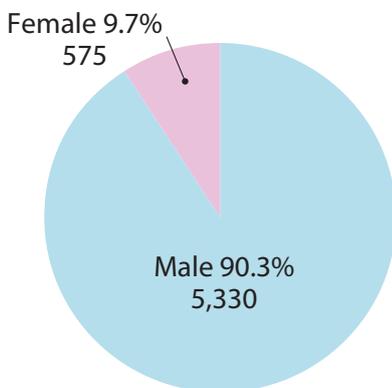
We use a fair selection process that focuses on the aspirations and motivation of prospective employees, and not gender or other personal qualities. Our interviews are held in a professional manner to ensure that both the company and the prospective employee fully understand one another.

### Employee Composition

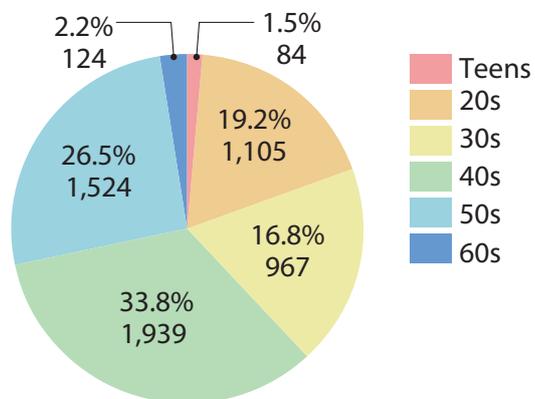
As of March 31, 2014, JX Nippon Oil & Energy had the following number of employees.

Regular employees	5,743
Employees forwarded from other companies	144
Part-time workers	18

#### By Gender



#### By Age Group



## 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.

## 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 at the head office in Tokyo for local managers (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 and supports the greater involvement of female employees in order to transform itself into an organization that incorporates more diverse and flexible thinking to meet the needs of customers.

We provide the necessary support to ensure our 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.

Going forward, we will increase the ratio of females hired out of university, use training and other awareness-raising activities to change our mindsets, support the formation of a female employee network, and review our work styles and methods.



## 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, 2014, our employment rate of persons with disabilities stood at 2.08%.

We recognize that 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. This means that employees with a disability are placed in a host of different locations and not just a single workplace.

In addition, training programs for entry-level employees also feature a hands-on session with wheelchairs to foster greater awareness towards persons with disabilities, while several of our departments offer sign language classes.

## 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 includes self care by employees, line care by managers, an organized support system and hotlines both inside and outside the company.

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 fifth 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 5th Action Plan (April 1, 2013 to March 31, 2015)

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), and 4th General Business Owner Action Plan (April 1, 2011 to March 31, 2013). 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.



#### ● Compilation of Childcare Assistance Guidebook

In October 2010, we 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.

### Shortened Working Hours Program

Employees that are pregnant, raising a child, acting as a care giver, or have a disability can freely 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.

## 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.

## Re-employment Program

We offer a re-employment program for retired workers that have the desire and motivation to continue working, excluding those with special circumstances that may make it difficult to work such as a health condition. This program provides these employees another opportunity to share their valuable knowledge, skills and experience with the company.

## 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

## 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 8:00pm
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. We also co-organize review meetings on support for the next generation and on reducing working hours where a vigorous exchange of views takes place.

## 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 2013, there were a total of 3,602 submissions, including 191 from family members of employees. We selected a total of 11 winners and 83 honorable mentions in the employee category as well as 4 winners and 17 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.



# 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.

## Overview of the JX Nippon Oil & Energy Group Medium-term Environmental Management Plan for the Period from Fiscal 2010 to Fiscal 2012

The targets set out in the JX Nippon Oil & Energy Group Medium-term Environmental Management Plan for the period from fiscal 2010 to fiscal 2012 have almost been achieved.

### I. Promote Measures to Prevent Global Warming and Preserve Biodiversity

Develop and provide environmentally-friendly products and services	<ul style="list-style-type: none"> <li>● Roll out biogasoline nationwide as well as develop and expand sales of environmentally-friendly products such as SUSTINA, etc.</li> <li>● Develop and expand sales of next generation technologies, including the SOFC ENE-FARM fuel cells, photovoltaic cells, and mega solar projects, etc.</li> </ul>
Reduce CO <sub>2</sub> emissions across the entire supply chain	Failed to meet specific energy consumption reduction target of 3% (compared to fiscal 2009) due to weaker operating rate from operational troubles, despite steady progress in energy conservation activities. Compared to Fiscal 2009's specific energy consumption: 8.99, Fiscal 2010: 8.85 (-1.6%), Fiscal 2011: 8.90 (-1.1%), Fiscal 2012: 8.96 (-0.3%)
Take part in activities for the betterment of the environment	Promote contributions to the environment, such as ENEOS forests and ENEOS Children's Science Classes
Utilize the Kyoto Mechanisms	Continue to invest in emissions credit fund and implement the Russia JI Project

### II. Continually Reduce Environmental Impacts

Perform soil contamination studies and take relevant measures	<ul style="list-style-type: none"> <li>● Systematic studies (972) and measures (222) at decommissioned facilities and facilities in operation</li> <li>Completed studies for prevention of offsite spills from facilities in operation</li> <li>● Develop lower cost methods for cleanup (phytoremediation) and roll out at Sendai Refinery, Kudamatsu Plant, Hiroshima Depot and former service station sites</li> </ul>
Take steps to reduce VOCs	Reduce VOC emissions by 50% of fiscal 2000 levels (54% reduction expected for fiscal 2012)
Take steps to reduce waste	Maintain the Zero Emission Plus goals (waste-to-landfill ratio of less than 0.5%) (0.3% expected for fiscal 2012)
Strive to reduce the environmental impacts of offices	<ul style="list-style-type: none"> <li>● Reduce paper usage, trash and electricity consumption of offices</li> <li>Paper usage reduction: Fiscal 2010: 5,952 sheets; Fiscal 2011: 5,676 sheets; Fiscal 2012: 5,559 sheets/year per person</li> </ul>

- ▶ JX Nippon Oil & Energy Group Medium-Term Environmental Management Plan (Fiscal 2010 to Fiscal 2012) (<http://www.no.ejx-group.co.jp/csr/environment/managment/plan20102012.html>) (available only in Japanese)

## JX Nippon Oil & Energy Group Second Medium-Term Environmental Management Plan (Fiscal 2013 to Fiscal 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 (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.
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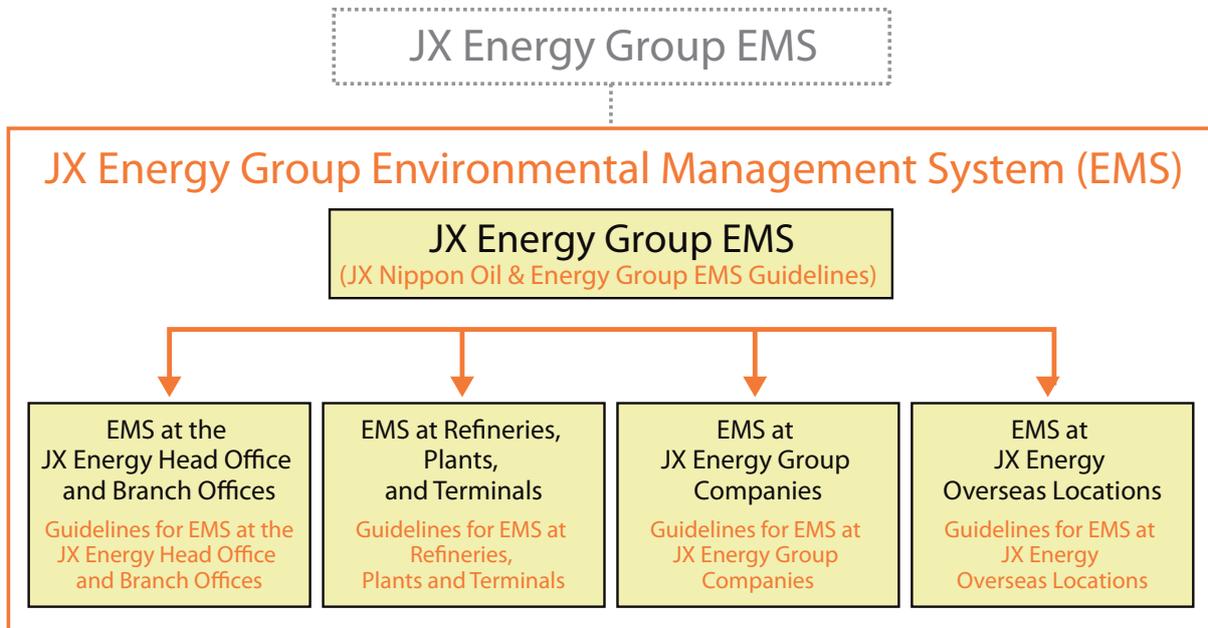
\*Equivalent to 20% of JX Nippon Oil & Energy Group CO<sub>2</sub> emissions in fiscal 2009 (20 million tons)

Key Themes	Specific Measures	Specific Initiatives Aimed at Fiscal 2015
I. Promote measures to prevent global warming and preserve biodiversity	(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>
	(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>
	(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>
II. Reduce environmental impacts	(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>
	(2) Take steps to reduce VOCs	<ul style="list-style-type: none"> <li>● Maintain VOC emissions at 50% of fiscal 2000 levels</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>
	(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>
III. Enhance the environmental management system	(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>
	(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>

## Environmental Management System

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.

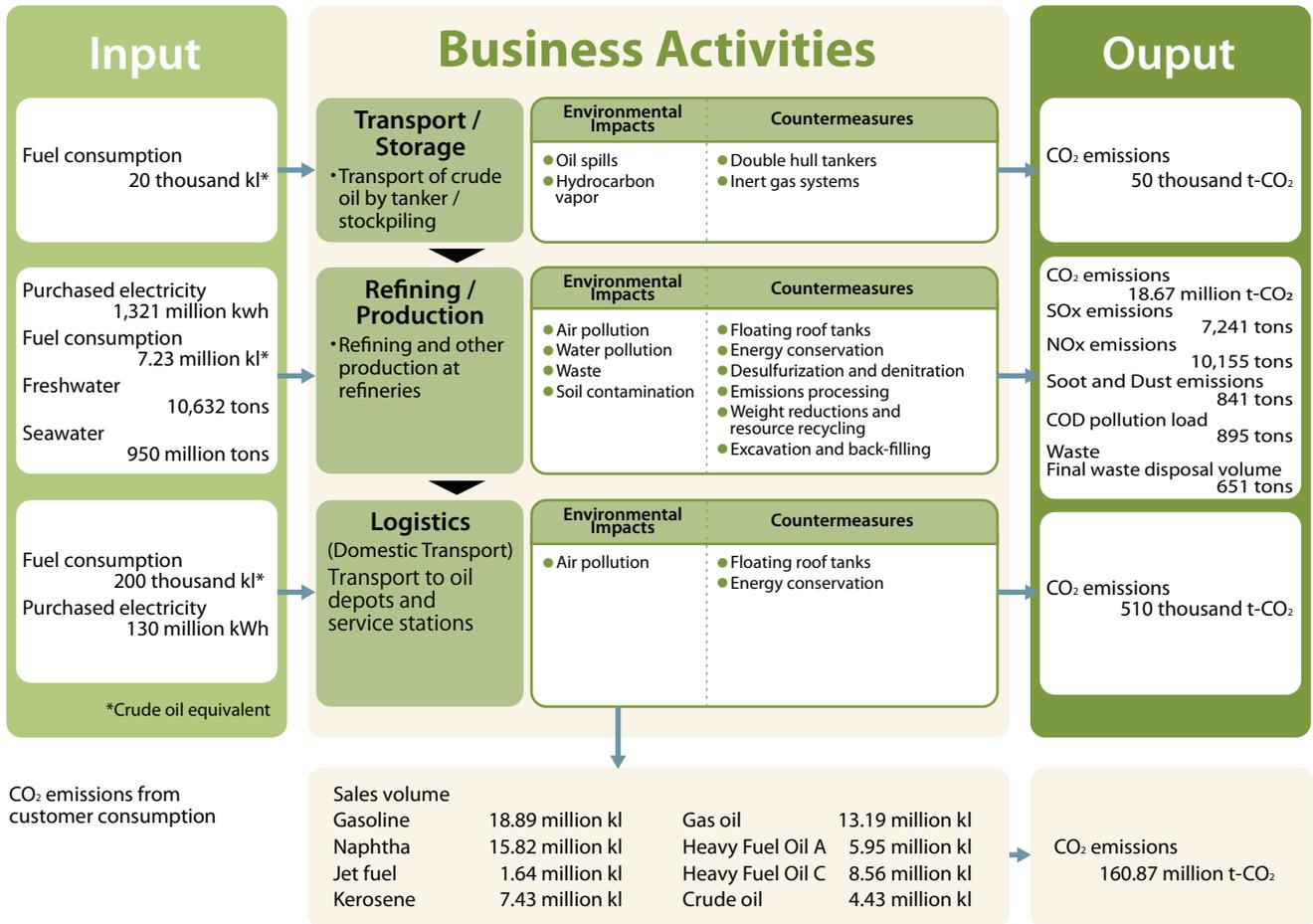
As part of our EMS operations, we have established environmental targets for each company and each department based on our Medium-term Environmental Management Plan. Actions are being taken to achieve these targets following the plan-do-check-action (PDCA) cycle.



# 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 2013. 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 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	1,130	5.8
		2	Capital goods	-	-
		3	Fuels not included in Scope 1 or Scope 2	-	-
		4	Upstream transportation and distribution	195	1.0
		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			1,828	9.5
Scope 3	Downstream	9	Downstream transportation and distribution	39	0.2
		10	Processing of sold products	-	-
		11	Use of sold products	16,087	83.3
		12	End-of-life treatment of sold products	-	-
		13	Downstream leased assets	-	-
		14	Franchises	35	0.2
		15	Investments	-	-
			Total	19,316	100.0

## 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.no.ejx-group.co.jp/csr/environment/perspective/index.html>)(available only in Japanese)

### Air and Water

	Extent of Environmental Impacts (tons)	2010	2011	2012	2013
Air	SOx	11,005	9,469	8,392	7,053
	NOx	10,597	9,444	10,040	9,790
	Soot and Dust	855	770	799	806
Water	COD	723	694	839	886

### PRTR

Total Volume of Release and Transfer (tons)	2010	2011	2012	2013
Benzene	25	55	30	35
Toluene	99	97	98	80
Xylene	87	94	66	94

### Waste

	2010	2011	2012	2013
Volume of waste generated (tons)	225,545	225,858	235,308	253,551
Final waste disposal volume (tons)	376	941	293	603

# Global Warming Prevention Measures

## Fundamental Approach

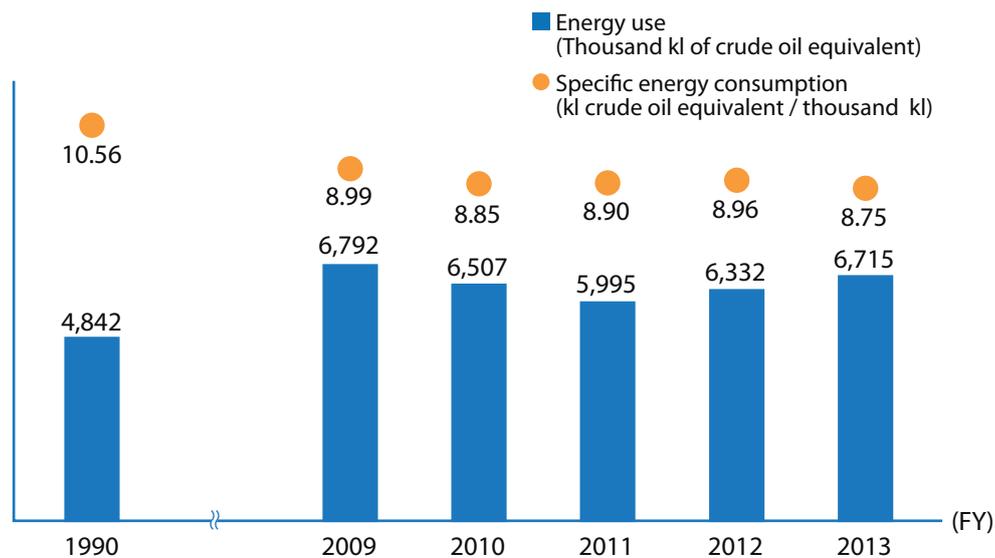
The JX Nippon Oil & Energy Group is constantly aware of environmental impacts throughout its entire supply chain. In addition to improving energy efficiency in refining and production phases, which represent our core business activities, and reducing fuel consumption during the transport of products,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

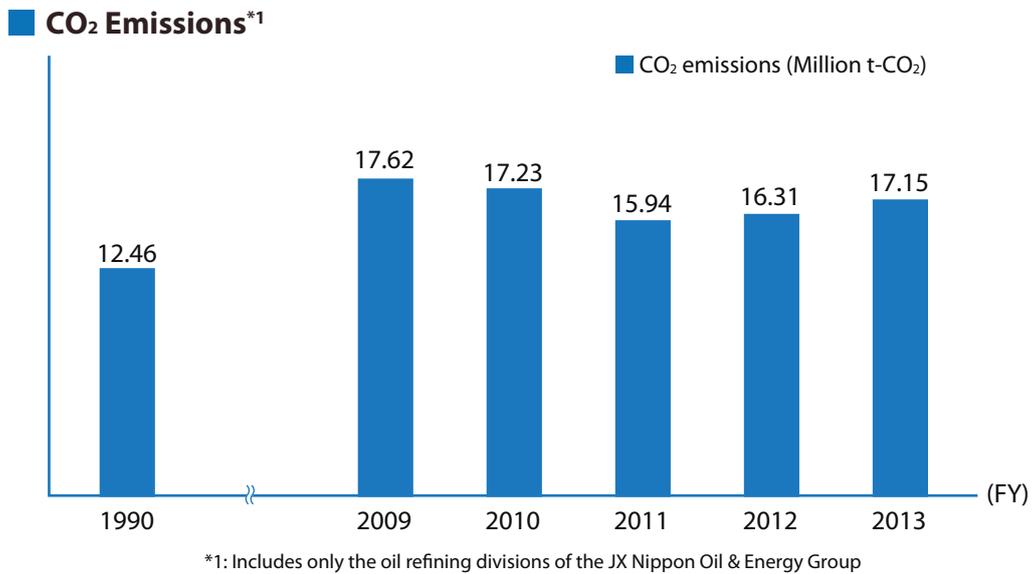
## Efforts to Reduce CO<sub>2</sub> Emissions

### Measures during Refining

Nearly 80% of the JX Nippon Oil & Energy Group's CO<sub>2</sub> emissions originate from refining. As a result, we consider improving the energy consumption efficiency of refining to be one of our most important tasks going forward. To that end, our Medium-term Environmental Management Plan (2013 to 2015) contains the target to reduce fiscal 2015 CO<sub>2</sub> emissions by 800 thousand tons compared to fiscal 2009 by carrying out energy conservation measures at refineries and other facilities. We are conducting a wide range of energy conservation activities toward this goal.

### Energy Use and Specific Energy Consumption\*1



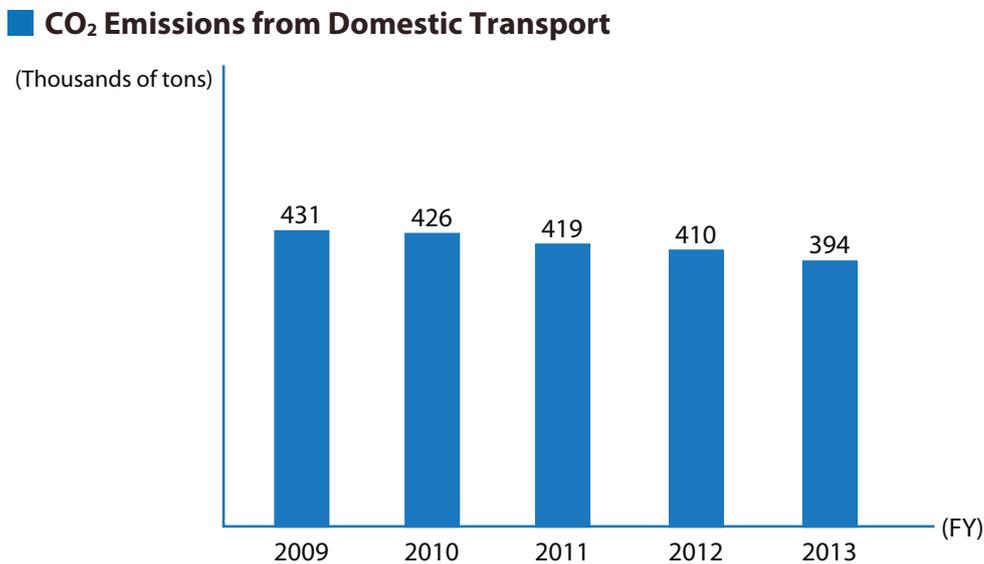


### Measures in Logistics

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 2013, our CO<sub>2</sub> emissions associated with fuel consumption in domestic transport totaled 394 thousand tons, representing a 8.6% drop over fiscal 2009 levels.



\*The above represents quantitative data reported as a specified consigner under Japan's revised Energy Conservation 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. We also introduce our environmental initiatives through booths hosted at exhibitions, trade fairs and other events.

▶ See Environmental Protection section on page P.51

## Utilizing the Kyoto Mechanisms

### Joint Implementation Project for the Recovery and Effective Use of Associated Gas at the Yety-Purovskoe Oil Field in Russia

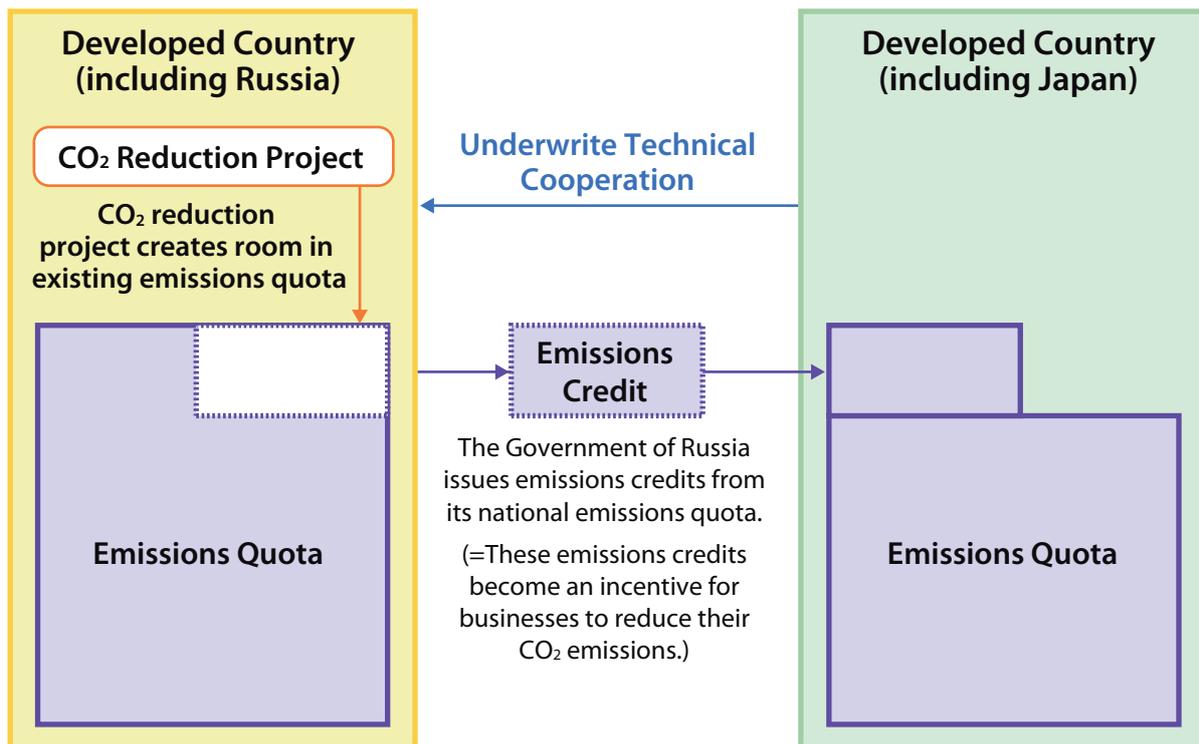
Under this project, associated gas from the Gazprom Neft-owned Yety-Purovskoe oil field located in the Yamalo-Nenets Autonomous Okrug in Russia that had been incinerated is now being recovered using a newly constructed pipeline and supplied to other parts of Russia as fuel.

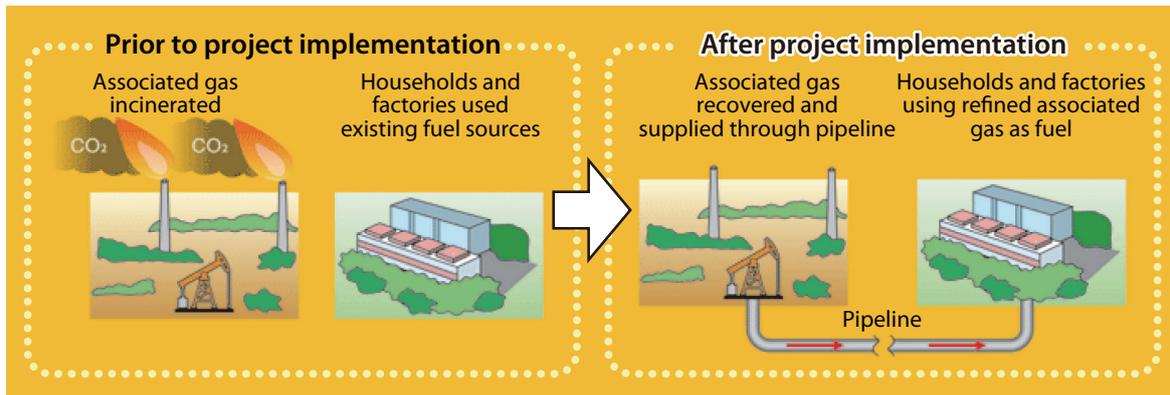
JX Nippon Oil & Energy has been involved in this project since the commercialization study phase as the developer in cooperation with Mitsubishi Corporation and Gazprom Neft, one of Russia’s largest oil companies. Our aim was to provide technical assistance for the issuance of emissions credits and prepare the project design document, using our experience from the clean development mechanism (CDM) project at the Rang Dong oil field in Vietnam. On July 23, 2010, the Government of Russia approved this project as the country’s first-ever joint implementation project. Following this, Russia issued its first emissions credits in January 2011.

A joint implementation project represents one method for reducing greenhouse gas emissions stipulated in the Kyoto Protocol in which two developed nations cooperate to initiate a greenhouse gas reduction project in either of their countries. Based on the emissions reductions from this project, the country implementing the project can then issue emissions credits.

The cumulative amount of CO<sub>2</sub> remissions designated by the Government of Russia for the duration of the project is 2.25 million tons. No additional emissions credits will be issued under this scheme, following the expiration of the first commitment period under the Kyoto Protocol but efforts to reduce CO<sub>2</sub> emissions locally will continue.

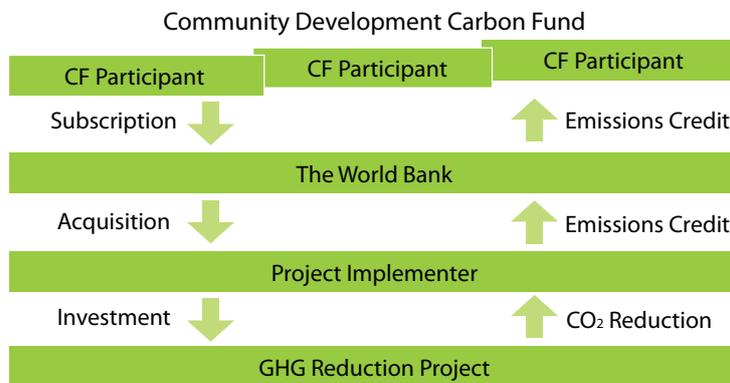
### Joint Implementation Project (JI)





### 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.



### 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 separation and capturing technologies as well as the selection and 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. This company performs preliminary studies in advance of verification testing in Japan. Based on four years of field studies, and in fiscal 2012 it began work at a site opened in Tomakomai, Hokkaido.

Currently, work is underway on the construction of facilities to separate and capture CO<sub>2</sub> and preparatory work is taking place on the wells that will be dug for the injection of CO<sub>2</sub>, which is planned in fiscal 2016 or later.

JX Nippon Oil & Energy made an investment in Japan CCS 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.

\*CCS: Carbon Dioxide Capture and Storage

# 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

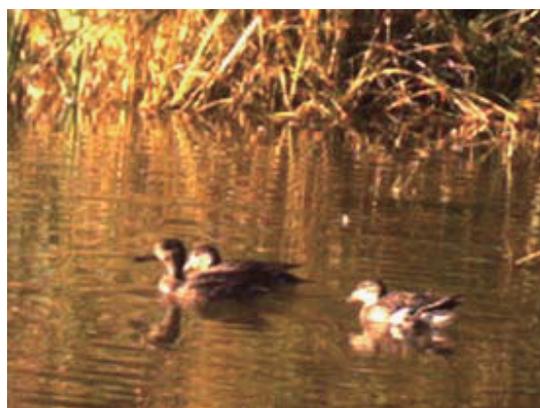
The Chita Plant is a member of the “Ecological Network Formation and Leadership Development Program for Corporate Green Spaces in the Coastal Area of Chita Peninsula” and the “Project Linking Life with One Another” as part of its efforts to protect biodiversity through green space management. This initiative 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.

The Project Linking Life with One Another received the Screening Committee Honorable Mention Award in the 2014 Good Life Awards (March 2014) and the Minister of the Environment’s Award for contributors to the natural environment on Greenery Day (April 2014), both organized by the Ministry of the Environment.



Chita Plant’s biotope



A spot-billed duck visiting the biotope

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

JX Nippon Oil & Energy is a member of the Japan Business Initiative for Biodiversity (JBIB), a leading business initiative for biodiversity in Japan. 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 the common goal of biodiversity protection.

# 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 2013

(millions of yen)

Category	Surveys		Countermeasures	
	Number of Case	Expenditure	Number of Case	Expenditure
Service stations	130	303	81	1,379
Oil depots	11	141	4	144
Refineries / Terminals	4	2	0	0
Total	145	446	85	1,523

### Soil Contamination Reporting and Published Properties in Fiscal 2013

Category	Location	Survey Results				Status
		Soil		Groundwater		
		Substance	Scale Factor	Substance	Scale Factor	
Idle Land	Hyogo	Lead	2.9	-	-	Countermeasures completed
Operating	Aichi	Benzene	39	Benzene	6.2	Countermeasures underway
	Aichi	Lead	1.7	-	-	Countermeasures completed
	Hokkaido	Benzene	1,000	Benzene	1,200	Countermeasures underway

## 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 where needed. 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 offsite before they happen. We are also taking steps to raise awareness among operators and enhance the scope of daily inspection work. Gasoline storage tanks at service stations that have reached a certain age are reinforced under the guidelines of Japan's Fire Service Act to help prevent spills before they occur.



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

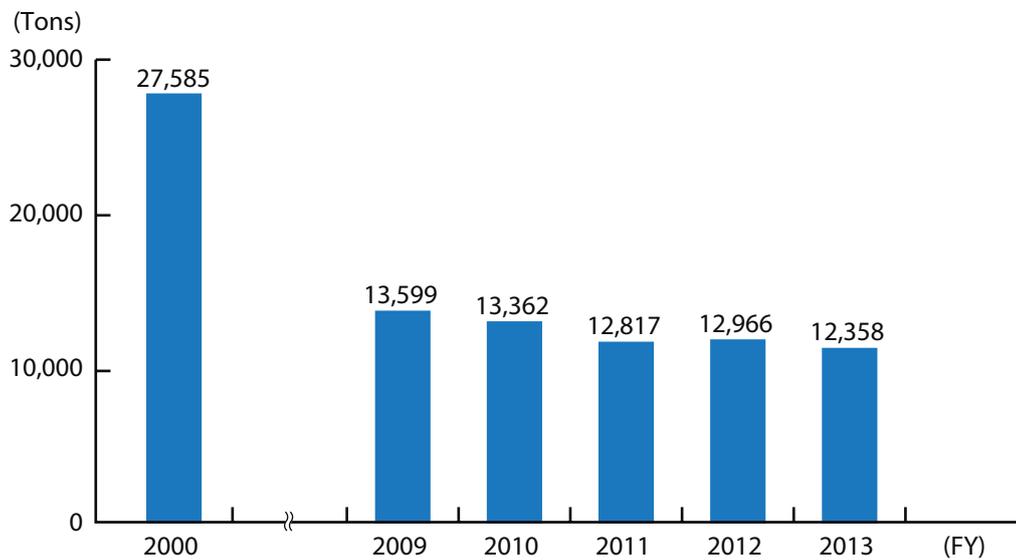
The JX Nippon Oil & Energy Group continually implements measures at its facilities and for its equipment to help prevent the release of volatile organic compounds (VOCs).

### 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 2013 were a 56% reduction.

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



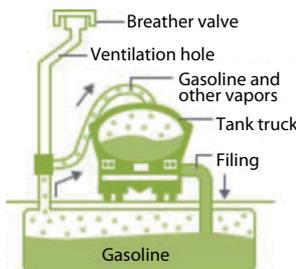
### Measures at Our Service Stations

#### 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.

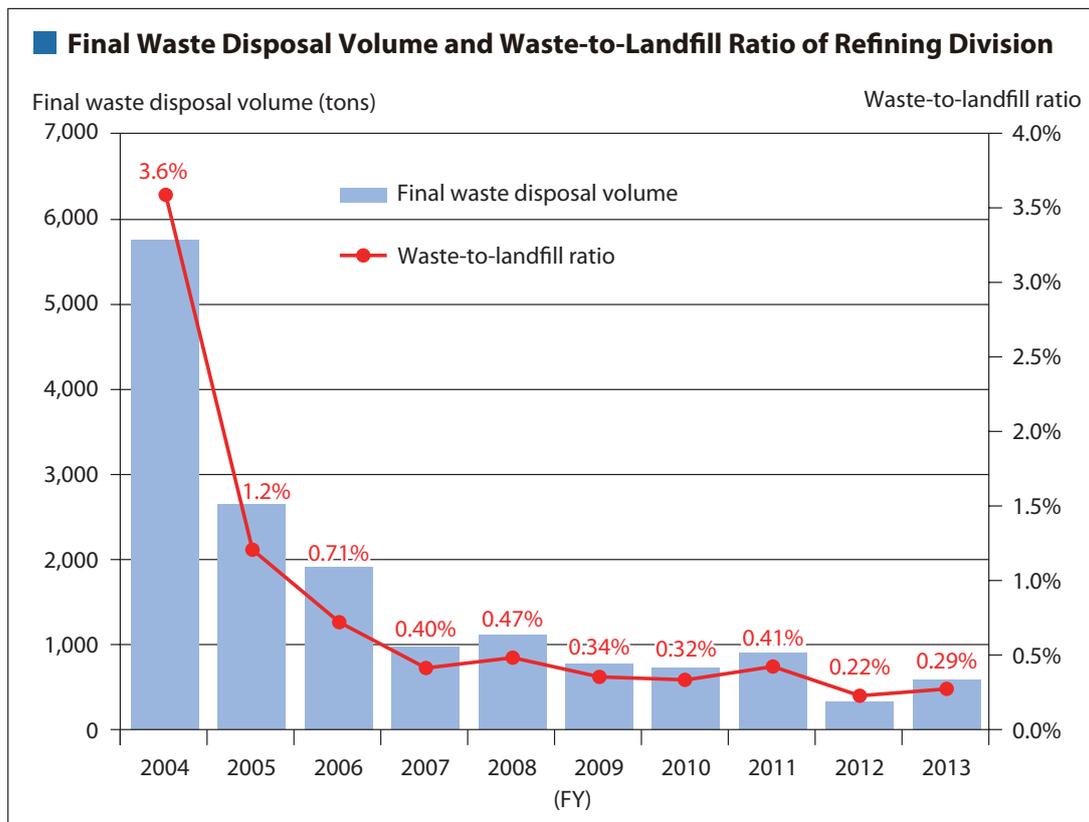
### Reducing Our Waste-to-Landfill Ratio

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 2013, our final disposal rate was 0.29%, indicating we have continued to achieve our goal of zero emissions plus.

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



## ● 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, fiscal 2013 we were able to switchover 99.7% of all manifests, or about 10,500, to electronic manifest systems.

## Air Pollution Prevention Measures

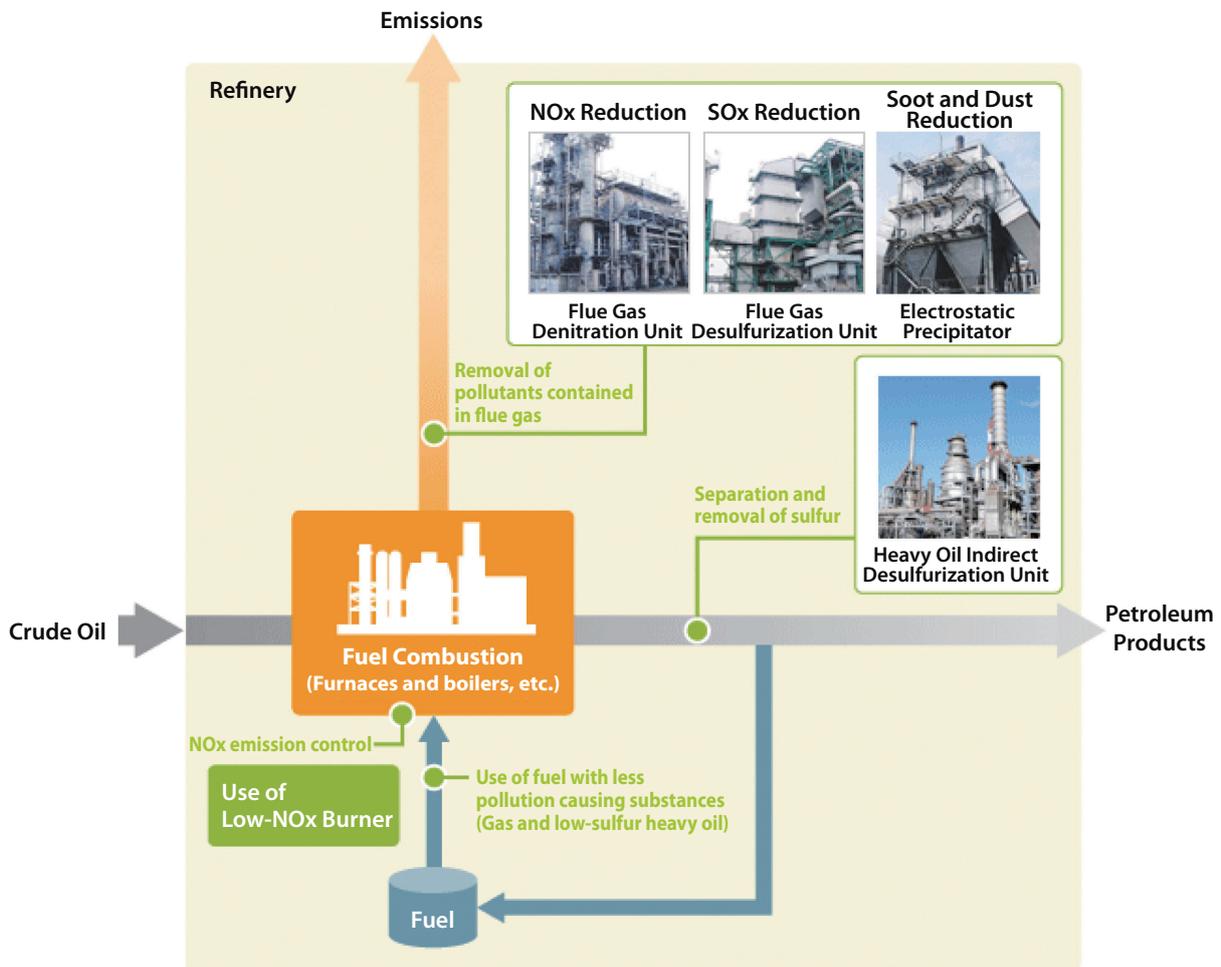
The JX Nippon Oil & Energy Group has initiated a wide range of measures to help control its release of air pollutants into the atmosphere, such as SOx, NOx and soot and dust.

### Controlling the Release of Air Pollutants

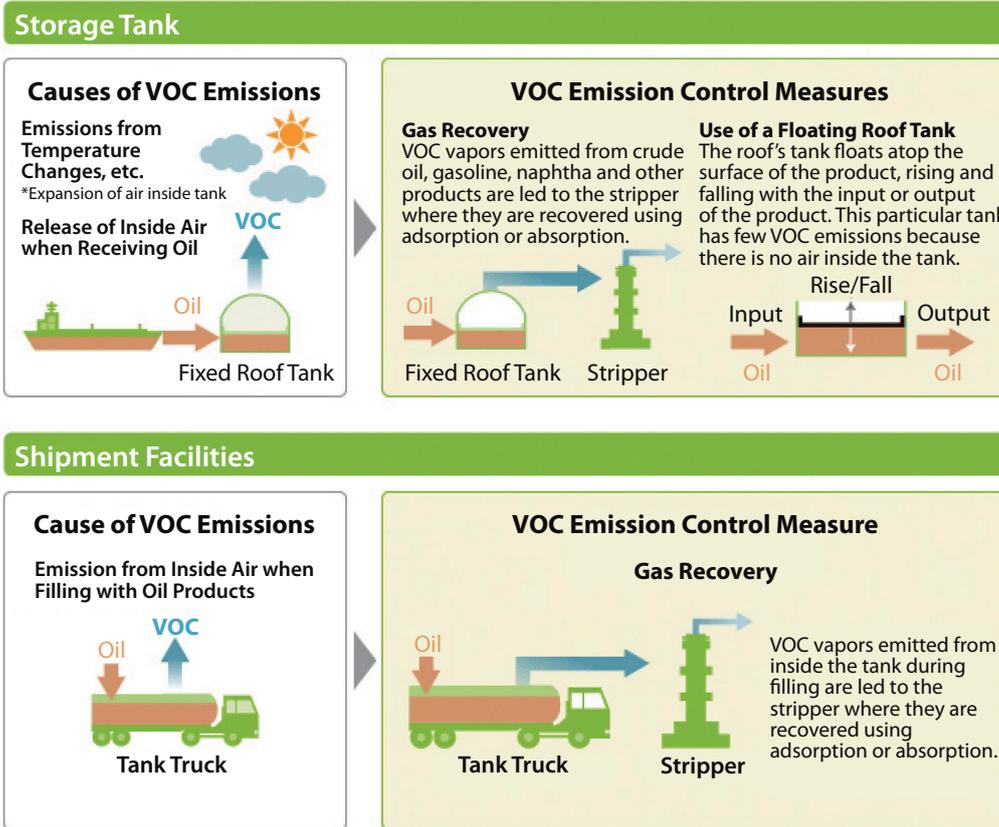
The petroleum product manufacturing process consumes fuel as the necessary energy for distillation and chemical reactions. As a result, sulfur oxides and other air pollutants are released when incinerating impurities found in this fuel. Refining, storage and shipment facilities for crude oil and petroleum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



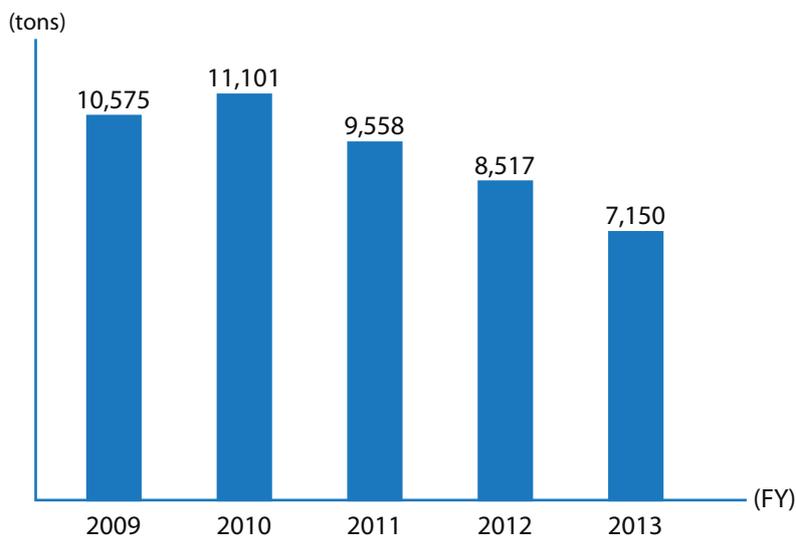
VOC Emissions at Refineries and Control Measures



**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.

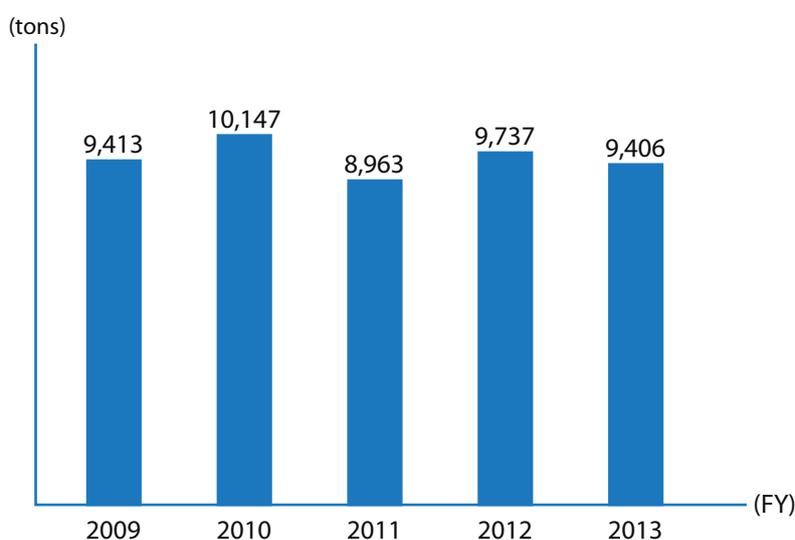
**SOx Emissions at Our Refineries**



## Reducing Nitrogen Oxide (NOx) Emissions

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

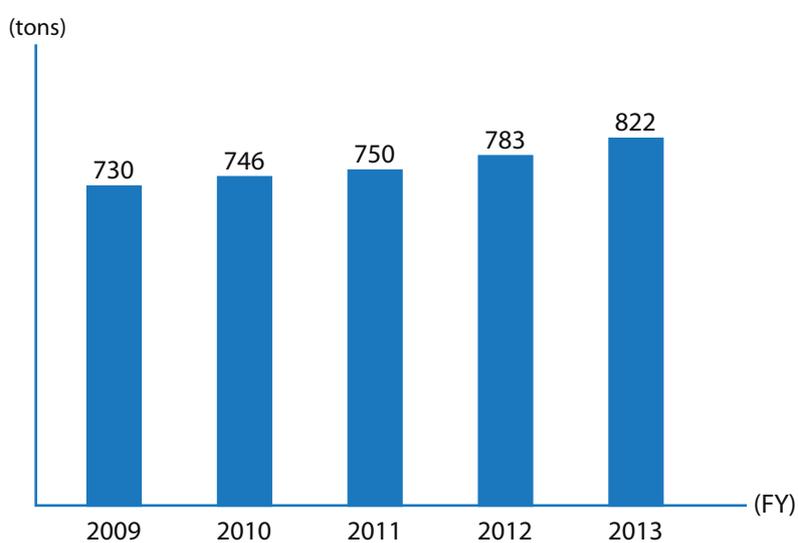
### ■ NOx Emissions at Our Refineries



## 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

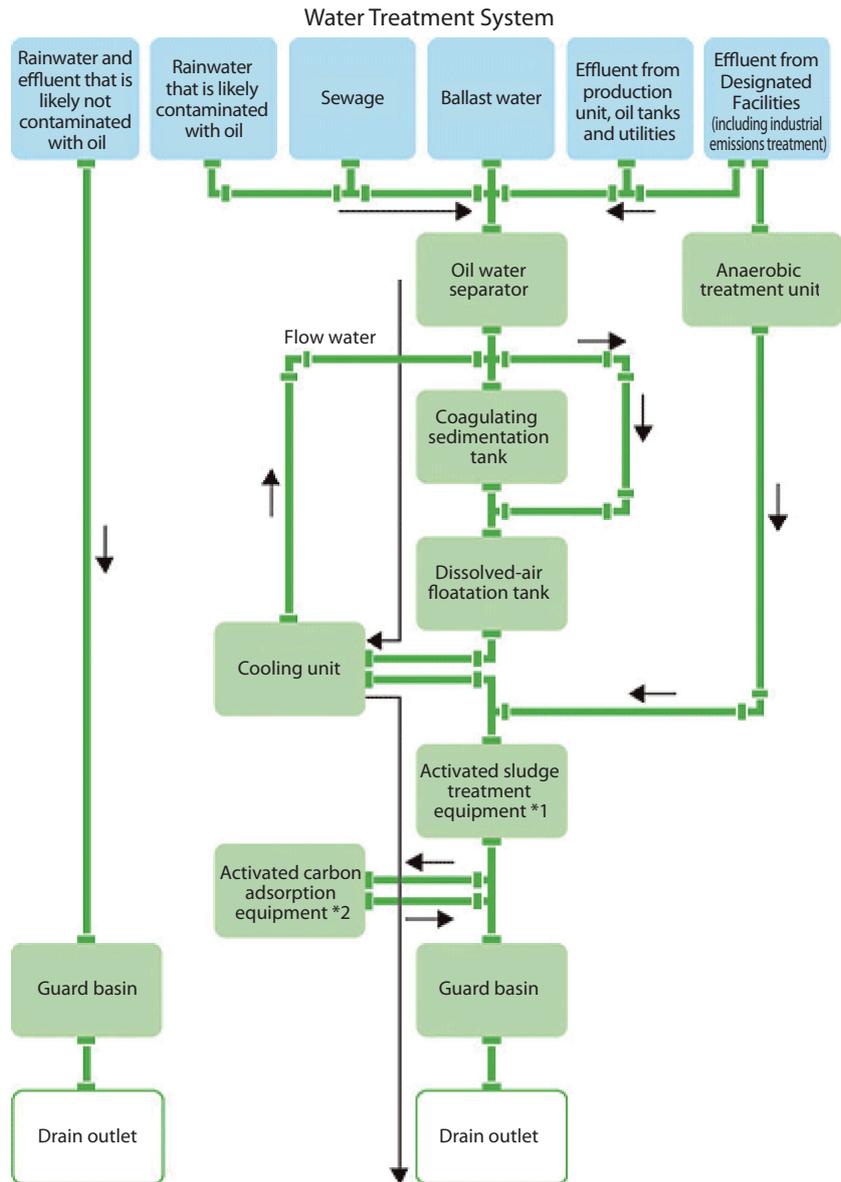
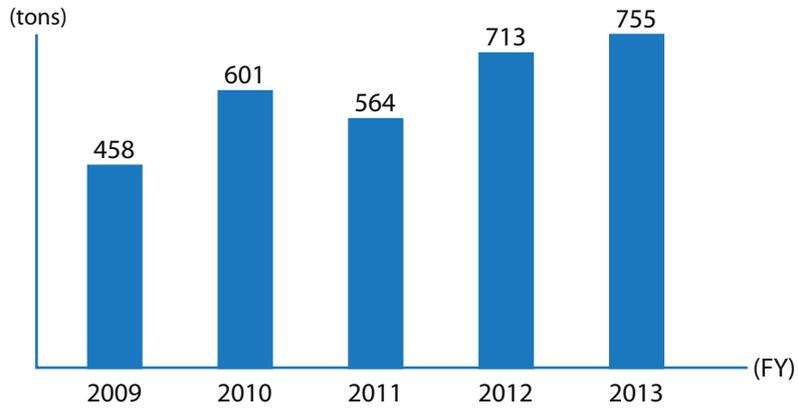
The JX Nippon Oil & Energy Group has initiated a wide range of measures for preventing water contamination.

### 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



\*1: Activated sludge treatment unit



2: Activated carbon adsorption unit



## Measures during Transport

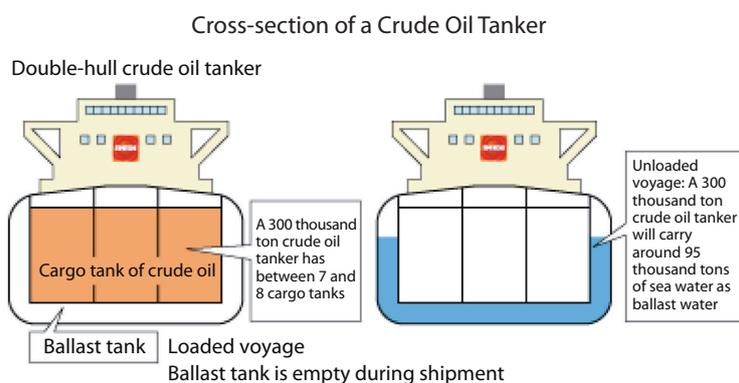
### Stepping up Our Fight to Prevent Marine Pollution

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 a safety measure for unloaded voyages. Yet, this ballast water contains microorganisms and plankton that are in turn carried to the faraway waters off oil producing countries. In compliance with the demand of crude oil shipping ports, the JX Nippon Oil & Energy Group replaces this ballast water while still on the open ocean to maintain the ecological balance that exists in the coastal waters off oil producing countries.



### 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.



Car washing machine with water recycling function

### Wastewater Treatment

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

## Management of Chemical Substances

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

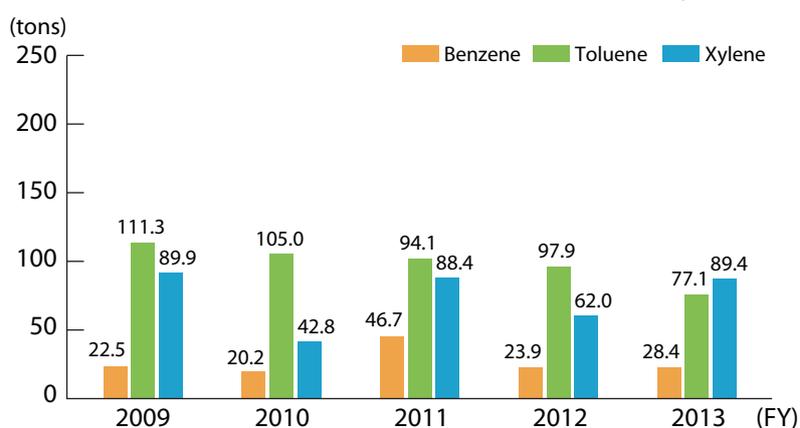
### Monitoring and Managing the Release and Transfer Amounts of Chemical Substances

#### 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 2013, our petroleum refining division released and transferred a total of 1,361 tons of these substances, which mainly included benzene, toluene, and xylene, each an additive in gasoline. These chemicals were released and transferred into the air or water.

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



\*Includes only the petroleum refining division 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



An employee turning off the lights during lunchtime

Our offices have initiated a variety of energy conservation measures, including turning off 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 also collect waste oil and used oil filters at our service stations.



Waste sorting and collection box

### 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.no.e.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 (Available only in Japanese)

- ▶ 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\\_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/eco/index.html>)
- ▶ Osaka Refinery (<http://www.noe.jx-group.co.jp/company/about/gaiyou/jigyousho/osaka/eco/index.html>)

# JX Nippon Oil & Energy CSR Report

## Editorial Policy for the 2014 Edition

CSR Report 2014 uses special feature sections to inform stakeholders about the most important CSR topics of the JX Nippon Oil & Energy Group, which include "Building a Resilient Value Chain", "Responding to the Diverse Energy Needs", and "Products that Contribute to Develop the Sustainable Society".

In addition, Specific details pertaining to the company's activities can be found in the Management Report, Corporate Citizenship Report 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 24 main affiliates (including refineries and plants of the company and its affiliates)

### Timeframe

April 2013 to March 2014

However, certain activities and plans that took place prior to March 2013 or after April 2014 have also been included.

### Published

November 2014

(The next edition is slated for publication in October 2015)

#### Previous CSR Reports

 CSR Report 2013 (PDF:12.7MB / 89 pages)

([http://www.noie.jx-group.co.jp/english/company/current\\_csr\\_report/pdf/report-2013-en.pdf](http://www.noie.jx-group.co.jp/english/company/current_csr_report/pdf/report-2013-en.pdf))

 CSR Report 2012 (PDF:13.2MB / 89 pages)

([http://www.noie.jx-group.co.jp/english/company/current\\_csr\\_report/pdf/report-2012-en.pdf](http://www.noie.jx-group.co.jp/english/company/current_csr_report/pdf/report-2012-en.pdf))

 CSR Report 2011 (PDF:0.7MB / 20 pages)

([http://www.noie.jx-group.co.jp/english/company/current\\_csr\\_report/pdf/report-2011-en.pdf](http://www.noie.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 2013 to March 2014.  
(This also includes certain activities and plans that took place prior to March 2013 or after March 2014)