



Energy in **People**  
Energy of the **Earth**

Energy of **Society**

**CSR Report  
2006**  
Corporate Social Responsibility Report

**JAPAN ENERGY CORPORATION**



Our company name, Japan Energy, represents our social mission of providing a stable supply of energy as one of Japan's leading energy companies. It also represents the "energy" that we put into developing new technologies and new businesses.

JOMO, our corporate brand name, is an abbreviation meaning the "Joy of Motoring" and the "Joy of Movement."

The sphere part of our corporate mark represents the Earth, with a gradual change of color from blue to green representing our crystal-clear environment of water, plants and trees. The square part of the corporate mark represents the sky above us, with the gradual change from reddish orange to yellow representing the dawn of a new era. The combination of these two elements symbolizes both a deep concern for the Earth and its environment, and a picture of moving towards a new era.

## Editorial Policy

Japan Energy has been publishing an Environmental Report Since 2003, and a Social and Environmental Report in 2005. This year's publication is called CSR Report 2006.

This report details the company's wide range of petroleum-related businesses, from exploration of petroleum to the sale of petroleum products at JOMO service stations. We have also strived to present the responsibilities and efforts of each of our business fields in an easy-to-understand format.

## Scope of the Report

This report basically covers the activities of Japan Energy Corporation. Financial data, however, covers Japan Energy Group consolidated companies. Environmental data and environmental accounting cover Japan Energy Corporation and Kashima Oil Co., Ltd.

## Period Covered by the Report

This report covers the CSR activities for FY2005 (April 1, 2005 to March 31 2006). Some sections also cover activities in and after April 2006.

## Reference Guidelines

In this report, we referred to the Environmental Reporting Guidelines (FY2003 version), published by Japan's Ministry of the Environment, and the Sustainability Reporting Guidelines 2002, published by the Global Reporting Initiative (GRI). For environmental accounting, we referred to the Study on the Introduction of Environmental Accounting in the Petroleum Industry (2000) published by Japan Petroleum Energy Center.

## Nippon Mining Holdings Group

The Nippon Mining Holdings Group, through its holding company Nippon Mining Holdings, Inc., carries out two major businesses: petroleum (Japan Energy) and metals (Nippon Mining & Metals Co., Ltd.). It is a comprehensive resources and energy group active in the fields of petroleum, petrochemicals, non-ferrous metals, and electronic materials. Through these businesses, it carries out its mission of efficient, stable provision of fundamental materials that support industries and individual lifestyle around the world.

The Nippon Mining Holdings Group is involved in a wide range of businesses. A unique corporate group with a variety of operations adapted to each field's stage of growth and business characteristics, its activities include everything from fundamental materials for infrastructure-building to leading-edge IT materials that drive the field of nanotechnology.

## Nippon Mining Holdings Group



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## Our Mission: Provide a Stable Supply of Energy. We are Fulfilling our Social Responsibilities to the Earth and to Our Stakeholders.

### We Believe that our Daily Activities, All of which are Based on Our Mission of “We Create Energy,” in Themselves Constitute CSR Activities.

In April 1997, we established our Mission: “We Create Energy.” Our aim was to activate “Energy in people,” use the “energy of the Earth” wisely and enhance the “energy of society” by making good on our Five Pledges.

Creating energy means using the three kinds of energy—the energy in people, the energy of the Earth and the energy of society—in a synergistic effect in order to help realize a society that is warm and vibrant.

The Five Pledges represent promises that our directors and employees have made to society regarding corporate ethics and social contribution, environment and safety, respect for individuality, a customer-first approach and profitable growth. These are promises that must guide us in everything we do. Putting our Mission and Business Principles into practice is what our CSR activities are all about.

In January 2005, we boosted our CSR capacities with the establishment of the Corporate Social Responsibility Department, which is dedicated to the planning and implementation of all CSR activities based on our Mission.

Japan Energy carries out CSR activities with an emphasis on compliance, environmental protection, customer satisfaction and social contribution.

### Boost Compliance Capabilities, Be a Good Corporate Citizen

At Japan Energy, compliance is a prerequisite for all business activities. We strive to achieve strict compliance systems and education and training programs so that every one of our directors and employees earnestly abides by laws, social norms and corporate ethics.

In 1999, we established the Antimonopoly Act Compliance Promotion Committee (now called the Compliance Committee). In 2001, we opened the Mission Consultation Office, where employees could inquire or report such matters as misconduct in the company. In 2004, we created the Fundamental Compliance Rules. With the enactment of the Whistleblower Protection Act in April 2006, we created the Reporting System Operational Rules to improve our previous reporting system, including setting up of a helpline outside the company. These and other measures will help us constantly improve the ethical mentality of our organization, prevent misconduct, clarify compliance-related responsibilities and ensure that all directors and employees conduct themselves sensibly.



## **Carrying Out Business with Concern for the Environment and Safety**

Petroleum products constitute a valuable source of energy and petrochemical products an important source of raw materials. Large-scale consumption of these, however, causes problems like man-made carbon dioxide emissions that impact the Earth's environment. Accidents at our sites can also negatively impact the local and global environment, so these must be prevented by taking all possible measures.

In our Five Pledges, we state that we shall "Always give top priority to safety and the environment." As a petroleum company, it is only natural that we take responsibility for preventing problems like global warming and air pollution through strict environmental measures in all business processes, including exploration, development and production of petroleum, transportation, refining and marketing. As of 1999, all of our refineries and plants were certified for ISO 14001. Such efforts ensure that our organization has built-in systems for continuous environmental improvement.

And since these sites handle large amounts of dangerous substances and high-pressure gas, we have systems for safety management and crisis management in case of an accident.

We also develop technologies that protect the environment: our research and development includes clean energy sources, fuel oils like sulfur-free gasoline and sulfur-free diesel fuel, environmentally friendly products in the lubricant and petrochemical fields and plastic chemical recycling. We are also obtaining carbon emissions credits as part of efforts to prevent global warming.

Japan Energy is also striving to protect domestic forests, which act as carbon sinks. Working with local governments and non-profit organizations, we are providing funds and employee volunteers for forest protection and tree planting activities.

## **2006 is the Start of a New Era of Customer Satisfaction: Producing JOMO Service Stations that Make Customers Want to Come Again**

Japan Energy and JOMO service stations and dealerships work as a team in pursuit of customer satisfaction. Everyone—from service station crew to top management—share a desire to serve and achieve the

highest level of customer satisfaction. We are striving to create what we call "Value Style" stations based on the principle of "producing stations that make customers want to come again." Another way we are satisfying our customers is by training our people to be rich in humanity to enhance quality of our customer service.

## **Contributing to Society through Sports, Culture and Volunteering**

Japan Energy is particularly active in its contributions to society through the promotion of sports and cultural activities and assistance to children's and special needs' groups. We also support our employees' volunteer activities in the community.

Japan Energy's longest-running initiative is the JOMO Children's Story Award. Every year, we gather children's stories from around Japan, and the most outstanding entries are awarded and published in the Bouquet of Children's Stories. This year marks the 37th edition of the awards.

Since 1992, our dealerships have purchased the Bouquet of Children's Stories, with proceeds going to the Japan National Council of Social Welfare, which carries on the JOMO Scholarship Grant for the children's welfare.

We also promote sports through the JOMO Basketball Clinic and physical activities for special needs people through the Click Donation program.

## **UN Global Compact**

Japan Energy takes part in the UN Global Compact and its local network, the Global Compact Japan Network, working with other companies to solve problems and share successes in international problems related to human rights, labor, the environment and anti-corruption.

We hope that this CSR Report 2006 will give you a better understanding of Japan Energy's CSR activities.

We welcome your frank and honest opinions and hope to reflect them in our CSR activities from now on.

July 2006

**Isao Matsushita**

President and Chief Executive Officer,  
Japan Energy Corporation

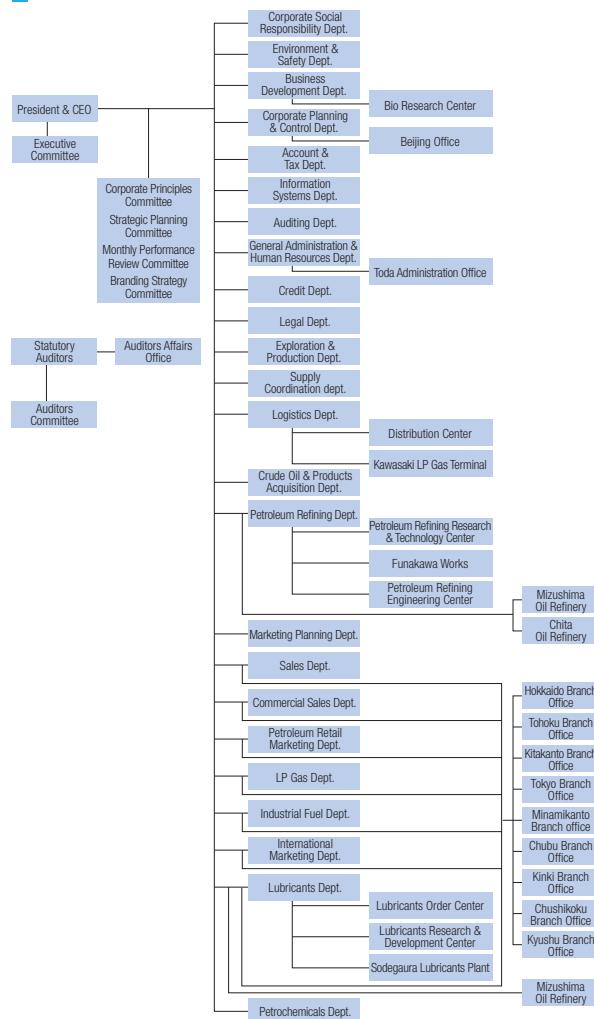
**We strive to develop new resources that will allow us to secure energy sources and boost competitiveness. We also aim to improve our profit base and achieve sustainable growth.**

## Company Profile

Name	Japan Energy Corporation
Head office	2-10-1 Taronomon, Minato-ku, Tokyo, Japan 105-8407
Founded	December 1905
Established	April 1, 2003
Capital	48 billion yen (as of Sep. 25, 2006) Wholly owned by Nippon Mining Holdings, Inc.
President	Isao Matsushita
Number of employees	2,519 (as of March 31, 2006)
Main lines of business	Exploration, development and production of petroleum Manufacturing and marketing of gasoline, naphtha, kerosene, gas oil, heavy fuel oil, LP gas and lubricating oils Manufacturing and marketing of petrochemical products

## Organization

(as of June 28, 2006)



Notes: The Kitakanto Branch, Tokyo Branch and Minamikanto Branch do not oversee the business of the Industrial Fuel Department, International Marketing Department and Lubricants Department.

## Fiscal 2005 Performance

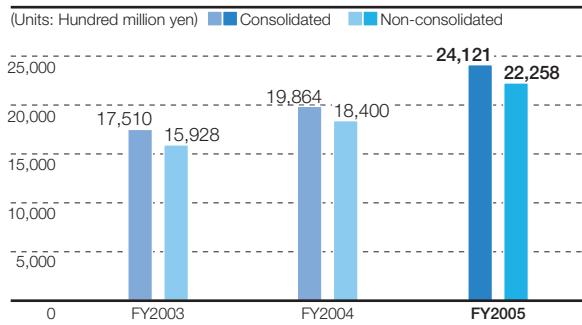
In FY2005, sales volume of fuel oils was 29.91 million kiloliters, about the same as the previous year. The price of our products rose due to the continuing high level of crude oil prices. Net sales were 2,225.8 billion yen, up 21% over the previous year, and income before special items increased 18% to 79.9 billion yen.

In the refining division, the Mizushima, Chita and Kashima refineries continue to put safety and environmental protection first while continuing their highly efficient operation. As part of our efforts to protect the environment, the Mizushima and Kashima refineries began shipping sulfur-free regular gasoline (sulfur content below 10 ppm) and gas oil to JOMO service stations, where these fuels went on sale throughout Japan in April 2005.

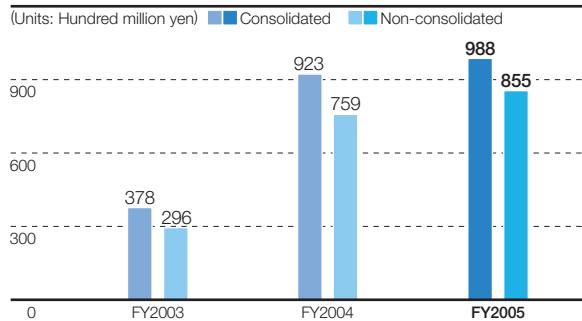
In our marketing division, everyone from service station crew to top management share a "mentality of hospitality" as part of our mission to manage our company with a customer-satisfaction focus. Based on a policy of "producing service stations that make customers want to come back," we are striving to create "Value Style" service stations.

In our exploration and production division, we're engaged in petroleum exploration, development and production business in the Middle East, China, Southeast Asia, Oceania and Japan.

### Net Sales



### Operating Income



## Primary Affiliated Companies

### Petroleum exploration, development and production

Japan Energy Development Co., Ltd.  
Southern Highlands Petroleum Co., Ltd.  
NMC Pearl River Mouth Oil Development Co., Ltd.  
Abu Dhabi Oil Co., Ltd.  
United Petroleum Development Co., Ltd.

### Crude Oil transportation

Nissho Shipping Co., Ltd.

### Refining and manufacturing of petroleum products and related businesses

Kashima Oil Co., Ltd.  
Kashima Aromatics Co., Ltd.  
Nikko Liquefied Gas Co., Ltd.  
Petrockes Ltd.  
Cactus Industry Co., Ltd.  
Funakawa Kosan Ltd.  
Oga Techno Co., Ltd.  
JOMO Technical Research Center Co., Ltd.  
Sanyo Kiki Kentel Co., Ltd.

### Isewan Sea Berth Co., Ltd.

JS Initiative Ltd.

### Transportation (in Japan)

Nippon Tanker Co., Ltd.  
Toshin Yusosen Co., Ltd.  
JLS Corporation  
Chubu Sekiyu Yuso Co., Ltd.  
Kinki Ekitai Yuso Co., Ltd.

### Marketing of petroleum products, LP gas and petrochemicals, and related businesses

JOMO-Net Sapporo Co., Ltd.  
JOMO-Net Tohoku co., Ltd.  
JOMO-Net Kita-Kanto Co., Ltd.  
JOMO-Net Higashi-Tokyo Co., Ltd.  
JOMO-Net Nishi-Tokyo Co., Ltd.  
JOMO-Net Minami-Kanto Co., Ltd.  
JOMO-Net Tokai Co., Ltd.  
JOMO-Net Kansai Co., Ltd.  
JOMO-Net Sanyo Co., Ltd.  
JOMO-Net San-in Co., Ltd.  
JOMO-Net Kyushu Co., Ltd.

### J-Quest, Co., Ltd..

Asia Shoji Co., Ltd.

Nissan Sekiyu Hanbai Co., Ltd.

JOMO Retail Service Co., Ltd.

Ryoyu Oil Co., Ltd.

Asahikawa Sekiyu Co., Ltd.

Toyo Sekiyu Hanbai Co., Ltd.

JFE Shoji Sekiyu Hanbai Co., Ltd.

Iwami Kotsu Shoji Co., Ltd.

Inoue Shoko Co., Ltd.

Taiyo Koyu Co., Ltd.

Itochu Petroleum Sales Co., Ltd.

JOMO Support System Co., Ltd.

JOMO Enterprise Co., Ltd.

JOMO Guardian Co., Ltd.

JOMO Net Outsourcing Co., LTD.

JOMO Educational Information Center Co., Ltd.

Kyo-Pro Co., Ltd.

JOMO-Pro Kanto Co., Ltd.

Gas Net Co., Ltd.

JOMO Sun-Energy Co., Ltd.

Japan Energy Analytical Research

Center Co., Ltd.

Toa Tansan Co., Ltd.

### Oil Stockpiling

Fukubi Oil Storage Co., Ltd.

Akibi Co., Ltd.

Kyodo Terminal Co., Ltd.

Okinawa Terminal Co., Ltd.

### Other businesses

IS Japan Co., Ltd.

am/pm JAPAN Co., Ltd.

### Overseas businesses

Irvine Scientific Sales Co., Inc.

Japan Energy (Singapore) Pte. Ltd.

Japan Energy (Oceania) PTY., LTD.

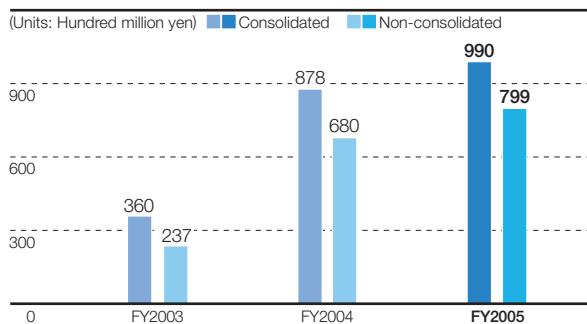
Japan Energy (U.K.) Ltd.

Japan Energy (Shanghai) Trading Co., Ltd.

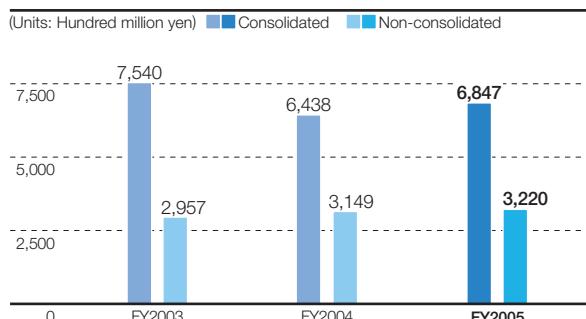
Shanxi Japan Energy Lubricants Co., Ltd.

(as of April 1, 2006)

## Income Before Special Items

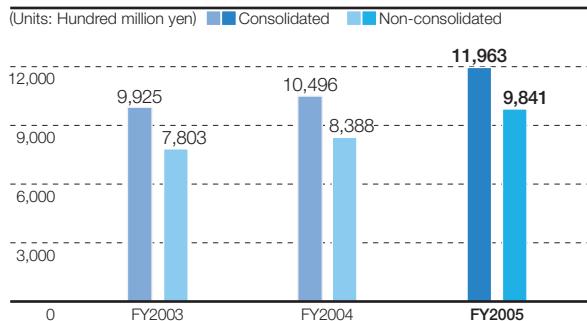


## Interest-Bearing Liabilities

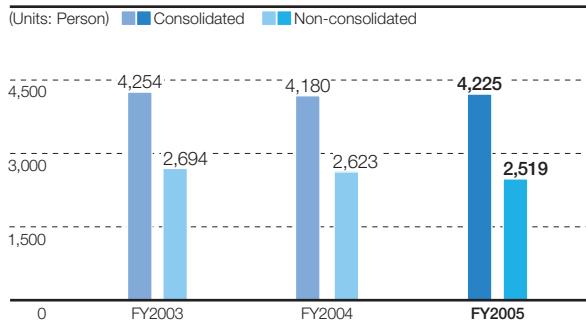


Note: Consolidated interest-bearing liabilities are those of the Nippon Mining Holdings Group

## Total Assets



## Number of Employees



Note: The number of non-consolidated employees includes those dispatched to affiliates.

## Putting Our Mission and Business Principles into Practice

Our Mission, "We Create Energy," indicates the direction of our company is heading in. To create energy, all of our directors and employees must share the same sense of values and commitment. Our Business Principles consist of the Five Pledges, standards of action for implementing our Mission. Central to our CSR activities is the obligation of each and every director and employee to carry out their day-to-day work with a focus on the Mission and Business Principles.

Japan Energy's Mission and Business Principles (established April 1997)



Our Mission

### **WE CREATE ENERGY**

**For a more cohesive and dynamic society.**

We activate the natural **Energy in People**, placing a high value  
on individual imagination and creativity.

We use the **Energy of the Earth** wisely,  
fully aware that the global environment forms the basis for mankind's present and future existence.

We enhance the **Energy of Society**  
by continually improving corporate performance and credibility,  
and discharging our responsibility as a corporate citizen to discover new values  
and additional areas for growth.

Our Business Principles

### **FIVE PLEDGES**

**To achieve our mission, we will:**

- Communicate openly about our policies, programs and performance,  
and always act as a good corporate citizen.
- Always give top priority to safety and the environment.
- Foster a work environment based on teamwork  
and a can-do spirit to offer innovative technologies, products and services.
- Accurately identify and fully satisfy the ever-evolving needs of our customers.
- Strive to achieve corporate growth through sustainable earnings  
in close cooperation with our group of companies.

# Corporate Governance

By putting its Mission into practice, Japan Energy is fulfilling its role as a good corporate citizen.

An important part of this is our goal of ensuring effectiveness and transparency in our management.

## Creating Systems that Strengthen Internal Control

Japan Energy's goals are to speed up decision-making, make operations more efficient and clarify responsibilities. To this end, we clarified the difference between the board of directors' functions and operating officers' execution functions.

In carrying out their functions, directors and employees are to abide by relevant laws, the company's articles of incorporation, our Mission, the Basic Compliance Rules and other in-house rules and notices. To make all this effective, Japan Energy has numerous systems in place.

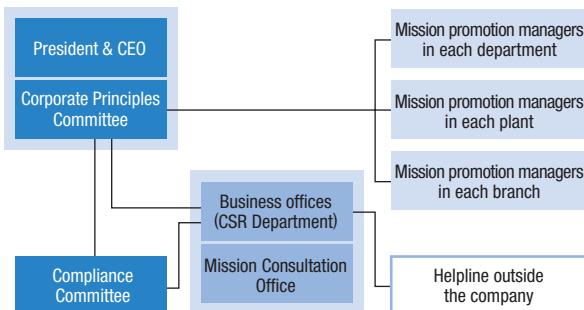
Ever since the establishment of our Mission in 1997, the Corporate Principles Committee (originally the Corporate Principles Headquarters Meeting), chaired by our company president (originally the Chief Officer of the Headquarters), has made it a rule to meet once a month. Made up of officers in charge or in supervision of each department, this committee discusses company-wide issues related to our Mission and CSR.

The Compliance Committee was established in July 2003 as a subsidiary body of the Corporate Principles Committee and sets policy on company-wide education and awareness activities and examines progress that each department is making in compliance. Both the Corporate Principles Committee and the Compliance Committee are run by the Corporate Social Responsibility Department.

In addition to the Corporate Principles Committee, three other advisory bodies have been established: the Strategic Planning Committee, the Monthly Performance Review Committee and the Branding Strategy Committee. These committees allow the company's highest level of management to examine critical issues with a specialized focus, thus allowing us to improve the efficiency and transparency of our management.

Note: In line with the new Japanese Corporate Law, we abolished the Board of Directors, Board of Auditors and Board of Executive Officers, and established the Executive Committee and the Auditors Committee, effective as of June 28, 2006.

### System for Promoting Our Mission and Compliance



## Group Management System

Japan Energy and Nippon Mining Holdings, Inc. work together on a joint committee, the Nippon Mining Holdings Group Management Conference, to create medium- and long-term management plans that both sides can agree to. The two companies also have a basic contract related to management of the group that clarifies the standards on which Nippon Mining Holdings' manages and controls Japan Energy. These standards separate group management and execution of businesses, effectively securing group business control functions and management transparency.

Japan Energy and its subsidiaries share duties on the Japan Energy Group Management Conference, whose aim is to create unified medium- and long-term management plans. Another goal of the committee is to respect the autonomy of affiliates based on the Rules for Control and Operations of Affiliates while at the same time improving the overall strength of the group and thus helping the petroleum business segment grow and operate more efficiently.

Note: In April 2006, the Internal Control Promotion Department was established in Nippon Mining Holdings, Inc. to help the Nippon Mining Holdings Group prepare its operations for smooth and systematic compliance with new laws and revisions of current laws; for example, the May 2006 revisions to the new Corporate Law and the Japanese version of the SOX Law (Financial Instruments and Exchange Law; scheduled to go into effect in 2008). As well, the Group Internal Control Committee was established to allow Nippon Mining Holdings, Inc. and the core business companies, including Japan Energy, to cross-organizationally discuss and examine policy on things like system improvements to group-wide internal control, and to carry out the related planning, documentation and evaluation of such policy.

### Participation in the United Nations Global Compact

Japan Energy supports the United Nations Global Compact (below referred as GC) and its 10 principles in four areas including human rights, labor, the environment and anti-corruption. Through CSR activities based on our Mission and Business Principles, we pledge to abide by the 10 principles of the Global Compact.

In May 2004, our Basic Compliance Rules consolidated our promises for the prevention of child labor and forced labor, prohibition of unfair discrimination, environmental protection and clean relations with politicians, government and other public offices. Adherence to these rules by employees is ensured by regular in-house education and training activities.

We also offer employees opportunities to raise their awareness of global issues; for example, through activities to raise money for NGOs that conduct education-support in developing countries and through the sponsoring of



joint events with concerned organizations that bring employees close to important issues facing the world today.

→ Please refer to page 46 for details about our support for employees' volunteer activities.

## Compliance and Risk Management

For Japan Energy, compliance is the major prerequisite in all business activities. Our basic policies, concrete standards and systems of implementation are all set in rules and we are striving to promote compliances.

### Fundamental Compliance Policy

Established in May 2004, our Basic Compliance Rules state that, led by our top management, all directors and employees shall earnestly abide by laws, social norms and corporate ethics based on our Mission. To this end, we have made it a basic policy to continuously upgrade our organizational culture and create a system that prevents misconduct and clarifies responsibilities.

### Concrete Standards of Compliance

Based on our Fundamental Compliance Policy, we set the following 22 criteria as concrete standards that directors and employees must adhere to in all that they do. The Basic Compliance Rules state that directors and employees must adhere to these and other relevant laws and regulations.

#### Concrete Standards of Compliance (22 Criteria)

1. Adherence to the Antimonopoly Act
2. Prohibition of insider trading
3. Environmental protection
4. Safety management
5. Adherence to the Unfair Competition Prevention Law
6. Fair relations with politicians, public agencies and public officials
7. Consumer protection
8. Disclosure of information, and accountability
9. Dealing with anti-social forces
10. Appropriate accounting
11. Fair reporting of working hours
12. Prohibition of receipt of gifts
13. Prohibition of unfair discrimination
14. Prevention of sexual harassment
15. Protection of personal information
16. Prevention of child labor and forced labor
17. Prohibition of conflicts of interest
18. Prohibition of private usage of company properties
19. Assurance of the security of company information
20. Appropriate management of exports
21. Prohibition of trading for speculative purposes
22. Rigorous crisis management

### System of Implementation for Compliance

Japan Energy's compliance activities are run by the Compliance Committee, which was established as a subsidiary body to the Corporate Principles Committee in July 2003. The Compliance Committee establishes policy on compliance education and awareness activities for the entire company. Every six months, the committee examines and evaluates the progress that company divisions are making on key compliance-related efforts.

### Mission Consultation Office for Internal Reporting

Part of efforts to promote our Mission. The office responds to questions, opinions and doubts expressed by directors and employees, and hears complaints on in-house misconduct and other issues based on our Fundamental Compliance Rules.

Formulated in June 2004, the Whistleblower Protection Act protects whistleblowers from dismissals, demotion, salary cuts or other unfair treatment. Japan Energy strictly prohibits organizational and personal reprisals on whistleblowers and has written protection of whistleblowers into its Basic Compliance Rules.

With enactment of the Whistleblower Protection Act in April 2006, we strengthened our reporting systems by establishing our Reporting System Operation Rules, which detail basic policy, procedure and notes for the operation of reporting systems. At this time, we also established the Helpline outside the company.

### Compliance Education

Japan Energy has always made compliance education an integral part of education on the company Mission and CSR. Our implementation policy is to take every opportunity to honestly and frankly educate directors and employees so that a spirit of compliance takes firm root in the company.

In FY2005, we implemented compliance education in the training programs for new employees and newly appointed managers. As well, each department of every Japan Energy site had a lecture by an outside expert aimed at Mission Promotion Managers. With the start of the Personal Information Protection Law in April 2005, we began a personal information protection e-learning course for all employees.



Compliance training at the Mission Promotion Managers Meeting

## Risk Management

Risk management is divided into risk assessment (preventative), risk control (dealing with problems) and risk communication (public relations). Japan Energy places particular emphasis on risk assessment as a way to prevent problems from ever occurring. In FY2005, we introduced the HAZOP\* method at our refineries, which are the sites that present the greatest risk.

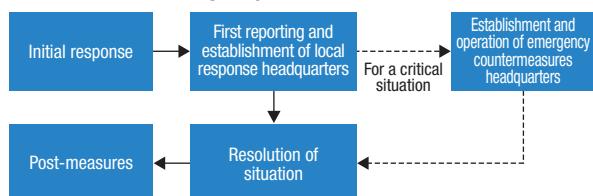
\* HAZOP: Hazard and Operability Study. A method for analyzing the safety of processes.

## Preventing Disasters, Taking Emergency Measures

Japan Energy's business involves the handling of large amounts of dangerous substances and high-pressure gases. That's why we take every opportunity for thoroughness and make it a top priority to prevent disasters like fires, explosions and work-related accidents. We do this by thoroughly maintaining and ensuring the proper operation of facilities, and by conducting regular training for employees including TPM (Total Productive Maintenance). In April 1997, we established the Risk Management Rules, which describe systems for dealing with natural disasters like typhoons and earthquakes as well as terrorist attacks.

In April 1975, we established the Disaster Emergency System Guidelines, which detail the chain of command for communications and for rescue and repair operations in the event of an accident at refineries, plants, delivery terminals, during transportation by tank trucks or at filling stations or service stations. These guidelines help employees properly and promptly carry out disaster measures. They are also regularly checked and updated to ensure that they are relevant and functional.

### Occurrence of Emergency Situation



## Dealing with a Disaster

If by some chance a disaster occurs at a Japan Energy site, the site in question shall make the following documents; (1) a disaster survey report, (2) scheduling charts of countermeasures for the problem and a plan to prevent its reoccurrence and (3) an analysis of the causes of the disaster. These reports are sent to headquarters upon completion, where they are examined by the Companywide Standing Committee for Safety and Health. They are finally shared with the entire company so that similar accidents can be prevented.

## Asbestos: Survey and Measures

In July 2005, we began a survey of asbestos use in our refineries, plants, delivery terminals, R & D Center, JOMO service stations and other Japan Energy sites. As a result of the survey, every point of asbestos that was judged to be at risk of dispersing into the air was either removed or given protective covering. This work was completed by March 2006. We are continuing to carry out detailed surveys of all sites for the presence of asbestos.

We are also removing asbestos-based insulation covering, and gaskets and other materials on machinery and pipes in our refineries and other facilities, and installing replacements that contain no asbestos. Health check-ups of all current and former employees carried out until March 2006 revealed no cases of mesothelioma or other asbestos-caused illnesses.

### Purpose of Our Mission Guidebook

Japan Energy takes every opportunity to stress the value of its Mission and Business Principles, which represent the codes of conduct for all directors and employees.

In April 1997, we established our Mission and Business Principles and released the Mission and Business Principles Instruction Manual. Shortly after, we established the Corporate Principles Headquarters and began distributing a pocket-sized booklet called the Mission Guidebook, which explains our Mission and Business Principles.

Then, in 1999, we published a revised version of the Mission and Business Principles Instruction Manual, and in February 2002, came out with an 80-page Mission Guidebook compiling all previous material and its explanations.

This guidebook is distributed to not only all Japan Energy directors and employees but to group companies, business partners, relevant government agencies, trade associations and other companies in our industry. This is a way of showing that Japan Energy is serious about acting on its Mission and Business Principles. To ensure that these are always in the minds of all directors and employees we held Mission Guidebook Explanation Meetings at the head office, branches and all other sites.



#### Main Content of the Mission Guidebook

Message from the President

Chapter 1: Significance of the Mission

1. What is the Mission?
2. Role and necessity of the Mission
3. Relation of the Mission to business activities
4. Social responsibility, corporate evaluation and risk management
5. Corporate ethics

Chapter 2: Japan Energy's Mission

1. How the Mission was established, how it is progressing
2. Purport of the Mission
3. Purport of the Business Principles
4. Efforts to live up to the Mission

Chapter 3: Putting the Mission into practice

1. About Compliance
2. About social contribution
3. Business principles in each division

Chapter 4: Questions and answers

**All of the processes involved in our business of bringing you petroleum products are carried out with the utmost concern for the environment.**

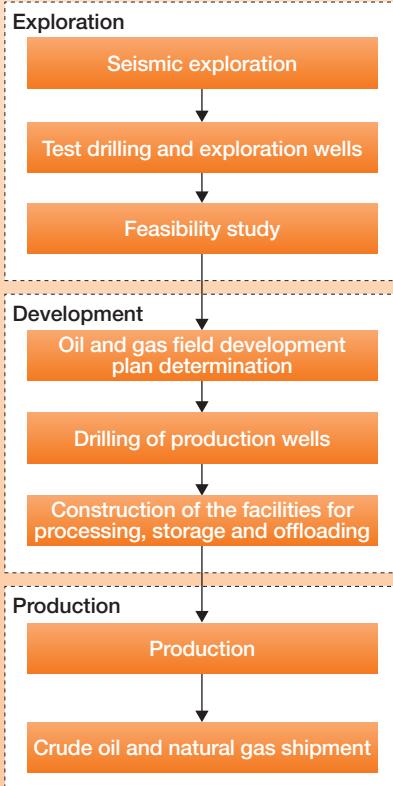
### Petroleum Exploration, Development and Production



Ever since we successfully developed in the Omonogawa oil field, Akita Prefecture in 1933, we have been engaged in petroleum exploration and production (E & P) businesses in Japan and around the world.

"Exploration" of petroleum uses seismic waves to detect underground structures, followed by the drilling of exploration wells. If petroleum is discovered, the "development" phase follows. This involves the drilling of production wells and the construction of facilities for processing, storage, and offloading. The final stage is "production."

This petroleum development business is carried out by Japan Energy Development Co., Ltd. and other group companies.



### Crude Oil Transportation



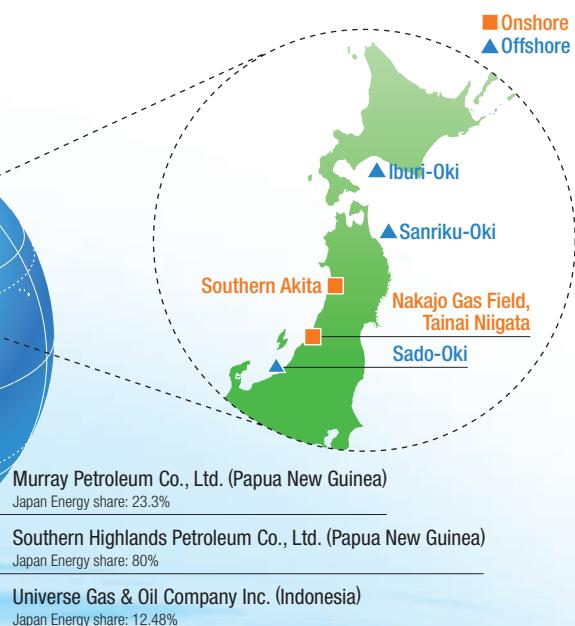
Crude Oil is transported by large tankers (VLCCs, Very Large Crude Oil Carriers), weighing more than 250,000 deadweight tons from the Middle East to our refineries in a stable, efficient manner. There are seven VLCCs in service, mainly chartered from the group company Nissho Shipping Co., Ltd. All efforts are made to ensure safe transport and minimal environmental burden: safety-first is foremost in all navigation, oil pollution prevention measures are taken, and advanced navigation technologies reduce the amount of fuel needed for the tankers.

### Japan Energy Group E & P Projects

NMC Pearl River Mouth Oil Development Co., Ltd.  
(People's Republic of China)  
Japan Energy share: 95%

United Petroleum Development Co., Ltd.  
(Qatar, United Arab Emirates)  
Japan Energy share: 35%

Abu Dhabi Oil Co., Ltd.  
(United Arab Emirates)  
Japan Energy share: 31.5%



## Refining and Stockpiles at Refineries



Crude oil from oil fields in Japan and overseas is transported to our refineries, where it is refined into gasoline and other fuels. Refineries also play an important role by stockpiling petroleum for emergencies.

Petrochemical products, lubricating oils and LP gas are also manufactured in our refineries.

## Production and storage of LP gas



## Production of lubricating oils



## Production of petrochemical products



## Transportation in Japan (coastal tankers)



Fuel oils and other products are transported to domestic delivery terminals by coastal tankers.

## Delivery Terminals LP gas Secondary Terminals



Petroleum products are received from tankers, then stored and shipped.

## Domestic transport (tank trucks)



Petroleum products are transported overland from refineries and delivery terminals to JOMO service stations and customers.

## Marketing of petroleum products



JOMO service stations sell petroleum products like gasoline and engine oil, as well as wash and maintain customers' cars. We are currently striving to create "Value Style" service stations, where customers can enjoy the ultimate service and comfortable surroundings.

## Marketing of LP gas

- Propane
- Butane
- Autogas

## Marketing of lubricating oils

- Lubricating oils for automobiles
- Industrial lubricating oils
- Refrigeration lubricants
- Others

## Marketing of petrochemical products

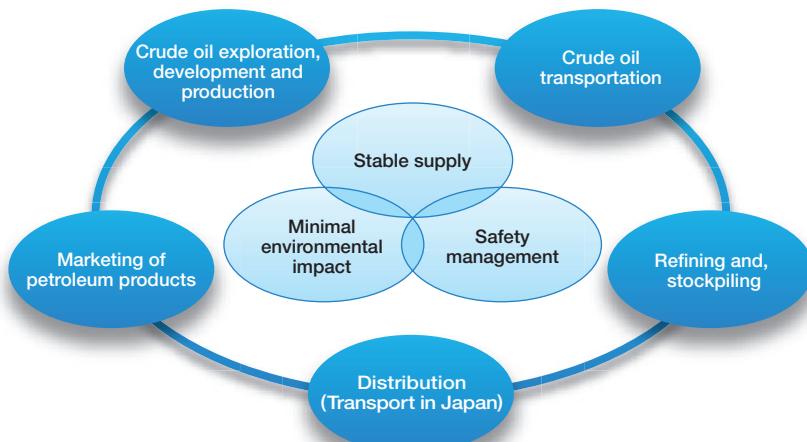
- Paraxylene
- Benzene
- Normal paraffin
- NS Clean
- Heavy aromatic solvents
- Others

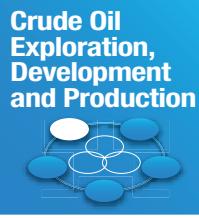


## Feature: Our Responsibilities and Actions as an Energy Company

### Concern for the Environment and Safety Throughout the Supply Chain

**Energy Solutions for People and the Environment** — At Japan Energy, we offer a stable supply of the energy that is indispensable for people's everyday lives. We do this with an integrated supply chain that includes all processes: exploration development, and production of petroleum fields, refining and storage, distribution and finally the services we offer at our JOMO service stations. And an integral part of this entire supply chain is concern for the environment and safety. Japan Energy is aware of its social responsibility as a corporate citizen and does all it can to build a world where people can live in peace of mind.





# Long-Term, Stable Supply of Energy to Resource-Scarce Japan and Other Countries

## Our Responsibilities and Actions

Japan is one of the world's largest energy consumers; however, the supply of energy from domestic natural resources is limited. One of Japan Energy's missions is, therefore, to provide long-term stable supply of oil and natural gas that supports the industries and communities in Japan and around the world.

Japan Energy Development Co., Ltd. (JED), a wholly owned subsidiary of Japan Energy Corporation, is responsible for exploration and production (E&P) of the hydrocarbon resources in Japan and overseas, including the United Arab Emirates, Qatar, China, Papua New Guinea, and Indonesia. In carrying out the E&P business around the world, JED's primary objective is to take the necessary precautions to prevent all accidents, injuries, and occupational illness, and to protect the natural environment. JED also maintains close relationships with host governments and local communities to foster mutual understanding and cooperation.

### Injection of Associated Gases into Oil-Bearing Reservoirs Minimizes Air Pollution and Global Warming

Abu Dhabi Oil Co., Ltd., (ADOC), in which JED has a 31.5% stake, operates three offshore oil fields in the Abu Dhabi Emirate. In line with the Emirate's Environmental Policy and Guideline, ADOC has implemented two challenging environmental projects, the Sour Gas Injection Project and the Zero Flaring Project, both of which are intended to minimize the emission of sulfur dioxide and carbon dioxide into the atmosphere.

The natural gas associated with crude oil production had long been flared because it had not been feasible to use. But these flares were considered to be a main cause of air pollution and global warming. By implementing these environmental projects, the associated gases have been collected, compressed with high-pressure compressors, then re-injected into the subsurface oil reservoirs at approximately 3000 meters below sea level. The injection of the high-pressure toxic sour gas was successfully initiated in 2000 and the remaining associated gases were collected and injected into the oil reservoirs by 2001, thus achieving "near zero flaring" with a substantial reduction of CO<sub>2</sub> exhaust gas.

As a significant achievement involving innovative technology, the Sour Gas Injection Project was honored by the state-owned Abu Dhabi National Oil Company (ADNOC) with the first prize in the ADNOC 2000 HSE Awards.

### Disposal of Associated Water into Subsurface Formations Prevents Sea Pollution

In ADOC's operations, crude oil is produced with a large amount of associated water, which contains oily components and solid particles. To prevent sea pollution and to meet the strict emission standards set by ADNOC, this water is properly treated and disposed of into the subsurface non-hydrocarbon-bearing formations at a depth of over 1,000 meters. The oily sludge accumulated in the water treatment facility is properly managed through an authorized waste management process. All such measures are designed to ensure that none of the processes causes environmental pollution.



Mubarak Processing Facility for Abu Dhabi Oil Co., Ltd.

### Safety through Equipment and Education

The Japan Energy Group maintains close relationships with host governments and local communities, promoting employment of locals and establishing a systematic Health, Safety and Environmental Management System that ensures safe, healthy, and environmentally friendly operations.

In addition, we have a shutdown system that allows field operations to be immediately stopped in case of emergency. We strive to improve HSE performance by installing proper equipment, implementing the systematic HSE Management System, and holding regular training, education, and drills for emergency responses.





## Thorough Safety in Tanker Navigation, and Minimal Environmental Impact in Cargo Operation

### Our Responsibilities and Actions

We mainly use large tankers (called VLCC) to transport crude oil loads of approximately 300,000 kl per voyage to Japan.

Protecting the ocean environment by navigating safely is one of our main responsibilities.

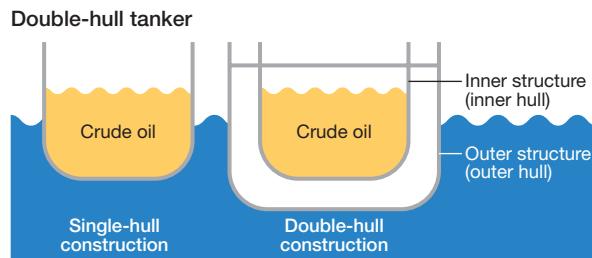
An accident of a tanker carrying large amounts of crude oil can severely pollute the ocean. The IMO (International Maritime Organization) has required that all crude oil tankers have a double-hull construction by 2015 so that oil will not leak even if the ship's hull is damaged. Currently, six of Japan Energy's seven VLCCs have double-hull construction, and we plan to have all completed by March 2007.

### What Group Company Nissho Shipping Co., Ltd. Is Doing

#### • Preventing Ocean Pollution, Streamlining Navigation, and Reducing CO<sub>2</sub> Emissions

Barnacles and blue mussels grow on the hull of a tanker, slowing it down. To prevent this, Nissho Shipping Co., Ltd. used to paint the ship's bottom with paints containing organotin. The company is now switching to paints without organotin, however, in order to prevent ocean pollution. It also abides by IMO rules by purifying the ballast water (seawater) it takes on prior to departure before disposing of it into the waters of the destination port, since dumping such ballast water can damage the marine ecosystem. The company also complies with International Convention for the Prevention of Pollution from Ships by strictly separating and treating waste from the tankers.

We are also trying to find efficient tanker operation technologies that reduce energy losses and thus improve navigation fuel efficiency and reduce CO<sub>2</sub> emissions. We use electronic navigational charts, which utilize GPS to locate current position, and weather routing, which uses real-time weather and marine conditions information to select the best navigational course. We also develop and improve on environmentally friendly navigational technologies, such as electronically controlled engines whose fuel injection and exhaust timing is controlled by computer.



#### • Protecting Sailors and Maintaining Safe Tanker Operation in the Event of Marine Accidents, Terrorist Threats, Piracy, and Armed Conflicts

All of Nissho Shipping Co., Ltd. tankers are equipped with GPS-compatible devices (electronic navigational charts) giving precise information such as location and ocean depth. The company has also developed a Vessel Traffic Management System that uses maritime communication satellites to determine operational conditions in real time, and a crew management system for ensuring that tankers are operated by the most competent crews. These are just some of the ways we prevent maritime accidents and maintain safe navigation.

Other safety-related efforts include pre-boarding training for all crew members, regular guidance for on-board procedures and the dispatching of safety inspectors upon arrival in port.

To cope with not only marine accidents but also piracy, terrorist threats, and armed conflicts, Nissho Shipping Co., Ltd. has a communication systems network compatible with the International Ship and Port Facility Security Code (ISPS Code), a set of measures to enhance the security of ships and port facilities. All tankers are equipped with Ship Security Alert System (SSAS) for alerting the company, Japan Coast Guard, or other relevant organs when the ship experiences a sudden security threat. There is also a "pirate sensor" that uses an optical sensor to trigger an alarm if suspicious ships come close. All these measures ensure that tankers have thorough autonomous security to deal with threats like piracy and terrorism.



## Refining and Stockpiling



# Our Refineries: Reducing Environmental Impacts and, Boosting Safety and Disaster-Prevention Measures to Cover All Possible Emergencies

## Our Responsibilities and Actions

The role of refineries is to refine crude oil and produce petroleum products. They are also responsible for stockpiling to ensure a stable supply of crude oil and petroleum products. Japan Energy's three refineries in Japan make safety, disaster prevention and environmental protection top priorities, and carry out Total Productive Maintenance (TPM) with the participation of all employees.

Regarding safety and disaster prevention, refineries have a fire-prevention organizational structure with the very latest fire-fighting facilities, and carry out regular disaster-prevention drills that prepare workers for any scale of disaster. As well, refineries are tied to local fire-fighting departments and police departments through emergency networks in a system brings together Japan Energy and local communities to ensure safety in the event of a disaster. We also share information, such as causes and solutions, on past disasters with the entire petroleum industry to prevent such disasters from reoccurring.

On the environmental protection front, our refineries are certified for the ISO 14001 environmental management

standard and strive to reduce environmental impact in every way possible. In addition to equipping facilities with devices to remove substances like sulfur oxides, nitrogen oxides and soot and dust, we purify wastewater using the active sludge method, prevent water pollution, and reduce and recycle waste.



Because making low-benzene gasoline and sulfur-free gasoline requires refineries to use more energy compared to conventional gasoline refining, we try to make up for this by saving energy through methods such as waste heat collection, heat collection using heat exchangers and reduction of steam loss.

→ For more details on refineries, see pages 21-30.

Sulfur-free gasoline production units

## Distribution (Transport in Japan)



# Transporting Products by Coastal Tankers, Railway and Tank Trucks Efficiently and with Minimal Environmental Impact

## Our Responsibilities and Actions

The role of our distribution division is to safely transport petroleum products from refineries to delivery terminals and JOMO service stations.

The products are delivered overland by tank trucks and railway tanker cars, and oversea by coastal tankers, with the safest, most efficient transportation methods chosen based on the routes and distances. Raising transportation efficiency is not just about cutting costs: it also reduces fuel used and thus the amount of CO<sub>2</sub> emissions that contribute to global warming. Japan Energy has been using larger and larger tank trucks and coastal tankers, and delivering by night to avoid metropolitan traffic jams, resulting in increased transportation efficiency and reduced fuel consumption every year.

We also offer safety education for tanker crews and drivers. We also have intelligent safety devices to prevent accidents. For

example, to prevent mishaps caused by accidentally filling a kerosene tank with gasoline at a JOMO service station or customer company, we have a device that automatically detects the type of oil inside when a tank truck hose is inserted into the mouth of the tank, effectively preventing the mixing of different types of fuel.

→ For more on distribution, see page 24.



Filling a tank truck with a safety belt



## Building Environmentally Friendly, Safe Service Stations Where Customers Feel at Ease

### Our Responsibilities and Actions

A JOMO service station's role is to be a necessary part of the community by providing a safe supply of the gasoline, gas oil, and kerosene that are essential to people's day-to-day lives.

That's why JOMO service stations are operated with the utmost concern for avoiding danger, with high standards of safety to deal with calamities like fires or earthquakes, and with meticulous daily checks and reviews, as well as legal inspections.

We also have a wide range of measures to protect the environment: we prevent the evaporation of gasoline and other vapors into the air and the leaking of such oils into the soil, and we recycle waste and purify wastewater.

We are also working to give visitors to JOMO service stations a comfortable, relaxing atmosphere through the development of attractive "Value Style" stations.

→ For more on "Value Style" stations, see page 38.

### Thorough Safety Measures Make JOMO Service Stations Community Lifelines in the Event of a Disaster

JOMO service stations are designed to comply with the safety standards set under fire defense laws and regulations, and all facilities and equipment have built-in safety measures.

Apart from the service station's entrance, there is a fireproof wall around the site, and the building itself is fire resistant thanks to the use of non-flammable construction materials. Underground tanks for storing gasoline and other petroleum products have a double-layer construction to prevent ignition or leaks, and they are extremely earthquake resistant. The safety and strength of service stations was proved during the 1995 Great Hanshin Earthquake in and around Kobe, Japan, when none experienced fires or structural damage. We are also building more and more service stations that can act as community lifelines in the event of disasters, equipping them with private power generators to aid emergency vehicles like fire trucks and ambulances or water tanks that store drinking water for local residents.

### Preventing Air and Soil Pollution, Recycling Waste and Wastewater

In February 2003, Japan enacted the Soil Contamination Measures Law, which introduced legal mechanisms for surveying soil pollution from specified toxic substances<sup>\*1</sup> and preventing damage to health. These specified toxic substances include the benzene in regular gasoline and the lead that used to be contained in high-octane gasoline. But to expand the measures to prevent not only leaks of gasoline but also fuels like gas oil and kerosene, Japan Energy got together with specialist companies both inside and outside the group to establish the Japan Soil Solutions Group (JSSG). Through the JSSG, all nationwide JOMO service stations do everything possible to prevent leaks into the soil.

And to prevent air pollution, we have equipment for collecting the hydrocarbon vapor<sup>\*2</sup> that is emitted during natural vaporization of the liquid when discharging petroleum products from tank trucks at JOMO service stations. We also recycle waste including used tires, lubricating oils and batteries.

Another way we reduce environmental impact and effectively use resources is to take the wastewater generated from our car washes, purify it by separating the oil and sludge, and reuse it for the car washes.

→ For more on environmentally friendly JOMO service stations, see page 28.

**\*1 Specified toxic substances:** Specified under the Soil Contamination Measures Law, these are contained in the soil and are likely to damage people's health.

**\*2 Hydrocarbon vapor:** If emitted into the atmosphere, this causes global warming and photochemical oxidant (photochemical smog).



Soil pollution survey

### Emergency Power Generating Facilities

To allow us to continue supplying gasoline and other products at JOMO service stations in the event of a disaster-related power outage, from June 2006 we began equipping some



Private power generator



Power switchboard

JOMO service stations with private power generators and power switchboards to generate power during disasters. This equipment will be able to power two or three dispensing pump, two canopy lights (400-W mercury lamps) and two indoor fluorescent lights (40 W each), and supply fuel for the estimated four to seven days that power would be out due to a disaster.

These emergency power generating facilities have been installed in 36 JOMO service stations, mainly those close to urban areas, with plans to expand this number to 100 in the future.

## **What the Customer Wants: The Ultimate Service and Comfortable Surroundings**

It goes without saying that JOMO service stations should offer service that is known and trusted by the local community. We train our people so that they offer customers the ultimate service. We constantly strive for excellent customer service through measures that include customer satisfaction surveys focusing on treatment of customers and cleanliness, and staff suggestion boxes that allow station staff to offer and share ideas for improving service.

In order to offer customers service stations that they find attractive and comfortable, we are currently creating what we call "Value Style" service stations.

We're standing in the customers' shoes in creating service stations that make them want to visit us and come back again and again; service stations that offer customers a comfortable, enjoyable experience.

We're also converting service stations to barrier free zones, with slopes going into the sales room and restrooms so that everyone has access to the all our facilities.

And we're adapting service stations to the needs of our customers and particular areas by teaming up with businesses in other industries to create totally unique facilities; some of our service stations, for example, have beauty parlors and laundromats.



A female service station attendant serves a customer



Magazine area



A sales room in a "Value Style" service station

→ For more on JOMO service stations, see pages 37-38.

## **A Message to Japan Energy**

### **Dealerships Rely On Further Support From Japan Energy**



**Toshihiro Nakai**  
Station Manager JOMO-NET  
Higashi-Tokyo Co., Ltd.

Gas stations have traditionally concentrated on creating a lively atmosphere. But since we adopted the "Value Style," a customer-oriented service mentality has taken over at our service station. And this mentality has helped us increase the number of customers, particularly women. We plan to focus even more on educating our staff. In future, we hope to receive further support from Japan Energy in the areas of sales promotion, environmental protection, and safety.

## **Message from the Front Lines**

### **CSR Through Team JOMO**



**Hiroshi Yamashita**  
Retail Support Manager  
Petroleum Retail  
Marketing Department

The Petroleum Retail Marketing Department supports store management, sales promotion, and environmental and safety measures at dealerships and JOMO service stations across Japan. In future, we plan to carry out explanation and education activities, called TACS\*, on retail support programs such as improved customer satisfaction and operational improvement. This will

help Japan Energy and service stations—Team JOMO—work together to boost CSR.

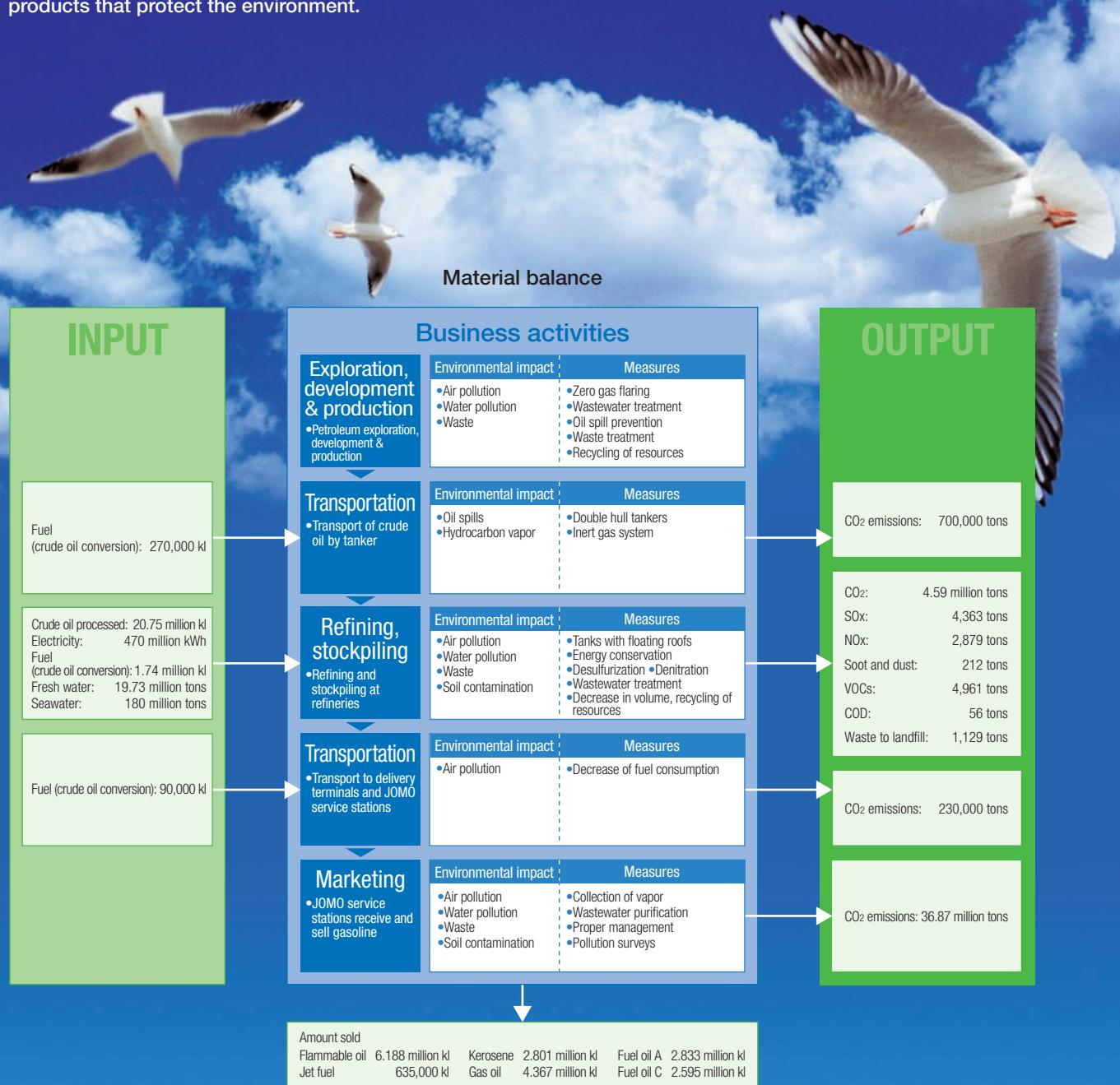
\* **TACS:** Top of Area to Customers' Satisfaction. Service stations aim for what customers consider to be the highest level of customer satisfaction.



# Working for the Environment

Protecting the environment in all business activities is a top priority for Japan Energy, whose energy-related activities include refining and marketing petroleum products.

In our Mission, we state that we will "use the Energy of the Earth wisely." This means pursuing energy conservation and lessening environmental impact, and developing and spreading the use of technologies and products that protect the environment.



Note: The above figures were calculated according to the LCA (life cycle assessment) method (an assessment of the environmental impact after measuring resource consumption and emissions in all processes: manufacturing, use, and disposal of products).

# Environmental Management

To ensure that our business activities do not harm the environment, we have built an environmental management system, and all of our refineries and plants are ISO 14001 certified. We also have environmental education programs that make employees aware of the importance of protecting the Earth in all that they do.

## Environmental Protection Policies

Japan Energy's Mission states that we will "use the Energy of the Earth wisely" and "always give top priority to safety and the environment." This thinking was the basis for the creation of our environmental policies, which guide us in protecting the environment and reducing environmental impact.

### Environmental Protection Policies

1. We will strive to prevent pollution by considering the environmental effects of all our operations.
2. To use resources wisely, we will strive to recycle and use energy efficiently.
3. We will comply with all relevant laws and strive to attain environmental standards that earn the trust of the community.
4. We will contribute to improvement of the global environment through the research and development of environmentally friendly products and technologies.

## ISO 14001 Certified Sites

Japan Energy complies with environmental rules and regulations that help the company improve its ability to protect the environment.

By 1999, all of our refineries and plants had been certified for ISO 14001\*. We have an organizational structure for planning and implementing regular environmental protection efforts—using less energy, recycling, reducing waste, and preventing air and water pollution—that are geared to the needs of each of the business fields and regions we operate in.

\* ISO 14001: An internationally accepted standard for environmental management systems issued by the ISO (International Organization for Standardization).

### ISO 14001 Certified Sites

	Mizushima	Chita	Funakawa	Sodegaura	Kawasaki	Kashima
Date certified	February 26, 1999	March 5, 1999	November 27, 1998	March 18, 1998	May 21, 1999	March 12, 1999
Certification body	LRQA	JQA	LRQA	LRQA	JQA	JQA
Certificate code	YKA 0772494	JQA-EM 0353	YKA 0771917	771512	JQA-EM 0427	JQA-EM 0373

## The Roots of Our Environmental Protection

Our environmental protection efforts can be traced back to 1914, when Kuhara Mining Co., our predecessor company, spent a huge sum of money to build a giant stack to prevent smoke hazards from the Hitachi Mine.

In the copper mining and smelting that could very well be called the start of Japanese industry, every company



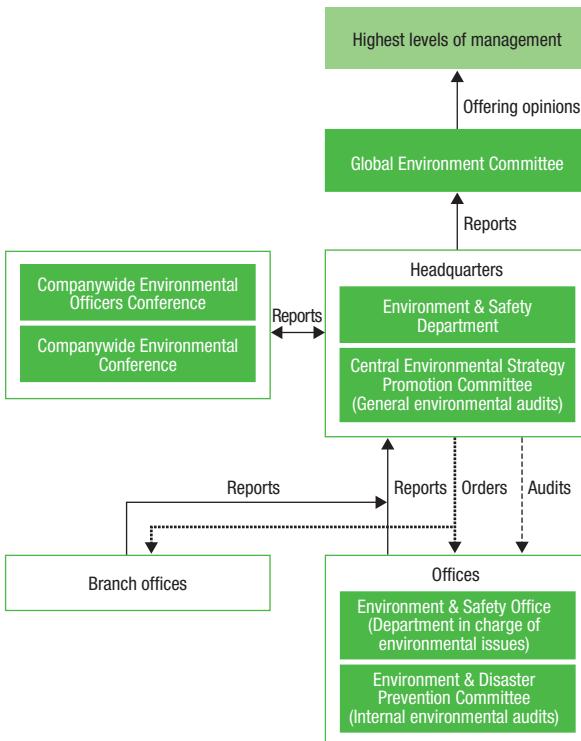
Giant Stack at the Hitachi Mine

battled with the problem of smoke hazards. After much trial and error, a solution was finally arrived at with the construction of what was at that time the world's tallest smokestack.

## Environmental Management System

The Global Environment Committee was established to carry out company-wide environmental protection activities that follow rule and guidelines.

### Environmental Management System



## Environmental Management

### Environmental Audits

To ensure that the company's environmental management system is being properly run and maintained, Japan Energy undergoes regular reviews by ISO certification institutions and carries out its own environmental audits.

Our environmental audit system consists of a comprehensive audit carried out by headquarters (once a year) and an internal audit conducted at each Japan Energy site. Both are carried out according to auditing methods set out in our outlines for environmental auditing and internal auditing.

Any problems discovered in the reviews and audits

are immediately remedied. Follow-up audits are then conducted to ensure that the solutions were in fact suitable for the problem.



A review by an ISO certification institution

### Environmental Education

We believe that environmental management starts with environmental education. That's why we strive to ensure that employees are aware of environmental issues and have the knowledge needed to take action.

#### Environmental Education at Refineries

Environmental protection is an essential part of the TPM (Total Productive Maintenance) activities conducted at refineries. We have been offering environmental education



Training in the manufacturing division

programs, and we continue to urge employees to take the environment-related certification programs we have been offering.

### Environmental Education in the Marketing Division

Our marketing division, together with dealerships and sales companies that operate JOMO service stations, has introduced the TACS\*1 program and the JOMO Lube Power Up Program\*2, whose aims include improved gas mileage and reduced car exhaust. These programs educate JOMO Service station staff about offering customers products and services like high-quality gasoline and lubricating oils and maintenance that are suitable to their cars.

\*1 **TACS:** Stands for Top of Area to Customers' Satisfaction. JOMO Service stations aim for what customers consider to be the highest level of customer satisfaction.

\*2 **JOMO Lube Power Up Programs:** Education and certification programs to raise salespersons' knowledge and maintenance techniques for lubricating oils. Those completing the program are certified as JOMO Oil Masters. This system was introduced in 1995 and was approved as a business career system by Japan's Ministry of Labour (now the Ministry of Health, Labour and Welfare).

### Companywide Environmental Conference

The Companywide Environmental Conference has been held once a year from 2003 as an opportunity for employees of Japan Energy and group companies to present and debate environment-related efforts and research.

About 100 took part in the FY2005 conference in September at the Japan Energy headquarters. The six topics of presentation and debate included What Japan Energy is Doing to Reduce Greenhouse Gases and Environmental Efforts at Refineries and Plants.



Companywide Environmental Conference



## FY2005 Environmental Accounting

We use environmental accounting to assess the effectiveness of our environmental management.

We calculate environmental accounting by classifying items into three major categories: environmental costs, which are the expenses for environmental protection activities; environmental investment, which includes investment for building and improving environmentally related facilities; and effects, which means how well our environmental efforts have worked. Below are our environmental accounting figures for FY2005.

### Environmental Costs

Item	FY2005	FY2004	Millions of yen
1 Environmental costs for products (decreasing sulfur content of heavy fuel and gas oil, improving gasoline quality)	30,028	24,161	
2 Direct cost of reducing environmental impact			
(1) Preventing pollution (air, water, and soil pollution)	3,839	1,599	
(2) Protecting the global environment (preventing global warming)	694	502	
(3) Waste treatment, recycling	196	250	
3 Cost of environmental activities			
(1) Management activities	357	336	
(2) Social activities	10	5	
(3) Environmental donations and contributions	607	676	
4 R&D to reduce environmental impact	1,532	1,536	
<b>Total</b>	<b>37,263</b>	<b>29,065</b>	

### Investment

Item	FY2005	FY2004	Millions of yen
1 Costs to build and improve environmental protection facilities	5,254	7,363	
2 Costs to maintain equipment (repair and upgrade)	13,885	12,806	
<b>Total</b>	<b>19,139</b>	<b>20,169</b>	

### Effect

- Atmospheric Improvements
- Reduction in sulfur oxide emissions  
Sulfur produced: 182,395 tons/year
- Reduction in benzene emissions  
Benzene recovered: 48-ton increase (against FY1998)
- Reducing resource consumption recycling
- Reduction in fuel use through energy conservation  
Crude oil conversion: 67,868 kl (against FY1990)  
Amount of used oil recycled  
• Crude oil conversion: 4,447 kl/year  
By reducing the amount of resources used and recycling more, we saved approximately 2.99 billion yen.

Calculation period: April 2005–March 2006

Scope of calculations: Japan Energy Corporation and Kashima Oil Co., Ltd.

# Preventing Global Warming

The prevention of global warming is an urgent concern around the world. Under the Kyoto Protocol, which came into effect in February 2005, Japan is obligated to reduce greenhouse gas emissions by 6% compared to FY1990 levels. To contribute to these reduction targets, Japan Energy is pursuing a variety of actions.

## Basic Policy to Prevent Global Warming

For some years now, Japan Energy has been working to reduce emissions of CO<sub>2</sub>, a greenhouse gas, through efforts focused on energy conservation. In particular, we have set unit energy consumption targets that are among the most ambitious in the industry.

Besides reducing fuel consumption in production processes at refineries and plants and during transport, we are also improving gas mileage for cars by developing sulfur-free gasoline and gas oil, and high-quality lubricating oils.

## Energy Conservation at Refineries

Refineries emit CO<sub>2</sub> in several ways, such as through fuel combustion in furnaces during crude oil treatment and through reforming reactions during hydrogen production.

There were several factors behind the increase in fuel consumption at our refineries in FY2005: for example, we treated a larger amount of crude oil, and we introduced deep desulfurization unit for gas oil and gasoline with lower benzene and sulfur content. There was, however, a 2% improvement in unit energy consumption\*, to 8.76 kl crude oil/1,000 kl. This was achieved through efforts such as the recovery of waste heat from boilers, the recovery of heat using heat exchangers and reductions in the amount of steam loss. We will continue to strive to reduce CO<sub>2</sub> emissions through these and other energy conservation actions.

\* **Unit energy consumption:** There is a variety of facilities for refining, and the configuration of these facilities differs among refineries. Using an adjustment coefficient that matches the characteristics of the facilities at the refinery, we calculate the amount of energy used per unit of production. The smaller the unit energy consumption, the higher the efficiency.

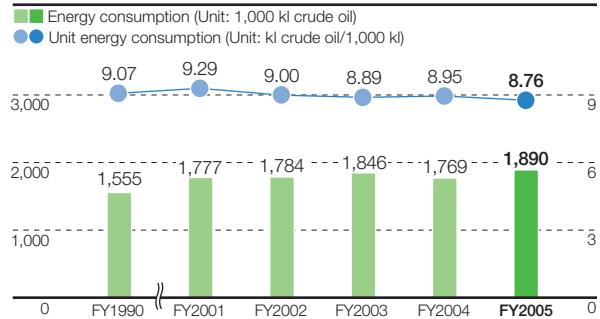
### Wind Power Generation Facilities

Japan Energy has begun generating electricity from wind power, a new cleanenergy source. In March 2003, we opened wind generation facilities at the Kashima Oil Refinery and in FY2005, these facilities generated over 3.903 million kWh of electricity (crude oil conversion: 983 kl).

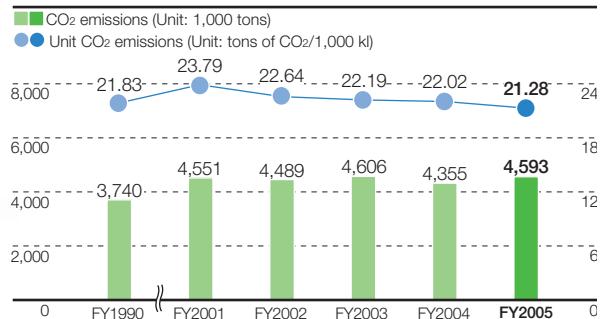


Wind power generation facilities

### Energy consumption and unit energy consumption



### Carbon dioxide (CO<sub>2</sub>) emissions and unit CO<sub>2</sub> emissions



\* **Unit CO<sub>2</sub> emissions:** The amount of CO<sub>2</sub> emissions (tons) per 1,000 kl of production. The smaller this figure, the less the CO<sub>2</sub> emissions.

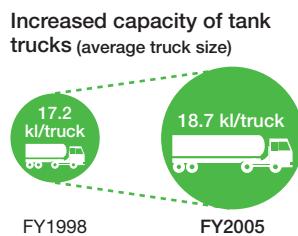
## Energy Conservation in the Transportation Division

Petroleum products are transported either by land or by sea. Land transportation is carried out by tank trucks and railway tanker cars, while sea transport is carried out by coastal tankers.

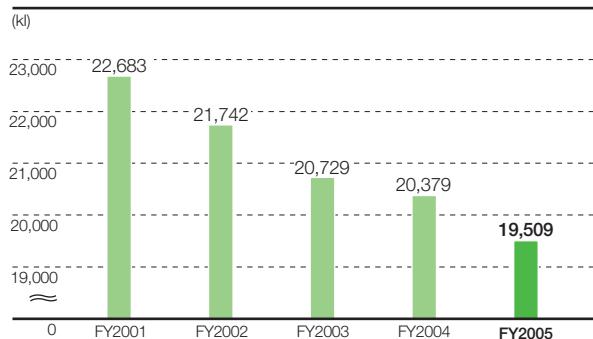
As a result of efforts to boost distribution efficiency in FY2005, tanker trucks used 4% less fuel than the previous year and coastal tankers used 11% less.



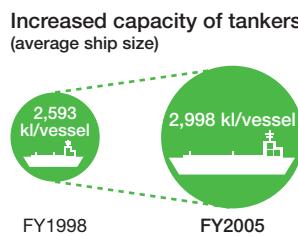
Large tank truck



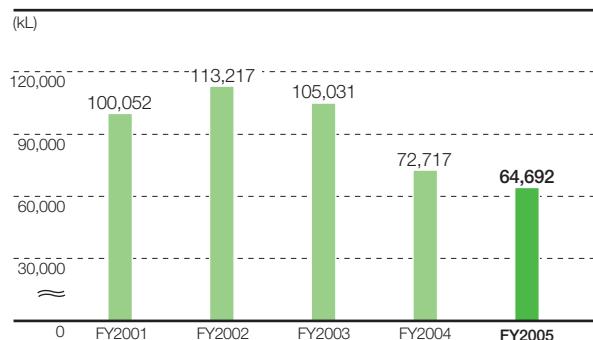
### Annual fuel consumption of tank trucks



Large coastal tanker



### Annual fuel consumption of tankers



## Clean Development Mechanisms (CDM)

The Kyoto Protocol has what are called the Kyoto Mechanisms, which recognize Clean Development Mechanisms (CDM), joint implementation<sup>\*1</sup> and emissions trading<sup>\*2</sup> as ways to reduce greenhouse gas emissions.

Under CDM, a developed country and a developing country jointly carry out a project, for example an energy conservation project, and the developed country gets credit for the resulting reductions in greenhouse gases. Japan Energy's efforts to curb global warming include purchasing a large number of international funds that invest in CDM.

<sup>\*1</sup> **Joint Implementation:** System in which developed countries work together on energy conservation projects, with credits for greenhouse gas emissions transferred between them.

<sup>\*2</sup> **Emissions Trading:** A system in which developed countries buy and sell emissions credits.

### Emissions Trading through JMD Greenhouse Gas Reduction Co., Ltd.

As part of efforts to reduce greenhouse gas emissions, in May 2006 we signed a contract to purchase 1.5 million tons of CO<sub>2</sub>-equivalent emission credits from JMD GHG Reduction Co., Ltd. (hereafter referred to as JMD), a company jointly established by JGC Corporation, Marubeni Corporation, and Daioh Construction Co., Ltd.

JMD plans to carry out CDM business in which it recovers and breaks down CFC, a greenhouse gas, emitted from a CFC-substitute production plant in Zhejiang, China. Breaking down this greenhouse gas CFC will yield 40 million tons of CO<sub>2</sub>-equivalent emission credits.

Under this contract, which runs from January 2008 to June 2013, Japan Energy will obtain emission credits equivalent to 300,000 t-CO<sub>2</sub>/year (approximately 7% of Japan Energy's annual greenhouse gas emissions).

### Japan Energy Invests in Japan Greenhouse Gas Reduction Fund

In December 2004, we invested \$1 million in the Japan Greenhouse Gas Reduction Fund (JGRF).

This fund was jointly established by the Japan Bank for International Cooperation, the Development Bank of Japan and private Japanese companies. This fund purchases emission credits generated by greenhouse gas reduction projects in developing countries and Eastern Europe and distributes these among investors in the fund.

By investing in this fund, Japan Energy supports emission reduction projects and thus contributes to curbing global warming.

# Environmental Efforts at Refineries and Plants: Part 1

Japan Energy has measures for dealing with air pollutants (SOx, NOx, soot and dust, and VOCs) generated during refining and production. We also have numerous purification processes for wastewater, which contains oil and other pollutants, that is emitted from refining facilities.

## Preventing Air Pollution

### Reducing Sulfur Oxides (SOx)

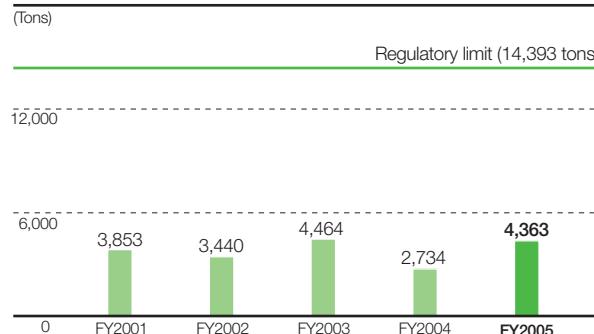


Sulfur recovery and flue-gas desulfurization equipment

We use low-sulfur fuel in our furnaces and boilers. As well, emission-reducing devices on facilities have allowed us to achieve emissions that are 35% below regulatory limits.

- Use of low-sulfur gas and heavy fuel oil
- Installation of flue-gas desulfurization devices

### SOx Emissions



### Reducing Nitrogen Oxides (NOx)

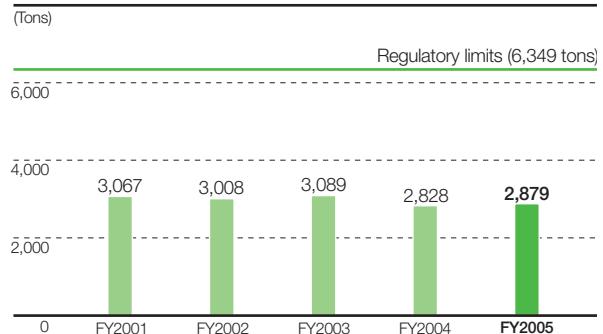


Flue-gas denitrification equipment

Furnaces and boilers use low-nitrogen fuel. As well, emission-reducing devices on equipment have allowed us to achieve emissions 50% below regulatory limits.

- Use of low-nitrogen fuel oil
- Installation of low-NOx burners
- Installation of flue-gas denitrification equipment

### NOx Emissions



### Reducing Soot and Dust

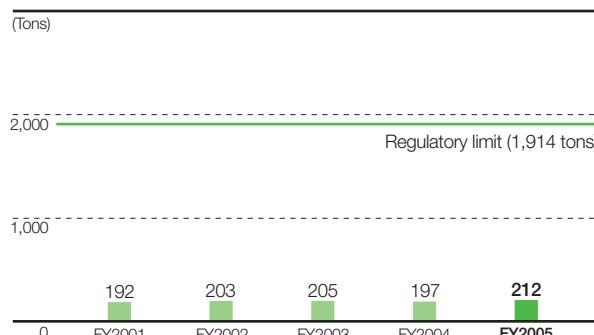


Electrostatic precipitators

Refinery furnaces and boilers use more fuel gas than heavy fuel oil. For boilers that use larger amounts of heavy fuel oil, we installed facilities that reduce the soot and dust generated, thus achieving emissions that are 15% below regulatory limits.

- Installation of electrostatic precipitators

### Soot and Dust Emissions



### Reducing Volatile Organic Compounds (VOCs)

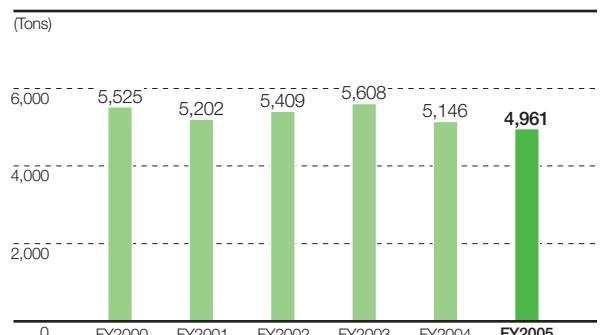


Hydrocarbon recovery facility

We have equipment and devices that help prevent the release of volatile organic compounds (such as benzene, toluene, and xylene contained in naphtha and gasoline).

- Use of floating roof tanks
- Installation of equipment for recovering VOC vapor during offloading

### VOC Emissions

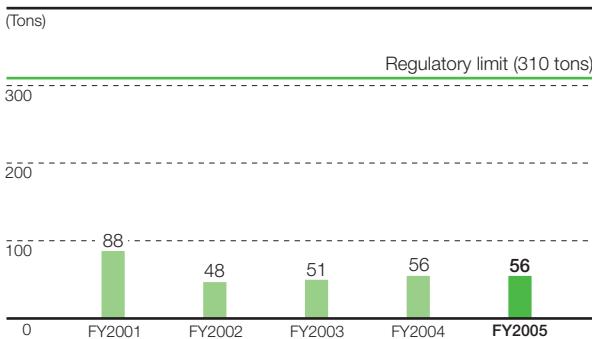


## Preventing Water Pollution

### Wastewater Management at Refineries and Plants

As shown in the diagram on the right, we have proper wastewater treatment systems with type of treatment depending on whether it contains oil or sludge. On the process lines, we control wastewater by checking indicators such as chemical oxygen demand (COD), which shows how polluted the water is. These indicators vary depending on the volume of wastewater, something we are striving to reduce.

#### COD sludge loading



**Note:** The Kashima Oil Refinery is not included here because its waste is treated at the Ibaraki Prefecture Kashima Sewerage Office's Fukashiba Treatment Plant.

## Proper Management of Chemicals

### Managing and Rendering PCBs Harmless

We have condensers (259) and PCB-containing oils (691 drums) stored at our refineries, plants, delivery terminals, and R&D center.

We plan to detoxify these between 2009 and 2012 and are currently undergoing early registration with the Japan Environmental Safety Corporation (JESCO)\* for this process.



Inside a storage facility

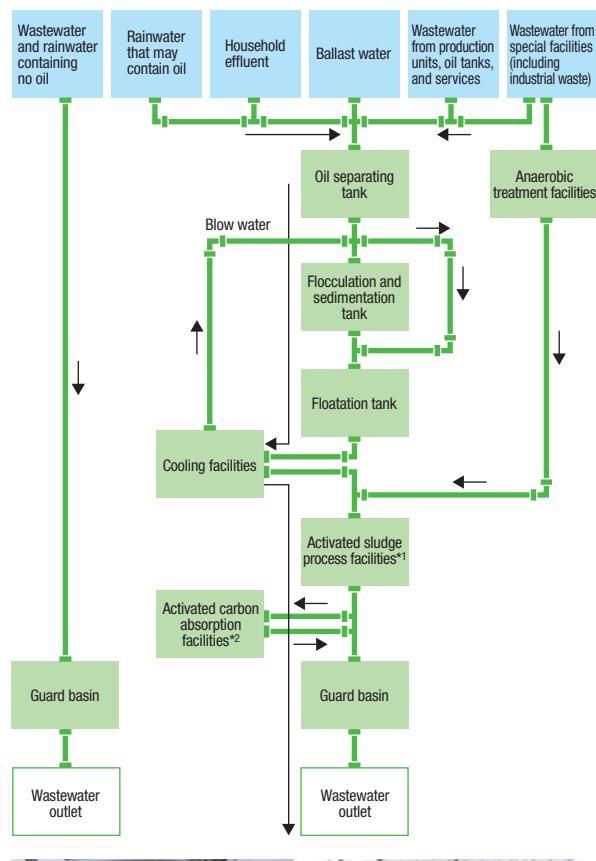
**\* Japan Environmental Safety Corporation (JESCO):**  
Established in April 2004 as a special company wholly owned by the government, JESCO has taken over the duties of PCB waste treatment from the former Japan Environment Corporation (JEC).

## Information Disclosure According to the PRTR Law

Of the substances released and transferred at Japan Energy refineries and delivery terminals, eight are designated by the PRTR Law\*. (See the site reports on pages 49-54.)

**\* PRTR (Pollutant Release and Transfer Register) Law:** Law for the registration system of specified chemicals that are released into the environment. The aim of the law is to improve the management of chemical substances.

## System for Treating Polluted Water



\*1 Activated sludge process facilities



\*2 Activated carbon absorption facilities

# Environmental Efforts at Refineries and Plants: Part 2

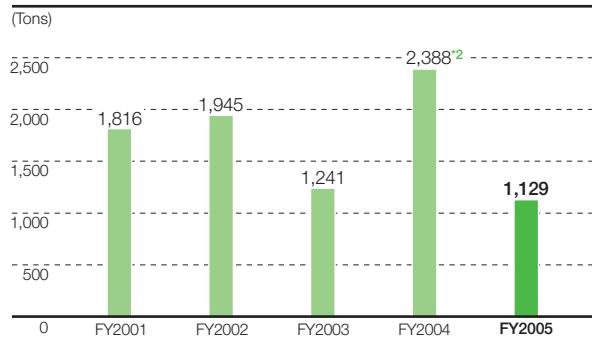
Japan Energy works to reduce waste to landfill by recycling waste and reusing resources. We are also carrying out as much green purchasing as possible when we procure the chemical raw materials needed for petroleum refining.

## Reducing Waste, Increasing Recycling

The waste generated at refineries includes a wide range of substances: waste oil, sludge, waste acid, waste alkali, dust collected from electrostatic precipitators, used catalysts, and construction materials. We reduce as much of this as possible: for example, we recover oil from waste oil and sludge, and we dehydrate or incinerate sludge.

We also try to put this waste to effective use. For example, we re-refine waste oil, make sludge and dust into the raw material for cement that can be used as roadbase, and separate the remains of construction material such as scraps of metal and concrete.

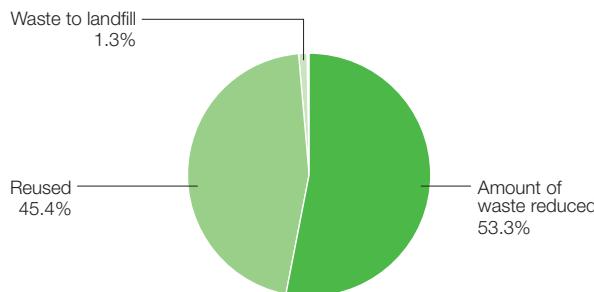
### Waste to Landfill<sup>\*1</sup>



<sup>\*1</sup> Our goal is for waste to landfill to be no more than 1% of all waste generated.

<sup>\*2</sup> In FY2004, typhoons resulted in the generation of unforeseen waste (1,245 tons). Despite the increase in waste to landfill, however, we managed to make effective use of 96.5% of all waste.

### Status of Waste



Note: Includes 16,928 tons of recovered soil for treatment at the Funakawa Works.

## Strict Soil Contamination Measures

We carry out regular soil contamination surveys on the sites of all refineries, plants, delivery terminals, former JOMO service stations and other company-owned land. Any contamination discovered is dealt with appropriately.

We completed backfilling work at the Funakawa Works and are in the process of treating the recovered soil.

### Treating Soil Recovered at the Funakawa Works



Removing soil with a crane



Gathering the soil inside the tank



Loading it onto trucks



Sorting the soil at an intermediate treatment facility



Mixing the soil with calcium oxide

## Green Purchasing

While petroleum products are an important source of energy, their use gives off CO<sub>2</sub> emissions. So, when we purchase the necessary additives (chemical raw materials) for making petroleum products, we strive to purchase raw materials with minimal environmental impact, because we believe that we must do everything possible to reduce environmental impact during production and use of petroleum products.

We gave our suppliers a questionnaire about their products and the results were used to decide which suppliers satisfy our criteria for green purchasing. We have also clarified our purchasing demands and conditions and are calling on suppliers to be environmentally friendly in all aspects of their business.

# Environmental Efforts at JOMO Service Stations

We work with our service station dealerships to recycle waste and reduce wastewater from car washes.  
We also work to prevent soil contamination and stop emissions of vapor from gasoline and other substances.

## Energy Conservation Installation of Solar Panels



JOMO service station with solar panels

Some JOMO service stations have solar panels on the roof for generating clean solar energy. As of 2006, these solar power systems were operating on 16 service stations.

## Developing Energy-Efficient Lighting

In 2005, JOMO Enterprise Co., Ltd. tested energy-efficient lamps, which were jointly developed with Toshiba Corporation, in currently-operating JOMO service stations. The results showed dramatic energy savings, so starting in 2006 we are investing in replacing JOMO service station lamps. This will reduce both electricity use and environmental impact.

## Treating Waste According to Law

Waste oil and waste elements generated at JOMO service stations are outsourced to JOMO Guardian Co., Ltd. to be treated according to law. Waste oil is recycled as mineral oil, and waste elements are incinerated at legally designated treatment plants. JOMO Guardian also gathers useful waste treatment information and provides this to JOMO service stations as needed.

## Reusing Car Wash Water



Water recycling car wash machine

JOMO service stations use large amounts of water in their car washes. Water recycling devices are installed to save and promote the effective use of water. These recycling devices allow us to reuse about 80-90% of the wastewater. It takes about 150 liters of water to wash one car, so assuming the water recycling rate is 80%, that means we can wash four more cars with the water recycled from washing one car.



Car wash water recycling device

## Purifying Wastewater

Surface wastewater at JOMO service stations passes through a small wastewater trough and is collected in an oil separating tank where oil and sludge are removed.

## Preventing Soil Contamination

Since 2002, a year before the Soil Contamination Measures Law went into effect, JOMO service stations have been regularly carrying out risk control measures for fuel leakage. This involves surveying the risk of oil pollution and then using survey results to plan appropriate measures (such as removal of pollutants, improvement of facilities, and strict monitoring). In FY2005, risk control measures were carried out at 144 JOMO service stations.

To protect the soil around underground tanks at JOMO service stations, we established the Japan Soil Solutions Group (JSSG), which began offering comprehensive support to this end in November 2004. We are also reducing risk by using underground facilities of the highest level of safety, such as double-wall tanks and resin pipes. In April 2006, all JOMO



Soil contamination survey

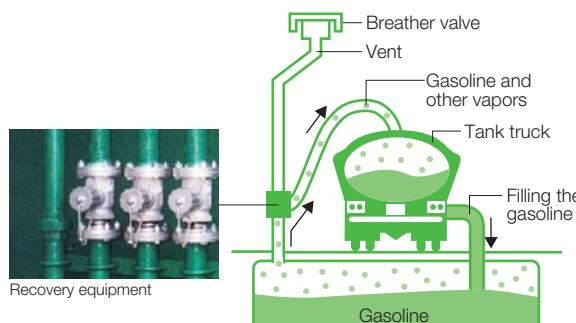
service stations were given a soil protection measures instructional video, another way to ensure that station staff are fully able to protect their environment.

## Fuel Oil Vapor Recovery

When tank trucks fill JOMO service station tanks with gasoline and other oils, vapors containing hydrocarbon escape. Besides causing photochemical smog, this vapor sends foul odors into the neighboring area and can harm the health of service station customers and employees. That's why JOMO service station tank vents have recovery devices that send the vapor back into the tank truck.

Relaxations in Japanese fire regulations in 2005 allowed the installation of breather valves, which stop vapors escaping from underground tanks. In FY2005, we installed breather valves at 300 stations in the Kanto area and are in the process of doing the same at service stations around the country.

### How Vapor Recovery Works



# Environmental Efforts in Products and Services

Japan Energy provides a wide range of products, including fuel, lubricating oils, and petroleum products. We strive to develop and supply products whose use will have minimal impact on the environment.

## Environmentally Friendly Fuel Oil

At Japan Energy, our goal is to provide environmentally friendly products; for example gasoline and gas oil that reduce the greenhouse gas CO<sub>2</sub> and toxic substances in vehicle exhaust.

### Sulfur-Free Fuels

Sulfur-Free Fuels Sulfur-free fuel contains almost no sulfur. Japan will soon enact regulations for gas oil (2007) and gasoline (2008) that limit sulfur content to 10 ppm (0.001%) or less.



Sulfur-free gasoline manufacturing facility

Japan Energy is well ahead of these regulations: we have been offering sulfur-free premium gasoline since May 2002 and sulfur-free regular gasoline and gas oil since January 2005.

### Benefits of Sulfur-Free Fuels

Not only does sulfur-free gasoline and gas oil offer cleaner vehicle exhaust; it also contributes to improved functioning and durability of the exhaust treatment devices on environmentally friendly cars, and to improved gas mileage. These fuels also reduce CO<sub>2</sub> emissions and thus help to curb global warming.

We educate customers on the benefits of sulfur-free products with informational posters at all JOMO service stations.

### Lowering Benzene Content in Gasoline

Since January 2000, we have reduced the amount of the suspected carcinogen benzene in gasoline from 5% to no more than 1%.

### Reducing Vapor Pressure

To reduce evaporative emissions that may cause photochemical smog, we reduced summertime gasoline vapor pressure from a maximum of 78 kPa to 65 kPa.

## Environmentally Friendly Lubricating oils

Japan Energy has provided environmentally friendly lubricants under the motto "Be gentle on people, the environment and resources."

In February 2004, we began offering the JOMO ECO Series, a lineup of products that responds to public demands for longer product life, contribution for biodegradability and compliance with environmental regulations.

## Automobile Lubricating oils

### •ECO Series: JOMO DELSTAR DH-2

This low-ash diesel engine oil is suitable for not only diesel engines equipped with DPFs (for complying with exhaust regulations), but also for all large diesel engines. It complies with the DH-2 standard (an engine oil standard of the Japan Automobile Manufacturers Association, Inc. and



JOMO DELSTAR  
DH-2LD

the Petroleum Association of Japan that covers trucks, busses, and other diesel vehicles equipped with DPFs).

In November 2005, we introduced DH-2LD, a low-ash long-drain engine oil.

### •ECO Series: JOMO CNG Oil, JOMO GE Power Oil

This high-performance oil with good superb oxidation stability is suitable for engines using compressed natural gas (CNG) or liquefied petroleum gas (LPG). It is a high-end long-drain engine oil with a low ash content and so it cuts down on post-combustion deposits, thus contributing to reduced maintenance costs.



JOMO GE Power Oil

### •JOMO Dreamer Series

The 0W-20 engine oil was developed for the ultimate in environmental performance and superior gas mileage.



JOMO Dreamer Series



JOMO CVT fluid

Our existing products, the 0W-30, 5W-40, and 10W-40, have all been qualified designated for the highest standard (SM grade) by the American Petroleum Institute (API). In September 2005, we added a newly developed product to the Dreamer Series, a fluid suitable for the majority of Japanese metal V-belt CVT (continuously variable transmission) vehicles.

## Industrial Lubricating oils

### •ECO Series: JOMO Bio Series

Made of full synthetic base oil, this lubricant has superior oxidation stability and biodegradability, so leaks cause minimum impact on the water and soil. All of these products have been certified with the Japan Environment Association's Eco Mark.



JOMO Bio Hydro

### •Refrigeration Compressor Oil

In 1989, we introduced the world's first synthetic polyol-ester based refrigeration compressor oil that complied with CFC restrictions. Our products now enjoy the top share of the Japanese and world markets.

## Environmentally Friendly Petrochemical Products

Japan Energy has a wide range of petrochemical products, including industrial detergents and industrial solvents. We are doing everything possible to develop products that are environmentally friendly; for example we have responded to the needsdemands from the public to eliminate chlorine, toluene, xylene, and other substances that harm human health and the environment.

### Industrial Detergents

#### •NS Clean

This hydrocarbon detergent has superb cleaning and drying properties and it can be used repeatedly. It is used for removal of metal processing oil and particulates, and for draining water. It is also used as a substitute for chlorine-based detergents.

#### •EM Clean

Used to complement NS Clean, this highly-soluble hydrocarbon detergent is effective in removing stubborn pitch, wax, urethane, and epoxy resin.

### Industrial Solvents

#### •Cactus Normal Paraffin

This industrial solvent has superb biodegradability and minimal odor, and does not contain toluene, xylene, or other aromatic hydrocarbons that pollute the atmosphere.

#### •Cactus Solvent

We have a wide-ranging lineup of solvents that substitute for toluene or xylen, substances which are not covered by the PRTR Law.

#### •TS Paraffin

Highly pure paraffin for use as a latent heat storage agent, it contributes to reduced CO<sub>2</sub> emissions and energy conservation, and is expected to see increasingly wider use in the air conditioning, textile, construction, and automotive industries.

## Awards for Environmentally Friendly Products

### Developing Technology to Clean Insulating Oil Containing PCBs

Japan Energy and Nichiyo Consulting and Engineering Co., Ltd. jointly developed technology to clean insulating oil containing PCBs. In May 2006, the two companies received the FY2005 Japan Petroleum Institute Award for Technical Progress from the Japan Petroleum Institute (JPI) for the development of this technology to clean transformers and other equipment that use insulating oil containing PCBs. This technology is used in our NS Clean product. We also received the 6th Ozonesphere Protection and Global Warming Prevention Grand Prix, Examination Committee Special Prize for NS Clean, which contributes to the reduction of 1,1,1-trichloromethane, an ozone-layer depleting substance.

\* We estimate that NS Clean contributes to a reduction of 50,000 tons of 1,1,1-trichloromethane per year, equivalent to approximately 25% of the total during the peak demand period (fiscal 1993).



FY2005 Japan Petroleum Institute Award for Technical Progress from the Japan Petroleum Institute (JPI)

## Environmentally Friendly LPG

LPG (liquefied petroleum gas) is an energy source with a relatively low environmental impact. Besides educating the public on the benefits of LPG as a clean energy source, Japan Energy is striving to spread the use of environmentally friendly energy supply systems using LPG, and the use of LPG vehicles.

### Spreading the Use of Cogeneration Systems

Japan Energy is developing and promoting the use of gas cogeneration systems using LPG. Residential gas cogeneration systems (called the Ecowill in Japan) allow homes to generate their own electricity and have a high 85% energy efficiency. These benefits, along with government subsidies for buyers, have propelled the rapid spread of these systems.

### Promoting the Use of LPG Vehicles

LPG vehicles are seeing increasing use among Japanese national and local government agencies as next-generation low-pollution vehicles: they give off exhaust that has no black smoke or suspended particulate matter (SPM) and extremely low levels of nitrogen oxides and hydrocarbons.

To spread the use of LPG vehicles within the JOMO group, we have since 1996 been offering subsidies to cover the purchase price. The result has been an increase in the number of these vehicles every year.

### JOMO LPG Cogeneration Study Group

Japan Energy holds regular gatherings of the LPG Cogeneration Study Group with the aim of promoting and spreading the use of LPG cogeneration systems.

We held two such gatherings in FY2005. Attended by dealerships and others concerned with LPG cogeneration, the meetings featured demonstrations of the ECOWILL residential cogeneration system, presentations on fuel cell experiments, lectures by gas cogeneration equipment manufacturers, and open discussions on major issues in the field.

We plan to continue holding these study group gatherings with the aim of contributing to protecting the Earth's environment through the spread of LPG cogeneration systems. First meeting: July 13, 2005 (Attendees: Approx. 80)  
Second meeting: February 14, 2006 (Attendees: Approx. 70)



LPG Cogeneration Study Group

# R&D into Environmentally Friendly Technologies and Products

We work to protect the Earth's environment through research and development of technologies for clean energy and environmental protection.

## Clean Energy R&D

### Fuel Cells

With the pressing need to diversify energy sources and create an environmentally friendly, recycling-based society, there has been an increasing focus on fuel cells, which generate efficient



The JOMO ECOCUBE, a residential fuel cell

and clean energy through the chemical reaction of hydrogen and oxygen. Japan Energy has been carrying out in-house research into fuel cells since the 1980s.

### Japan Energy Takes Part in Large Scale Experiments with Stationary Fuel Cells

Japan Energy took part in large scale experiments with stationary fuel cells run by the New Energy Foundation (NEF) in FY2005. We installed 30 fuel cell systems (JOMO ECOCUBE) in homes and are currently gathering data on their operation. This is what we have found so far:

- Primary energy savings rate: 10-20%
- CO<sub>2</sub> emission reduction rate: 20-30%

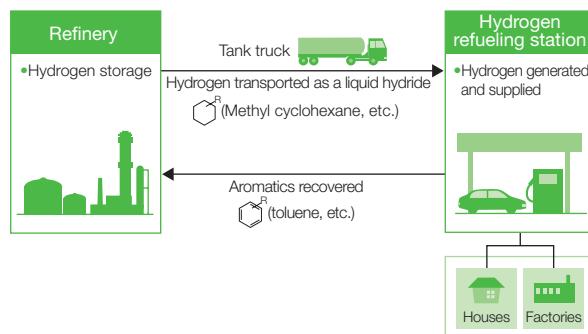
We are continuing our participation through FY2006, with plans for the operation of 33 systems. These efforts will prepare us for the inevitable widespread use of fuel cells.

### Hydrogen Energy Supply System

Fuel cells run on hydrogen, and we have researched and developed a way of storing and supplying hydrogen in liquid form, called the organic hydride method.

Using hydrogen transfer chemical reactions, such as those with toluene and methyl cyclohexane, to transport the hydrogen, this method can be carried out with existing infrastructure.

### Hydrogen Storage and Supply System Using the Organic hydride method



We have also developed technology for a complex monitoring system that immediately detects leaks of hydrogen gas at hydrogen refueling stations using three types of sensors (sound, gas, and image).

### Environmentally Friendly Clean Fuels

CO<sub>2</sub> in vehicle exhaust is a cause of global warming. To reduce this impact, experts are seriously looking at carbon-neutral, biofuels for automobiles. Japan Energy is fully participating in government-sponsored experimental research projects on biofuels like ETBE<sup>\*1</sup>, ethanol, and BDF<sup>\*2</sup>. We are also moving full speed ahead on in-house research to design higher-quality automobile fuels.

In the area of the promising future energy of hydrogen, we are researching highly efficient bi-fuel engines<sup>\*3</sup> and the fuels they will use.

Our research and development of effective ways to eliminate sulfur in fuel includes high-performance catalysts and absorption. This is helping us make our sulfur-free gasoline and gas oil production more streamlined and efficient.

<sup>\*1</sup> **ETBE (Ethyl tertiary butyl ether):** A gasoline component stock made from bioethanol.

<sup>\*2</sup> **BDF (Bio Diesel Fuel):** Diesel engine fuel made from renewable resources such as vegetable oil.

<sup>\*3</sup> **Bi-fuel engine:** A single engine that can convert between using two types of fuel.

### Japan Energy in Major Trade Shows

We publicize our new energy technologies and environmental efforts by participating in trade shows. At INCHEM TOKYO 2005, we joined a special booth on fuel cells and hydrogen production. We also took part in ENEX 2006, the 30th Energy & Environment Exhibition.

At INCHEM, we attracted significant attention with our JOMO ECOCUBE, the only actual working fuel cell at the entire show. Also popular was our exhibition and video presentation of a hydrogen supply system that uses the organic hydride method to efficiently store and transport hydrogen. All this made it apparent to show-goers that Japan Energy is serious about the business of fuel cells.



Japan Energy booth at INCHEM TOKYO 2005

## Developing Environmental Protection Technologies

### Soil Remediation Technologies

We have developed soil contamination survey and remediation technologies that give us a consistent system for carrying out everything from soil survey to cleaning of the soil.

For soil surveys, we developed our own technologies for measuring oil contamination on-site and for measuring microorganisms in the soil.

We are also researching and developing technologies, such as the use of bio-surfactants\* to clean oil-contaminated soil and the use of plants to purify the soil (called phytoremediation).

\* **Bio-surfactants:** Derived from microorganisms, these biodegradable surfactants are an environmentally friendly way to remove oil.

### A Recycling-Based Society through the Chemical Recycling of Waste Plastics

Every year in Japan, about 10 million tons of plastics are disposed of and about 60% of them are recycled. But because conventional recycling methods energy recovery and mechanical recycling only produced low quality plastics, the uses for these plastics were limited.

Japan Energy and the Plastic Waste Liquefaction Industries Conference have developed a chemical recycling technology, the first of its kind in Japan, that upgrades light thermal cracking oil derived from municipal waste plastics into petroleum products (naphtha, etc.) at oil refineries. The greatest benefit of this technology is that the plastic can be used repeatedly as new products, contributing to a society in which no resources go to waste.

Japan Energy's role in this cycle is to upgrade light thermal cracking oil derived from municipal waste plastics into petroleum products for the petrochemical industries using an existing upgrading unit in the oil refineries. To do this, we need high-quality light thermal cracking oil derived from municipal waste plastics, so we established standards to be followed by the company that is converting the plastic into oil.



**Takanori Kawanishi,**  
Petroleum Refining Research & Technology Center

**Nobuyuki Shiratori,**  
Senior researcher, Petroleum Refining Research & Technology Center

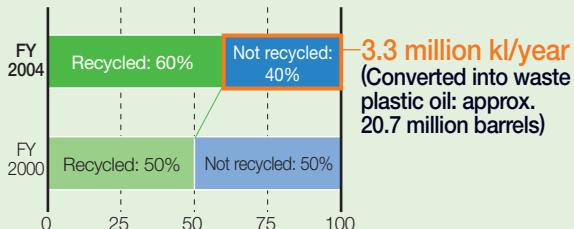
### Reducing the Environmental Impact of Refineries

To reduce the environmental impact of our refineries, we are researching ways to keep machinery clean and automatically measure and monitor advanced processes (called online sensing technology). The goal of all this is to reduce fuel consumption and CO<sub>2</sub> emissions.

As another way to reduce waste and environmental impact, we are researching the feasibility of recycling spent catalysts.

We have developed a successful flow scheme to co-process LTCO with petroleum in an oil refinery and demonstrated this utilizing an existing upgrading unit at the Mizushima Oil Refinery in April 2004. We have treated about 1,000 kl/year of light thermal cracking oil derived from municipal waste plastics, and upgraded about 70% of the oil into naphtha. We intend to keep on developing this system and take it from the experimental stage to the business stage.

### Figures for Waste Plastic Processing



• Equal to 5 days worth of the crude oil processed in Japan in FY2003 (Approx. 4.1 million barrels/day\*)

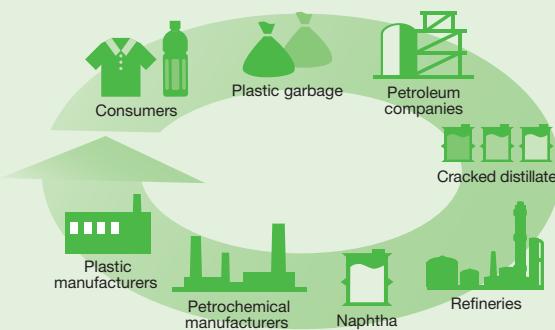
• Equivalent to amount of crude oil developed and produced in-house (Approx. 3.2 million kl/year<sup>2</sup>)

\*1 From Petroleum Association of Japan Web site

\*2 From Japan Petroleum Development Association Web site

Source: Plastic Waste Management Institute

### Chemical Recycling of Plastic Waste





## Environmental Protection Highlights Local Nature Protection Contributions

# Japan Energy Starts the Hara Village JOMO Ayumi-no-Mori Forest Project

In addition to minimizing environmental impact from business activities, in April 2005 Japan Energy joined the Adopt-a-Forest Operation promoted sponsored by Nagano Prefecture, Japan. We signed a contract with Hara Village in Nagano Prefecture under which both sides will work together to preserve and replant the forest.

### Adopt-a-Forest Operation Joins Private Companies and the Local Government

Under Nagano Prefecture's Adopt-a-Forest Operation, the prefectural government brings together municipalities owning forest land and companies intent on protecting nature to preserve these forests in a cooperative effort among industry, government, and residents.

The foster parent, in this case the company, and the foster



Japan Energy employees and family members join in



Planting mountain cherry seedlings

child, the municipality, sign a contract to protect the forests, which absorb CO<sub>2</sub>. Besides investing money for forest upkeep, the private company sends employee volunteers to help protect the forests. There are currently about 20 municipalities in Nagano Prefecture taking part in this project. Japan Energy and Hara Village signed their agreement in April 2005, making Japan Energy the first foster parent company in the Suwa district of the prefecture. A ceremony to mark the signing of the agreement in

May 2005 was witnessed by village residents, prefectural government officials, and Japan Energy employees, all of whom joined in the planting of 600 Japanese white oak and fir tree seedlings.

The signing ceremony



## Employees, Families, and Village Residents Join in Preserving Forests

Hara Village and Japan Energy are working together on the Hara Village JOMO Ayumi-no-Mori project. Japan Energy provides the village with the funds for upkeep of the forest. Employees and their families visit the village and work with villagers to protect the forest, learning about what it means to live with nature by strolling through the forest and harvesting vegetables. Japan Energy considers this forest protection an important part of its CSR activities. We will continue to urge employees and their families to participate and hope to expand our nature protection activities to other regions.

In August 2005, employees and family members gathered in the Hara Village JOMO Ayumi-no-Mori to see how the planted seedlings were coming along and remove weeds. In October, about 40 people came to thin the forest and to prune trees.

## "A Bouquet of Children's Stories" Makes Use of Thinned Wood

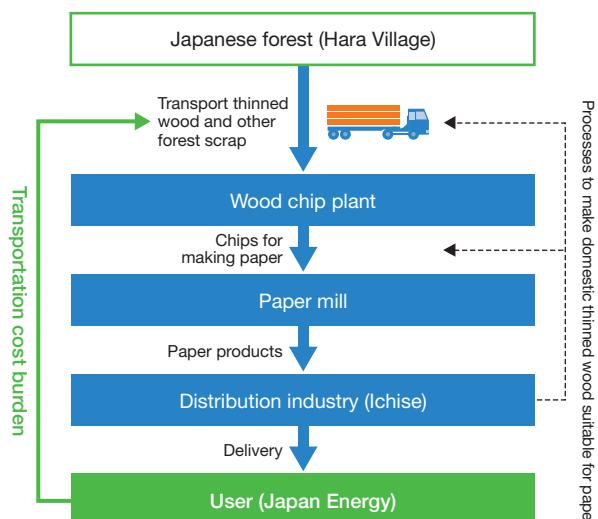
Besides protecting forests, Japan Energy gathers the wood from forest thinning for processing into 3.9 Paper\* that is used for the book "A Bouquet of Children's Stories".



B-(2)-060008

\* **3.9 Paper:** When pronounced in Japanese, "3.9" sounds like "thank you." Wood from the thinning of forests in Japan is used as raw material for making paper. Because it costs money to transport this wood, it is often left in the forest, inhibiting the growth of young trees and decreasing CO<sub>2</sub> absorption by the forest. To solve this problem, two paper wholesalers, Ichise Co., Ltd. and Oji Paper Group, developed the "3.9 Paper" business model to make effective use of thinned wood and to protect forests. Because the user of the paper covers the cost of transporting the thinned wood, it is feasible to use domestic thinned wood as raw material for paper.

## Using Domestic Thinned Wood to Make 3.9 Paper



## A Message to Japan Energy

### Hopes for a Lasting Legacy



**Gyosuke Nakamura**

Head of Agricultural, Forestry, Commerce, and Tourism Department, Hara Village Office

Hara Village is made up of eight settlements and is surrounded by forest. But with people around here getting older, it was becoming increasingly harder to take care of the forest. Then, our village decided to take advantage of a new initiative by the prefectural government, called the Adopt-a-Forest Operation, to work with private companies to preserve forests.

We began working with Japan Energy in April 2005 and in the spring of 2006 we conducted the fourth forest preservation activity. Through forest preservation activities and friendship exchanges, Japan Energy employees and villagers have strengthened their friendship, so much so that employees and their families often take part in village events in addition to the Adopt-a-Forest activities.

As well, the thinned trees from our forest are used to make paper on which Japan Energy-published children's story books are printed. I sincerely hope that Japan Energy starts more activities like this that leave something concrete and lasting for the future.

## Message from the Front Lines

### Calling for More Participation from Employees



**Sayuri Osaka**

Human resources, General Affairs Department, Kashima Oil Refinery, Kashima Oil Co., Ltd.

This is the third time for me to join the forest preservation event carried out with Hara Village. Before starting this program, we had no previous experience in tending forests, so each time I go I realize how much work it is.

I have even wondered how people like me with no knowledge of forests can be of any use. But still, I want to help out in some way, so I join in. But there's another reason for taking part: the warm hospitality shown to us by the residents of Hara Village each time we visit, and the desire to once again meet coworkers from other parts of our company.

I feel that working to maintain the forest and getting together with village residents has raised our own awareness of the natural environment. We're calling on more employees to join in to preserve nature and contribute to the local community. The Kashima Oil Refinery is currently looking to get involved in similar community-based activities.



# Together with Society

There are many stakeholders who support the business activities of Japan Energy.

We are well aware of the necessity of ongoing compliance so that we can continue to be a trusted and indispensable member of the community.

We also do our utmost to be a good corporate citizen through environmental conservation and social contribution activities.

And we support our employee's participation in these activities because we believe that such volunteer action is important in fostering the "energy in people" and contributing to the "energy in society."



# Together with Our Customers

Besides raising quality in order to give customers the very best products, we are offering them comfortable service stations and the ultimate service under the slogan “smile life with JOMO.” Our goal is excellent customer service and attractive service stations that have an atmosphere distinct to JOMO.

## Thorough Safety and Quality Control through a Group-Wide Organizational Structure

To provide customers with products and services that they can use with peace of mind, the Japan Energy Group has had its refineries and plants certified for the ISO 9001 international standard for quality management systems. As well, in June 1995, we established our own proprietary quality standards in the form of rules for the implementation of quality control, quality assurance and the prevention of product liability (PL) problems.

Since then, the Quality Subcommittee, which is made up of quality personnel from each group company and our staff of R & D Center, has been in charge of monitoring the group-wide quality control situation and promoting employee education. As for opinions and complaints from customers, these are shared over the entire group via the Liaison Meeting of Quality Assurance Personnel. This allows the entire company to work together to further quality control and improve quality-related activities. The Quality Subcommittee sets annual policy in an effort to improve work processes and raise the quality of products and services in each group company. In FY2005, divisions worked together to improve their activities based on four priority tasks: eradication of quality-related problems; proactive compliance to quality regulations for improvement of atmospheric environment; improve quality competitiveness; and aggressive initiatives toward new fuels.

Starting in April 2005, JOMO service stations throughout Japan began selling sulfur-free regular gasoline and gas oil (sulfur content below 10 ppm). Sulfur-free fuels result in less environmental impact such as air pollution. And starting in 2005, we reduced summertime gasoline vapor pressure to 65 kPa to help reduce the occurrence of photochemical smog. Such developments are part of our efforts to offer products with minimal environmental burden and maximum quality.

Our policy for FY2006 is to improve activities through four priority tasks: properly deal with quality problems; strictly comply with quality regulations; improve quality competitiveness; and boost fundamental technologies.

### ISO-certified companies



### Status of ISO 9001 certification

	Mizushima	Chita	Funakawa	Sodegaura	Kashima
Date of certification	January 10, 1996	February 9, 1994	February 11, 1997	October 8, 1996	November 17, 1995
Certifying institution	LRQA	JQA	LRQA	LRQA	LRQA
Certification number	0941885	JQA-0400	0957130	0955550	JQA-1042

## Proper Management of Personal Information Education and Training for All Employees

In April 2005, the Law Relating to Protection of Personal Information (the Personal Information Protection Law) came into full effect. Prior to that, in March 2005, Japan Energy Group established its Personal Information Protection Policy and Fundamental Rules for Personal Information Protection. This was accompanied by e-learning for all employees and explanation meetings at headquarters and sites to ensure that everyone manages personal information properly.

The Personal Information Protection Policy can be viewed on our Web site.

<http://www.j-energy.co.jp/guide/privacy/policy.php>



**Personal Information Protection Law Response Guide**  
We created the Personal Information Protection Law Response Guide and distributed this to nationwide dealerships and JOMO service stations, both of which handle a variety of customer information. This guide contains summaries of the law and important points to keep in mind when handling personal information.

### Personal Information Protection in LP Gas Sales

In 2005, we created the Manual for Finding Potential LP Gas Customers Using Personal Information. This manual includes results of a survey on how personal information is handled by LP gas companies, a summary of the Personal Information Protection Law, and tips on proper application of personal information protection to service-related duties. As well as distributing this manual, we held explanation meetings and seminars on the importance of properly handling personal information at LP Gas JOMO Associations in each district.

### Leak of Customer Data

In June 2005, a survey by Toyota Finance Corporation, Japan Energy's affiliate card company, found that some people masquerading as card owners had attempted to make unauthorized purchases on the Internet using JOMO Card Plus, a credit card issued by Japan Energy. This was ascertained due to the fact that all the cards used without authorization had been issued at the same JOMO service station. Although prompt action prevented any purchases being made on our customers' accounts, we sincerely apologize for any worry or inconvenience we caused them.

We have established a task force to deal with this and we are working with Toyota Finance to determine the cause of the trouble so that such an incident does not occur again. We are also working with relevant dealerships to step up management and protection of customers' personal information.

## Together with Our Customers

### Survey and Analysis of Customer Satisfaction at JOMO Service Stations

Since 1994, we have been carrying out our CS Survey, a semiannual survey of customer satisfaction at our approximately 2,000 JOMO service stations (full service) across Japan.

Investigators visit JOMO service stations, where they evaluate and grade the station on criteria such as fueling operation, car wash, customer service, and station cleanliness. Service stations must score at least 150 out of a possible 200 points so that we can achieve our goal of offering a uniformly high standard of service to all of our customers around Japan.

In Internet surveys we have been carrying out regularly since 1998, we ask Club JOMO members their opinions and wishes regarding the products and services we offer at JOMO service stations.

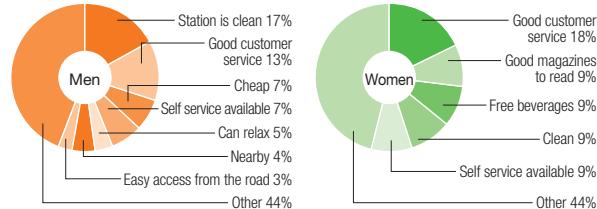
An analysis of the FY2005 Internet survey gave us a detailed picture of customers' needs and we are translating this into service that goes beyond their expectations.

#### Results of Internet Survey (FY2005)

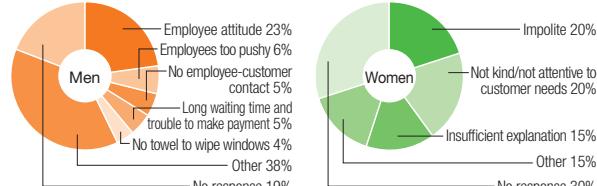
##### (1) Level of satisfaction at JOMO service stations

	Satisfied	Average	Not satisfied
Products	41%	48%	11%
Customer service	63%	32%	5%
Waiting room	45%	46%	9%

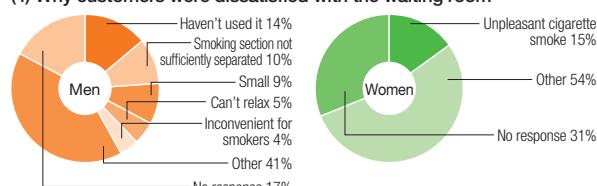
##### (2) What customers liked about Value Style service stations



##### (3) Why customers were dissatisfied with customer service



##### (4) Why customers were dissatisfied with the waiting room



### Improved Customer Service Manner and Cleanliness by All Employees including part-timers

Under our theme of "smile life with JOMO," we are working to create stations that offer customers the highest level of service. We are placing particular emphasis on the areas that customers value most, such as customer service and station cleanliness. In FY2003 we started our customer service training and in FY2004 cleanliness on-the-job training. So far, approximately 5,000 JOMO service station employees have taken this training.



Customer service training

As a result of these efforts, the FY2005 CS Survey showed an 11.7 point increase over FY2003 for customer service and a 1.5 point increase for cleanliness.

### JOMO Customer Center Gathers Opinions and Requests

In July 1998, we opened the JOMO Customer Center to gather customer ideas and reflect these in our service. Customers can call a toll-free number and give us their opinions and ideas on improvements that could be made.



The fax newsletter with helpful customer comments

These customer opinions and requests are put into a database and are used in creating targets for future improvements. We also regularly fax JOMO service stations a newsletter with helpful customer comments.

**JOMO Customer Center  
0120-150-106 (toll-free in Japan; M-F, 9:00 a.m.-5:00 p.m.)**

#### Calls to the JOMO Customer Center (FY2005)

Details	No. of calls	% of total
JOMO card (request for application forms, Web-related)	3,708	43.5%
Claims (JOMO card, service at service station, campaigns, etc.)	887	10.4%
Products	791	9.3%
Auto body care	18	0.2%
Campaigns	123	1.4%
Guide to service stations	387	4.5%
Bouquet of Children's Stories	1,145	13.4%
Crank calls	219	2.6%
Other	1,251	14.7%
<b>Total</b>	<b>8,529</b>	<b>100.0%</b>

## Value Style: A New Kind of Service Station Offering Customers Comfort and Convenience

Value Style is a model that is based on the concept of creating service stations that make customers want to have a look,



Value Style station

want to come in, and want to come again. We began rolling out these service stations nationwide in FY2005 and plan to have 1,000 by FY2008.

### Barrier-Free Design

JOMO service stations are incorporating universal design so that all customers can use them easily and with peace of mind.

#### Main initiatives

- Stairs and curbs: Ramps installed
- Store entrance doors: Automatic or sliding doors
- Restrooms: Wider space and handrails, Western-style toilets

Note: There are 27 JOMO service stations that provide full wheelchair access.



Entrance



Wheelchair access restroom

### Inter-Industry Annexing

Japan Energy is collaborating with other industries to take advantage of the specific locations of JOMO service stations.

We continue to think of new ways to make JOMO service stations more convenient and satisfying to our customers.

#### Inter-industry annexed shops

- Beauty salons: 10 shops
- Laundromats: 5 shops
- Dry cleaner: 1 shop
- Fast food: 1 shop
- Boxed lunch: 1 shop
- Restaurants: 2 shops



Annexed laundromat



Annexed beauty salon



**Value Style** smile life with JOMO

We want to bring more abundance and value to our customers' lives

The Value Style logo shows two little birds perched on a branch with a leaf.

These are the “birds of happiness” and they are always together. They are a symbol of happiness and continually hope that our customers keep on smiling.

The leaf represents nature and consideration for the environment. This logo expresses the goal of the Value Style concept: that customers come to our service stations in complete peace of mind.

Note: “Value,” “Value Style,” , “smile life,” and “smile life with JOMO” are all registered trademarks of Japan Energy Corporation and their unauthorized use is prohibited.

### Features of Value Style Service Stations

#### Coherent Design with Improved Visibility

We are creating a uniform image and reducing the number of posters and banners inside and out. We are also making it easier for drivers to spot JOMO service stations by having pictures of familiar mascot characters illustrated on the roof of the sales room and on station signs.



Value Stations have a unified design

#### Space for Relaxation and Enjoyment

We have designed sales rooms with different sections so that customers can relax as they wish. We also have a separate smoking room so that non-smokers will not be bothered.

##### Sales room sections

- Coffee section
- Magazine section
- Kids’ section (coloring books, etc.)
- Relaxation corner (free massage chairs)
- Bouquet of Children’s Stories section



Bouquet of Children's Stories section



Coffee section

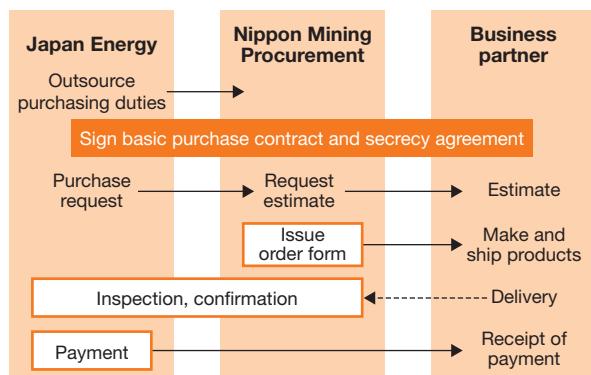
# Together with Our Business Partners

In our purchasing relationship with our business partners, we strive to create a win-win situation through a partnership of fair and honest dealings.

All purchasing functions of the Japan Energy Group are subcontracted out to Nippon Mining Procurement Inc., the purchasing arm of the Nippon Mining Holdings Group.

This company was established in July 2005 to carry out group-wide purchasing for the Nippon Mining Holdings Group. The company complies with all relevant laws in conducting purchasing in a fair and highly transparent manner. Based on the purchasing policies below, we strive to build a partnership founded on mutual trust with all of our business partners.

## Purchasing Process



## Nippon Mining Procurement Purchasing Policies

### Role

1. We will provide the group company of the Nippon Mining Holdings Group with the necessary materials and services in the most efficient and stable manner.
2. We will contribute to the competitiveness of the group company of the Nippon Mining Holdings Group by working with the company to reduce the cost of the materials to be purchased.
3. We will conduct business with high levels of precision, speed and transparency so that we can gain the trust and satisfaction of the group company of Nippon Mining Holdings Group.
4. We will share information with the company of the Nippon Mining Holdings Group in order to make both parties aware of the progress and results of the purchasing process and thus strengthen the purchasing functions of the Nippon Mining Holdings Group.
5. We will make purchasing information available to business partners so that we can offer the maximum number of business opportunities.

### Course of Action for Purchasing Deals

1. Transparency: Purchasing deals will be carried out in an open manner from start to finish.
2. Fairness: Selection of suppliers will be carried out based on fair evaluations.
3. Rigorous legal compliance: During purchasing deals, we will comply with all related regulations, and will not only observe the individual clauses of each law, but will also adhere to the spirit of the law.
4. Environmental protection: We regard the environment as the most important thing, and endeavor to "purchase green."
5. Mutual trust: We will build relationships of trust with our suppliers, based on equal partnerships.
6. The person in charge of purchasing will keep fair relationships with business partners based on a rigorous ethical viewpoint.

### Our Promise to Business Partners (Fundamental Rules for Purchasing Deals)

1. Fair entry opportunities: We will provide companies that wish to trade with us fair opportunity to do so, and will respond to any proposals earnestly.
2. Fair evaluation: Selection of suppliers will be conducted based on a fair evaluation of product quality, price, delivery schedules, performance and other factors.
3. Clear specification of purchasing procedures: We clearly publicize the Course of Action for Purchasing Deals, the Fundamental Rules for Purchasing Deals, registration procedures for new suppliers, various procedures from ordering through payment and the contact details for the person in charge as well.
4. Management of confidential information: We will strictly manage information received in the course of purchasing operations and ensure maintenance of confidentiality.
5. Disclosure of the reasons behind selections: Where suppliers are not selected in tenders or competitive bids, we will clearly inform them, if requested, of the facts and reasons behind our decisions.

## Green Procurement Initiatives

Through green procurement, Japan Energy aims to create a recycle-based society, prevent global warming, and promote the 3Rs. We survey all business partners and choose to deal with those whose efforts satisfy a certain level of environmental consideration. Those who do not meet our criteria are urged to step up their environmental efforts.

For more on green procurement, see page 27.

# With the Employees

Japan Energy strives to build a workplace where each employee can use his or her abilities to the fullest. Our human resource system evaluates employees openly and fairly and respects their motivation.

## Fundamental Human Resource Policies

- Japan Energy has four fundamental human resource policies.
- (1) Place people in jobs or job rotations based on their specific skills and to develop their abilities.
  - (2) Evaluate and reward employees based on their performance in an open, fair manner.
  - (3) Establish labor conditions commensurate with the company's capacities and have prompt, systematic response to social needs.
  - (4) Offer sufficient opportunities for employees to develop their skills through education.

## Open, Fair System of Evaluation

In 1998, Japan Energy established an open, fair, competency-based system of evaluation.

This system is made up of action standards (competency model) established for each job description and annual work achievement targets, both of which are used as a basis for regularly evaluating the progress and achievement of employees.

In this system, employees and their superiors hold frank discussions at the beginning and end of the fiscal year. This offers a fair process in which both sides can agree on issues and also provides the basis for revising employee work targets and pursuing the necessary training to develop their skills.

## Job Placement and Human Resource Training that Respects Employee Motivation

Under Japan Energy's self-declaration system, once a year employees voice their opinions on their particular skills and future career goals, as well as make requests regarding where they want to work or other personal wishes. Based on employees' suitability or skills for particular jobs, and with consideration for their intentions and desires, we place them in jobs or on career paths that they find rewarding and that make the most of their strengths.

## A Workplace that Empowers Women

In July 2005, we began getting a consensus among department heads at headquarters and holding hearings for female employees in order to better understand how to create a corporate culture and systems conducive to boosting women's participation in Japan Energy. Our goal is to create a workplace in which women can do their jobs unconstrained and have access to a wider range of job opportunities.

## Re-Employment of Retired Workers

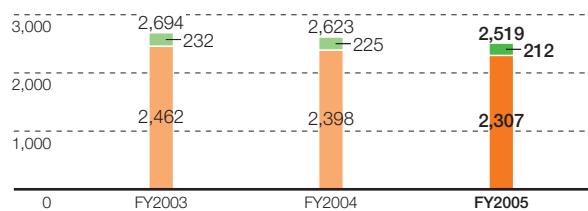
With the start of the Law concerning Stabilization of Employment of Older Persons, in FY2006 Japan Energy introduced a system for re-employing retired workers. All employees retiring at age 60 who wish to be rehired are eligible for this system. This system allows employees 60 and older to use the experience and knowledge they have built up over the years and pass their valuable skills on to the next generation of Japan Energy.

## Employment of the Disabled People

As of March 31, 2006, Japan Energy has 33 employees with disabilities (representing 2.0% of all employees), and we will strive to increase this number with the aim of staying above the legal limit (1.8% of all employees). To this end, we are working to create a workplace conducive to making the most of disabled employees' talents and increasing the number of jobs open to the disabled.

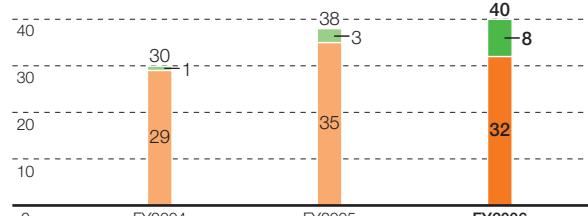
### Number of Employees

(employees) Men Women



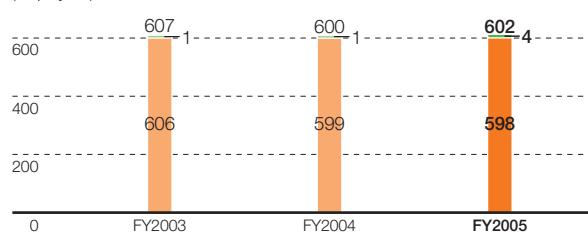
### New University Graduates Hired

(employees) Men Women



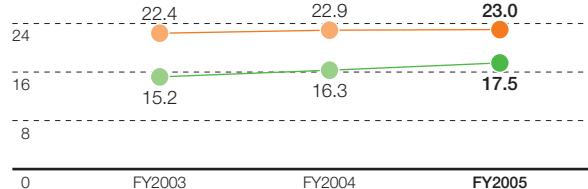
### Ratio of Men and Women in Management Positions (Fiscal Year End)

(employees) Men Women



### Average Number of Continuous Years Worked (Fiscal Year End)

(employees) Men Women



## With the Employees

### Education for All Employees

Japan Energy believes that people are a company's greatest resource. That's why we encourage directors and employees to further their abilities through training programs.

It is with this belief that we established the Nippon Mining Management College to foster the next generation of Nippon Mining Holdings Group leaders. With the aim of grooming Japan Energy business leaders, we offer a full range of courses for employees selected from all management classes, from department manager to executive.

In the area of skill development, we have group education for all levels, from new employees to executives. In addition, employees can join our range of other programs: the open college, available for anyone with a desire to better themselves in a number of skill areas; correspondence education, which covers foreign languages, certification programs and practical courses; and study abroad programs that send employees to business schools overseas with the aim of molding internationally minded managers.

As well, education about our corporate principles and CSR activities is a required part of training programs for each employee level.

### Revision of Child Care Leave and Family Health Care Leave Systems

Japan Energy has for some time now had childcare leave and nursing care leave systems in compliance with Japanese

laws. But with the enactment of the Law to Promote Measures to Support Fostering Next-Generation Youths in April 2005, we have revised our childcare leave systems so as to allow employees to find a balance between work and childcare and to make it easier for women to continue working after having children. In FY2005, 12 employees used their childcare leave (two of these were men) and no employees used nursing care leave.

#### Revisions to Child Care Leave and Nursing Care Leave Systems

- (1) Child care leave period extended from "until child become 1 year old" to "until child become 1 year and 6 months old, or until the first fiscal year end after the child becomes 1 year old, whichever is longer (maximum of approximately 2 years)."
- (2) Maximum of 5 days paid leave during the childcare leave period.
- (3) The eligibility for child nursing care leave changed from "children who have not yet entered elementary school" to "children who have not yet entered junior high school."
- (4) The period during which employees can shorten work hours to look after children extended from "until the child is 3 years old" to "until the child starts elementary school."

#### Japan Energy Group Education System

		Training by job category	Nurturing of business leaders (selected employees)		Open college (voluntary and selected applicants)	IT	Self-development support	Training by job type
			In-house	External				
Executive officers	•Training sessions for corporate officers							
Management level employees	6 class				Japan Energy Management College			•Education for marketing managers
	5 class			•SE-1 course	•SE-2 course			•Education for administration managers
	4 class				•E-2 course			•Education for engineering managers
	3 class					•Marketing course		
	2 class						•Office automation education	
	1 class	•Training for new managers		•E-1 course			•Correspondence courses	
General office employees	7 class						•In-house language lessons, in-house English exam	
	6 class				•Study abroad			
	5 class	•Scheduled training 10 years after joining company			•Inter-industry exchange training			
	4 class							
	3 class	•Scheduled training 3 years after joining company	•New employee training					
	2 class				•Study at head office			
	1 class	•New employee training						
		Held by Human Resources Dept						Held by each department

## Initiatives to Support the Next Generation

The Law to Promote Measures to Support Fostering Next-Generation Youths requires companies to establish ways to help employees balance work and childcare. In response to this law, Japan Energy created a two-year action plan in April 2005. We are implementing this plan and seeking to have it certified\* by the head of the Tokyo Labour Bureau.

\* **Certification system:** Companies that carry out consistent action plans and that meet certain legal standards are certified by the head of the Labour Bureau of the prefecture in which they are based. This certification gives companies the right to use a next-generation certification logo on their products.

In addition to our two-year action plan, we have made the following revisions to company policies regarding fostering the next generation.

### Revisions Related to Fostering the Next Generation

- (1) The maximum age for people eligible for a dependent allowance was raised from 18 to 20.
- (2) We have revised the dependent allowance and are providing generous allowances to employees raising children.

## Message from the Front Lines

### Five Days that Taught How Tough—and How Important—Child Care Can Be



I took five days of childcare leave from January 5, 2006. Although just eight days in total including weekends, all the diaper changes and baby baths were a valuable lesson in just how tough and important it is caring for a child.

I've heard that men in Japan take on average just 0.4% of their allowable childcare leave. I hope that with more understanding

of the workplace and a change in men's thinking, we will someday realize a society in which men can play an important role in raising children.

## Smooth Labor-Management Relations Based on a Spirit of Mutual Dependence and Mutual Trust

Under the union shop system, Japan Energy has an agreement with the Japan Energy Labor Union (1,887 members as of March 31, 2006) based on a spirit of mutual dependence and mutual trust. In the spirit of this agreement, the company strives

to improve the working conditions of union members and the union works with management in solving problems related to running the company. Such smooth labor-business relations form the foundation of the company's growth.

## Proper Management of Working Hours

Japan Energy constantly and properly manages working hours. We inspect our system of operations to ensure all employees are in good health, both labor and management thoroughly monitor the state of things like employee working hours and amount of paid leave taken, and we have a flex time system.

## Safety Awareness at All Sites

At each Japan Energy site, the general manager oneself tours the site, looking for improvements that can be made and instructing managers on ways to prevent labor accidents.

Each worksite also conducts numerous safety activities. These include near-miss awareness, in which workers report things they are worried about or near-miss incidents; and illustrated lesson sheets, which are diagrams of a worksite that workers study to try and find potential points of danger.

As well, sites that have experienced labor accidents are required to make certain plans: accident surveys, accident cause analysis sheets, and plans to prevent accident re-occurrence. The table below shows the number of accidents at Japan Energy (including Kashima Oil Co., Ltd.), both those that resulted in lost work time and those that did not, over the past five years.

### Number of Labor Accidents

	FY2001	FY2002	FY2003	FY2004	FY2005
Resulting in lost work time	1	0	0	1	2
Not resulting in lost work time	3	6	2	3	3

## Support for Employees' Mental Health

Japan Energy also strives to maintain the mental health of its employees. Mental health lectures by outside experts (sponsored by Nippon Mining Holdings) offer employees the knowledge they need to keep themselves in a healthy state of mind.

The Health Insurance Union of Nippon Mining Group also has a call center where employees can call to consult on matters of health and medical care. Open 24 hours a day, 365 days a year, the call center responds to concerns on mental and physical health and provides information on medical institutions and nursing care.

# Together with the Community

Based on our Mission of “aiming for a more cohesive and dynamic society,” we contribute to society through the promotion of sports and culture and through support for Japan Energy employees’ volunteer activities.

In FY2005, we stepped up our efforts by prioritizing our areas of social contribution and by focusing our support on certain activities.

## Clarification of Action Policies for Social Contribution

Japan Energy has carried on the spirit of community contribution learned in the 100 year history of Nippon Mining Holdings and has earnestly contributed to society based on the company Mission and Business Principles.

In FY2005, we revised our social contribution thinking, establishing priority areas of contribution and clarifying the focus of our support.

Our main focus is on art and culture through the long-running JOMO Children’s Story Award, children’s welfare through the JOMO Children’s Story Fund, sports through the JOMO Basketball Clinic, the disabled through the Click Donation program, and victims of natural disasters through our matching-donation program. Through these activities, we support mainly children and the disabled.

We will continue to step up activities in our priority areas and look into new approaches.

### JOMO Children’s Story Award

In the winter of 1970, we gave customers who purchased our kerosene a collection of children’s stories with the theme of heart-to-heart communication. Our aim was to promote a warm and happy family life amidst the cold of winter. This was the beginning of the JOMO Children’s Story Award.

In 1973, we began accepting children’s stories from the general public. The response was so overwhelming that in 1976 we made it an annual event that has continued to today.

Outstanding entries from the public receive the JOMO Children’s Story Award and the best stories each year are compiled into the Bouquet of Children’s Stories. These are distributed to customers through JOMO service stations and dealerships and to local schools, kindergartens, and day-care centers. For the 36th JOMO Children’s Story Award in FY2005, we received 9,461 entries in the general division (junior high school students and older) and 741 entries in the children’s division (elementary school children and younger), for a total of 10,202 entries.



The JOMO Children’s Story Award Presentation Ceremony



The Bouquet of Children’s Stories

### The JOMO Children’s Story Fund and JOMO Scholarship Grant

In 1994, Japan Energy, the Nationwide JOMO Association (the sales network handling JOMO brand products), and Nationwide

JOMO LP Gas Association jointly established the JOMO Children’s Story Fund with the objective of using the Bouquet of Children’s Stories for worthy social causes. Dealerships, affiliates, and Japan Energy Group employees purchase the Bouquet of Children’s Stories and the proceeds go to children’s homes and mothers’ and children’s homes around the country.

In FY2005, we donated 23 million yen to the Japan National Council of Social Welfare, which provided scholarships to 194 former residents of children’s homes and mothers’ and children’s homes.

→ Read about how the Bouquet of Children’s Stories is helping preserve forests on page 34.

### Supporting Sports for the Disabled

In April 2004, Japan Energy added the Click Donation section to its Web site in support of sports activities for the disabled.

Each time a visitor to the Web site clicks the icon (limit of one click per person per day), Japan Energy donates one yen to sports organizations for the disabled.

In FY2005, we urged people to support Japanese athletes training for the 2006 Paralympics in Turin, Italy and received 4,924,420 clicks on our Web site. This translated into a 4,924,420 yen donation from Japan Energy to the non-profit organization the Japan Paralympic Support Council. This money went towards training and equipment for the athletes.

We’ve also support numerous sporting events for the disabled in Japan, including the Japan Wheelchair Basketball Federation (JWBF) championships (May), the Japan Wheelchair Basketball Federation (JWBF) national junior championships (July), the Pipo Universal Marathon Relay (September), and the Japan Wheelchair Basketball Federation (JWBF) national women’s championships (October).



The Click Donation Web site

Since March 2006, the Click Donation has been collecting clicks in support of the November 2006 Special Olympic National Summer Games in Kumamoto, Japan and the 2007 Special Olympics World Summer Games in Shanghai, China.

[http://www.j-energy.co.jp/cp/society/click\\_tp.php](http://www.j-energy.co.jp/cp/society/click_tp.php)

### Click Donation destinations (FY2005)

Organization	Amount
Japan Ice Sports Federation for the Disabled (JISFD), Japan Sledge Hockey Committee	1,000,000 yen
Ski Association of Japan for the Disabled	2,000,000 yen
Japan Sports Association for the Disabled (Japanese Paralympic Committee)	1,924,420 yen

## Disaster Assistance

Japan Energy directors and employees joined in a donation campaign to raise funds for victims of the October 2005 earthquake in northeast Pakistan.

In this donation program, Japan Energy matches the amount donated by executives and employees. We donated a total of 1,045,668 yen (522,834 from executives and employees and the same amount from the company) to the NGO Japan Platform, which sent this money to those suffering in Pakistan.

In April 2006, we established the JOMO Fureai Fund, in which a fixed amount of the salary of executives and employees is set aside in a savings account to be used to help future victims of disasters. We hope this will be put to speedy use in the case of a disaster.

## Support for the Japan Rescue Dog Association

Since December 2003, Japan Energy has opened the grounds of its site in Chigasaki City, Kanagawa Prefecture for the Japan Rescue Dog Association to train its dogs. Formed after the 1995 Great Hanshin-Awaji Earthquake, this non-profit organization trains rescue dogs with the help of volunteer trainers.



A rescue dog searches a building in a simulated rescue



Japan Rescue Dog Association training at a Japan Energy site

## Forest Conservation with Local Government

As part of our environmental conservation efforts, in FY2005 we began working with the local governments and non-profit organizations in prefectures such as Nagano and Okayama to preserve forests. Japan Energy employees and their families volunteer in these activities, strengthening ties with local residents and gaining a greater awareness of nature and the environment.

→ See pages 33-34 for information on Japan Energy efforts in the Ayumi-no-Mori forest in Hara-mura, Nagano.

## Forest Volunteers

The Japan Energy Group strives to preserve the natural environment of regions in Japan by having its bases work with local residents to protect forests. Employees and their families volunteer in earnest to see that these activities are a success.



**Hara-mura-JOMO AyuminoMori**  
(Hara Village, Suwa County, Nagano Prefecture)  
May 28-29, 2005; 40 participants; tree planting (fir tree and Japanese oak; 600 in total)  
August 26-27, 2005; 20 participants; undergrowth removal  
October 15-16, 2005; 40 participants; forest thinning, tree pruning



**Kurashiki Utsukushii Mori** (Participated as Part of General Public)  
(Kurashiki City, Okayama Prefecture)  
August 27, 2005; 20 participants from our company; undergrowth removal, tree pruning



**Nakajo Field of Japan Energy Development Co., Ltd., Nagaike Park**  
(Tainai City, Niigata Prefecture)  
November 19-20, 2005; 35 participants; forest thinning, tree planting, undergrowth removal, park cleanup



**Takahashi-JOMO Fureai-no-Mori**  
(Takahashi City, Okayama Prefecture)  
March 18, 2006; 110 participants; raking leaves, pruning

## Together with the Community

### Cleaning Activities

Japan Energy has for years now been holding community cleaning activities at its sites.

In FY2005, approximately 800 employees took part in cleaning activities held at the Mizushima Oil Refinery, Chita Oil Refinery, Funakawa Works, Sodegaura Lubricants Plant, Kawasaki LP Gas Terminal, R&D Center, Hokkaido Branch, and Kashima Oil Refinery (Kashima Oil Co., Ltd.).

For its outstanding cleaning activities, the R&D Center (in Toda City, Saitama Prefecture) was awarded for the second year in a row in the organization category of the Toda 530 Zero Waste initiative awards.



The R&D Center is honored for its contribution to zero waste

### Science Classes and the JOMO Planet School

We've been holding science classes at the R&D Center for sixth grade students from the nearby Toda City Niizo Elementary School since 2004. These fun, informative classes include quizzes and experiments that teach children about the basics of petroleum and environmental technologies.

In March 2006, we held the JOMO Planet School. In the first session, we sparked students' interest in natural science by letting them observe the night sky through a telescope. There were 43 students and parents from Niizo Elementary school and six Japan Energy family members who came to observe the moon, Saturn, and other celestial bodies.



Learning about science through experiments



Observing the night sky in JOMO Planet School

### Participation in Local Disaster Prevention Activities

To ensure safety in local communities, Japan Energy refineries and plants cooperate with neighboring companies and local governments in disaster prevention activities.

In FY2005, eight members of the fire brigade of the R&D Center took part in emergency response drills sponsored by the Warabi police station. After the drill, the chief of police presented the R&D Center with a certificate of appreciation.

### Participation in Minato-Net

Japan Energy is part of a social contribution network of companies and organizations in Minato Ward, Tokyo. Representatives work together on events that enrich the community and strengthen ties among their organizations.

In FY2005, eight employees of Nippon Mining Holdings took part in a workshop titled "What Would You Do in a Major Earthquake: What Earthquakes Have Taught Us About Disaster Preparation," held at the headquarters of NEC.



Participants learn about measures to take in the event of a disaster

### Opening Japan Energy Facilities to the Public

Japan Energy's headquarters has since 1989 lent its gymnasium to local kendo groups for practice. Since 1986, the Funakawa Works has let locals use its Japanese archery field.

Other Japan Energy refineries and the R&D Center also open sports facilities such as tennis courts, Japanese archery fields, and kendo training rooms to the general public.

## Japan Energy Supports its Employees in their Volunteer Work



### Second-Hand Book Charity Market

In August 2005, Japan Energy, Key Coffee, Inc., Japan Tobacco Inc., and Hitachi High-Technologies Corporation held a charity concert and second-hand book fair. The proceeds went to the non-profit organization Child Fund Japan for its children's education support activities in the Philippines and were enough for each company to support two years of schooling for one child.



### English Conversation Charity

Japan Energy holds English conversation classes in Japan that help children in Thailand, Laos, and Cambodia enter school. Japan Energy employees and their families take English classes taught by an American teacher and the lesson fees go to Minsai Center Japan, an NGO dedicated to helping the less fortunate in other countries get an education. In FY2005, the R&D Center held three such courses and the lesson fees were enough to send three children to school for one year.



### Tochigi Guide Dog Center Cleaning Volunteers

Since the autumn of 2003, Japan Energy employees have been working as volunteers to clean up the Tochigi Guide Dog Center. In FY2005, a total of 50 volunteers took part in cleanups held in spring and autumn. There are also donation boxes inside our offices in support of dog training activities at the Dog Center. Starting in FY2006, JOMO-Net Kita-Kanto Co., Ltd. has donation boxes at its JOMO Service Stations in Tochigi Prefecture.



### In-House Blood Donor Clinics

About twice a year, we sponsor blood donor clinics at headquarters and Japan Energy sites. These provide the Red Cross with safe blood and give employees the chance to do a good deed. In FY2005, approximately 450 employees donated blood at six sites.



### JOMO Volunteer Network

Established to support and promote employee volunteer activities, this network strives to create the engine for energy and dynamism in the community through volunteer work by Japan Energy employees. Run by approximately 20 employees from headquarters and sites dedicated to volunteering, the network provides volunteer-related information and plans and implements in-house volunteer activities.



### Collecting Items to Donate

In 1997, we began social contribution activities that anyone could easily participate in; namely, the collection of items such as used stamps and telephone cards to be given to NGOs. From January to May 2005, we collected erroneous postcards and used stamps and donated them to the non-profit organization Hunger Free World, a group working to alleviate world hunger. In March 2006, we collected unused telephone cards and other items for donation to the Darunee Scholarship Fund project run by the NGO Minsai Center Japan. Through this, we were able to provide student grants to seven Laoian elementary school students for three years.

As well, Japan Energy and four other companies participating in Minato-Net collect PET bottle caps (polypropylene) and sell them to a recycling company, with the proceeds going to the NGO Japan Committee for Vaccine for the World's Children.



## Social Contribution Highlights Sports Promotion and Community Contribution

# Feeding the Spirit through Sports: What We Hope to Achieve through our Basketball Clinic

Part of our Mission is to "activate the natural energy in people" so that we can achieve a cohesive, dynamic society. One way to do this is by promoting local sports.

To this end, Japan Energy has been holding its JOMO Basketball Clinic since 1995. Under this program, coaches and current and former players from the JOMO Sunflowers, the top women's basketball team in Japan, tour the country and teach children the basics of basketball.

### More than 10 Years of Sharing with Children All Over Japan

Begin in 1995, to promote basketball and promote exchange between Japan Energy and local communities, the JOMO Basketball Clinic features coaches and current and former players from Japan's top women's basketball team, the JOMO Sunflowers, touring the country to teach mainly elementary and junior high school student's basic basketball skills. In FY2005, the tenth year of the program, we formed a full-time team consisting of former players and increased both the frequency of sessions and the amount of material coached. Selected teams receive special reinforcement courses



covering a number of sessions, and one-day courses give everyone from children to adults the chance to master basic basketball techniques while having fun. While sessions used to be held four times a year, in FY2005 we held 69 sessions attended by a total of 2,905 participants. And we gave children a dream to shoot for with special sessions led by Yuta Tabuse (formerly of the Phoenix Suns), the first Japanese ever to play in the NBA. 2005 sessions were held in Chiba (July) and Tokyo (August) and 2006 sessions were held in Tokyo and Hokkaido (May).

 [http://www.j-energy.co.jp/jomo\\_clinic/](http://www.j-energy.co.jp/jomo_clinic/)



## A Message to Japan Energy

### Keep on Giving Children Something to Dream for



Eiko Narita

Arai Mini Basketball Club  
coach

I first heard about the JOMO Basketball Clinic when my son applied to join the Tabuse Clinic held in 2005.

I currently coach the Mini Basketball Team, a club of about 40 members. We practice at the gym of Arai Elementary School, where the JOMO Basketball Clinic was held.

At a JOMO Basketball Clinic, the children are even more enthusiastic than usual, probably because they relish the chance to be taught by great players and coaches and are inspired to want to become great players themselves. And their dreams get even bigger when they watch the players face off in an action-packed game.

I think that when children get that involved in something, their parents also become interested and this furthers parent-child communication. If possible, I'd like to see Japan Energy hold even more of these clinics so that more children can continue to have something to dream for.



## Message from the Front Lines

### It's Important to Have Something You Love



Taeko Oyama

Full-time coach, JOMO  
Basketball Clinic

I started playing basketball in elementary school. I played for Japan at the Atlanta and Athens Olympics before retiring. Today, I am a full-time coach with the JOMO Basketball Clinic.

At the clinic, I instruct mainly elementary and junior high school students. Recently, however, I hear that many schools, for one reason or another, have to cut back on the hours that students can use the gymnasium. This makes me feel sorry for the children. That's why during the clinics I make it a point to use the limited time to convey the joy of basketball so that children will love the game and have a dream that they can continue to chase.

I hope to continue teaching more and more children the importance of having something that you love doing.

## Message from the Front Lines

### Teaching the Joy of Ambition



Yuko Oga

JOMO Sunflowers

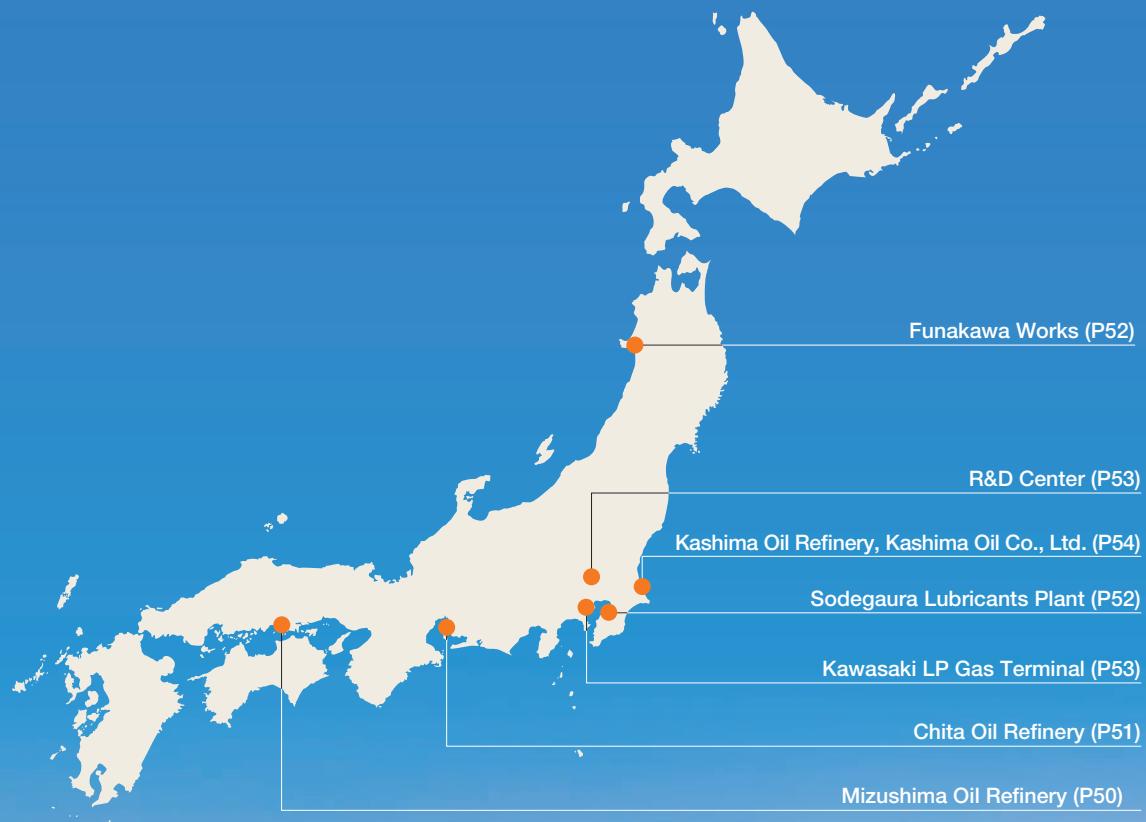
Ever since I started playing basketball in elementary school, I have continued practicing because I always wanted to get better. Because I love basketball so much, I was able to have the desire to continually improve myself.

At the clinics, besides teaching basic basketball skills, I want to also teach children to love basketball and to understand the joy they can get from the desire to improve. To this end, I believe that I have to give them something to dream for: the desire to reach a certain level of play or to become like their favorite player. Finally, I want to have a good time with the children and give them dreams and energy. (In fact, the children often energize me!)

# Site Report 2006

This site report provides an overview of Japan Energy's refineries, plants (sites), and R&D Center, as well as environmental impact and related data for FY2005.

We are striving to reduce environmental impact from production according to the characteristics of each site, such as products manufactured and scale of operations.



# Mizushima Oil Refinery



Name	Mizushima Oil Refinery
Location	2-1 Ushiodori, Kurashiki-shi, Okayama, Japan
Site land area	1,647,800m <sup>2</sup>
Date operations commenced	June 1961
Number of employees	385 (as of March 31, 2006)
Refining capacity	205,200 barrels per day

An integrated refinery that produces a full range of petroleum products, including petroleum based fuel oils, normal paraffin, solvents, benzene, xylene, and other petrochemicals, and lubricating oils.

The center of an advanced industrial complex, the refinery is equipped with all the advanced pollution control facilities needed to comply with strict emission regulations. The neighboring Mizushima Plant of Petrocokes Ltd. uses heavy fuel oil from Japan Energy to produce petroleum coke and since April 1999 the two companies have been jointly managing operations.

## Controlled substances

Substance	Regulatory laws, etc.	Details of regulation	Coverage	Regulatory limit (Daily average value in parentheses)	Measured value		Units
					Maximum	Average	
Air	NOx	Pollution prevention agreement	Regulation of total emissions	J Energy	149.6	89.3	69.2
	SOx			Petrocokes Ltd.	25.9	18.6	12.5
	Particulate matter	Air Pollution Prevention Law	Regulation of concentration	J Energy	187.8	58.1	37.5
				Petrocokes Ltd.	28.7	9.1	4.5
Water quality	COD	Pollution prevention agreement	Regulation of total emissions	J Energy	365	154.4	100.1
	Nitrogen			Petrocokes Ltd.	7	0.5	0.3
	Phosphorous			J Energy	430	315.4	141.9
	COD			Petrocokes Ltd.	9	0.8	0.4
	SS			J Energy	30.5	6.5	1.7
	Oil content			Petrocokes Ltd.	0.9	0.03	0.02
	Phenols	Okayama Prefecture regulations	Regulation of concentration		15 (10)	4.1-8.5	2.8-4.2
	Nitrogen				40 (30)	6.6-7.8	3.4-3.9
	Phosphorous				2 (1)	<0.5	<0.5
					0.5	<0.1	<0.1
		Water Pollution Prevention Law			120 (60)16	0.6-3.8	0.5-2.6
					(8)	<0.1-0.1	<0.1-0.1

## Results of PRTR study

Substance	Emissions		Sum total	Units
	Air	Water		
Ethylbenzene	0.2	0.0	0.0	0.2
Xylene	1.2	0.0	0.0	1.2
Toluene	5.6	0.0	0.0	5.6
Benzene	0.8	0.0	0.0	0.8
Dioxins	0.0	0.1	0.0	0.1
				Mg-TEQ/year

Notes: Rounded to the nearest tenth.

Substances with no emissions or transfers are not listed here.

## Green procurement

Segment	Item	Target	Item
Paper	Copier paper	At least 90% (by value) of all items procured should be green result	100%
	Paper for forms		100%
	Toilet paper		100%
	Tissue paper		100%
	Cardboard		100%
	Business cards		100%
Stationery	Stationery	At least 90% (by value) of all items procured should be green result	99%
	Office envelopes		100%
	Window envelopes		100%
	Recycled toner		100%
Uniforms	Work uniforms (overalls)		100%
	Work gloves		100%
	Fire extinguishers		100%

Note: Products are judged to be green based on the Okayama Prefecture Green Procurement Guidelines.

# Chita Oil Refinery



Name	Chita Oil Refinery
Location	25 Kitahama-cho, Chita-shi, Aichi, Japan
Site land area	1,293,086m <sup>2</sup>
Date operations commenced	October 1973
Number of employees	102 (as of March 31, 2006)

A petrochemical-based refinery that produces gasoline and other fuel oils, aromatic products like paraxylene, cyclohexane and benzene, and a variety of solvents.

One of the newest refineries in Japan, it is doing its best to preserve the forested landscape that surrounds the premises.

## Controlled Substances

Substance	Regulatory laws, etc.	Details of regulation	Regulatory limit (Agreement value)	Measured value			Units
				Maximum	Minimum	Average	
Air		Amount contained	0.17	0.042	0.016	0.029	%
			78.97	30.06	24.35	27.51	Nm <sup>3</sup> /hour
		Regulation of total emissions	81.43	10.87	5.56	8.41	
			1,609	210			Tons/year
			33.95	2.17	0.82	1.10	Kg/hour
Water quality		Regulation of total emissions	880	673	—	277	m <sup>3</sup> /hour
			195	57.2	—	29.6	Kg/day
			317	77.3	—	12.7	
			21	6.9	—	3.2	
			21	1.4	—	0.98	
		Regulation of concentration	Maximum 20	6.3	—	—	mg/l
			Daily average 14	—	—	3.5	
			Maximum 20	10.0	—	—	
			Daily average 15	—	—	3.0	
			Maximum 1.0	≤0.5	—	≤0.5	
			Maximum 1.0	≤0.1	—	≤0.1	
			Daily average 20	1.1	—	0.4	
			Daily average 2.0	0.2	—	0.1	
			55	47~54			dB (A)
			65	30~30			dB

## Results of PRTR Study

Substance	Emissions		Waste	Sum total	Units
	Air	Water			
Xylene	2.8	0.0	0.0	2.8	Tons
1,3,5-trimethylbenzene	0.1	0.0	0.0	0.1	
Toluene	3.9	0.0	0.0	3.9	
Benzene	0.8	0.0	0.0	0.8	

Notes: Rounded to the nearest tenth.

Substances with no emissions or transfers are not listed here.

## Funakawa Works



Name	Funakawa Works
Location	162-1 Aza-Ashizawa, Funakawa-Minato Funakawa, Oga-shi, Akita, Japan
Site land area	280,608m <sup>2</sup>
Date operations commenced	March 1939
Number of employees	65 (as of March 31, 2006)

Produces top-grade, high-value-added petroleum-based lubricating oils.

The birthplace of our company's oil refining business, this site tackles all environmental issues head on.

### Controlled Substances

Substance	Regulatory laws, etc.	Details of regulation	Regulatory limit	Measured value			Units	Wastewater standards under the Water Pollution Prevention Law
				Maximum	Minimum	Average		
Air	Air Pollution Prevention Law	Concentration regulations for each facility	260	90~108			ppm	—
		K-value regulations for each facility	8.76	0.48~3.66			—	
		Concentration regulations for each facility	0.3	0.001~0.004			g/Nm <sup>3</sup>	
Water quality	Pollution prevention agreement		5.0~9.0	8.2	7.3	7.8	—	5.0~9.0
			60 (daily average 30)	12.5	3.8	7.2	mg/l	160 (daily average 120)
			70	24.0	2.5	7.5		200 (daily average 150)
			5	2.8	0.2	0.8		5
			0.5	<0.2	<0.2	<0.2		3

## Sodegaura Lubricants Plant



Name	Sodegaura Lubricants Plant
Location	1 Kitasode, Sodegaura-shi, Chiba, Japan
Site land area	55,735m <sup>2</sup>
Date operations commenced	April 1969
Number of employees	9 (as of March 31, 2006)

Began operations in 1969 as Japan Energy's supply base for lubricating oils in East Japan. Using advanced blending technology, this site produces a variety of lubricating oils for automotive, marine, industrial and other purposes. Received ISO 14001 certification early on, in 1998.

### Controlled Substances

Substance	Regulatory laws, etc.	Regulatory limit	Measured value			Units
			Maximum	Minimum	Average	
Water quality	Pollution prevention agreement with Sodegaura City	6.5~8.6	8.4	7.2	7.7	—
		10	7.2	3.8	5.1	mg/l
		20	6	<4	4	
		1	<1	<1	<1	
		—	7.5	0.3	5.0	
		—	0.46	0.05	0.30	

## Kawasaki LP Gas Terminal



Name	Kawasaki LP Gas Terminal
Location	5-1 Mizue-cho, Kawasaki-ku, Kawasaki-shi, Kanagawa, Japan
Site land area	44,441m <sup>2</sup>
Date operations commenced	March 1968
Number of employees	15 (as of March 31, 2006)

The site's facilities have been gradually automated since the 1980s and it is now one of the five largest sites in Japan in terms of annual tank truck shipment volume (680,000 tons). We are working towards five environmental targets and goals. In the seven years since the site was certified for ISO 14001, we have achieved steady environmental gains through improved management and work processes, such as the reduction of electricity use and exhaust gas emissions. Our local environmental activities include monthly cleanups of the public roads surrounding the site and larger scale cleanups together with 14 other companies in the area.

### Controlled Substances

Substance	Regulatory laws, etc.	Regulatory limit	Measured value			Units
			Maximum	Minimum	Average	
Water quality	Kanagawa Prefecture regulations	130	20	12	16	Mg/l
		130	9	9	9	
		120	8	2	5	
		38°C or less and no more than 10°C over the water temperature where the wastewater is released.	24	9	17	
		Same as water temperature where wastewater is released.	25	10	17	°C

## Toda (R & D Center)



Name	Toda (R & D Center)
Location	3-17-35 Niizominami, Toda-shi, Saitama, Japan
Site land area	49,721m <sup>2</sup>
Date operations commenced	April 1959
Number of employees	134 (as of March 31, 2006)

This site carries out energy- and environment-related research including next-generation clean fuels, while at the same time striving to protect and live in harmony with the surrounding environment.

### Controlled Substances

Substance	Regulatory laws, etc.	Regulatory limit	Measured value			Units
			Maximum	Minimum	Average	
Water quality (sewage wastewater)	Toda City regulations	600	11	<10	10.9	mg/l
		600	12	<5	6.5	
		5	<1	<1	<1	
		240	14	<0.1	2.8	
		32	0.3	<0.1	0.14	
		5	<0.02	<0.02	<0.02	

### Results of PRTR Study

Substance	Emissions	Amount transferred		Sum total	Units
	Air	Sewerage	Waste		
Toluene	0.0	0.0	0.5	0.5	Tons
Xylene	0.0	0.0	0.2	0.2	

Notes: Rounded to the nearest tenth.

Substances with no emissions or transfers are not listed here.

# Kashima Oil Refinery of Kashima Oil Co., Ltd.



Name	Kashima Oil Refinery
Location	4 Touwada, Kamisu-machi, Kashima-gun, Ibaraki, Japan
Site land area	2,730,000m <sup>2</sup>
Date operations commenced	April 1970
Number of employees	338 (as of March 31, 2006)
Refining capacity	200,000 barrels per day

An integrated refinery producing a range of products from petroleum products to petrochemicals like paraxylene. Raw materials and fuels go back and forth for processing between this, the central refinery in the industrial complex, and other petrochemical companies.

The Kashima industrial complex has an environmentally friendly and efficient design: companies share utility service and waste treatment facilities, and also own facilities for final treatment of wastewater, and green areas for relaxation and recreation.

## Controlled Substances

Substance	Regulatory laws, etc.	Details of regulation	Regulatory limit	Point of emission	Measured value			Units
					Maximum	Minimum	Average	
Air	NOx	Pollution prevention agreement	Regulation of total emissions	132	—	48.0~64.7		Nm <sup>3</sup> /hour
	SOx			343	—	126.2~150.8		
	Particulate matter		Concentration regulations for each facility	0.04~0.05	—	0.001~0.033		
Water quality	pH	Ibaraki Prefecture regulations Pollution prevention agreement	5.8~8.6	1GB	8.2	8.0	8.1	—
				2GB	8.2	8.0	8.1	
				Central Road	8.3	8.0	8.1	
				West No. 2 Road	8.2	8.0	8.1	
				3CW	8.2	7.6	8.0	
	COD		10	1GB	2.1	0.2	1.0	mg/l
				2GB	2.2	0.3	0.9	
				Central Road	3.9	0.4	1.1	
				West No. 2 Road	5.7	0.3	1.4	
				3CW	1.7	0.4	1.0	
	SS		10	1GB	6.4	0.5	2.1	
				2GB	9.2	0.4	1.9	
				Central Road	7.3	0.5	2.3	
				West No. 2 Road	9.3	1.1	2.4	
				3CW	7.8	0.4	2.2	
	Oil content		1	1GB	0.9	<0.5	0.6	ppm
				2GB	1.0	<0.5	0.6	
				Central Road	0.9	<0.5	0.6	
				West No. 2 Road	0.8	<0.5	0.6	
				3CW	0.8	<0.5	0.6	
Offensive odors	Hydrogen sulfide		0.06	<0.001			ppm	
	Xylene		2	—	<0.1			

## Results of PRTR Study

Substance	Emissions	Amount transferred		Sum total	Units
	Air	Sewerage	Waste		
Ethylbenzene	1.6	0.1	0.0	1.7	Tons
Xylene	18.0	1.5	0.0	19.5	
1,2-dichloropropane	0.0	0.0	0.0	0.0	
1,3,5-trimethylbenzene	0.1	0.0	0.0	0.1	
Toluene	17.0	3.7	0.0	20.7	
Phenol	0.0	8.1	0.0	8.1	
Benzene	3.1	1.5	0.0	4.6	

Notes: Rounded to the nearest tenth.

Substances with no emissions or transfers are not listed here.

## New Construction of Production Plant for Petrochemical Products

Japan Energy, Mitsubishi Chemical Corp., and Mitsubishi Corp. will invest approximately 70 billion yen to jointly construct facilities for the production of aromatic products and light naphtha made from condensate (natural gas associated crude oil). The plant will be constructed inside the Kashima Oil Refinery of Kashima Oil Co., Ltd.

### Overview of Joint Business

Main products: Paraxylene, benzene, light naphtha  
Start of construction: September 2006 (operations scheduled to start in November 2008)

Main operator: Kashima Aromatics Co., Ltd.

## Third Party Opinions

To help make this CSR Report a more effective means of communicating our CSR activities, we asked two outside experts for their opinions.



**Kanji Tanimoto**

Professor of Graduate School of Commerce and Management, Hitotsubashi University, Doctor of Business Administration



**Ms. Yoko Takahashi**

Chief Director of the Japan Philanthropic Association

### Personal history

Completed doctorate at the Graduate School of Business Administration, Kobe University. Worked as a professor at Wakayama University before joining the School of Business at Hitotsubashi University in 1997. Began current position in 2000. Became Representative Director of NPO corporation "Social Innovation Japan" in 2005. Expertise: Corporate systems, "Corporations and Society". Publications: "CSR: Kigyou to Shakai wo Kangaeru Thinking About Corporations and Society", published by NTT Publishing Co., Ltd. (2006) "Social Enterprise", (Author and Editor), published by CHUOKEIZAI-SHA, INC. (2006)

Compared to the previous report, this CSR Report 2006 shows Japan Energy's effort to present the environmental and social aspects of its business activities in a manner that is easier to understand.

In 1997, Japan Energy established its corporate mission and business principles. Understanding that the implementation of these leads to CSR action, in 2005 the company started the Corporate Social Responsibility Department to give it the capacity to implement CSR action across the entire company.

However, the CSR Report does not tell us how the content of the mission and business principles are connected to things such as management of the company and the tasks in the area of CSR. By clearly explaining how CSR fits into the company's management system and how it is put into action, Japan Energy could make its CSR activities more accessible to readers of this report.

Although the CSR Report comes up short in this respect, Japan Energy's Mission Guidebook (published in 2002) shows the business principles divided by each division. Based on this, the company has a system, with the Corporate Social Responsibility Department being the key body, in which key CSR themes are selected for each department, plans are announced to put these into action, and results are announced (in a semiannual review). I think, therefore, that the company should explain this mechanism in its CSR Report.

By explaining what the company understands to be the concrete CSR tasks at hand, and by giving a concise and easy to understand overall picture of the basic policies and annual themes related to the environment and society, Japan Energy can make its CSR activities accessible to a greater number of stakeholders.

This CSR Report explains mainly Japan Energy's non-financial activities in the areas of environment and society over the past year. CSR is not something separate from the company's business, but rather a fundamental questioning of how the company conducts its business. No matter what the CSR activities, they will eventually be tied to a company's performance, business structure and corporate value. While this connection is pointed out in the company's business report, in the medium-term management plan and annual report of Nippon Mining Holdings Inc., it is mentioned merely as supplementary information. I hope that Nippon Mining Holdings and Japan Energy will look into ways to make the report more consistent overall.

### Personal history

Joined Japan Philanthropic Association in 1991. Worked as secretary-general and managing director before assuming her present position of chief director in June 2001. Has a wide range of contacts in government, industry and nonprofit organizations, and works with these in philanthropic activities that support both companies and individuals.

My first impression was that this year's report is more interactive than last: it surveys the comments and level of satisfaction of JOMO service station customers.

As well, readers are made aware of the tasks at hand for Japan Energy with sections called "Our Responsibilities and Actions" for each process of the supply chain.

However, since the company went to all the trouble of listing data for each of its sites, I wish it would have explained some of the environmental and social activities at each site in order to give us some details of what they are doing. By including the activities at each site and interviews with participants, future reports will give us the warmth and energy of the people involved.

As well, in the area of air pollution prevention, the report mentioned that FY2005 emissions increased. But it didn't tell us why or what Japan Energy is doing about this.

As for social contribution activities, the feature on the basketball clinic had photos that captured the excitement at the event sites and really allowed me to feel the enthusiasm of this activity. However, although Japan Energy clarified its policy for social activities this year, this is not clear from the report. I hope that in future Japan Energy will explain the scope of each activity, its relation to the company's major fields, and the benefits it brings. This would make it easier to see the direction in which Japan Energy is heading.

Although I always stress the importance of social contributions through a company's business, too narrow a focus will cause a company to miss the people who need its help the most. Activities like the JOMO Children's Story Award meet such needs. Such grassroots activities that have been going on for years are surely the source of some interesting stories and people that Japan Energy could highlight in future reports, thus giving readers an understanding of the true value of the company's social contribution activities. And for the JOMO Scholarship Grant awards, follow-up news on and interviews with students would be effective in letting more people know about this system. By presenting the company's simple, grassroots activities or its business stance in a way that captures the interest of the readers, I hope that Japan Energy will inform both its employees and the general public about what it has achieved, what it still has to do, and where it is heading.

## Explanation on Terms

Terms, abbreviations	Explanations
Aroma	Short for aromatic compound. The major aromatics include benzene, toluene and xylene.
Sound detection system	A system that uses sound to detect hydrogen leaks. Leaks are detected by analyzing sounds picked up by a microphone.
Activated sludge aeration equipment	A device that brings liquid and air into contact. Substances in the air (oxygen, etc.) are injected into the liquid, or dissolved gasses in the water are emitted into the air. By bringing wastewater into contact with air and providing plenty of oxygen to the air, this device improves the capacity of the aerobic microbes to break down sludge. The methods used by the device include agitating the air by blowing it, stirring the liquid to remove air from its surface, and dispersing the liquid into the air to give the two maximum opportunities for contact.
Activated charcoal absorption tank	An advanced treatment method that uses activated charcoal to remove substances such as soluble organic substances, COD, chromaticity, surfactants and offensive odor components. It is used following biochemical treatment or when reusing secondary effluent.
Environmental impact	The degree of influence on the environment.
Guard basin	An impounding basin at the final stage of a wastewater treatment system, it functions to separate minute amounts of oil and to temporarily store water in the case of a problem with the upstream wastewater treatment facilities. The guard basin has an oil detection device at its mouth, so if wastewater containing oil enters, it is detected and the cutoff valve closes. This prevents wastewater containing oil from being discharged to outside of the site.
Carbon neutral	Plants take in CO <sub>2</sub> through the process of photosynthesis. This means that the CO <sub>2</sub> emitted into the atmosphere by the burning of plant-based fuels was CO <sub>2</sub> that was originally in the atmosphere before being absorbed by plants through photosynthesis. This means there is no net emission of CO <sub>2</sub> into the atmosphere.
Xylene	An aromatic hydrocarbon, it has a methyl group (CH <sub>3</sub> ) substituted in place of two hydrogen atoms in benzene. There are three isomers of xylene: ortho, meta and para. Xylene is an oily liquid that is toxic, colorless, transparent, and flammable. It is obtained from petroleum reformate and is the raw material for organic solvent and synthetic resin.
kPa	A pascal (Pa) is an international unit (SI) representing pressure. One pascal is equal to one Newton per square meter. The unit for air pressure is kilo pascal (kPa). (Kilo=1,000)
Photochemical smog	The nitrogen oxide and hydrocarbons in car exhaust undergo chemical change when they react with the ultraviolet rays from the sun in the atmosphere, thus producing photochemical smog. Oxidants are air pollutants and one of the main components of photochemical smog.
Sulfur-free	Reducing the sulfur content in gasoline and gas oil to 10 ppm or less.
Catalysts	A substance that remains unchanged itself but alters the speed of chemical reactions of other substances. An example is the desulfurization of heavy fuel oil, which commonly uses the hydrodesulfurization method. High-temperature, high-pressure heavy fuel oil is injected with hydrogen, subjecting it to solid catalysts inside the reaction chamber. A hydrocracking reaction of the sulfur compounds results in the sulfur being removed as hydrogen sulfide. Catalysts have a life span and are replaced when they lose their ability to alter the speed of chemical reactions.
COD contamination	An index for water pollution, COD (chemical oxygen demand) is a measure of the oxygen required to oxidize organic compounds in water. It is a major index for measuring pollution by organic compounds in sea water and lake water.
Sludge	As oil deteriorates, it reacts with dissolved oxygen, resulting in a polycondensation product called sludge.
Biodegradable	Organic substances are broken down by microorganisms into water and CO <sub>2</sub> .
Denitration	The process and technology for removing nitrogen oxide from exhaust. The most common method of denitration is the ammonia catalytic reduction method in which ammonia is used as a reductant.
Desulfurization	Reducing the sulfur content of petroleum stock by causing a reaction between the sulfur and hydrogen, thus removing the sulfur in the form of hydrogen sulfide.
Hydrocarbon vapor recovery unit	Equipment for removing the hydrocarbons in the hydrocarbon vapor that is emitted when petroleum products are filled into or discharged from tank trucks. An absorbing solution such as kerosene is brought into contact with the vapor, thus absorbing and removing it. This equipment prevents the dispersion of hydrocarbon vapor into the air.
Diesel particulate filter (DPF)	A DPF is a type of post-treatment technology. Installed between the engine and the muffler, it has a ceramic filter that traps the particulate matter in the exhaust from diesel engines.
Toluene	An aromatic hydrocarbon, it has a methyl group (CH <sub>3</sub> ) substituted in place of one hydrogen atom in benzene. It is a colorless, flammable liquid with a distinct odor. It is obtained from the distillation of coal tar and the breakdown and reforming of petroleum. It is the raw material for dyes, explosives, and synthetic resins. It is also commonly used as a solvent as a main ingredient in paint thinners. It is also known as toluol.
Naphtha	Also known as unrefined gasoline (intermediate gasoline), it is mainly used as a raw material for petrochemical products. It has a fractional distillation range of between about 30 and 200°C.
Particulate matter	The particles contained in the smoke from smokestacks.
Benzene	A colorless liquid with aroma, it is insoluble in water. Also known as benzol. It is extremely volatile and easily ignitable. Because benzene is toxic, its use is restricted under Occupational Health and Safety Law and must be handled with care. Its molecular formula is C <sub>6</sub> H <sub>6</sub> and it is the most basic substance of the aromatic hydrocarbons.
Delivery terminals	A relay station where products refined at refineries can be efficiently delivered to where they will be consumed. Stockpiling at delivery terminals has advantages such as ensuring a stable supply and reducing distribution costs.

## CSR Report 2006

Published: July 2006 (2nd Edition as of Oct. 2006)

Publisher: Japan Energy Corporation, Corporate Social Responsibility Department

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Japan Energy supports a forest preservation initiative sponsored by Japan's Forestry Agency. This CSR Report 2006 enhanced the use of thinned wood from forests in Nagano Prefecture, Japan. Making paper in this way preserves and expands forests, which absorb CO<sub>2</sub>.

This report was printed using environmentally friendly waterless printing and soy ink.