J-POWER Group

Sustainability Report 2007

J-POWER Group

J-POWER Group Business: Outline

(J-POWER and consolidated subsidiaries, as of the end of March 2007.)

J-POWER was founded as an electricity wholesaler by the Japanese government in 1952 and is the only company with a nationwide network of transmission and transformation facilities playing a key role in the generation and supply of electricity throughout Japan.
Since its establishment J-POWER has contributed to economic growth and the improvement of everyday life in Japan by providing moderately priced and stable electricity supply to general electric utilities (10 regional power companies). The company was fully privatized in October 2004.

Corporate Profile (As of the end of March 2007)

◆ **Founded (J-POWER)** September 16, 1952

◆ **Employees** Group total 6,494
(including 2,174 parent company employees)

◆ **Main business activities**

● Wholesale power supply (J-POWER)

Hydropower stations 59 Total output 8.56 GW

Thermal power stations (including geothermal) 8 Total output 7.82 GW

Transmission lines (total length) 2,408 km

Customers 10 general electric utilities (regional power companies)

● Other electricity business

Wind farms 8 Total output 0.21 GW

Wholesale power supply to general electric utilities via independent power producers (IPP) 1 Total output 0.13 GW

Wholesale power supply to power producers and suppliers (PPS) 2 Total output 0.22 GW

● Ancillary business related to electricity

Design, construction, and maintenance of electric power facilities, supply of fuel for power generation

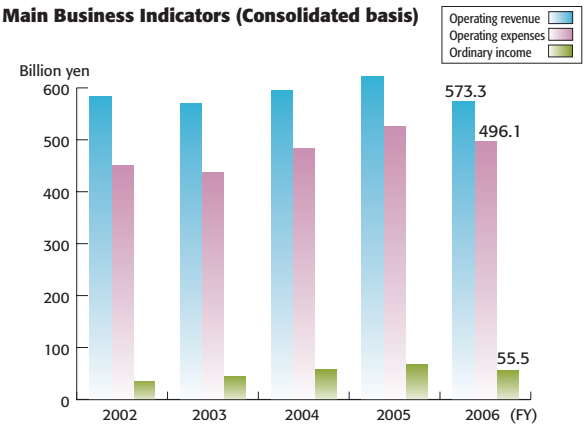
● Diversified business

Investment in overseas power generation projects and new energy businesses such as power generation from waste materials in Japan

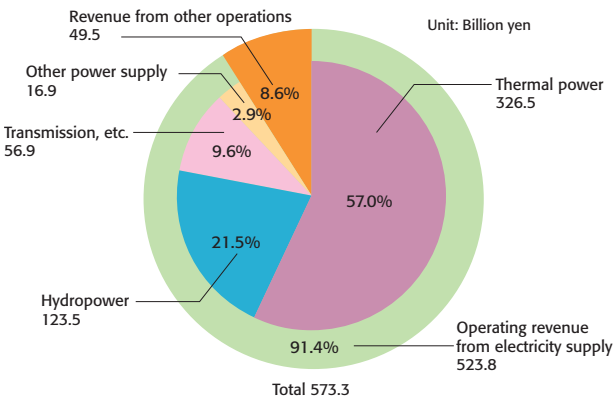
◆ **Total sales (consolidated basis)** 573,300 million yen

Revenue from electricity supply 523,800 million yen

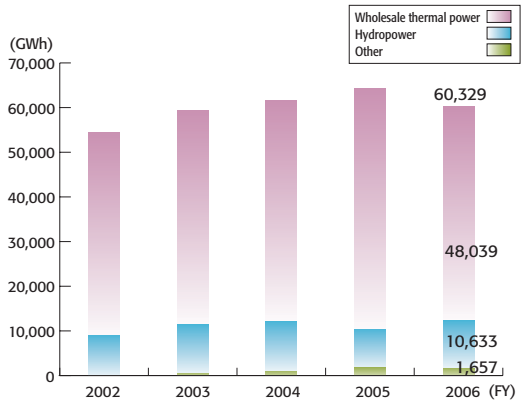
■ **Main Business Indicators (Consolidated basis)**



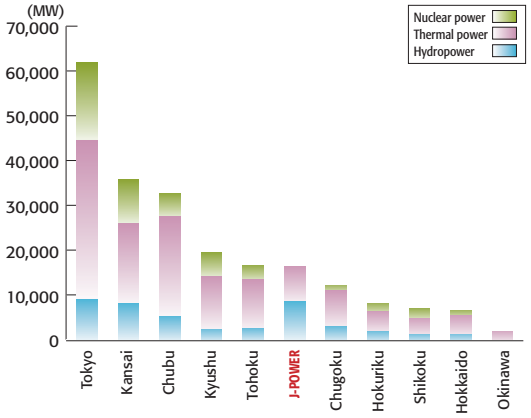
■ **Breakdown of Consolidated Sales (FY 2006; including equity method affiliates)**



■ **Electric Power Sold**

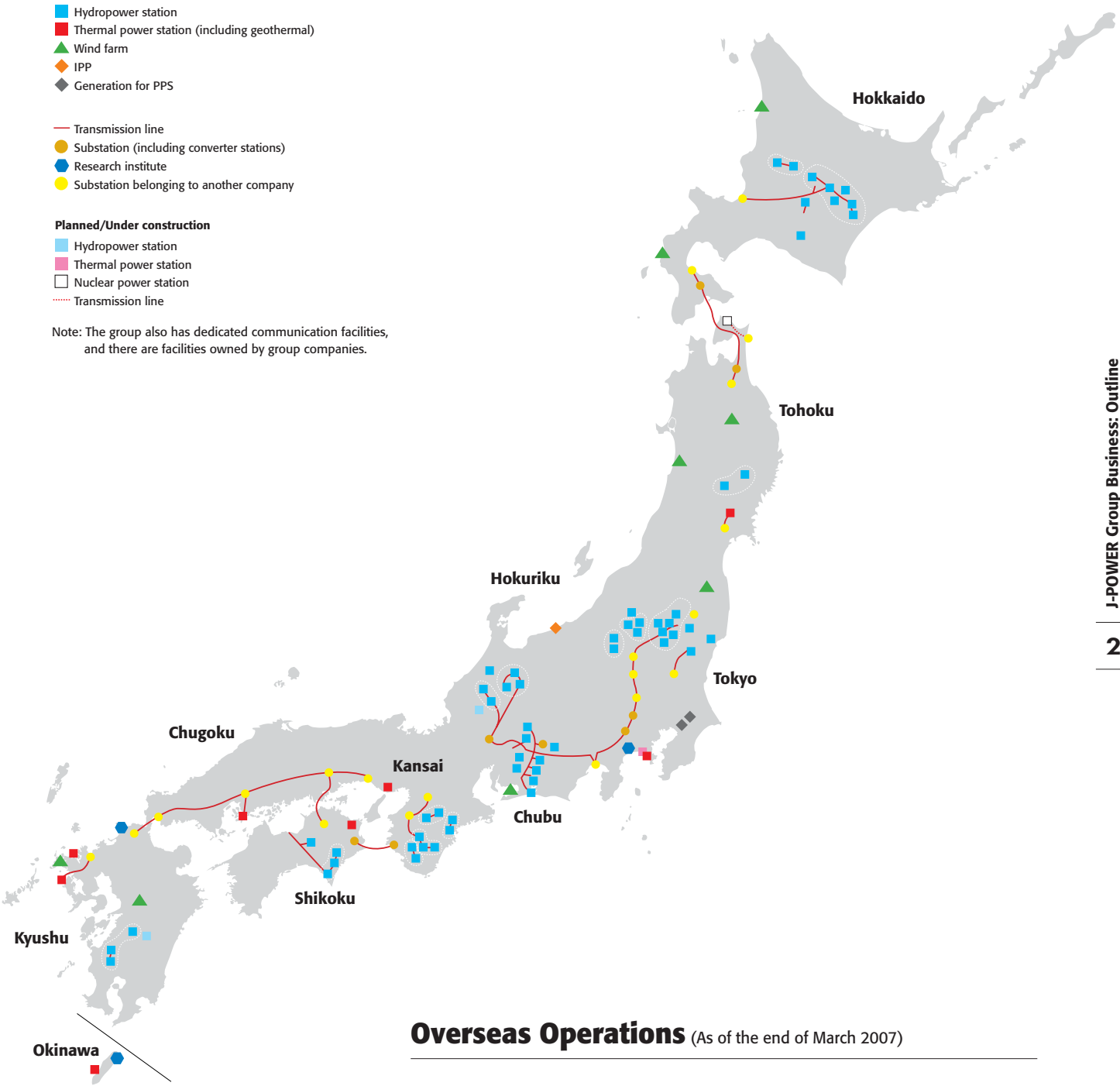


■ **Output of J-POWER and 10 Electric Power Companies (As of the end of March 2007)**



Source: *Monthly Report on Electric Power Statistics*

Facilities in Japan (As of the end of March 2007)



Overseas Operations (As of the end of March 2007)

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Note concerning forecasts
The plans, strategies, and forecasts set out in this report have been formulated based on currently available information. Unforeseeable changes in various factors may cause results to differ from projections.

Editorial Policies

- The J-POWER Group has continued to operate under its corporate philosophy of contributing to the sustainable development of society. Society today requires corporations to provide information on their overall activities through corporate reports, which initially focused on environment-related topics. Accordingly, this report (formerly titled *Environmental Management Report)* has been renamed *Sustainability Report* to express our intention of achieving sustainable corporate growth. It summarizes and reports on J-POWER's corporate activities under the headings of Business Management, Environment, and Social Responsibilities.
- This report includes all consolidated subsidiaries and is representative of the entire J-POWER Group.
- Key issues of the J-POWER Group have been listed in the Feature section with the aim of clearly identifying them.
- All data (inputs and outputs) on "Business Activities and the Environment" have been calculated for the J-POWER Group as a whole. Joint investments have been calculated according to the investment ratio.
- To ensure objective credibility, environmental data contained in this report has been independently evaluated by Shin Nihon Environmental and Quality Management Research Institute Co., Ltd. (see page 68 for details).
- Opinions on corporate social responsibility have been drawn from a wide spectrum of experts, researchers, and journalists with the goal of improving corporate management so that it may contribute to building a sustainable society and of increasing the reliability and transparency of our operations.
- This report is also available at J-POWER's website as "J-POWER Group Sustainability Report 2007." Information on business plans and financial data are provided in its Annual Reports.
  WEB http://www.jpower.co.jp/english/

Period covered: April 2006 to March 2007 (some items include information pertaining to April 2007 and beyond)
Scope: J-POWER and J-POWER Group companies (consolidated subsidiaries)
Where data applies only to J-POWER, or includes Group companies, this fact is noted in the text.
Guidelines referred to:
Ministry of the Environment, Environmental Reporting Guidelines: Fiscal Year 2003 Version
Global Reporting Initiative (GRI), Sustainability Reporting Guidelines 2002
Report issued since: 1998
Next report due: July 2008 (tentative schedule)

J-POWER Group's Corporate Social Responsibility

Our corporate philosophy calls for ensuring constant supplies of energy to contribute to the sustainable development of Japan and the rest of the world. This is fundamental to our ongoing efforts to deliver efficient, reliable electricity while protecting the environment. It is this corporate philosophy that forms the basis of our social responsibility.

Established September 11, 1998

J-POWER Group Corporate Philosophy

We aim to ensure constant supplies of energy to contribute to the sustainable development of Japan and the rest of the world.

Sincerity and pride underlie all our corporate activities.

We build community trust by harmonizing our operations with the environment.

Profits are a growth source, and we share the benefits with society.

We continuously refine our knowledge and technologies to be a leader in these areas.

We meet the challenges of tomorrow by harnessing our unique skills and enthusiasm.

The J-POWER Corporate Conduct Rules have been laid down as standards for the conduct of business grounded in our corporate philosophy. Individual Group companies also have policies relating to their own responsibilities to society. We endeavor to fulfill our corporate social responsibility by adhering to our corporate philosophy and Corporate Conduct Rules as we press forward in our operations.

Established January 1, 2001

J-POWER Corporate Conduct Rules

Reliable supply of energy
We will put forth every effort to reliably supply energy both in Japan and abroad utilizing our experienced personnel and cutting-edge technology.

Safety assurance
In conducting operations we will constantly work to raise safety awareness and give the highest priority to public and worker safety.

Environmental protection
Based on an awareness that our business operations are deeply linked with the environment, we will actively engage in environmental protection activities.

Communication with society
To establish communication with society we will conduct information disclosure and public relations activities in a fair and transparent manner.

Contribution to society
Aiming to be a good corporate citizen we will undertake activities to contribute to society and assist in the development of local communities both in Japan and abroad.

Creation of a rewarding corporate culture
In addition to providing safe and comfortable work environments, we will respect the individuality of our employees and endeavor to establish a rewarding corporate culture that encourages them to take on new challenges.

Compliance with laws, regulations, and corporate ethics
We will conduct business in good faith and in a fair manner with a strong commitment to compliance and ethics. We will stand firm against anti-social forces that undermine the order and security of civil society.

Role of top management
Recognizing their responsibility in putting into practice the spirit of these Corporate Conduct Rules, our top management must set an example for others and work to spread awareness of these Rules. Should an event occur that violates the spirit of these Rules, top management must take the initiative in dealing with the problem to determine the causes and prevent recurrence. Top management must also identify and take disciplinary actions against those responsible, including themselves.

Fulfilling our social responsibilities and pursuing sustainable development for society and for the company, based on our corporate philosophy

Through energy business premised on the coexistence of energy production and the environment, the J-POWER Group conducts its operations with the aim of being a company that underpins affluence, safety, and peace of mind in people's daily lives.

中垣喜彦

Yoshihiko Nakagaki
President

For a sustainable society and a sustainable company

Our corporate philosophy calls for providing reliable supplies of energy to support sustainable development in Japan and the rest of the world, and on that basis we endeavor to ensure the efficient and stable supply of electricity necessary for people's daily lives and their economic activities. This corporate philosophy is the wellspring of our social responsibility as a company.

The supply of electricity inevitably gives rise to environmental issues, for example the environmental load of the consumption of energy resources. How to ensure compatibility with the environment is a global issue, and for our part we position "the coexistence of energy production and the environment" as a major management goal. Our twofold approach to addressing this issue is to contribute, through our business activities, to the sustained development of society while at the same time striving to achieve our own sustained growth.

Meanwhile, quite a number of compliance issues involving J-POWER have arisen since last year, for example relating to the Electricity Business Act, the River Act, the Water Pollution Control Act, and the Act relating to the Prevention of Marine Pollution and Maritime Disaster, and these have caused all of you a great deal of anxiety and inconvenience.

We have taken the realities of this very seriously and have reflected deeply on them. As a result, we have sought to restore society's faith in us by setting about reforming our corporate culture and employee perceptions throughout the Group, refining internal control systems, and ensuring they are working effectively, and at the same time taking steps to strengthen compliance and ensure strict implementation of measures to prevent recurrences.

Making effective coal use compatible with measures to counter global warming

During the half-century that we have been in the energy business we have been striving through a variety of eras and phases to realize the coexistence of energy production and the environment. Today, however, the energy industry finds itself in a situation that is beset with problems and gives little cause for optimism.

Amid global growth in demand for energy resources and soaring prices, global warming is exerting a steadily deepening impact on the Earth's environment and must be addressed urgently, as reports by the Intergovernmental Panel on Climate Change point out. In the approach to the first commitment period of the Kyoto Protocol, which begins in 2008, in Japan further energy-saving efforts are being called for in both the industrial sector and the residential and commercial sector.

Given these circumstances, enabling the use of coal to coexist with measures to counter global warming has become one of the most important issues facing the entire international community, since demand for coal is expected to continue rising, particularly among developing countries. The J-POWER Group is one of the largest coal users in Japan, and we are a leading company in the field of coal utilization. So it is no exaggeration to say that for us, addressing this issue is equivalent to fighting global warming as a global issue.

The operating environment for the electric power business is a very harsh one that will require greater management inputs, characterized as it is by greater competition resulting from liberalization and by a slow pace of increase in electric-power demand.

Nevertheless, we recognize that the global issue of the compatibility of coal use and measures to counter global warming is the most important issue for us as regards the fulfillment of our social responsibilities, and so we will persist in our efforts in this area. Specifically, we will continue to implement countermeasures, including the use of Kyoto mechanisms, but also press strongly ahead with the development of technologies that will lead to the curbing of carbon dioxide emissions over the medium to long term, with the aim of sharing our research findings with others both within Japan and overseas. Through this we hope to make the effective use of coal compatible with measures to counter global warming.

Coexistence with society

For the J-POWER Group to develop as a company that will remain an enduring presence in society, it is important that we deepen our partnership with broader society. To that end we will disclose information to shareholders, customers, and all other stakeholders in a fair and timely manner, help people to understand our business activities, identify the hopes and expectations that arise from that, and respond to them.

In particular, activities to support study and education in the sphere of energy and the environment will be symbolic activities for us as part of our quest to help create a society in which energy production and the environment coexist. I want to continue our close collaboration with ordinary citizens, non-profit organizations (NPOs), and educational and other institutions with the aim of having young people come into contact with the natural surroundings of electric-power facilities and learn, as part of their schoolwork, about the importance of energy.

A sustainable society and sustainable companies are integral to each other. The aim of the J-POWER Group is to achieve sustainable development both for society and for itself, and to reflect that thinking we are calling this corporate report our *Sustainability Report*. To help us ensure that this report becomes a tool for communication with all stakeholders as we pursue management aimed at achieving the sustainable development of society and the company, we hope that as many of you as possible will read it and give us your frank opinions about it.

July 2007

Feature

Harmonizing Stable Energy Supply with the Environment: The Heart of Social Responsibility for the J-POWER Group

The J-POWER Group's commitment "to ensure constant supplies of energy to contribute to the sustainable development of Japan and the rest of the world" is integral to its corporate philosophy. As the environment surrounding energy issues has changed drastically in the half-century since we entered the energy business, we have adapted to each era, tackling each challenge as it arose. Today we continue our efforts from a broader perspective, with the global situation in mind.

Tracing J-POWER's Initiatives to Ensure Stable Energy Supply

1952-

The Electric Power Development Promotion Law is enacted in July 1952 to overcome a national power shortage. J-POWER, established in September of the same year under that law, begins by launching a large-scale hydropower development program.

1960-

J-POWER embarks on a program of coal-fired thermal power station construction aimed at supporting the domestic coal industry in line with national policy. This marks the beginning of J-POWER's involvement in coal-fired power generation spanning more than four decades.

1970-

Responding to urgent calls for energy diversification in the wake of two oil crises in the 1970s, J-POWER begins construction of the country's first large-scale coal-fired thermal power station fueled by imported coal.

contents

1980-

With the rising dependency on oil-fired power as the base power source, development of nuclear power moves forward, but the summer peak in demand grows more pronounced than ever. To cope with peak load, J-POWER focuses on development of large-scale pumped storage power plants and construction of high-capacity transmission lines.

1990-

While keeping an eye on the continuing growth in electricity demand, J-POWER focuses on improving energy efficiency and addressing environmental problems while undertaking a wide range of domestic and overseas initiatives tailored to the age of internationalization.

2000-

Sensitive to the new climate of energy-market deregulation and environmentalism, the J-POWER Group has pursued a wide range of initiatives, including nuclear power, wind power, gas-turbine combined-cycle, and biomass power in addition to coal-fired power generation and hydropower. We are also developing technology to make coal use even cleaner and more efficient.

Tachibanawan Thermal Power Station

Feature

Fulfilling Our Commitment to Stable Supply

The J-POWER Group is committed to ensuring constant supplies of energy. Making certain we fulfill this commitment is the mission of J-POWER Group employees all over the world.

Akiba Transmission Line

The Mission of J-POWER Group Employees

The arena in which J-POWER Group employees operate spans national borders. Charged with the mission of providing stable, constant supplies of energy, they work day and night toward that end. Sometimes they sweat under the intense pressure to find answers with barely enough time, personnel, or other resources. Some are stationed away from their families or obliged to work at night and sleep during the day. Despite these harsh conditions, each performs his or her mission with dedication, working diligently behind the scenes to keep the power on in our lives.

Tokyo

Central Load Dispatching Center

Sadao Tsutsui
Central Load Dispatching Center
Power System Operation Department

"The system operators on duty get on the phone to confirm that day's supply-and-demand situation with the power companies, the weather conditions with the control centers, and the next day's operation curve with the thermal power stations. As shift supervisor, I supervise the staff and confirm the issues to be taken over to the next shift. The Central Load Dispatching Center (CLDC) where I work is a busy place, but on the surface there's nothing more peaceful. Then suddenly an alarm goes off in the control room. The operator on the phone says, "Excuse me. I'll call you back later," hangs up, and we focus all our attention on the blinking lights of the monitoring panel on the wall in front of us. That's a moment of high tension."

To efficiently operate the J-POWER Group's 67 electric power facilities nationwide, the CLDC stays in close contact with regional electric power companies and passes on appropriate operating instructions to each power station. At present the CLDC performs these duties around the clock, in three shifts. Where hydroelectric power stations are concerned, the work involves adjusting their generating plans on a weekly, daily, or hourly basis to keep the dam water levels high without having to waste water through discharge when it rains. In the case of thermal power stations, generating power often has to be reduced when equipment is being repaired, and a major job of the CLDC is to coordinate the schedule and contents of power stations' operations with power companies. When transmission lines are knocked out by lightening, causing power outages, work at the CLDC becomes highly charged as the staff race with time to fix the problem as quickly as possible.

"The work we do at the CLDC involves keeping a sharp eye on the power system monitoring panel that shows us the operational conditions of every facility all over the country, while also keeping in mind the constantly changing supply and demand situation, weather conditions, water flow conditions, and repair schedules. We do all we can to respond appropriately to every sort of situation, keeping in mind that J-POWER depends on those of us at the frontline to ensure a stable supply of electric power—which is to say that the industrial activities and daily lives of power users depend on us, too."

Kanagawa Prefecture

Isogo Thermal Power Station No. 2 Unit Construction Office

Masaharu Fujii
Mechanical Engineering Group
Isogo Thermal Power Station
No. 2 Unit Construction Office

Hiroyuki Uchinaga
Electrical Engineering Group
Isogo Thermal Power Station
No. 2 Unit Construction Office

The Isogo Thermal Power Station, built under Japan's domestic-coal-use policy, began commercial operation in 1967. In the more than three decades since then, it has provided a stable supply of electric power, primarily to the Tokyo area. Since 1996, however, the J-POWER Group has been proceeding with projects to replace the aging plants utilizing J-POWER's advanced thermal power technologies to meet the requirements of an environmental improvement program based on the Yokohama city government's "Yokohama 21st Century Plan ."

To meet day-by-day electricity demand, the power station is responsible for continuing to provide a stable supply of electric power during the construction of new plants. To this end, J-POWER has employed a sophisticated "build, scrap & build" method: The old power station (530 MW) continued operating while the new No. 1 unit (600 MW) was being built, and then was scrapped as soon as the new No. 1 unit started commercial operation. Then the new No. 2 unit (600 MW) is being built on the site occupied by the old facility. The construction is carried out in an environmentally friendly fashion, furthermore, concrete debris from demolition work and coal ash generated during operation are utilized as aggregate for the concrete sub-slab poured between the bedrock and the foundation of the new unit. Construction of the new No. 1 unit was completed and began commercial operation in 2002, taking over from the old plants. J-POWER is currently proceeding with construction of the new No. 2 unit whose commercial operation is scheduled for 2009, while placing top priority on maintaining stable operation of the new No. 1 unit.

"Unlike in ordinary power station construction projects, we have the new No. 1 unit already operating on the site, so we have very limited space in which to store our construction materials and so forth. For that reason we need to draw up a very detailed construction plan so that we are supplied only with the construction materials requested just in time" (Masaharu Fujii, Mechanical Engineering Group). To maneuver within this small site, it is sometimes even necessary to rebuild the roads in the power station in accordance with the construction progresses. Many J-POWER Group departments and sections are involved in the construction of the new No. 2 unit, and they coordinate closely with one another to ensure that construction proceeds on schedule at each stage.

A 96-day-long regular inspection of the new No. 1 unit is scheduled to begin in the spring of 2008. Modifications to connect the equipment and systems of the new No. 1 and No. 2 units are scheduled to be carried out during this limited time. The new No. 2 unit construction team and the new No. 1 unit operation and maintenance team are currently engaged in preparations for this work in close coordination with one another.

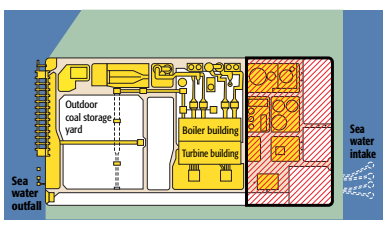
"One of the modifications is a rearrangement of the Operation Center's layout and so forth to accommodate the new No. 1 and No. 2 units. The Operation Center is the core of operation and monitoring at the power station, and we need to rearrange it as an integrated system that brings the two units into accord, so that there's no visual or operational inconsistency in the operation and monitoring system of the two units" (Hiroyuki Uchinaga, Electrical Engineering Group).

When the replacement project is completed in 2009, the new power station will provide electric power totaling 1200 MW (the total of No. 1 and No. 2 units).It will be reborn as an environmentally friendly power station, thanks to the incorporation of state-of-the-art technologies and equipment, including the application of some of the world's most advanced high-pressure and high-temperature steam conditions for achieving higher plant efficiency and a dry-type desulfurization system using activated coke. The entire J-POWER Group is working together to ensure its successful completion.

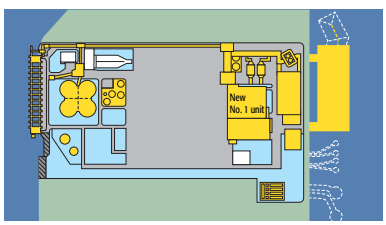
Operation Center

Build, scrap & build method

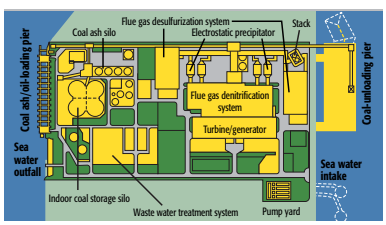
New No. 1 unit built while old power generating facility continues operating
Outdoor coal storage area scaled back and coal ash silo built on cleared area. Old tanks, etc., then removed and new No. 1 unit built on cleared site.



Old power generating facility scrapped after new No. 1 unit starts up.
Old power generating facility scrapped after new No. 1 unit starts up, clearing site for new No. 2 unit.



Replacement project completed after new No. 2 unit commenced commercial operation
New No. 2 unit currently under construction on site from which the old facility was cleared. In the final phase, No. 1 and No. 2 unit operation systems are to be integrated.



Enhancing Reliability of Hydroelectric Power Stations

Hideaki Sagara
Electrical Engineering Office
Civil and Electrical Engineering Department

Hydroelectric power stations consist of civil structures, such as dams, waterways, and penstocks, as well as generating equipment, such as water turbines, generators, and switchgears. The lifetime of the generating equipment is shorter than that of the civil structures made of concrete and steel, but high reliability is required, since generating equipment outages may directly cause instability of power supply.

The J-POWER Group works diligently to maintain the reliability of our generating equipment, carrying out check-ups and overhauls to check for any trouble or deterioration and responding with appropriate repair or replacement.

"When I was a student, just about the time I was beginning to think about where I might work after graduation, I went on a tour of the Sakuma Power Station. That was when I became interested in J-POWER and power station construction. Since joining the company, I've been involved in construction and maintenance at sites in Japan and overseas. Feasible hydropower sites have already been developed in Japan, so effective utilization, maintenance, and operation of existing facilities is more important, and with the recent trend toward deregulation of the electric power industry, greater efficiency and cost-cutting have become imperatives. When we upgrade facilities, it's not sufficient just to replace equipment. We have to try to make it better than the original in terms of reliability, functionality, and efficiency.

"The conventional approach to refurbishing equipment is to replace each unit as it ages or sustains damage, but we've adopted a new approach. By upgrading all the major electrical equipment at once, we're able to reduce costs, provide reliability and mechanical performance comparable to that of new power stations, and transform it into a more competitive power station. We've been able to realize this plan by marshaling all the hydropower maintenance and construction technology that the J-POWER Group has developed over many years."

The maintenance technologies and ideas developed in Japan are also being put to use in overseas facilities. For example, efforts to improve reliability and efficiency at a pumped-storage power station owned by the J-POWER Group in the Philippines have contributed to the plant's stable operation and enhanced competitiveness.

Pirrís–Costa Rica

Pirrís Hydroelectric Project

Kenji Yokokawa
Costa Rica Office
International Power Business Department

Since July 2003, J-POWER has been providing consulting services for the Pirrís Hydroelectric Project being built by the Costa Rican Electricity Institute (Instituto Costarricense de Electricidad, or ICE). Specifically, we have assisted with detailed design and construction supervision.

Costa Rica is a Central American country, a little larger than the island of Kyushu in Japan, and with a population of about 4.3 million. Known for its coffee, bananas, and ecotourism industries, Costa Rica depends on hydropower for about 90% of its electric energy, with geothermal power, wind power, and thermal power supplying the rest. With electricity demand growing at a rate of about 6% annually, the country must add 100 MW to 150 MW to its power system network every year.

"Having worked here for about four years now, I'm more aware than ever of the time it takes for decisions and action in the *hasta mañana* culture of these Latin countries. The bidding system here has its own unique aspects—for example, the General Comptroller can order the bidding halted or call for a rebid at any stage—making the bureaucratic process extremely time-consuming."

The Pirrís Hydroelectric Project has been designed on a large scale, with a 113-meter-high dam, a 10-km-long power tunnel, and a capacity of 128 MW. At present the facility is 60% complete, and construction is proceeding, with the startup scheduled for 2010. On April 19, 2007, the power suddenly went out all across Costa Rica. For two weeks beginning the day after the blackout, ICE was obliged to impose a cut in peak demand through a nationwide electricity rationing program. The immediate causes of the blackout were said to be a decline in hydropower supply capacity owing to a major drought, lack of reserve capacity owing to malfunctions at several thermal power facilities, and breakdown of transmission equipment in a certain region. "Completing the Pirrís Hydroelectric Project on schedule is truly the highest imperative from the standpoint of ensuring a stable supply of electric power in Costa Rica. As we continue with the project, I want everyone involved to share my firm resolve to permit no further delays as we work together to fulfill our mission."

Feature

Making Coal Use Compatible with Measures to Counter Global Warming

The J-POWER Group is one of the biggest coal users in Japan, consuming nearly 20 million tons of coal per year at eight coal-fired power stations with a total capacity of 7950 MW, which account for approximately 20% of Japan's total coal-fired generating capacity. The J-POWER Group is working as the leading company in the field to balance the effective use of coal with responsiveness to global environmental issues.

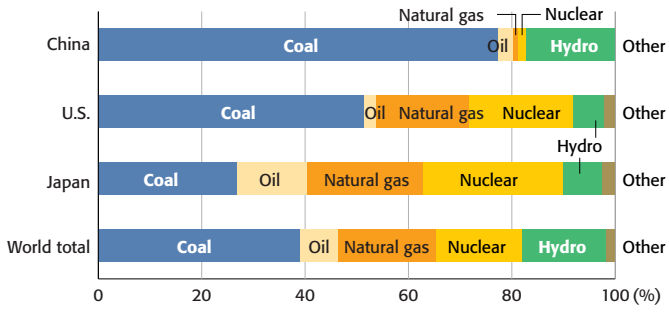
Matsuura Thermal Power Station

The Significance of the Effective Use of Coal for Today

People may think that coal has been replaced by oil and natural gas and is no longer a major fossil fuel. However, around 30% of total electric power generated in Japan comes from coal-fired power stations, even though Japan places priority on balancing the energy mix in power generation as a country heavily dependent on overseas sources for natural energy resources. Furthermore, coal continues to be the main fossil-fuel in use around the world, accounting for around 80% of power generated in China and around 50% in the United Sates. It is widely used in Europe as well.

In this way, coal is indispensable as the biggest electric power source, supplying approximately 40% of the world's electric power.

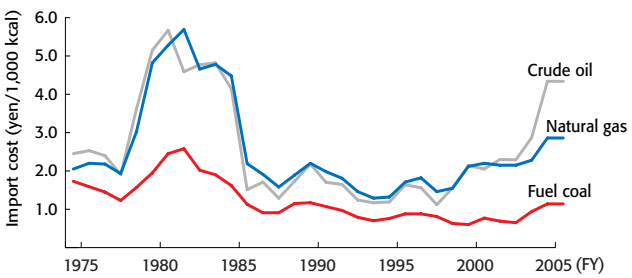
■ **Electricity Generation by Source**



Source: International Energy Agency, *World Energy Outlook 2006*.

Global energy consumption is expected to nearly double by 2030 from the 2002 level. Oil, one of the main energy resources, is vulnerable to political instability because production is so heavily concentrated in the Middle East. On the other hand, coal is widely distributed throughout the world and can be easily obtained at a stable price.

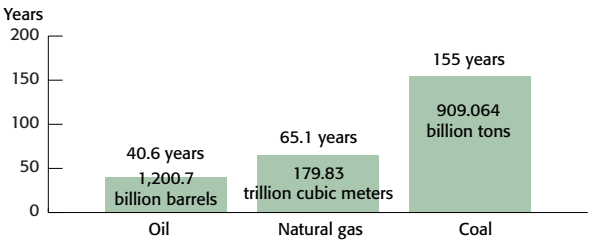
■ **Trends in Fuel Costs**



Source: Institute of Energy Economics, Japan, *Handbook of Energy & Economic Statistics in Japan, 2007*.

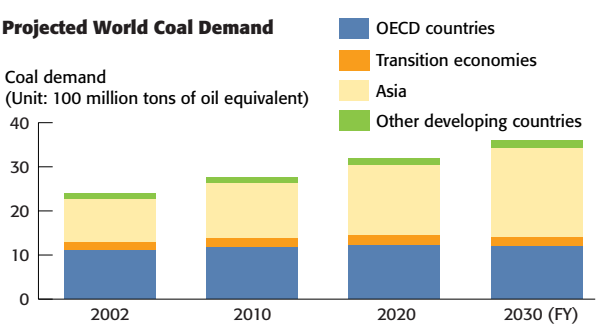
Moreover, because coal has the most abundant reserves of all the major energy resources—estimated at about four times that of oil and three times that of natural gas—it will continue to be an important fuel in meeting the ever-rising global energy demand.

■ **Proved Reserves**



Source: *BP Statistical Review of World Energy*, June 2005.

■ **Projected World Coal Demand**



Source: International Energy Agency, *World Energy Outlook 2004*.

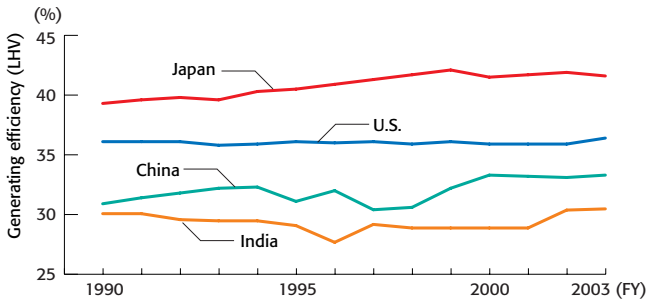
J-POWER's Efforts to Address Global Warming

Improving Efficiency of Coal-Fired Power Generation

A problem with coal-fired power generation is that it results in the emission of relatively large amounts of CO_2 compared with other fossil fuel-fired power generation. As the concentration of greenhouse gases (GHGs) including CO_2 in the atmosphere rises, the heat stored in the atmosphere builds up as well, causing the global temperature to climb. Today, with global warming, or climate change, giving rise to serious problems, the Intergovernmental Panel on Climate Change (IPCC) has concluded with near certainty that the increase in anthropogenic greenhouse gas emissions has caused global warming. We are now facing a situation where we need to reduce emissions of CO_2 and other GHGs.

To reduce CO_2 emissions it is necessary to lower the ratio of CO_2 emissions per unit of production and to reduce the absolute amount of emissions. In generating electricity through fossil fuel combustion, coal results in twice the amount of CO_2 emissions compared to natural gas. In Japan, however, coal-fired power stations are generating electricity with higher energy efficiency by raising the temperature and pressure in steam turbines to above the critical point, or to ultra supercritical (USC) conditions. This technology is contributing to the reduction of CO_2 emissions. If this high performance technology were introduced in the United Sates, China, and India, the world's big CO_2 emitters, it is estimated that CO_2 emissions in these three countries could be reduced by around 1 billion tons annually, which is around 80% of Japan's annual total CO_2 emissions. Therefore, it is important to transfer and disseminate of these clean coal technologies.

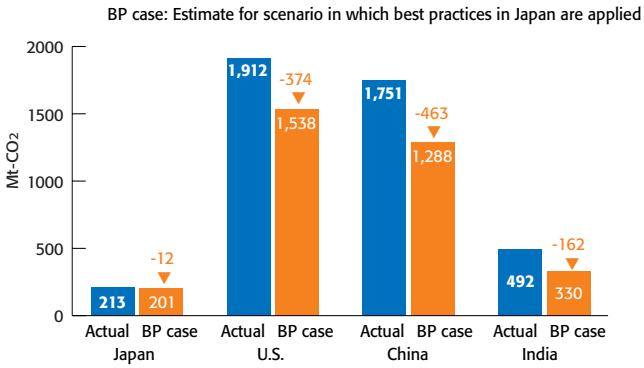
■ **Trends in Coal Generation Efficiency by Country**



Source: *Ecofys, Comparison of Power Efficiency on Grid Level, 2006.*

In addition, J-POWER Group is a pioneer in clean coal technology, and we are making efforts to develop two next-generation technologies aiming at higher energy efficiency: integrated coal gasification combined cycle (IGCC) and integrated coal gasification fuel cell combined cycle (IGFC) . The combination of gas and steam turbines with fuel cells that use hydrogen from coal gasification could reduce CO_2 emissions by a third.

■ **CO_2 Emissions from Coal-Fired Power Generation and Potential for Reduction**



Source: International Energy Agency, *CO_2 Emissions from Fuel Combustion 2005 Edition.*

What Is the Intergovernmental Panel on Climate Change (IPCC) ?

The IPCC was established by the United Nations Environment Programme (UNEP) and the World Meteorological Organization (WMO) in 1988 as a forum for international deliberation on the issue of global warming. Participants include Japan, the United States, China, Russia, and numerous other developed and developing countries. The IPCC collects and assesses a wide range of research involving scientific knowledge on global warming, its impacts, and the measures to be taken, and publishes the results in assessment reports. As part of the IPCC Fourth Assessment Report (AR4), Working Group I, studying the physical science basis of climate change, released a report in February 2007. This report concluded that warming of the climate system is unequivocal and also stated with very high confidence that the increase in anthropogenic greenhouse gas emissions is the cause. The Synthesis Report of the IPCC Fourth Assessment Report is expected to be adopted at the IPCC plenary session in November 2007.

Asia-Pacific Partnership on Clean Development & Climate (APP)

The Asia-Pacific Partnership on Clean Development & Climate (APP), which consists of six countries (Japan, the United States, Australia, South Korea, China, and India), held a peer review for the maintenance and improvement of energy efficiency of coal-fired thermal power stations during April 16–19, 2007.

Participants, including 37 representatives from the United States, Australia, South Korea, China, and India, visited J-POWER's Takasago Thermal Power Station in Hyogo Prefecture to exchange information on such topics as global warming, efforts to maintain and improve the energy efficiency of coal-fired thermal power stations, and the maintenance factors causing declines in energy efficiency, and shared their recognition of the current situation and some issues to be addressed. J-POWER made efforts to promote the transfer and dissemination of technology among the countries by holding discussions on operation, maintenance, and the environment while viewing the existing facilities at the power station.

The participating representatives seemed

amazed by the efforts made to maintain the high energy efficiency of Takasago Thermal Power Plant, which is nearly 40 years old.

Fukuoka Prefecture

The EAGLE Project

Eiji Arimori
EAGLE Research and Engineering Group
Wakamatsu Research Institute
Technology Development Center

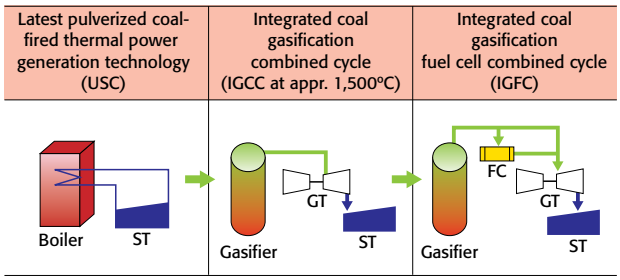
Kenichi Yamaguchi
EAGLE Research and Engineering Group
Wakamatsu Research Institute
Technology Development Center

Further Advances in Coal Use through Gasification

J-POWER Group is working on a variety of new technologies aimed at making our use of this precious natural resource coal higher in efficiency and lower in environmental load. One of our development initiatives that has attracted the most notice is the EAGLE* Project, which was launched in 1995 with the goal of developing technology to produce coal gas for use in fuel cells.

The power generation efficiency of pulverized coal-fired thermal power generation with only steam turbines is about 40%. However, this figure can be boosted to around 48% when the coal is gasified and both steam and gas turbines are used—a method called integrated coal gasification combined cycle (IGCC) generation. Moreover, with the integrated coal gasification fuel cell combined cycle (IGFC) method, which adds fuel cells as a third mode of generation, the generating efficiency can be raised even further, to 55%. If successfully put into practice, the new technology could bring about major reductions in CO_2 emissions (a decrease of about one-third from conventional coal-fired generation).

■ **Next-Generation Coal-Fired Power Generation Technology**



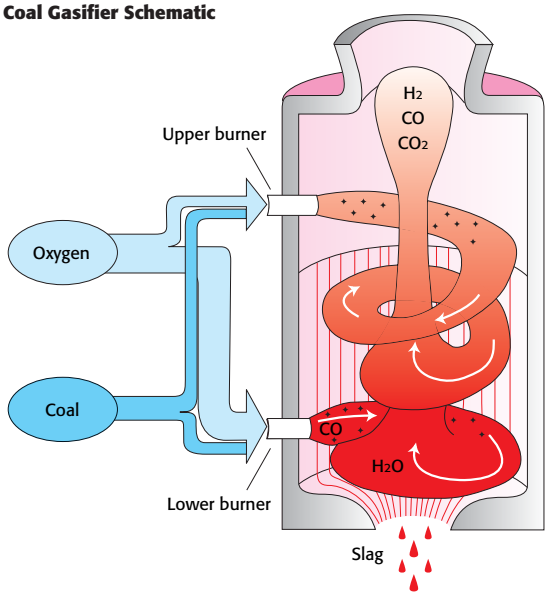
ST: Steam turbine
GT: Gas turbine
FC: Fuel cell

To convert coal to gas, the EAGLE Project is also applying a new technology known as "oxygen-blown" gasification. One advantage of oxygen-blown gasification over other methods is that it makes CO_2 capture relatively easy; another is that it makes possible the production of hydrogen and such synthetic fuels as methanol.

"Coal gasification technology itself has existed for some time. The commercialization of the technology has made progress in the United States and Europe ahead of other countries. The EAGLE Project is taking an original approach to this technology and attempting to transform it into something more efficient, reliable, and widely applicable. In 2002 we began trials at a pilot plant. It was all terra incognita, hitting one impasse, finding a way around it, and then hitting another, until we finally achieved the desired target level" (Eiji Arimori, in charge of test planning and assessment).

* EAGLE stands for Coal Energy Application for Gas, Liquid, & Electricity.

■ **Coal Gasifier Schematic**



Making High-Efficiency Coal-Fired Power Generation a Reality
EAGLE Achieves 1,000+ Hours Continuous Operation

EAGLE achieved the project's initial goals by fiscal 2006, and on May 2, 2007, it reached the equipment reliability benchmark of 1,000+ hours of continuous operation.

"We're approaching this from the standpoint of the users who will actually be operating the equipment and developing technology for operating and maintaining the plant at the same time that we're developing the equipment. Coal gasifiers reach extremely high temperatures, so it called for operation and monitoring methods different from those used at conventional plants, but we've steadily accumulated know-how until we achieved continuous prolonged operation" (Kenichi Yamaguchi, in charge of gasification equipment maintenance).

Having achieved this giant step toward commercialization, the EAGLE Project has entered a new phase. The next challenge is to increase the range of coal types (coal comes in many forms) that can be used in the coal gasifier so as to make fuel procurement easier and more flexible. Also in the works are steps to further enhance the plant's reliability and continue to conduct studies to assess the environmental impact. In this way we are working to make high-efficiency power generation a reality.

Operation Center

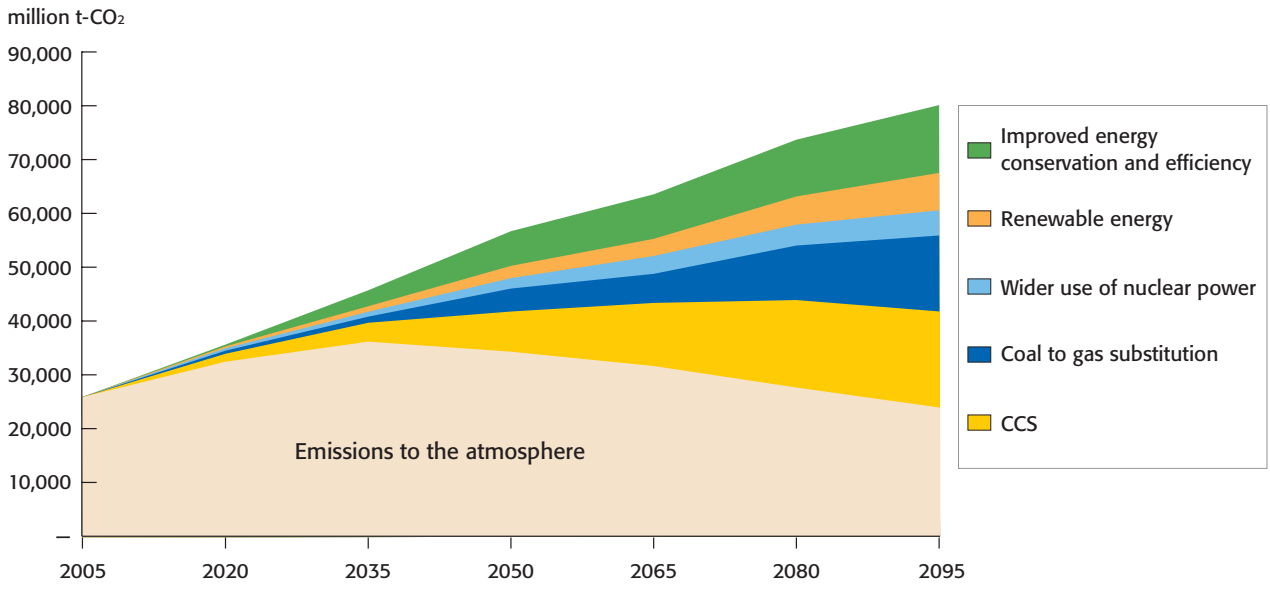
Ultimate Goal: Zero CO_2 Emissions

The combustion of fossil fuels inevitably produces CO_2. For this reason, efforts are under way around the world to develop carbon capture and storage (CCS) technology.

According to the *Special Report on Carbon Dioxide Capture and Storage* (released September 26, 2005) of the Intergovernmental Panel on Climate Change (IPCC), capture and storage of CO_2 has a major role to play in fighting global warming. According to the report, CCS has the potential to reduce by 30% or more the costs that mitigating climate change will entail over the next 100 years and to reduce much of the CO_2 emissions that will have to be cut between now and 2100.

Conscious of the potential that CCS holds as the ultimate weapon against global warming, J-POWER Group is working to develop technologies relating to CO_2 capture and storage, and we intend to continue these efforts with the aim of using such technologies to reach the goal of zero CO_2 emissions.

■ **Contribution of Methods for Reducing CO_2 Emissions with Concentrations Stabilized at 550 ppm (estimates by Pacific Northwest National Laboratory)**

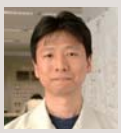


Source: IPCC, *Special Report on Carbon Dioxide Capture and Storage*

Fukuoka Prefecture

CO_2 Capture Technology (capture from oxygen-blown gasifier gas)

Kyouhei Nakamura
Gasification/CO_2 Capture Equipment Test Assessment Supervisor
EAGLE Research Group
Wakamatsu Research Institute
Technology Development Center



"As the next step in the EAGLE Project, we've begun working to establish a technology for capturing CO_2. We'll divert some of the gas produced through coal gasification from our present gasification equipment and use it to carry out CO_2 capture testing. The EAGLE Project makes use of the oxygen-blown method, which has the merit of facilitating efficient CO_2 capture. CO_2 capture is going to be one of the key technologies for achieving our ultimate goal of coal use with zero CO_2 emissions.

"At this time, we're considering the design of our CO_2 capture system and a testing plan. With EAGLE's oxygen-blown method, the coal gas has low nitrogen content and consists primarily of CO and H_2. First, we'll use the shift reaction to convert the CO to CO_2. Then we'll capture the CO_2 in the next stage of the capture process.

"There are a lot of technological issues involved in applying CO_2 capture technology to coal gas, but by beginning our R&D effort at the pilot plant, we can gain the insights that are going to be needed to apply it to large-scale equipment. I believe reducing CO_2 emissions from coal use is a key issue today, and having the opportunity to be involved in the development of this technology gives me a sense of doing something important and worthwhile as an engineer."

Four Strategies to Fight Global Warming

The J-POWER Group intends to continue to reduce CO_2 emissions intensity by combining the four strategies described below, including CO_2 emissions control efforts for coal-fired thermal power generation. For further details on each of these strategies, see "Environment" (page 33 ff.).

In addition, in keeping with the Basic Policy of our Environmental Management Vision (page 25), We have formulated an Action Program (page 27) that clearly defines targets and approaches for key challenges and issues relative to Group business activities, and we are working together to achieve these Group targets.

As a world leader in the use of coal, we believe that we have a social responsibility to make coal use compatible with efforts to stem global warming. By fulfilling this responsibility, we are determined to contribute to the sustainable development of Japan and the world.

1. Maintenance and Improvement of Energy Use Efficiency

p. 34 ▶

In addition to promoting increased efficiency in coal-fired thermal power generation, we are further boosting the power generation efficiency of CO_2-emission-free hydropower by continually upgrading our facilities and making them more efficient.

Total upgrade of major facilities in the Tagokura Power Station (Fukushima Prefecture)

2. Development of Low-CO_2-Emission Power Sources

p. 35 ▶

The J-POWER Group is working to develop power generation using fuels that emit little or no CO_2, including nuclear power, wind power (a natural energy source), and biomass that utilizes living resources.

Biosolid fuel

Biosolid supply facility, Matsuura Thermal Power Station (Nagasaki Prefecture)

3. Utilization of the Kyoto Mechanisms

p. 37 ▶

J-POWER is making use of its technological and financial resources to apply such Kyoto Mechanisms as the Clean Development Mechanism (CDM), whereby its member countries are allowed to count the amount of emissions reduced by projects they conduct in other countries for cutting greenhouse gases as their own reductions. In this way we are contributing to efficient reduction of CO_2 emissions on a global scale.

CDM project at Caieiras Landfill in Brazil (combustion of landfill gas)

4. Development, Transfer, and Dissemination of New Technologies

p. 39 ▶

The J-POWER Group is developing coal gasification technology to improve power generation efficiency as well as technology for capturing CO_2. We intend to continue our quest for next-generation technologies and lead the world in the improvement of coal-fired power generation.

EAGLE Pilot Plant J-POWER Wakamatsu Research Institute (Fukuoka Prefecture)

Corporate Governance

Corporate Governance Framework

The J-POWER Group recognizes that comprehensive corporate governance systems and thoroughgoing compliance are critical to achieving long-term growth, raising corporate value, and earning stakeholders' trust. Consequently, we are undertaking various initiatives that address these key management issues.

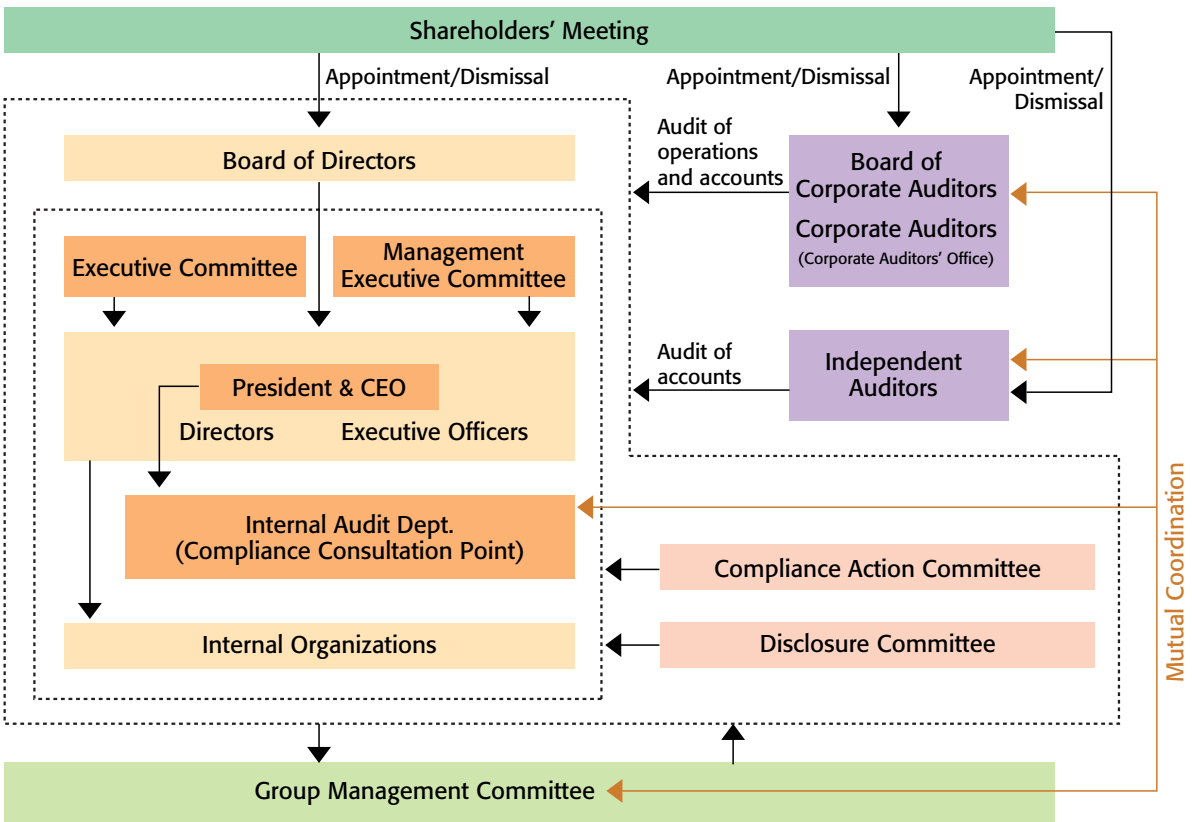
An outline of the corporate governance framework is set out below.

Structure of Execution of Duties by Directors

J-POWER has 13 directors. Based on the Company's corporate philosophy, the directors take the initiative in giving guidance on honest and fair business activity based on an unswervingly law-abiding spirit and ethical attitude in accordance with the J-POWER Corporate Conduct Rules. At the same time, they promote efforts to instill this attitude into all J-POWER employees.

J-POWER has also introduced an executive officer system to encourage more rapid and efficient business implementation, building a management system in which directors and executive officers are apportioned business execution based on the Board of Directors' decisions. In addition, to build a management structure that clarifies the manage-

■ The J-POWER Group's Corporate Governance Framework



ment responsibilities of directors and is able to respond rapidly to changes in the environment, the Company has shortened the terms of office of directors and executive officers to one year.

In principle, the Board of Directors meets monthly and the Executive Committee, attended by all executive directors, meets every week to deliberate on matters to be brought to the attention of the Board of Directors and on important matters relevant to overall policy on the execution of Company operations and on management. This ensures both accurate and prompt decision-making, and efficient corporate management. Management Executive Committee meetings are also held, attended by representative directors, directors related to the matters under discussion, executive officers, and full-time corporate auditors. This committee deliberates on important matters concerning individual divisions.

In addition, to ensure proper business execution, J-POWER has established an Internal Audit Department under the direct control of the president to implement internal audits of business execution. To enhance the transparency of its corporate activities, the Company has established the Disclosure Committee, chaired by the president, which ensures that fair and transparent information about the Company is proactively disclosed in a timely manner.

Group Governance

Since fiscal 2006 the J-POWER Group has been conducting fully consolidated accounting. With regard to the administration of subsidiaries and affiliates, J-POWER's basic policy calls for Group-wide development in accordance with the Group's management plan. For that purpose it has established the Group Management Meeting, composed of the presidents and other officers of the Company itself and of major subsidiaries, with the aim of enhancing the propriety of business within the corporate group. J-POWER also conducts audits of its subsidiaries and affiliates through its corporate auditors and the Internal Audit Department.

Audits by Corporate Auditors

J-POWER has five corporate auditors, three of whom are outside auditors, who together form the Board of Corporate Auditors. These auditors audit the execution by the directors of their business responsibilities by attending meetings of the Board of Directors and other important meetings and committees and interviewing directors and others about business execution. Additionally, they conduct accounting audits in collaboration with independent auditors and also audits of individual internal J-POWER units and principal subsidiaries.

Conformity with the Japanese Version of the SOX Act

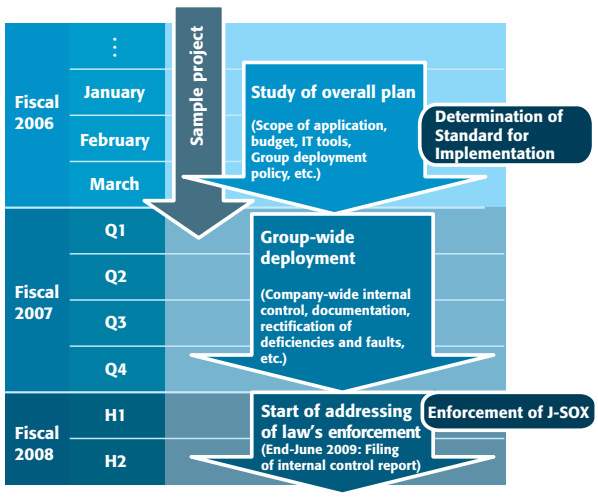
To address the requirements of the internal control provisions of the Financial Instruments and Exchange Law (known as the Japanese version of the U.S. Sarbanes-Oxley Act, or J-SOX), enacted in 2006, the J-POWER Group has been developing an internal control system for financial reporting.

In July 2006 we established a working group on internal control and we conducted diagnoses of the ways in which we are addressing the issue and of the internal control of J-POWER business. In addition, from December 2006 to January 2007 a project team headed by an executive vice president implemented a sample project with regard to visualizing (documenting) the Company' business operations.

Pursuant to the standard for implementation issued in February 2007 by the Internal Control Committee of the Financial Services Agency's Business Accounting Council, we prepared an overall plan that incorporated the results of our internal control diagnoses and sample project. Based on that, in April 2007 we began full-scale steps to address the requirements of the law within the J-POWER Group, including by establishing a promotion group for developing internal controls in our financial divisions.

Efforts such as these will enable us to identify financial reporting risk clearly and to control it appropriately, and through that to establish the internal control system within the J-POWER Group.

■ **Schedule for Addressing J-SOX**



Emergency Management

The risks surrounding J-POWER's business are becoming increasingly diverse and complex, requiring us to take responsibility for identifying the various risks accurately and to manage them appropriately in the event of an emergency, based on the principle of self-responsibility.

To recognize these risks fully and to conserve management resources as a company trusted not only by customers, shareholders, local communities, and other stakeholders, but also by society as a whole, we have laid down crisis management rules and we make company-wide efforts to address risk and emergencies when they arise.

Emergency Management Structure

For its emergency management structure, J-POWER 1) has its permanent Emergency Response Team, 2) appoints personnel to manage and take responsibility for crisis management in each head office division and local unit, and 3) when necessary it establishes an Emergency Response Headquarters and branch headquarters.

1) Emergency Response Team

(1) The Emergency Response Team is established permanently within the General Affairs Department at head office to predict emergencies, conduct rapid first-response when they do occur, and take overall charge of emergency management.

(2) The Emergency Response Team manages the following matters.
- Prediction of emergencies and rapid first-response when they do occur
- Risk identification, gathering and management of risk information
- Education and training

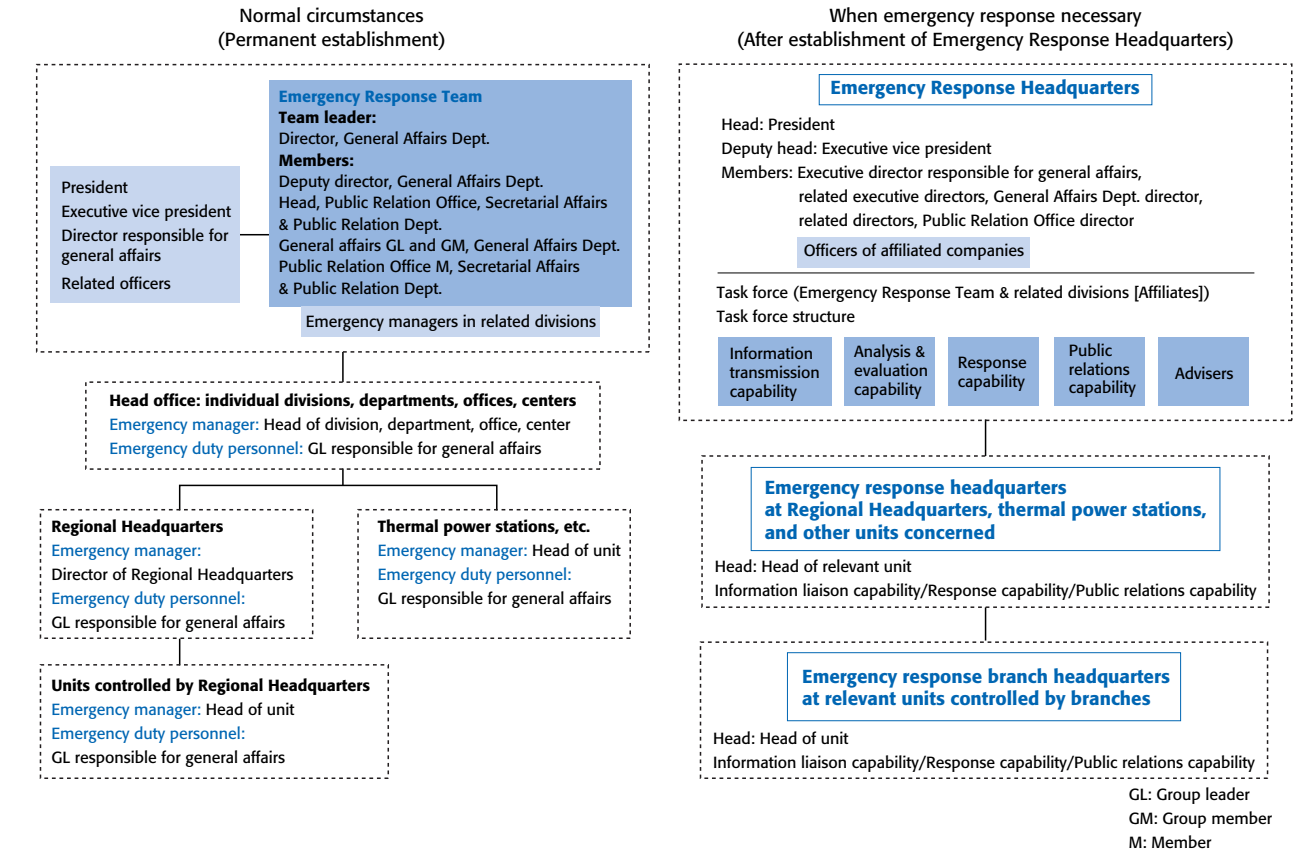
2) Emergency managers and emergency duty personnel

Emergency managers and duty personnel are appointed in each head office division and local unit, and these undertake rapid first response and transmission of information.

3) Emergency Response Headquarters and branches

When emergencies are predicted and occur, and their seriousness warrants emergency countermeasures, the Emergency Response Headquarters (and branches) are established promptly.

■ **Emergency Management Organization Structure**



Information Security

Information Security Activities

As companies have become increasingly information-oriented and are making ever-greater use of IT, the significance of information security is growing. Given its duty to provide stable supplies of electricity, J-POWER recognizes the importance of maintaining and enhancing information security to a higher level, and is implementing a variety of measures to achieve that.

Basic Policy on Information Security

J-POWER has formulated its group-wide "Basic policy on information security" and publicizes it on its website. Information security at all of the J-POWER Group companies is being developed and refined in accordance with this basic policy.

In the technical sphere, it incorporates countermeasures of various types, which include 1) prevention of unauthorized outside access through the Internet, 2) personal authentication of business-use personal computers, and 3) deployment of systems for preventing information leaks. Regarding personal security, we are instructing and educating employees continuously, and making them thoroughly conversant with the proper use of personal computers in their work.

Collaboration in Core Electric Power Systems

J-POWER is also making efforts in the field of IT to help ensure the stability of electric power systems. To position ourselves to deal rapidly and appropriately with IT problems in core systems for electric power operations, we are strengthening the structure of collaboration with government ministries and agencies and electric power companies as a whole.

Specific Measures

Organization and structure

- Establishment of the IT & Telecommunications Office within the Corporate Planning & Administration Department to take overall charge of Company-wide information security.
- Company-wide administration, establishment of rules and regulations, and conduct of internal checks, and third-party inspections through the Information Security Committee.

Personal measures

- Implementation of instruction and education for all Group employees, including e-learning and seminars; thorough confirmation of matters to be observed in personal-computer usage; and implementation of training for staff in charge of promoting information security.

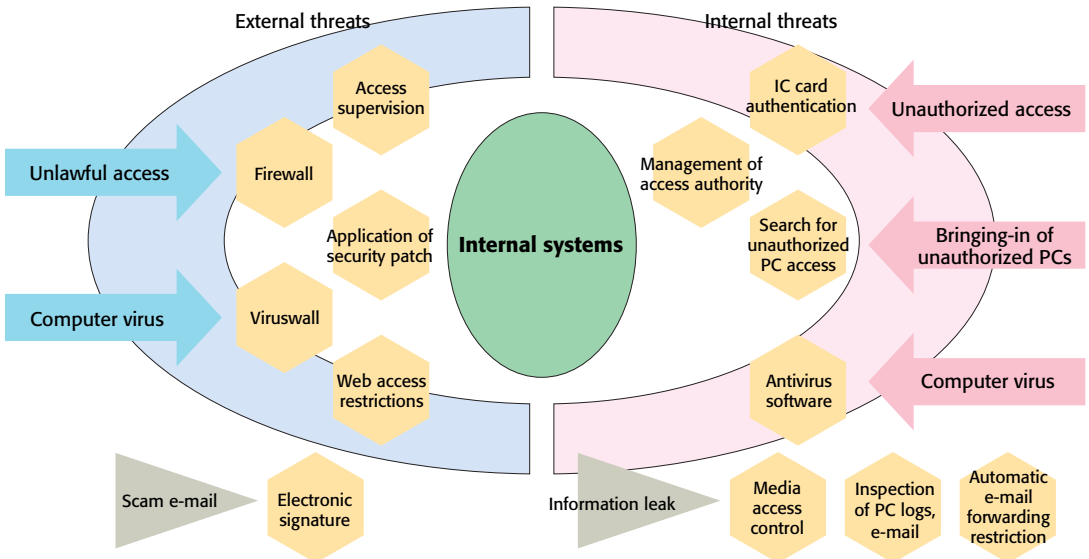
Physical measures

- Locking control (at head office) when people enter or leave the premises, by means of IC cards (for employee identification)
- Separation of business areas from meeting and reception space

Technical measures

- Limitation (authentication functions) of users of systems by means of IC cards (for employee identification)
- Approval by senior staff for removal of electronic information, and encryption of files
- Management of collation and analysis of operating logs

■ J-POWER Group Information Security Countermeasures



Compliance

Compliance Philosophy

J-POWER has always devoted considerable effort to compliance-oriented management, as all of its activities as a company have been premised on maintaining the trust of society. It is essential not to be obsessed with ephemeral thoughts of making profits, but to conduct ourselves in a legally compliant manner and in accordance with the highest standards of corporate ethics, so as to ensure unwavering public trust.

During fiscal 2006 a number of out-of-compliance cases occurred or came to light. We have reflected deeply on these, and have been taking steps to strengthen compliance still further.

Compliance Promotion Structure

In addition to laying down its Corporate Conduct Rules in January 2001, J-POWER instituted its Compliance Code to provide specific decision-making standards for managers and employees in their daily business activities. Based on these, we are evolving in-house rules to promote compliance. We have also created the Compliance Action Committee, chaired by the president, to examine measures to foster Company-wide compliance activities and to deal with out-of-compliance issues by implementing prompt action and taking measures to prevent recurrence. In parallel, separate compliance committees have been formed within each unit that is engaged in practical compliance activities.

J-POWER has also established the Compliance Consultation Point within its Internal Audit Department to serve as a point of contact for employees seeking advice when faced with compliance issues. We are promoting use of the contact point. The system protects the privacy of those employees who come forward and ensures that they suffer no disadvantage as a result.

Additionally, given the importance of promoting compliance in a coordinated way throughout the Group, collaboration in this area is conducted through the Group Management Committee.

Regulations	Committees
Corporate Conduct Rules	Compliance Action Committee
Compliance Code	Unit compliance committees
Compliance Promotion Regulations, etc.	Compliance Consultation Point

Compliance Instruction and Education

The following are some of the educational and instructional activities carried out by the Company to raise employees' awareness of compliance and give them essential knowledge, so as to ensure the effectiveness of promoting compliance.

1. Distribution of compliance guidebook
To ensure that employees are thoroughly conversant with the Compliance Code, a compliance guidebook is sent to each of them. In fiscal 2006 a revised edition, which includes case studies of actual incidents, was published and distributed.

Overview of Compliance Code

I. Basics
(1) Compliance with laws and internal regulations
(2) Acting in accordance with social norms

II. Areas for Compliance
1. Relations with Society
(1) Contribution to society
(2) Compliance with laws and ethical requirements, respect for cultures and customs
(3) Proper information disclosure
(4) Appropriate PR activities
(5) Regulation of donations and contributions to political parties
(6) Terminating relations with anti-social elements
(7) Environmental conservation
(8) Appropriate use of information systems
(9) Protection of intellectual property rights
(10) Compliance with import/export laws and regulations

2. Relations with Customers, Suppliers, and Competitors
(1) Security and reliability of energy supply and products sales
(2) Compliance with the Antimonopoly Law
(3) Dealing fairly with suppliers
(4) Preventing unfair competition
(5) Entertainment/gifts

3. Relations with Shareholders and Investors
(1) Disclosure of business information
(2) Prohibition of insider trading

4. Relations with Government Agencies/Officials
(1) Adherence to approval and notification procedures
(2) Entertaining/giving gifts to government officials

5. Relations with Employees
(1) Respect for human rights/prohibition of discrimination
(2) Sexual harassment
(3) Protection of privacy
(4) Workplace safety and hygiene
(5) Compliance with labor laws
(6) Compliance with employment regulations
(7) Proper accounting and tax procedures
(8) Appropriate use of company assets

2. E-Learning
During fiscal 2006 we sought to raise compliance-consciousness and knowledge by implementing compliance-related e-learning provided via our intranet to all employees.

3. Others
Compliance training has been incorporated into training courses for each job grade and practical business training sessions.

Compliance Violations and Measures to Prevent Recurrence

During fiscal 2006 the cases of violations of compliance regulations set out below occurred or came to light. We have taken these very seriously and reflected deeply on them. In consequence, the entire J-POWER Group is working to reform its corporate culture and employee attitudes and to develop its internal control systems and ensure they operate effectively. Compliance will also be strengthened and measures to ensure there are no recurrences will be implemented rigorously as part of our efforts to restore public confidence in us.

Cases of Compliance Violation concerning Electricity Generating Facilities

In response to directions given from the Ministry of Land, Infrastructure and Transport and the Ministry of Economy, Trade and Industry in November 2006, J-POWER conducted inspections and surveys of its power-generation facilities and found numerous cases of falsification of data, improper handling, defective procedures, and other such activities.

To prevent the recurrence of such incidents, common backgrounds and problems throughout the J-POWER Group were categorized as follows:

- Those relating to corporate culture and employee attitudes
- Those relating to internal control systems
- Those relating to compliance promotion activities
- Those relating to lack of knowledge or understanding

Specific action programs to prevent recurrence will be formulated for each of these, and they will be implemented continuously and subjected to a process of evaluation and confirmation of the status of their implementation. In this way, the measures to prevent recurrence are being implemented steadily.

For details, please refer to the J-POWER website at www.jpower.co.jp for news releases (available only in Japanese): "Hatsuden setsubi ni kakawaru tenken kekka no hokoku nitsuite (On the report on the results of the inspections regarding J-POWER's power-generating facilities)" released on March 30, 2007, "Hatsuden setsubi ni kakawaru tenken chosa kekka hokokusho wo fumaeta saihatsu boshi taisaku nitsuite (On the measures to prevent recurrence based on the report on the results of the inspections and investigations regarding J-POWER's power-generating facilities)" released on April 6, 2007, and "Hatsuden setsubi ni kakawaru tenken chosa kekka hokokusho wo fumaeta saihatsu boshi akushon puroguramu nitsuite (On the action program based on the report on the results of the inspections and investigations regarding J-POWER's power-generating facilities)" released on May 21, 2007.

Cases of Infringement of Environmental Regulations

In August 2006 the Company received guidance on the prevention of recurrence from the Japan Coast Guard with regard to the following three cases.

The discharge by ships of kelp drifting in the waters around the construction site for the Ohma Nuclear Power Station in September 2003 constituted a violation of the Law Relating to the Prevention of Marine Pollution and Maritime Disasters. And drainage problems (elevated pH discharges) at the Isogo Thermal Power Station in January 2006 and at the Takehara Thermal Power Station in March of that year violated the Water Pollution Control Law.

Given these circumstances, in September 2006 the president issued a notice calling for exhaustive efforts to be taken to prevent the recurrence of compliance violations. This made all employees aware of the need to prevent recurrences, and initiated across-the-board efforts in every unit of the Group to avoid any recurrence, including in the areas of thorough legality checks, thorough confirmation of the nature of operations, and improvements to plant and equipment. (For specific details of the situation and measures in each case, please see the "Violations of Environmental Statutes" section on page 57.)

Ensuring Stable Supplies

The J-POWER Group produces electricity at 78 facilities throughout Japan, including hydroelectric, coal-fired thermal, and wind power stations, and transmits it through its power transmission and substation facilities, supporting people in their daily lives. Backed by a highly trustworthy technical capability built up over a half-century of development and operations, it will continue to supply electric power in a stable and efficient manner, bringing peace of mind to people's daily lives.

Contributing to Stable Supply

The J-POWER Group's power generation facilities have the capacity to ensure stable supplies. Its power transmission and substation facilities form part of the system formed by electric power companies nationwide, linking different regions to create broad-ranging cooperation, and thereby helping to ensure stable supplies.

Steady Development of Stable Power Sources

J-POWER is Japan's largest wholesale power company with a total output capacity of 16.38 GW within Japan as of March 31, 2007, giving it a market share of approximately 7%. The electric power generated through these facilities, together with power generated within Japan by other Group companies, is delivered to consumers through general electric utilities (regional power companies) throughout the country.

J-POWER is currently constructing the Isogo New No. 2 Thermal Power Station (in Kanagawa Prefecture; 0.6 GW capacity), scheduled to start operations in July 2009. (Please see the feature on page 10.)

In addition, J-POWER is undertaking the construction of its first nuclear power station, the Ohma Nuclear Power Station (in Aomori Prefecture; 1.383 GW capacity). It is due to start operations in March 2012. (Please see page 35.)

Through these two projects designed to develop large-scale, stable sources of power, J-POWER's output capacity will increase by some 2.0 GW. The additional capacity is expected to make a significant contribution to the stability of power supply in Japan. J-POWER will continue with the steady expansion of its power generation plant and equipment and other electric power facilities.

Transmission, Substation, and Telecommunications Facilities Linking Electricity in Japan

J-POWER owns and operates transmission lines of approximately 2,400 km and eight substations and converter stations that link disparate regions of Japan together. In this way it plays a major role in the overall operation of Japan's electricity grid. It also operates essential facilities that support the wide-area power transmission in Japan, including extra-high-voltage transmission lines that connect Japan's main island of Honshu with the other main islands of Hokkaido, Shikoku, and Kyushu, and the Sakuma Frequency Converter Station, the first facility in Japan that has made possible the transmission of electricity between the different frequencies of Eastern Japan (50 Hz) and Western Japan (60 Hz).

In addition, J-POWER operates a telecommunications network comprising components such as highly reliable microwave radio circuits and fiber-optic cables, which enables it to conduct the remote monitoring and operation of its electric power facilities. Its usage of sophisticated IT underpins the stable operation of the country's electricity grid.

Power cables are laid across the Seto Ohashi Bridge, creating the Honshi Interconnecting Transmission Line linking Honshu and Shikoku.

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Contributing to Power System Stability—Power Frequency Regulation Control

In order to provide stable supplies of electricity to meet demand, suppliers have to adjust the amount of electricity output in a timely manner as demand changes constantly, so as to balance demand and supply.

To cope with short-term abrupt volatility of demand that cannot be handled by nuclear or thermal power stations, large-scale hydroelectric power stations, and pumped-storage power stations automatically adjust output swiftly and contribute to stable supply of electric power through capabilities such as automatic frequency control and online control by electric power companies. It is of particular note that a variable-speed pumped-storage power generating system is used at the No. 2 unit of the Okukiyotsu No.2 station, and it enables power frequency regulation control even in pump mode during nighttime, when the power system has poor capacity to adjust power generation volume.

These facilities can reach full power generation in a short time after a startup command is given, even when they have been in standstill condition, so they will be able to play a key role in providing emergency supply capacity if problems arise at other stations. By taking advantage of these characteristics, J-POWER pumped-storage power stations such as Okukiyotsu, Shimogo, and Shintoyone, and large-scale hydropower stations such as Sakuma, Okutadami, Tagokura, and Miboro operate in a way that contributes to the stability of the power system.

Okukiyotsu No. 2 Power Station (Variable-speed pumped-storage generating system)

Contributing to the Stable Operation of the Power System

To operate J-POWER's power generation and transmission facilities stably and efficiently, the Central Load Dispatching Center works in coordination with the power system operation conducted by related electric power companies. It has a 24-hour operating structure for issuing appropriate operating instructions (load dispatching) to our four regional control centers and thermal power stations.

In addition, beyond this regional structure J-POWER contributes to the stable operation of the entire national power system through the operation of facilities such as the Sakuma Frequency Converter Station and the electric power interconnection facilities that link Honshu and Hokkaido (Hokkaido-Honshu HVDC Link).

Facilities Maintenance

The J-POWER Group possesses various types of facilities in such fields as power generation, power transmission, transformation of electrical energy, telecommunications, civil engineering, and construction. To ensure stable supplies of power, J-POWER aims for the constant improvement of the high-quality maintenance work that is conducted to maintain the functions of these facilities, prevent malfunctions and accidents before they can occur, and minimize environmental load.

At thermal power stations, the constant emphasis is on the stability of operations. On the hardware side, reliability is ensured through day-to-day control to identify equipment abnormalities promptly and by such means as regular overhaul inspections of operating facilities under the system of "Autonomous Periodic Safety Inspection," while on the software and knowledge side the measures employed include the use of simulators to maintain and enhance operators' operating skills and a variety of drills to prepare for possible natural disasters and accidents. Other steps taken to ensure year-round stable power supplies include the conduct of special patrols every year, particularly during the summer months when the need for electric power is high.

Hydropower stations are subjected to inspection tours, regular inspections, and repairs. By maintaining and restoring the functioning of plant and equipment through prevention and predictive maintenance based on these activities, the potential for accidents and other problems is avoided. In addition, the four regional control centers monitor equipment round the clock, to ensure that any incidents affecting equipment at any of the 59 hydropower stations nationwide are addressed promptly. Also, at the dams used in hydropower production we monitor information relating to the associated river systems, including rainfall, river-water level, and meteorological data.

Transmission and substation facilities are subjected to harsh natural conditions such as wind, snow, lightning, and sea salt contamination, making it essential to deal appropriately with environmental changes and aging in the affected regions. The state of these facilities is constantly monitored by means of patrols and detailed inspections, and all necessary repairs are effected in order to maintain their functions and ensure stable power supplies.

The equipment-maintenance techniques and technologies built up in each of these fields are provided to employees through hands-on experience and training for the purpose of preventing human error, for human-resource development, and for the maintenance and enhancement of technical capabilities.

Emergency Response

To be prepared for events of disaster or accident, the J-POWER Group has established information contact routes with the regions in which its power generation and substation facilities and transmission lines are located, and it also operates a mutual assistance structure with all related units. Other measures include the stockpiling of supplies for post-accident recovery and the conduct of training for dealing with accidents.

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Disaster Prevention Structure and Disaster Prevention Task Force

J-POWER is an electric power supplier with responsibility for the nation's vital lifelines, and it is a designated public corporation under the Disaster Countermeasures Basic Law and the People Protection Law. In view of this, it has long been developing disaster prevention measures, and has aimed to be a company that is resilient to disasters and able to recover quickly.

In-house manuals, including a set of rules on disaster countermeasures and protection measures for the people, have been prepared, and the Company has built a disaster prevention structure that encompasses head office and all Group units systematically.

In addition to the creation of this structure, disaster drills are held regularly in every unit, and practical experience is acquired so as to ensure that appropriate steps are taken when the necessity arises. Also, given the frequent occurrence and growing severity of natural disasters since the Chuetsu Earthquake in Niigata Prefecture in 2004, steps have been taken to institute comprehensive and effective disaster prevention measures for J-POWER's entire power generation, transmission, and substation system. To that end, a Disaster Prevention Task Force was established in 2005 as a cross-functional organization straddling all related divisions. Taking effective advantage of the Company's knowledge in such spheres as civil engineering technology, assumptions about damage and impact analyses have been made with regard to every unit of J-POWER's plant or equipment, and countermeasures have been studied and implemented.

Specifically, J-POWER has studied all of its locations and implemented countermeasures with regard to potential earthquakes that are particular causes of anxiety, such as the Tokai earthquake, the Tonankai and Nankai earthquakes, and an earthquake directly below the Tokyo metropolitan area. It also is taking steps to raise the level of disaster prevention capability on a Company-wide basis.

In addition to these activities, J-POWER will continue its vigorous efforts to implement disaster prevention measures. Its aim is to minimize damage in the event a disaster occurs and to fulfill its social responsibilities as an electric power supplier. We are committed to enhancing corporate value by building a corporate fabric that is resilient to disasters.

Disaster Prevention Task Force activity

Environmental Management

The J-POWER Group believes that energy production and the environment can coexist in harmony. In light of this corporate philosophy, our environmental management aims to enhance environmental responsibility while enhancing the economic value of our operations in order to further contribute to the development of a sustainable society.

Environmental Management Vision

In 2004 we established a Basic Policy for achieving the J-POWER Group's Environmental Management Vision. Based on that policy we formulated an Action Program setting out medium-term goals, and we are now working toward those objectives.

Basic Policy

The J-POWER Group adheres to the following Basic Policy.

Basic Stance

As an energy supplier, we will contribute to the sustainable development of Japan and the world by harmonizing our operations with the environment and ensuring the constant supply of energy essential to human life and economic activity.

As an energy supplier, we will efficiently generate and continuously supply electric power essential to human life and economic activity by effectively using limited resources such as coal to meet diverse needs. We will contribute to sustainable development in Japan and the world as a whole by minimizing the environmental impact of our business activities, reducing environmental risks such as global warming, and improving eco-efficiency by achieving higher productivity with lower environmental load, thus enhancing both environmental responsibility and economic value.

Isogo Thermal Power Station

Efforts Relating to Global Environmental Issues

In accordance with the principles of the United Nations Framework Convention on Climate Change,* we will cost-effectively address issues relating to climate change on a global scale. We will continue to reduce CO_2 emissions per unit of electric power sold through an economically rational combination of measures including maintenance and improvement of the efficiency of energy use; development of low CO_2 emission power sources; development, transfer, and dissemination of new technologies; and utilization of the Kyoto Mechanisms. Furthermore, we will continue to work toward our ultimate goal of achieving zero emissions through the capture and storage of CO_2.

Since fossil fuels will inevitably remain a key energy source this century, global warming is one of the most important long-term issues facing humankind. As measures against global warming will entail major costs, we must adopt highly cost-effective measures and actions on a global scale to make larger reductions in greenhouse gas emissions at lower cost if we are to achieve sustainable development that harmonizes environmental and economic needs. This principle is set out in the United Nations Framework Convention on Climate Change, on which the Kyoto Protocol is based.

We will continue to reduce CO_2 emissions per unit of electric power sold through an economically rational combination of measures that takes account of cost-effectiveness on a global scale. Such measures include maintenance and improvement of efficient energy use; development of low CO_2 emission power sources; development, transfer, and dissemination of new technologies; and utilization of the Kyoto Mechanisms.

Recognizing that it will be necessary within this century to capture and store CO_2 generated by the combustion of fossil fuels in order to keep supplying energy to people throughout the world in a sustainable manner, we have also set the ultimate goal of achieving zero CO_2 emissions. We will continue developing and testing technology to achieve that objective.

* Framework Convention on Climate Change, Article 3, Paragraph 3 (Principles):
"…lack of full scientific certainty should not be used as a reason for postponing such measures, taking into account that policies and measures to deal with climate change should be cost-effective so as to ensure global benefits at the lowest possible cost."

Efforts Relating to Local Environmental Issues

We will take measures to reduce the environmental impact of our operations by saving, recycling, and reusing resources to limit the generation of waste and foster good community relations.

Recognizing that assuring attractive and safe living environments is the key to good community relations, both nationally and internationally, we work hard to earn community trust. We use the latest technologies and know-how to minimize the environmental impact of our operations on the air and water around our power stations, as well as reducing and appropriately processing waste by saving, reusing, and recycling limited resources. In addition, we ensure that we are prepared to deal with emergencies resulting from accidents or natural disasters.

Ensuring Transparency and Reliability

We will ensure that our business activities comply with all laws and regulations, disclose a wide range of environmental information, and enhance communication with stakeholders.

We work to earn the trust of society by improving our environmental management and assuring complete compliance with laws and regulations, as well as by increasing corporate transparency through disclosure of a wide range of environmental information. At the same time, we strive to enhance communication with stakeholders about environmental issues, calling upon the skills and knowledge of the entire J-POWER Group to continue meeting stakeholder expectations in terms of our business development and environmental activities.

April 1, 2004

Yoshihiko Nakagaki
President

Action Program

In accordance with the Basic Policy of the J-POWER Group Environmental Management Vision, we have formulated an action program setting out goals with respect to key issues or problems related to our business activities, along with methods to achieve the goals. The entire group is now working toward meeting these targets.

J-POWER Group Targets

Efforts Relating to Global Environmental Issues (Measures to Counter Global Warming)

Target	Work to reduce CO_2 emissions per unit of electric power sold by the J-POWER Group's domestic and overseas operations by 10% from the 2002 level by fiscal 2010
Action	Combine the measures below in an economically rational manner, taking into account cost-effectiveness on a global scale
Category	**Measure**
Maintain and improve efficiency of energy use	● Maintain efficient operation of power facilities ● Improve efficiency when replacing machinery ● Lower auxiliary power ratio in plants through efficient operational management ● Adopt high-efficiency technologies in new facilities
Develop low CO_2 emission power sources	● Pursue development of Ohma Nuclear Power Station ● Pursue development of renewable energy (wind power, co-combustion of biomass in coal-fired thermal power stations, etc.) ● Pursue development of gas-turbine combined-cycle power generation
Utilize Kyoto Mechanisms	● Obtain carbon credits through JI, CDM, and emissions trading
Develop, transfer, and disseminate new technologies	● Establish technology for biomass fuel use ● Pursue development of technology to reduce CO_2 emissions intensity of power generation on a long-term, sustained basis • Develop technology to improve efficiency of coal-fired power generation • Develop coal gasification and integrated coal gasification fuel cell (IGFC) technology • Research and develop CO_2 sequestration technology • Research and develop renewable energy

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J-POWER Group's Measures to Counter Global Warming and Assessment Indicators

The J-POWER Group's biggest impact on the global environment comes from the generation of CO_2 as a result of combustion of fossil fuels for power generation. With this in mind, we have adopted as our basic policy for addressing global environmental problems the ongoing reduction of CO_2 emissions per unit of electric power sold (CO_2 emissions intensity). The J-POWER Group targets were established for the purpose of conducting interim assessments of our long-term efforts. Because these assessments pertain to global environmental problems, we have attempted to make the scope of evaluation as wide as possible by including power generating businesses, in Japan and overseas, in which the J-POWER Group has an interest.

We are also participating in the Environmental Action Plan by the Japanese Electric Utility Industry, oriented to compliance with the Kyoto Protocol (for more information, see page 76 in the Materials section). The J-POWER Group's own targets, described above, serve as indicators for an assessment of the overall success of a wide variety of efforts the Group has undertaken as an electric utility that is expanding its business internationally, but we also believe that our attainment of those targets will contribute to successful implementation of the Environmental Action Plan by the Japanese Electric Utility Industry.

Efforts Relating to Local Environmental Issues (Formation of a Recycling-Based Society)

Target	Work to achieve a recycling rate of 97% for the entire J-POWER Group with the ultimate goal of zero industrial waste emissions by the end of fiscal 2010
Action	● Promote effective use of coal ash ● Reduce total volume of industrial waste generated by maintenance and operation of power stations

Ensuring Transparency and Reliability (Enhance Our Environmental Management Structure)

Target	Adopt an environmental management system (EMS) for the entire J-POWER Group by the end of fiscal 2007
Action	● All J-POWER's electric power business sites will receive ISO 14001 certification by the end of fiscal 2005 ● All consolidated subsidiaries will adopt an EMS by the end of fiscal 2007

Segment Goals–Each division and group company sets goals for its own business activities

Efforts Relating to Global Environmental Issues (Measures to Counter Global Warming)

Key items	● Thermal Power Division: High-efficiency operation of power plants and adoption of high-efficiency equipment in new plants ● Hydropower Division: Increased productivity of hydroelectric power stations ● Common issues: Energy conservation in buildings and offices, cutting back on vehicle fuel consumption

Efforts Relating to Local Environmental Issues (Air, Water, Waste)

Key items	● Thermal Power Division: Reducing SOx and NOx emissions, reducing industrial water usage, effective use of coal ash ● Hydropower Division: Effective use of driftwood ● Common issues: Cutting back on resource consumption in offices, reducing waste

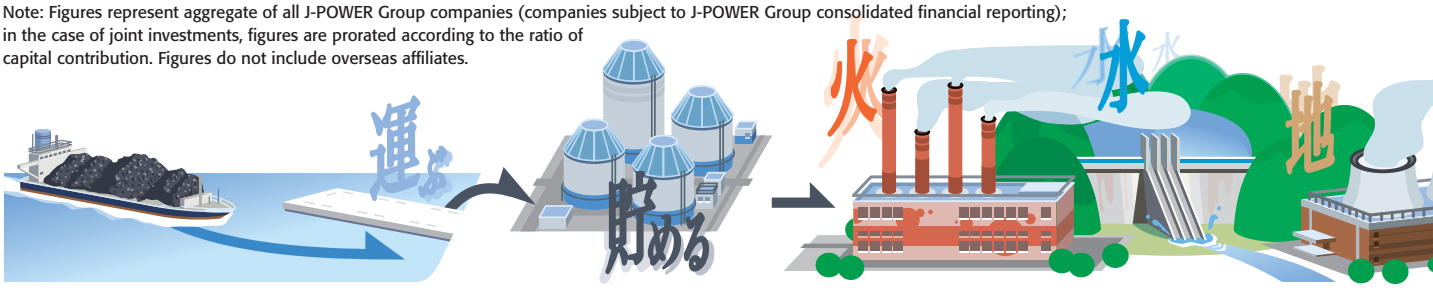
Ensuring Transparency and Reliability (EMS, Enhanced Environmental Communication, Green Procurement)

Key items	● Obtaining ISO 14001 certification, adopting EMS ● Promoting environmental communications, participate in environmental volunteer programs ● Green purchasing/procurement (energy-saving office equipment, recycled paper, low-emissions vehicles, etc.) ● Measures to prevent environmental accidents ● Rigorous environmental education (e-learning, auditor training, etc.)

Notes:
1. Each of the major goals is discussed on their respective pages.
2. See page 71 in the Materials section for the Fiscal 2007 J-POWER Group Environmental Action Guidelines.

Business Activities and the Environment (Fiscal 2006)

Note: Figures represent aggregate of all J-POWER Group companies (companies subject to J-POWER Group consolidated financial reporting); in the case of joint investments, figures are prorated according to the ratio of capital contribution. Figures do not include overseas affiliates.



INPUT

Thermal Power Generation (including Wakamatsu Research Institute)

Fuel

Wet coal	18.76 million tons
Heavy oil	59,000 kl
Light oil	21,000 kl
Natural gas	116.9 million Nm^3
Biomass (dried sewage sludge)	2,000 tons

Water

Industrial water	9.96 million m^3

Chemicals (undiluted equivalents)

Limestone ($CaCO_3$)	230,000 tons
Ammonia (NH_3)	11,000 tons
Hydrochloric acid (HCl)	1,000 tons
Sulfuric acid (H_2SO_4)	1,000 tons
Caustic soda (NaOH)	5,000 tons

Hydropower Generation

Power for pumped storage	1,900 GWh

Geothermal Power Generation

Steam	1.02 million tons	Hot water	4.56 million tons

Business Sites and Offices (internal use)

Electricity

Business sites	41.80 GWh
Offices	17.38 GWh

Fuel

Gasoline, diesel, city gas, etc. (gasoline equivalent)	4,122 kl

Water

650,000 m^3

Copy paper (A4 equivalent)

70 million sheets

BUSINESS ACTIVITIES

Electric Power Generated

Thermal
52,300 GWh

Hydroelectric
12,200 GWh

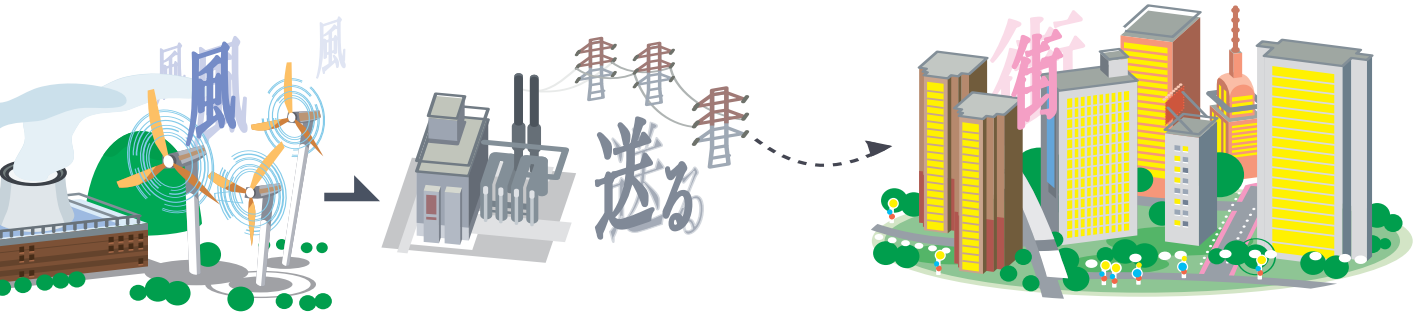
Geothermal
100 GWh

Wind power
300 GWh

Auxiliary power for operation and transmission loss 3,500 GWh

Notes:
1. Apart from waste water, almost all industrial water used in thermal power stations is released into the atmosphere as steam.
2. River water used in hydroelectric stations is not included in the input figures, as all such water is returned to the river after power generation.
3. While steam is used in geothermal power stations, hot water is returned underground after power generation via injection well.

Note: Due to rounding, figures may not add up to totals.



Volume of electric power sold	60,000 GWh
Pumped storage hydroelectric power output	1,400 GWh

Total

61,400 GWh

Supply

OUTCOME

The electricity generated at our power stations is supplied through regional power companies to end users throughout Japan. The 60,000 GWh of wholesale electric power we sold last year is equivalent to approximately 7% of total electric power sold by regional power companies.*

* 889,400 GWh: : Total fiscal 2006 electric power sold according to confirmed figures on electricity demand published by the Federation of Electric Power Companies of Japan.

OUTPUT

Thermal Power Stations (including Wakamatsu Research Institute)

Atmospheric emissions

CO_2	42.16 million t-CO_2	NOx	28,000 tons
SOx	10,000 tons	Soot and dust	1,000 tons
Waste water	3.63 million m^3	**Waste water COD**	15 tons

Geothermal power station

Hot water	4.86 million tons

Industrial waste

Coal ash	44,000 tons	Other industrial waste	16,000 tons
Sludge (excluding gypsum)	30,000 tons	Specially controlled industrial waste	1,000 tons

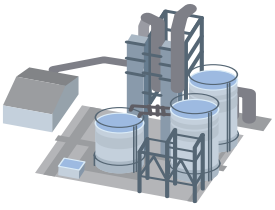
Municipal solid waste

Waste paper	49 tons	Driftwood in dam reservoirs	2,100 m^3

Recycling and reuse of resources

Coal ash	1,510,000 tons (97%)
Sludge (excluding gypsum)	3,000 tons (10%)
Gypsum (desulfurized byproduct)	330,000 tons (100%)
Sulfuric acid (desulfurized byproduct)	9,000 tons (100%)
Other industrial waste	15,000 tons (48%)
Waste paper	303 tons (86%)
Driftwood from dam reservoirs	16,800 m^3 (89%)

Percentages indicate rate of efficient use.



Cement plants, etc.

CO_2 emissions generated from consumption of electricity and fuel at business sites and offices

	35,000 t-CO_2
(Amount generated from office activities)	11,000 t-CO_2

Environmental Accounting and Eco-efficiency

The J-POWER Group regards environmental accounting as an important tool for environmental management. Through ongoing disclosure of environmental accounting data, we aim to further enhance the reliability and adequacy of information on cost and effectiveness. In addition, improving eco-efficiency (production per environmental load) is one of the goals outlined as part of our basic stance in the Basic Policy section of the J-POWER Group Environmental Management Vision.

Environmental Accounting

To calculate the overall costs and benefits of the J-POWER Group environmental conservation activities in fiscal 2006 in light of the nature of our business, we referred to the Environmental Accounting Guidelines 2005 issued by the Ministry of the Environment.

Calculation Guidelines

- **Period:** April 1, 2006, to March 31, 2007
- **Format:** In accordance with Environmental Accounting Guidelines 2005 issued by the Ministry of the Environment
- **Scope:** Costs (including depreciation costs) for thermal power generation companies, which have the highest environmental load among J-POWER and Group operations
  - ❍ Costs were calculated focusing on expenses for: personnel contracting/repair/chemicals associated with operating and maintaining equipment; waste recycling and disposal; R&D; and overseas projects (contracting and personnel expenses).
  - ❍ However, upstream and downstream costs associated with the contribution of hydroelectric power generation to measures against global warming, and with green purchasing efforts, were deemed to present problems in terms of calculation scope and method and thus were excluded from calculations.

Environmental Conservation Cost

Total costs for fiscal 2006 were approximately 39.5 billion yen, with "pollution control" costs for preventing contamination of the air, water, etc., accounting for about 44% of the total.

(Unit: billion yen)

Category	Main measures and efforts	Amount
Pollution control	Air pollution control (desulfurization/denitrification, soot and dust treatment), water pollution control (waste-water treatment), etc.	17.54
Global environmental conservation	Measures to reduce greenhouse gas emissions (maintaining high-efficiency operation of coal-fired power stations, developing renewable and unutilized energy sources, maintenance costs for energy-saving equipment, emission control of greenhouse gases other than CO_2)	1.90
Resource recycling	Waste reduction through reuse and recycling, treatment and disposal of waste	11.37
Management activities	Monitoring and measurement of environmental load, labor costs for environmental conservation organizations, costs for environmental education, etc.	1.64
Research and development	High-efficiency generation, use of fuel cells, capture and storage of CO_2, recycling of coal ash and gypsum, etc.	1.58
Social activities	Tree-planting, environmental advertising, environmental beautification, membership in environmental groups, preparation of environmental report, etc.	3.07
International projects	Overseas cooperation projects for environmental conservation technologies	0.95
Other	Pollution load levy	1.49
Total		39.54

Environmental Conservation Benefits

When looking at environmental load, the nature of our business requires that instead of tabulating total emissions we assess the overall environmental conservation benefit of our conservation measures on the basis of emissions intensity (emissions per unit of electric power sold), thermal efficiency, and reuse/recycling ratio, comparing these levels with the fiscal 2002 benchmarks. Since our efforts to control NOx, SOx, and soot and dust have already attained a high level of effectiveness, our task with regard to these items is to maintain the current levels.

For items that allow assessment of environmental conservation on the basis of a total figure, we have used the total for fiscal 2006 as the measure of environmental benefit.

Environmental conservation benefit	FY 2002	FY 2006
SOx emissions intensity (g/kWh)	0.21	0.20
NOx emissions intensity (g/kWh)	0.56	0.57
Soot and dust emissions intensity (g/kWh)	0.02	0.02
CO_2 emissions intensity (kg-CO_2/kWh)	0.72	0.68
Average coal-fired thermal efficiency (%)	40.3	40.3
Development of renewable/unutilized energy sources (MW)		66
Coal ash recycling rate (%)	67	97
Industrial waste recycling rate (%)	73	95
Gypsum recycling rate (%)	100	100
Volume of driftwood recycled (1,000 m^3)		16.8
Employees completing internal environmental auditor training		180
Environmental report (copies published)		8,000
Environmental pamphlet (copies published)		19,000
Overseas consulting projects (cumulative total)		277

Note: For detailed data regarding each category, see pages 73-74, Fiscal Year Data, in the Materials section.

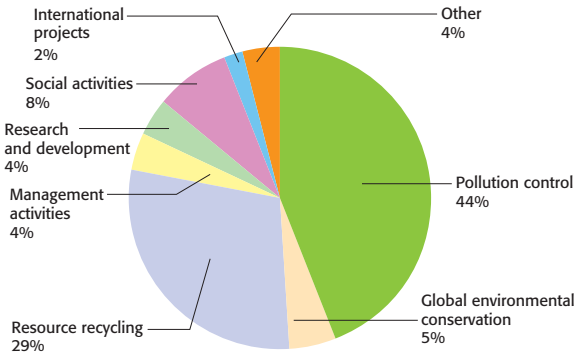
Economic Benefit

Efforts contributing to earnings and cost reductions were calculated to have had an economic benefit of approximately 6.53 billion yen.

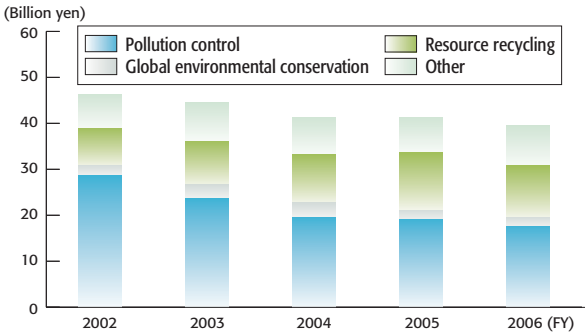
(Unit: million yen)

Category	Details	Amount
Revenue	Sales of marketable commodities from coal ash, gypsum, and sulfuric acid	410
Cost reduction	Reduction in fuel costs due to improved coal-fired thermal efficiency (introduction of USC)	2,000
	Reduction in disposal costs due to recycling of coal ash, gypsum, and sulfuric acid	4,120
Total		6,530

■ **Environmental Conservation Costs: Breakdown by Category**

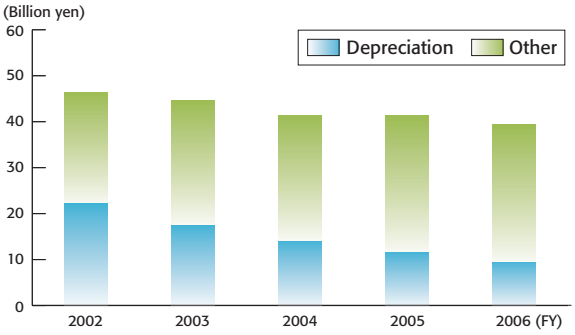


■ **Environmental Conservation Costs: Comparison by Fiscal Year**



Note: Figures for FY 2002–2004 are for J-POWER only, on a non-consolidated basis.

■ **Proportion of Depreciation and Other Costs**



Notes:
1. Figures for FY 2002–2004 are for J-POWER only, on a non-consolidated basis.
2. Depreciation: costs related to depreciation of environmental equipment.

Eco-efficiency

The Basic Policy section of the J-POWER Group Environmental Management Vision sets out our basic stance, which is to "contribute to sustainable development in Japan and the world as a whole by minimizing the environmental load of our business activities, reducing environmental risks such as global warming, and improving eco-efficiency by achieving higher productivity with lower environmental load, thus enhancing both environmental responsibility and economic value."

The data presented here is an integrated index of eco-efficiency arrived at by weighting each category of environmental load using an established coefficient and then calculating the total. By using such an integrated assessment system it is possible to use a single value to rate the overall eco-efficiency of all corporate activities.

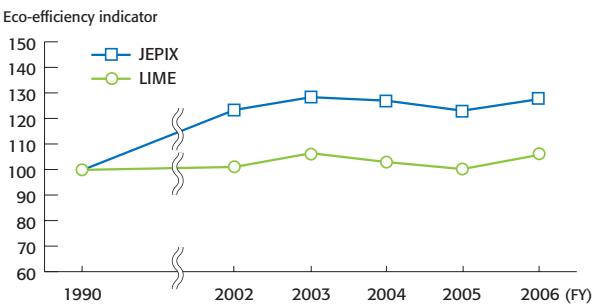
A number of integrated assessment methods have been developed overseas, including Eco-indicator 99 in the Netherlands, EPS 2000 in Sweden, BUWAL 297 in Switzerland, and others. Japan has also developed its own methods, which take into account the country's local characteristics. These include JEPIX (which uses policy targets as indicators) and LIME (which uses damage to human health and ecosystems as indicators).

We have used both of these methods to evaluate our efforts to this point. Although the two methods assign different coefficients to various aspects of the environment, both indicate an overall trend of improving eco-efficiency since fiscal 1990.

As our medium-to-long-term tasks henceforth, we are working to reduce the environmental load by improving the efficiency of energy use, which is closely tied to increased eco-efficiency, and developing renewable energy sources.

The production-to-environmental load quotient for each category is presented separately on the corresponding pages.

■ **Integrated Index (electric power sold per environmental load) of Eco-efficiency**



Eco-efficiency indicator: 100 = FY 1990 integrated index (electric power sold per environmental load).

Efforts Relating to Global Environmental Issues

With humanity obliged to continue relying on fossil fuels as its primary energy source through this century, the problem of global warming is the most serious issue to be tackled over the long term. J-POWER Group regards measures to combat global warming as a top management priority and is pursuing such actions vigorously.

CO_2 Emissions from Business Activities

Japan's total annual CO_2 emissions are approximately 1.29 billion t-CO_2 (actual emissions for fiscal 2005), of which about 30% is generated by power stations. Emissions from J-POWER Group companies (in Japan) account for about 4% of Japan's total.

We take this situation seriously, and to respond to it, we have compiled our Action Program (see p. 27), which systematizes our efforts heretofore. Through this program, J-POWER has committed itself to work for around a 10% reduction from the fiscal 2002 level of annual CO_2 emissions per unit of electric power sold by J-POWER Group electric power businesses in Japan and overseas by fiscal 2010.

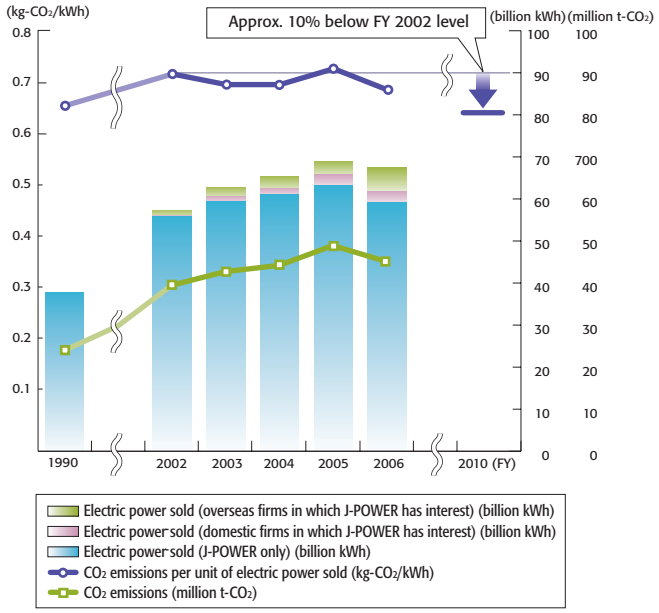
CO_2 Emissions by J-POWER Group Companies (Domestic and Overseas)

In fiscal 2006, electric power sold by the J-POWER Group as a whole—including that of all domestic and overseas subsidiaries and unconsolidated affiliates in which J-POWER has a stake, prorated according to J-POWER's holding ratio—was approximately 66.8 billion kWh, a drop of about 2% from the previous year. CO_2 emissions fell to 45.36 million t-CO_2, a reduction of about 8% from the previous year, owing in part to a lower utilization rate for coal-fired power stations.

At the same time, CO_2 emissions per unit of electric power sold fell approximately 6% from the previous year, to 0.68 kg-CO_2/kWh, thanks to such factors as the drop in the utilization rate of thermal power stations, an increase in the amount of hydroelectric power sold as a result of high precipitation in Japan, and the involvement in a gas cogeneration project overseas. This also represents a drop of about 6% from fiscal 2002, when the level of emissions per unit of electricity sold was 0.72 kg-CO_2/kWh.

We will continue to strive to reach our targets under the J-POWER Group Action Program.

■ **J-POWER Group (Japan and Overseas) CO_2 Emissions**



Scope of Companies Included in the Calculation of CO_2 Emissions and Electric Power Sold

Inasmuch as our focus is on global environmental problems, when calculating CO_2 emissions per unit of electric power sold (CO_2 intensity)—the measure on which our corporate targets are based—we have made an effort to include in our aggregate all energy-producing businesses in which J-POWER has a stake, both domestically and overseas. To this end, we have calculated the electric power sold and the CO_2 emissions of each of the Japanese and overseas companies in which J-POWER has a stake, including non-consolidated affiliates, and prorated their figures in accordance with J-POWER's holding ratio.

In calculating the volume of CO_2 emissions, we have used the emission coefficients established under the greenhouse gas accounting, reporting, and disclosure system instituted under the amended Law Concerning the Promotion of Measures to Cope with Global Warming, to arrive at totals extending back to fiscal 1990.

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CO_2 Reduction Benefit

The 59 hydroelectric power stations that J-POWER operates nationwide represent a total output of 8.56 million kW, almost 20% of the total capacity of Japan's hydropower facilities. In fiscal 2006, the volume of hydroelectric power sold (not including power from pumped storage generation) was 10.63 billion kWh, for a CO_2 emissions reduction benefit* of approximately 4.55 million t-CO_2.

Electric power sold by the Onikobe Geothermal Power Station and J-POWER Group's wind power facilities (domestic) were 94 million kWh and 245 million kWh, respectively, yielding a CO_2 reduction benefit of approximately 150,000 t-CO_2.

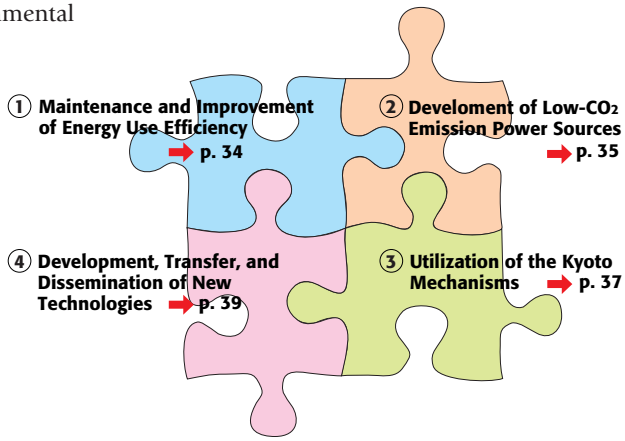

Tagokura Dam and Tagokura Power Station (Fukushima Prefecture)


Tomamae Winvilla Wind Farm (Hokkaido)

Four Measures for Achieving Emissions Reduction Targets

The J-POWER Group has been addressing global environmental problems by taking the following four measures.

- Maintenance and Improvement of Energy Use Efficiency
- Develoment of Low-CO_2 Emission Power Sources
- Utilization of the Kyoto Mechanisms
- Development, Transfer, and Dissemination of New Technologies



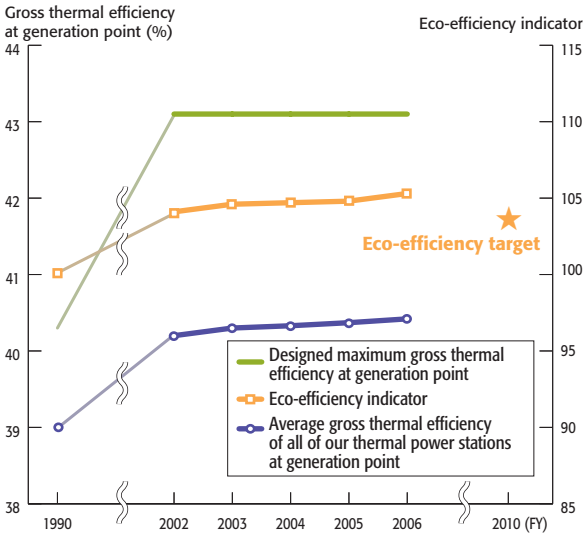
Maintenance and Improvement of Energy Use Efficiency

The energy-use efficiency of J-POWER's coal-fired power facilities is among the highest in the world, thanks to the company's efforts to develop and actively incorporate its own cutting-edge technology. In its hydropower and other facilities as well, J-POWER strives for stable operations and works to further improve equipment efficiency during upgrades. In addition, the Group as a whole is continually working to devise energy-saving measures.

Maintaining Efficient Operation of Coal-Fired Power Stations

J-POWER is taking measures to reduce auxiliary power for operations in its coal-fired power stations, while working to maintain high-efficiency operation through the introduction of new technologies, such as ultra super critical (USC) technology. In fiscal 2006, the average thermal efficiency of all of our thermal power stations (at point of generation) was 40.3% (as compared with 40.5% in fiscal 2005). Although thermal efficiency of coal-fired power generation equipment declines with age, we slow the aging process and stem the decline in thermal efficiency by installing high-efficiency equipment in our new facilities and conducting regular equipment inspections. By stemming the decline in thermal efficiency, it is possible to reduce the amount of fuel used and ultimately cut CO_2 emissions. J-POWER will continue these efforts to maintain and improve the efficiency of energy use in its coal-fired thermal power stations.

■ **J-POWER Coal-Fired Power Stations: Thermal Efficiency and Eco-efficiency**



Note: Eco-efficiency indicator: 100 = FY 1990 eco-efficiency (electric power sold ÷ energy input)

Measures to Maintain and Improve Hydropower Facilities (renewal)

J-POWER is carrying out a total replacement of the aging main generating facilities at the Tagokura Power Station to prolong the life of the facility and improve the reliability of its equipment, while adopting the latest technology to improve power generation efficiency. The plan should boost output by an estimated 5%.

We are also carrying out a total upgrade at Nukabira Power Station. In this way we are working to ensure stable operation of our hydroelectric power stations through improvements in equipment efficiency, as well as proper maintenance and operation of facilities.

Through these efforts, the power generation capacity of Tagokura Power Station is expected to gradually increase from the current 380,000 kW to 400,000 kW by 2012 (reaching 385,000 kW in 2006, 390,000 kW in 2008, and 395,000 kWh in 2010), while the output of Nukabira Power Station is planned to rise from 42,000 kW to 44,000 kW after 2010.

Total upgrade of main equipment at Nukabira Power Station (Hokkaido)

* For purposes of this report, CO_2 emissions-reduction benefit is calculated by comparing the emissions intensity for nuclear power, hydropower, geothermal power, or wind power with the average emissions intensity for electricity from all power sources in Japan (kg-CO_2 ÷ kWh).

Development of Low-CO_2-Emission Power Sources

As one important low-CO_2-emission power source, the J-POWER Group is moving forward with the construction of nuclear power stations. We are also at work on gas-turbine combined-cycle power generation, which can achieve high efficiency of energy use. In addition, while promoting the uses of wind power, biomass, and other alternative energy sources, we are working to develop micro-hydropower, one of the few natural resources remaining in Japan.

Construction of Ohma Nuclear Power Station

Nuclear power accounts for approximately one-third of Japan's total electric power generating capacity. In addition to benefiting from stable fuel supplies and prices, nuclear generation offers the environmental advantage of almost no CO_2 emission. For this reason, we believe it has a key role to play in efforts to combat global warming.

We are currently working on the construction of a nuclear power station (full MOX-ABWR; 1.383 million kW) in Ohma-machi, Aomori Prefecture, designed to use MOX fuel for the entire reactor core (scheduled to start operation in March 2012). We are carrying out this construction plan based on coexistence with local communities, with close attention to rigorous safety measures and environmental conservation. Ohma Nuclear Power Station is expected to yield an annual emission-reduction benefit of approximately 3.2 million t-CO_2 (assuming utilization rate of 80%).

Artist's rendering of completed Ohma Nuclear Power Station (Aomori Prefecture)

Gas-Turbine Combined-Cycle Generation

Gas-turbine combined-cycle power generation combines gas turbines and steam turbines to achieve high generation efficiency, in the area of 50%.

We have established Ichihara Power Co., Ltd. (a joint venture between Mitsui Engineering & Shipbuilding Co., Ltd. and J-POWER) and Bay Side Energy Co., Ltd. to work on gas-turbine combined-cycle power generation using natural gas as fuel.

Overseas as well, the J-POWER Group is involved in such IPP undertakings as the Kaeng Khoi 2 gas-fired thermal power station project in Thailand, which is expected to contribute to reductions in CO_2 emissions intensity once the facility begins operation.

Wind Power Generation

In fiscal 2006, commercial operation was launched at Koriyama Nunobiki Kogen Wind Farm (Fukushima Prefecture; total output 65,980 kW), Japan's largest wind power facility. With this, the total output of

Koriyama-Nunobiki Kogen Wind Farm (Fukushima Prefecture)

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Wind Power Stabilization Technology Development Project

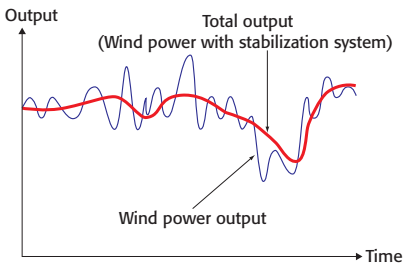
Wind power is a renewable energy source that has raised hopes from the standpoint of combating global warming. At Tomamae Winvilla Wind Farm, demonstration trials began in January 2005 for new control technology to stabilize the natural fluctuations in wind-generated power output using a power stabilizer (energy storage system) and to make wind power compatible with the existing electric power system. The trials, which make use of a stabilizer in combination with the Vanadium Redox-Flow Storage Battery, are scheduled to continue until the end of fiscal 2007.

Through this project, we are demonstrating the following newly developed control technologies:

1. Stabilization control: stabilizing output power from wind generation
2. State of charge feedback control: utilization of batteries' power capacity
3. Battery bank control system: control technology to reduce energy losses
4. Time constant shift control: control technology to sustain stabilizing effect

In addition, with the model program validated through our demonstration test data, we are carrying out simulations using data from other wind farms (measurements from a total of five sites other than Tomamae) to study the stabilizers at these wind farms.

■ Ilustration of Stabilization System



Note: This development has been carried out as part of the Wind Power Stabilization Technology Development Project commissioned by the New Energy and Industrial Technology Development Organization (NEDO) and carried out jointly by J-POWER, the Central Research Institute of Electric Power Industry, and the Institute of Applied Energy since fiscal 2003; it is scheduled to run through fiscal 2007.

all wind power facilities currently operating in Japan reached approximately 210,000 kW.

Overseas, we participated in a wind power project in Poland in fiscal 2006.

Power Generation Using Biomass Fuel

● Utilization of Woody Biomass (Co-firing with Coal)

From fiscal 2001 to fiscal 2004, we carried out a joint project with the Research Institute of Innovative Technology for the Earth (RITE). The aim of the project was to develop a technology for co-firing of woody biomass chips, which were derived from forest thinnings and construction wastes, in a coal-fired power station. In the final year of the project, fiscal 2004, a co-firing test was carried out in the No. 2 Unit of Matsuura Thermal Power Station (Nagasaki Prefecture), and it was verified that the co-firing of woody biomass was technically feasible.

Encouraged by the result, we have been working on feasibility studies of co-firing biomass fuels in our power stations for their future commercial operation.

Woody biomass chips

● Utilization of Sewage Sludge (Biosolid) Fuel (Co-firing with Coal)

A biosolid fuel is produced by heating a mixture of sewage sludge from sewage treatment plants and discarded cooking oil, in order to remove the moisture. For heating, the oil-heat depressurization drying method is employed. The resulting fuel has approximately the same heating properties as typical coal. From August 2003 to March 2006, as the first such attempt in Japan, we conducted a test of co-firing biosolid fuels with coal in the Matsuura Thermal Power Station (Nagasaki Prefecture), and it was verified that biosolid fuels could be co-fired at the maximum co-firing ratio of 1%. In fiscal 2006 we began commercial operation in the Matsuura Thermal Power Station and are currently co-firing 1,800 tons of biosolid fuels annually.

Matsuura Thermal Power Station is the first commercial thermal power generation facility in Japan to be certified as a new energy facility under the Renewable Portfolio Standard (RPS) system (certification was received February 16, 2005).

Biosolid fuel

● Development of Biomass Fuel Production Technology

As well as biomass co-firing technologies at coal-fired power stations, we are developing technologies to produce a variety of biomass fuels. For biosolid fuels, we are currently developing a method of production of fuels from sewage sludge using low-temperature carbonization technology. Compared to conventional carbonization processes, the low-temperature method was successful in upgrading the heating value of the fuel by about 40%. We carried out demonstration tests in fiscal 2006, and in 2007 we expect to receive a technical certification for the application of this technology in the sewage industry.

Stable Operation of Geothermal Power Facilities

Geothermal power, which makes effective use of Japan's precious volcanic resources, is another energy source that emits almost no CO_2. We are working to ensure the stable operation of our Onikobe Geothermal Power Station (Miyagi Prefecture; 12,500 kW).

Onikobe Geothermal Power Station (Miyagi Prefecture)

Micro-Hydropower Generation

J-POWER is working on utilizing the untapped energy potential of micro-hydropower generation in a number of areas. Thus far we have provided design and construction supervision for a power station that makes use of an existing sediment control dam (Oita Prefecture), facilities that use irrigation channels (Tochigi Prefecture and Yamanashi Prefecture), and one that uses the public water supply system (Mie Prefecture).

Yokkaichi Bureau of Waterworks hydroelectric power station (Mie Prefecture, 320 kW), for which KDC Engineering Co., Ltd. provided design and construction supervision.

Utilization of the Kyoto Mechanisms

The J-POWER Group has been making proactive use of the Kyoto Mechanisms, particularly the development of CDM projects that can generate emissions credits before the first commitment period (2008–12) of the Kyoto Protocol. In addition, we are actively supporting other companies' efforts to utilize the Kyoto Mechanisms.

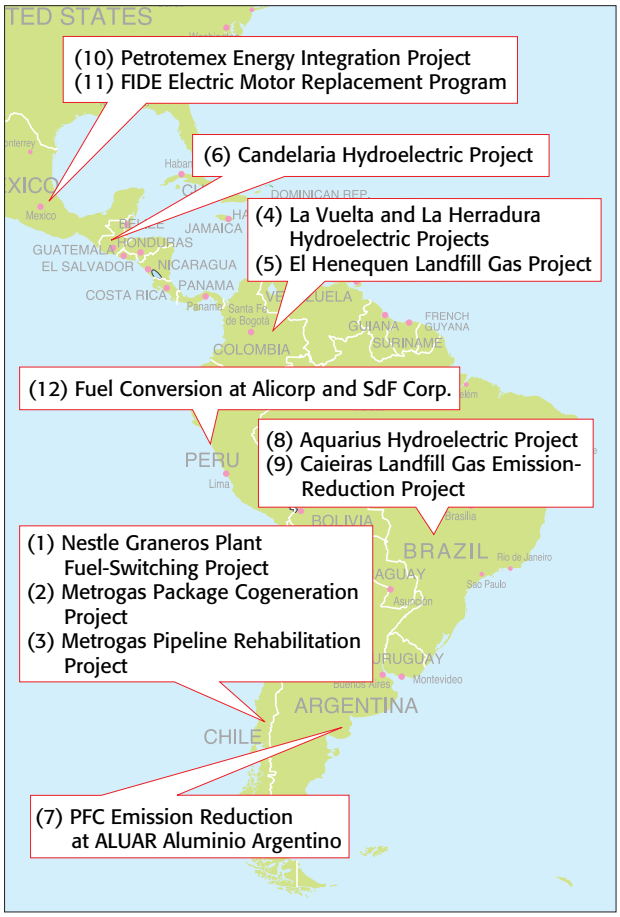
Overview of CDM Project Development

The Kyoto Protocol went into effect in February 2005, and detailed rules governing application of the Kyoto Mechanisms were formally adopted at the COP 11 and COP/MOP 1 meetings held in Montreal in November and December 2005. Even before the Kyoto Protocol went into effect, however, the J-POWER Group began moving proactively to take advantage of the Clean Development Mechanism (CDM). The reason for the focus on CDM is that while carbon credits will not be issued until 2008 under the other two Kyoto Mechanisms—Joint Implementation (JI) and emissions trading—credits can be issued before then under the CDM, which applies to activities undertaken from 2000 on.

In order to accumulate experience, we began by participating in a large number of small projects and assisting in activities that need to be carried out in order for a project to be registered as a CDM project, focusing on receptive Central and South American countries. As the date of the protocol's enforcement neared, we began to participate in large-scale projects as well.

Today the J-POWER Group is participating in 12 CDM projects in Central and South America. As the number of CDM projects registered with the CDM Executive Board has mounted—from four at the end of March 2005 to 146 a year later and 576 as of the end of March 2007—we have been applying ourselves diligently to the registration process. For six of the 12 projects, it was necessary to begin

■ **CDM Projects Involving the J-POWER Group**



■ **CDM Projects that J-POWER Group Helped Develop**

Country	Project name	Description	Notes
Chile	(1) Nestle Graneros Plant Fuel-Switching Project	Switch to natural gas in conjunction with renovation of facilities	Registered with CDM Exec. Board
	(2) Metrogas Package Cogeneration Project	Introduction of cogeneration for improved energy-use efficiency	
	(3) Metrogas Pipeline Rehabilitation	Rehabilitation of facilities for improved energy-use efficiency	
Columbia	(4) La Vuelta and La Herradura Hydroelectric Projects	Use of renewable energy sources	Registered with CDM Exec. Board
	(5) El Henequen Landfill Gas Project	Combustion of landfill gas to reduce greenhouse gases	
Guatemala	(6) Candelaria Hydroelectric Project	Use of renewable energy sources	Registered with CDM Exec. Board
Argentina	(7) PFC[a] Emissions Reduction at ALUAR Aluminio Argentino	PFC emissions reduction through improved aluminum production methods	
Brazil	(8) Aquarius Hydroelectric Project	Use of renewable energy sources	Registered with CDM Exec. Board
	(9) Caieiras Landfill Gas Emission-Reduction Project	Combustion of landfill gas to reduce greenhouse gases	Registered with CDM Exec. Board
Mexico	(10) Petrotemex Energy Integration Project	Improving energy-use efficiency through energy conservation, etc.	
	(11) FIDE[b] Electric Motor Replacement Program	Switch to high-efficiency motor for energy conservation	
Peru	(12) Fuel Conversion at Alicorp and SdF Corp.	Switch to natural gas in conjunction with renovation of facilities	

a. PFC: Perfluorocarbon, a type of CFC gas
b. FIDE: Mexico's Trust for Electric Energy Saving

by developing methodologies,* and four of these methodologies have been successfully registered with the CDM Executive Board. As of the end of March 2007, five J-POWER Group projects had been registered.

* The baseline methodology and monitoring methodology used in the Project Design Document (PDD) for CDM projects must be methodologies approved by the CDM Executive Board. For new kinds of projects, therefore, it is only possible to apply for registration after first developing a methodology and having it approved by the CDM Executive Board.

Major Fiscal 2006 Activities

CDM Projects

In fiscal 2006, two CDM projects were registered by the CDM Executive Board: the Aquarius Hydroelectric Project at the Aquarius Hydroelectric Power Station (4.2 MW) in Brazil and the La Vuelta and La Herradura Hydroelectric Project at the La Vuelta hydroelectric power station (11.7 MW) and La Herradura hydroelectric power station (19.8 MW) in Colombia.

Participation in Carbon Funds

As part of our ongoing effort to secure emissions credits efficiently through CDM and JI, the J-POWER Group contributes to the following carbon funds:

- Japan Greenhouse Gas Reduction Fund (JGRF)
- Dexia-FondElec Energy Efficiency and Emissions Reduction Fund

Feasibility Studies

With a view to identifying new JI and CDM projects, we carried out feasibility studies for landfill gas emissions reduction projects and projects to reduce methane emissions from livestock manure, both in China.

International Conferences

The J-POWER Group provided simultaneous Japanese interpreting as a language sponsor of Carbon Market Insights, an international conference on emissions trading held by Point Carbon, a Norway-based consultancy (March 2007).

In addition, we participated as an exhibitor in the Carbon Expo held by the International Emissions Trading Association (IETA) in May 2006.

Activities to Support Utilization of the Kyoto Mechanisms

The J-POWER Group is engaged in various activities to support utilization of the Kyoto Mechanisms by other Japanese businesses. For example, as the exclusive agent in Japan for the Norwegian firm Point Carbon, a world leader in information, analysis, and forecasts concerning the emissions trading market, we offer information services targeted to specialists. We also operate a Web-based service called GHG Solutions, which offers information and solutions targeted to Japanese businesses interested in global warming issues.

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The Kyoto Mechanisms and J-POWER's CO_2 Intensity Target

Such Kyoto Mechanisms as CDM and JI allow industrially developed nations to earn carbon credits to offset their own emissions by taking part in emissions reduction projects in other countries. CDM and JI were adopted by the Kyoto Protocol as a way of achieving the emissions reduction targets at the lowest possible cost. This makes it possible for a country like Japan, which has already pushed energy conservation to the point where further reductions in greenhouse gas emissions can only come at considerable cost, to pursue CO_2 emissions reductions more cost-effectively, at the global level, by implementing programs to reduce CO_2 emissions in developing countries and elsewhere. These mechanisms are crucial to minimize the economic burden on Japan and keep domestic industry internationally competitive.

With this in mind, J-POWER has been working actively to earn and use credits via CDM and JI. In evaluating the J-POWER Group's progress toward its CO_2 intensity reduction target, we give J-POWER's overseas CDM and JI projects the weight they deserve by applying the credits earned to offset J-POWER Group CO_2 emissions.

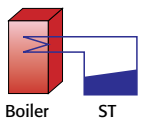
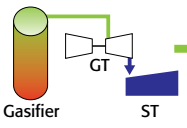
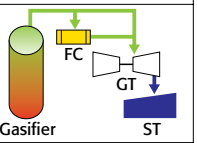
Development, Transfer, and Dissemination of New Technologies

Aiming for significant improvement in the efficiency of coal use, the J-POWER Group is pushing forward with the development of oxygen-blown coal gasification technology, which can be effectively combined with CO_2 capture technology. We are also testing technology for capture of CO_2 from pulverized-coal thermal power stations and conducting research into geological storage of CO_2.

High-Efficiency Coal Gasification Power Generation (IGCC, IGFC)

By converting coal to gas and combining different methods of power generation, it is possible to achieve far greater generation efficiency than conventional thermal power generation using pulverized coal, and this in turn leads to lower CO_2 emissions per unit of electricity generated. In pulverized-coal-fired power stations, electricity is generated by steam turbines alone. But an integrated coal gasification combined cycle (IGCC) system uses two forms of power generation, gas turbines and steam turbines, while an integrated coal gasification fuel cell combined cycled (IGFC) system adds a fuel cell to this mix to yield triple combined cycle generation. IGFC is considered the ultimate high-efficiency coal use technology, and the J-POWER Group is leading the world in its development. When these efforts bear fruit, it should be possible to improve generation efficiency to be approximately 60% and reduce CO_2 emissions by approximately 30% compared with conventional pulverized coal-fired power generation. With this goal in mind, the J-POWER Group is currently involved in the Multi-Purpose Coal Gasification Technology Development (EAGLE) project, as well as in research and development of a solid oxide fuel cell (SOFC).

■ **Next-Generation Coal-Fired Thermal Power Generation Technologies**

Latest pulverized-coal-fired thermal power (USC)	Integrated coal gasification combined cycle (IGCC at 1,500°C)	Integrated coal gasification fuel cell combined cycle (IGFC)
		
Gross thermal efficiency: 42% Net thermal efficiency: 40% (Comparative basis)	Gross thermal efficiency: 51–53% Net thermal efficiency: 46–48% CO_2 reduction: -15%	Gross thermal efficiency: more than 60% Net thermal efficiency: more than 55% CO_2 reduction: -30%

ST: steam turbine GT: gas turbine FC: fuel cell

Multi-Purpose Coal Gasification Technology Development (EAGLE)

To make technologies like IGCC and IGFC a practical reality, coal must be efficiently converted to gas, and the gas must be thoroughly cleansed of such matter as dust and sulfur.

Through the EAGLE pilot test (fiscal 2002 through fiscal 2006), which was carried out under a joint research project with the New Energy and Industry Development Organization (NEDO), we verified the basic performance and long-term reliability of such technology and obtained the data required to build a larger scale plant. For the next three years, beginning in fiscal 2007, we will be carrying out EAGLE Step II with a view to improving the performance of our gasification technology and verifying the applicability of the technology for separating CO_2 from synthesis gas as a way of countering global warming.

EAGLE Pilot Test Facility (J-POWER Wakamatsu Research Institute)

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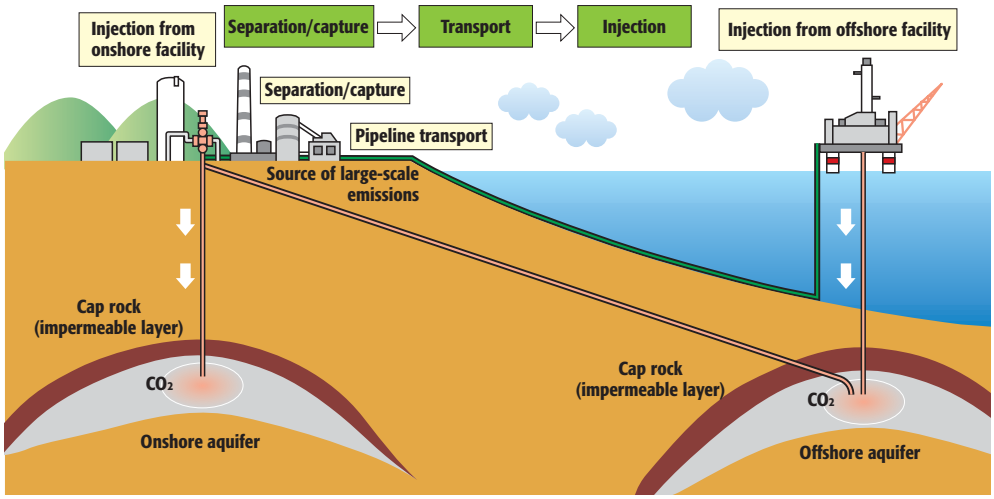
Solid Oxide Fuel Cells (SOFC)

In fuel cell power generation, hydrogen produced from gasified fuel reacts electrochemically with the oxygen in the air to produce electricity. Unlike power generation processes in which the heat generated by burning fuel is converted to electrical energy, this process generates electrical energy directly from the feedstock, resulting in low energy loss and high generation efficiency.

The SOFC under development by the J-POWER Group is made of an ion-conductive ceramic and produces high heat of 900°C–1,000°C during the electrochemical reaction. By using the hot exhaust in combination with gas turbines in a hybrid system, it is possible to achieve higher generation efficiency than with other types of fuel cells.

Testing of one of the world's largest capacity atmospheric-pressure SOFC systems, with an output of around 150 kW, is now under way at the Chigasaki Research Institute.

■ Illustration of CO_2 Storage Technology



Source:
Reference material for March 14, 2006, meeting, Global Environment Commitee, Central Environment Council.

As the next step toward development of a commercially viable system, study has begun on a large-scale demonstration trial of oxygen-blown coal gasification. We see this as an important step toward a further improvement in efficiency, which will enable the development of IGFC power generation, and a solution to global warming.

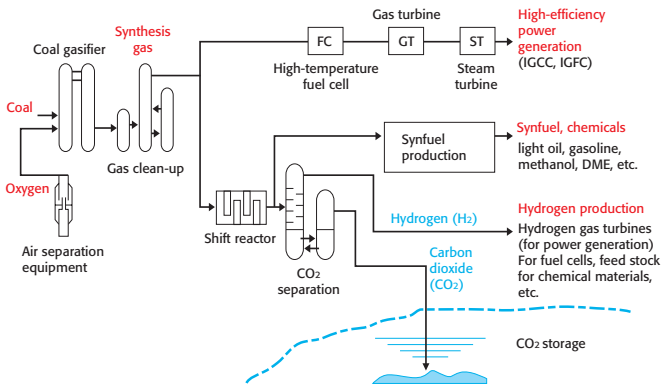
CO_2 Capture and Storage (CCS) Technology

● Capture from Synthesis Gas Derived from Oxygen-Blown Coal Gasification

In the EAGLE Pilot Test, due to the use of the oxygen-blown method, the derived gas produced by coal gasification has low nitrogen content and consists primarily of carbon monoxide (CO) and hydrogen (H_2). By converting the CO to CO_2 using the shift reaction ($CO + H_2O \rightarrow CO_2 + H_2$) and increasing the concentration further, the CO_2 can be captured efficiently, which offers an advantageous in terms of working toward zero CO_2 emissions. Taking advantage of this feature, we intend to build a CO_2 capture test facility at the EAGLE Pilot Test plant and carry out verification tests.

After CO_2 separation, the synthesis gas, having a high concentration of hydrogen, is suitable for use in clean fuel-cell power generation or as feedstock for the chemical industry. In addition, it is possible to produce synthetic fuels such as methanol or dimethyl ether (DME) from the derived gas. In this way, coal gasification technology can contribute to the stabilization of Japan's energy supply through expanded use of coal as well as helping protect the global environment.

■ Possibilities for Oxygen-Blown Gasification Technology



● Capture from Pulverized-Coal-Fired Power Stations

At present, pulverized-coal thermal power is widely employed as a coal-fired power generation system, and separation and capture of the CO_2 in the flue gas after combustion could become an important method for reducing CO_2 emissions in the future.

At Matsushima Thermal Power Station, we have been collaborating with Mitsubishi Heavy Industries Ltd. in demonstration trials using the chemical absorption method. Through operating trials carried out in fiscal 2006, we verified the applicability of this technology to existing pulverized-coal thermal power facilities by examining the influence of trace substances in the flue gas on the test facilities.

In addition, we are currently involved in preparatory study to develop oxyfuel technology, in which oxygen instead of air is supplied to boilers for combustion, in connection with a project being planned in Australia to demonstrate an integrated system encompassing CO_2 separation, capture, and geological storage.

CO_2 separation and capture demonstration test equipment at the Matsushima Thermal Power Station No. 2 unit

● Research on Geologic Storage of CO_2

J-POWER is involved in a three-year project beginning in fiscal 2005 to study the geological structure of an area near a source of large-scale CO_2 emissions in order to design survey and assessment methods to estimate the amount of CO_2 that can be geologically stored there (commissioned by the Engineering Advancement Association of Japan). We are also participating in the project "Development of Technology for CO_2 Georeactor Sequestration of Flue-Gas CO_2" from 2007 by performing chemical reaction simulation as part of the study on CO_2 mineral trapping at the Ogachi geothermal field (commissioned by the Research Institute of Innovative Technology for the Earth).

In addition, working with the National Institute of Advanced Industrial Science and Technology, we are developing a reservoir simulator for supercritical CO_2 behavior and a simulation analysis method incorporating geophysical monitoring techniques.

Note: For data on the number of patents that J-POWER owns, including those relating to research on global environmental issues, see page 78 in the Materials section.

Reduction of Emissions of Greenhouse Gases Other Than CO_2

The Kyoto Protocol of the Framework Convention on Climate Change covers six types of greenhouse gases. The J-POWER Group is working to ensure adequate control not only of CO_2 but also of other greenhouse gases (SF_6, HFC, PFC, N_2O, and CH_4) and is doing its utmost to reduce emissions of these gases. We are also taking appropriate steps to control specified CFCs and halons that deplete the ozone layer.

Measures for Reducing Emissions of Other Greenhouse Gases

The greenhouse gases covered by the Kyoto Protocol include five types in addition to CO_2. With respect to emissions by the electric utility industry, the contribution of these gases to global warming is about 1/400 that of CO_2.*

Sulfur hexafluoride (SF_6) is used in a confined state and is therefore not released into the atmosphere during use. However, partial release can occur when equipment is inspected or discarded. We are working to minimize such emissions through consistent recovery and reuse. In fiscal 2006, our recovery rate for SF_6 was 99%.

* Federation of Electric Power Companies of Japan, Environmental Action Plan by the Japanese Electric Utility Industry (September 2006).

■ **Measures for Reducing Emissions of Other Greenhouse Gases**

Gas	Applications and measures for reducing emissions
Sulfur hexafluoride (SF_6)	Used for insulation in gas insulation equipment. The J-POWER Group works to reduce emissions through rigorous recovery and reuse during inspection and disposal. In fiscal 2006, our rate of recovery and reuse was 99%
Hydrofluorocarbons (HFCs)	Used as refrigerant in air-conditioning equipment, etc. Their use is expected to increase as they are adopted to replace government regulated CFCs. The J-POWER Group works to reduce emissions through cooperative efforts to recover and reuse such gases, as well as preventing leaks during installation and repair.
Perfluorocarbons (PFCs)	Not stocked by J-POWER Group companies.
Nitrous oxide (N_2O)	The J-POWER Group is working to keep emissions to a minimum by improving thermal efficiency of coal-fired power stations. (In fiscal 2006, emissions of N_2O totaled approximately 1,580 t.)
Methane (CH_4)	As CH_4 concentrations in flue gases from coal-fired power stations are below average atmospheric concentrations, emissions are effectively zero.

Protecting the Ozone Layer

The ozone layer in the upper stratosphere (about 20 km–40 km above the earth) plays an important role in protecting life by absorbing harmful ultraviolet rays. There are concerns that specified chlorofluorocarbons (CFCs) and halons can destroy the ozone layer, resulting in serious damage to human health and to the ecosystem. For this reason reductions in the production and consumption of these substances have been mandated internationally.

As a user of these substances, we are not subject to direct regulation. Nevertheless, we periodically monitor our stocks and consumption and work hard to maintain appropriate controls and to limit emissions.

■ **Stocks and Consumption of Specified CFCs and Halons**

Category	As of year-end, fiscal 2006 (tons)				Application
Specified CFCs	Stock	1.8	Consumption	0.0	Refrigerant
Halons	Stock	4.3	Consumption	0.0	Fire extinguisher
Other CFCs, etc	Stock	9.9	Consumption	0.3	Refrigerant
Total	Stock	16.0	Consumption	0.3	
CFC substitutes (HFCs)	Stock	8.4	Consumption	0.0	Refrigerant

About Specified CFCs and Halons

Ozone-depleting substances, such as specified CFCs and halons, are chemically stable compounds that contain chlorine or bromine. Like HFCs, PFCs, and SF_6, they also have a powerful greenhouse effect.

Under the Ozone Layer Protection Law (Law Concerning the Protection of the Ozone Layer through the Control of Specified Substances and Other Measures), the production and consumption of substances targeted for regulation under the Montreal Protocol, referred to as "specified substances," is being phased out according to a regulatory schedule. As a result, halon production had completely halted by the end of 1993, and production of specified CFCs had stopped by the end of 1995. The production of other ozone-depleting substances is also being phased out.

Efforts to Reduce Environmental Load during Distribution

Reducing Environmental Load Using Larger Coal Carriers

In fiscal 2006, approximately 19 million tons of coal were imported to Japan from overseas (Australia, China, Indonesia, etc.). We have contracted with shipping companies to use larger dedicated bulk carriers (approximately 90,000–150,000 t), and three new coal carriers were completed in fiscal 2006.

The use of larger coal carriers cuts back on the amount of fuel oil consumed per unit of coal transported and reduces the environmental load of transport (emissions of CO_2, sulfur oxides, nitrogen oxides, etc.).

Reducing Environmental Load by Marine Transport of Coal Ash

Coal ash is the residue generated when coal is burned in coal-fired thermal power stations.

In fiscal 2006, J-POWER used marine transport to ship some 1.31 million tons of coal ash from its power stations to cement plants or other locations around the country, so that it could be put to use as a raw material for cement, concrete admixture, land reclamation material, and so on.

Approximately 90% of the coal ash we ship is transported by dedicated carriers and other ships. The use of maritime transport reduces the environmental load of shipping, such as CO_2 emissions, as compared with truck or train transport.

Dedicated coal-ash carrier Shoyo-maru

Energy Conservation at Our Offices

Energy Conservation Activities

As part of our effort to prevent global warming, we implement rigorous energy-saving policies at all our business sites, including lights off during lunch break and reduced power supply to equipment on standby. In addition, we are actively installing energy-saving equipment in every new office we build.

In terms of Japan's overall efforts to combat global warming, more intensive energy conservation is required not only of the industrial sector but of the consumer and transportation sectors as well. To do its part, the J-POWER Group has adopted the group-wide goal of reducing office electricity use and office fuel use by at least 4% from the fiscal 2006 levels by fiscal 2010 in order to take our office energy conservation efforts to the next level. By adding this target, we intend to promote new efforts in addition to the initiatives already in place.

Energy Conservation at J-POWER's Head Office

J-POWER's Head Office building consumes the most energy of any office in the J-POWER Group. For this reason we have developed an energy conservation policy for the head office that includes use of exhaust heat from air conditioners and recovery of exhaust heat from computer rooms, installation of regenerative heat pumps, and strict enforcement of a "lights off when not in use" policy. As a result of these and other energy-conservation efforts, 1.78 million kWh of electricity were consumed for lighting purposes at the head office in fiscal 2006.

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Energy Conservation Services

Our activities center on electricity supply-side measures, and we are also keenly aware of the importance of demand-side management. For this reason we offer energy auditing and consulting services, as well as sales and installation of energy-saving equipment, both domestically and overseas.

Domestically, we have offered energy audits and carried out energy-saving conversions for national and local governments, universities, elementary, middle, and high schools, hospitals, office buildings, shopping centers, and so on. As of the end of fiscal 2006, we had performed about 77 energy audits. We also implemented an energy-saving conversion of air-conditioning at a university (designed by J-POWER, installed by JP Hytec) that reduced the air-conditioning load by more than 30%. We also carry out technical evaluation and sales support for excellent energy-saving products (including the "EcoSylphi" for mitigating imbalance of indoor temperatures, high-efficiency ballast and fluorescent lamps, etc.).

Efforts Relating to Local Environmental Issues

Through our power-generation activities in various locales, the J-POWER Group understands that the basis for harmony with local communities is to ensure the safety and preserve the living environment of the residents by taking measures to minimize the environmental impact of our operations.

Reduction of Environmental Load

To minimize the impact of our activities on air and water quality and other aspects of the local environment, we use the latest technology and know-how at our coal-fired thermal power stations and other facilities to prevent air and water pollution, noise and vibration, and other environmental problems.

Air Pollution Control

Sulfur oxides (SOx), nitrogen oxides (NOx), and soot and dust are generated as a result of coal combustion at J-POWER's coal-fired thermal power stations. To reduce these emissions we have improved combustion methods and installed flue-gas treatment equipment, including desulfurization and denitrification systems and electrostatic precipitators. Although the performance of equipment varies with its date of installation, at each facility we have used the newest technology available at the time to remove pollutants with maximum efficiency.

This equipment operates automatically with the aid of monitoring devices that continuously measure the content of flue gas. In addition, human operators monitor the equipment 24 hours a day to ensure a swift response in the event of any malfunction.

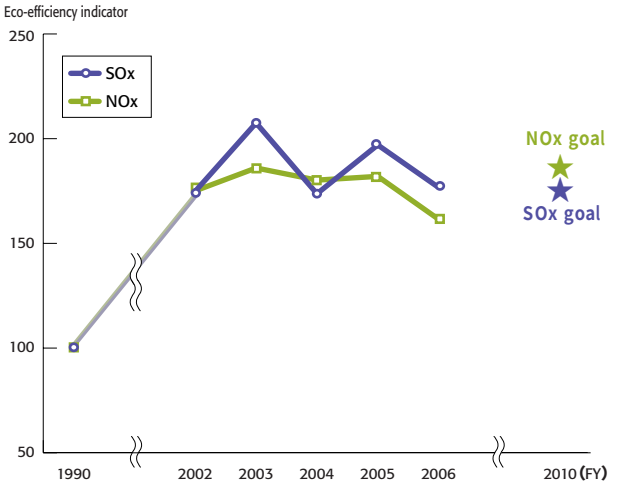
Owing primarily to a drop in the rate of utilization at some of our power stations, J-POWER's SOx and NOx emissions intensity for fiscal 2006 rose from the previous year.

■ **FY 2006 Performance (J-POWER)**

Substance	Equipment efficiency (removal efficiency)	Emissions	Emissions intensity
SOx	71%–99.7%	9,800 tons	0.20 g/kWh
NOx	65%–88%	27,800 tons	0.58 g/kWh
Soot and dust	99% (design value)	900 tons	0.02 g/kWh

Notes: 1. Emissions intensity figures have been calculated using the electric power sold by coal-fired thermal power stations as the denominator.
2. Emissions of soot and dust are calculated on the basis of measurements taken monthly.

■ **J-POWER Eco-efficiency Indicator for SOx and NOx**



Note: For the eco-efficiency indicator, 100 = FY 1990 eco-efficiency (electric power sold ÷ SOx or NOx emissions).

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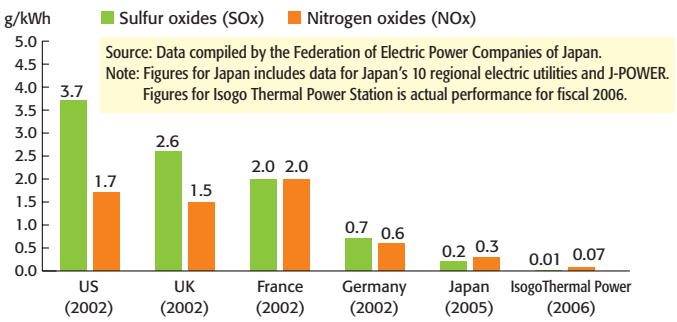
Emissions Performance at the Isogo Thermal Power Station

Emissions of SOx and NOx per unit of electricity generated by thermal power generation in Japan's electric industry have decreased sharply since the mid-1970s owing to improvements in both fuel and equipment. As a result, today intensity for both substances is a fraction of that found in the other major industrial countries.

The Isogo Thermal Power Station No. 1 Unit has achieved particularly low levels, as indicated by the figure at right, thanks to the adoption of cutting-edge environmental technology.

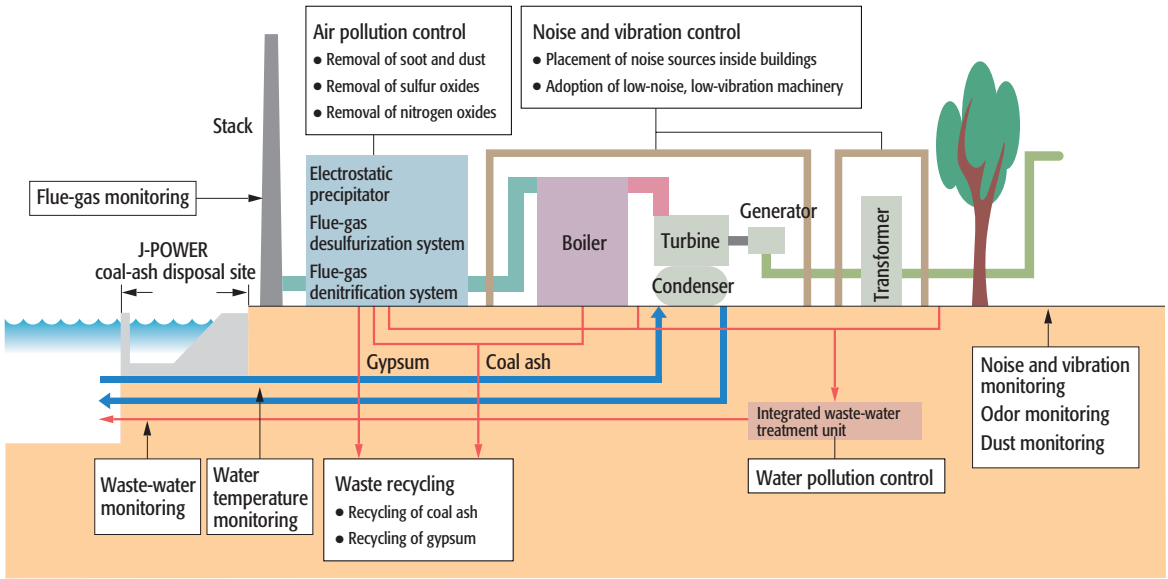
Note: Figures for countries refer to emissions intensity for coal-, oil-, and gas-fired thermal generation combined.

■ **Comparison of SOx and NOx Emissions Intensity for Thermal Power Generation**



Source: Data compiled by the Federation of Electric Power Companies of Japan.
Note: Figures for Japan includes data for Japan's 10 regional electric utilities and J-POWER. Figures for Isogo Thermal Power Station is actual performance for fiscal 2006.

■ **Examples of Environmental Conservation Measures at Coal-Fired Power Stations**



Water Pollution Control

We install waste-water treatment systems in all our coal-fired power stations and make sure that water discharged from desulfurization units, waste water from offices, and other effluents are appropriately treated.

Metals and organic substances contained in waste water are removed through coagulation, precipitation, filtration, and other methods in each facility's on-site integrated waste-water treatment unit. Treated water is routinely monitored by automatic measuring equipment and analyzed periodically to verify that all substances are well within the regulatory limits established under the Water Pollution Control Law and environmental conservation agreements.

Noise and Vibration Control

We work hard to prevent undue noise and vibration from boilers, turbines, exhaust fans, and other equipment by installing low-noise, low-vibration machinery in our coal-fired power stations and by keeping such equipment inside buildings. With regard to outdoor equipment at our coal-fired and hydropower stations, in addition to using low-noise low-vibration equipment, we also install soundproof covers and barriers as needed.

Noise and vibration levels are periodically measured at the boundaries of power station sites to ensure that they meet regulatory standards.

Greening Measures

At our coal-fired power stations, we plant trees (primarily evergreen), grass, and seasonal flowers to cover at least 20% of the site with greenery. These green areas provide habitat for birds, insects, and other small animals.

Odor Control

Because ammonia is used in such equipment as the denitrification systems of coal-fired thermal power stations, we have put in place rigorous safeguards to ensure that it has no impact on the surrounding area. These include periodic inspection, performance testing, and routine checking of equipment that makes use of ammonia. In addition, care is taken to avoid leakage of ammonia from receiving or storage facilities. Odor levels are periodically measured at the boundaries of power station sites to confirm that they meet regulatory standards.

Measures against Thermal Water Discharge

Coal-fired power stations intake seawater to cool steam used for power generation and release it as thermal water discharge. To prevent any negative impact on marine life in the vicinity, we control thermal water discharge with intake-discharge processes adapted to the conditions of the plant site. The temperature of thermal water discharge is monitored around the clock to ensure that it remains within the limits established by environmental agreements.

Measures against Coal Dust

At our coal-fired power stations we implement various measures to prevent the dispersion of dust when coal is handled, including the use of closed conveyor belts and indoor coal storage, as well as wind-shielding and spraying as dictated by topographical and weather conditions.

Measures at Coal-Ash Disposal Sites

At coal-fired power stations that are equipped with sites for landfill disposal of coal ash, soil is spread over the surface to prevent dispersion of the coal ash. Leachate treatment equipment is used to treat leachate as needed.

Measures against Soil Pollution

From fiscal 2004 through 2006, we conducted studies at all J-POWER Group domestic sites (370 locations, including thermal power stations, hydroelectric power stations, transmission system facilities, offices, and company-owned housing) and determined that all sites were free of soil or groundwater contamination. We will continue working hard to ensure that such pollution does not occur in the future.

Management of Chemical Substances

Storage and management of chemicals and other substances is rigorous and in full compliance with the law. With regard to PCBs, we are following detoxification treatment procedures in conformance with Japan's regional waste-management program.

PRTR (Pollutant Release and Transfer Register) Law

The PRTR system is a mechanism for reporting and disclosing the level of chemical emissions and the transfer of chemicals to the environment through waste materials. The legislation was enacted in 1999, and monitoring and reporting of the targeted substances began in 2001.

While the J-POWER Group uses chemical substances for painting and coating, treatment of intake water at thermal power stations, and other purposes, we have traditionally managed these substances carefully by monitoring and recording the quantities procured and used. We are committed to minimizing the use of such chemicals and to controlling and managing those we use appropriately, complying with all established procedures. With respect to dioxins, we are working hard to reduce emissions through correct management and oversight of facilities.

Measures to Reduce Dioxins

The J-POWER Group operates incinerators ("specified facilities" under the Law Concerning Special Measures against Dioxins) at three business sites for such purposes as carbonizing driftwood. At these facilities we implement appropriate maintenance and management procedures, such as sorting prior to treatment and combustion temperature control. Under the above-mentioned law, incineration facilities must monitor the concentration of dioxin in flue gas at least once a year and report it to the local government. In fiscal 2006, all our incinerators met emissions standards.

Management and Treatment of PCBs

PCBs have been widely used as insulators in transformers and other electric devices because of their excellent heat-resistance and insulation properties. Because of their toxicity, however, manufacture and import were outlawed in 1974, and all those in possession of such substances were required to observe stringent storage and management requirements. In July 2001, the Law Concerning Special Measures Against PCB Waste came into force, and appropriate treatment of waste containing PCBs became mandatory.

The J-POWER Group began treatment of these substances under the regional waste-management program in February 2005, and as of March 2007 we had treated approximately 3 kl of insulating oil (containing high concentrations of PCBs). We currently have approximately 136 kl of insulating oil (as of March 2007). This is stored and managed under stringent conditions in 29 warehouses and similar facilities that we have established nationwide.

Trace PCB Contamination

In July 2002, the Japanese government announced that extremely low levels of PCBs (under 5.0 ppm in about 60% of the cases) had been detected in products that had been accidentally contaminated by heavy electrical machinery following the prohibition on PCB use. We are diligent in enforcing stringent management procedures for machinery that uses insulating oil in which PCBs have been detected and in submitting the paperwork required by the relevant laws and regulations. Meanwhile, a national commission has investigated the causes of the contamination and will be deliberating measures for treating PCB-contaminated material. We will continue to respond to this issue in a conscientious and appropriate manner.

Asbestos

The J-POWER Group has adopted a policy for dealing with asbestos, under which we have conducted health checks and surveys of asbestos use in our equipment and buildings and undertaken appropriate countermeasures. According to the results of our surveys, there are no active or retired J-POWER Group employees who have been designated eligible for workers' compensation for health problems or death from asbestos, or who are in the process of applying for such compensation.

Where we have confirmed the presence of asbestos, we are systematically removing it and switching to alternatives while effectively managing the process to prevent dispersal of asbestos dust. Asbestos-containing material that has been removed is disposed of in a manner consistent with the Waste Management and Public Cleansing Law.

■ **Total PRTR-Substance Release and Transfer Volumes (FY 2006)**

Chemical	Use	Volume handled	Volume released	Volume transferred as waste
26: Asbestos	Insulation material	0.7 t/y	–	730 kg/y
63: Xylene	Coating for machinery and equipment	9.8 t/y	2,700 kg/y	–
177: Styrene	Coating for machinery and equipment	1.6 t/y	1,600 kg/y	–
179: Dioxins	Waste incinerators	–	8.9×10^{-8} mg-TEQ/y	2.9×10^{-4} mg-TEQ/y
253: Hydrazine	Chemical for feed-water treatment	1.8 t/y	–	–
307: Poly (oxyethylene) alkyl ether	Prevention of coal-ash dispersal (in conveyors)	6.9 t/y		6,900 kg/y

Notes:
1. Figures represent total release and transfer volumes for all business sites handling 1 ton or more per year of a Class 1 designated chemical substance or 0.5 ton or more per year of a specific Class 1 designated chemical substance.
2. For dioxins, figures represent total emissions from waste incinerators.

Efforts to Protect the Natural Environment and Biodiversity

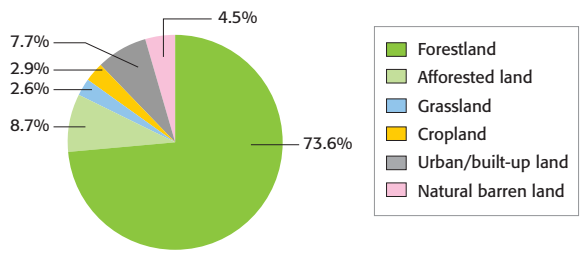
When planning a new power station or other construction, the J-POWER Group carries out environmental impact assessments and strives to minimize the impact on the environment, incorporating the views of local residents in our planning. During construction, we implement environmental measures and carry out monitoring toward the goal of coexisting harmoniously with the environment. In addition, we work to preserve the natural environment and biodiversity of the area in our operation and maintenance of the facility.

Efforts to Preserve Our Forests

J-POWER owns approximately 4,600 hectares of forest land around the country, primarily in the vicinity of our 59 domestic hydroelectric power facilities. In fiscal 2006, we used aerial photography to carry out a vegetation survey of all company land (excluding thermal power stations, etc.). The survey determined that about 90% of company-owned land is wooded land with a high degree of natural vegetation—either natural forest or wooded land close to natural forest. Furthermore, the ratio of forestland within J-POWER's company-owned natural lands (dry land excluding the flooded area of reservoirs) is 74% (see diagram below), roughly equivalent to that of Japan's natural parks (69%) or quasi-national parks (61%).

As this indicates, J-POWER's natural lands are generally wooded lands, of which the bulk is relatively close to its natural state. It can be inferred that these are areas with a high degree of biodiversity, and we intend to work to preserve them.

■ Land Cover Breakdown of Company-Owned Land



Harmonious Coexistence with Rare Species

At J-POWER Group we are aware of the need to preserve biodiversity, and are working to ensure that our construction and operation of facilities do not threaten rare species.

● Japanese Golden Eagle

The Japanese golden eagle, ranked as "endangered IB" in the Environment Ministry's Red Data Book, inhabits the area around Okutadami Dam and Otori Dam.

In the maintenance and operation of these dams, we are doing our utmost to avoid outdoor work during the Japanese golden eagle's nesting season.

If eagle nesting activity is confirmed among the eagles that have been determined to nest near the dam, and if work needs to be carried out in the vicinity, we take precautions to minimize the number of vehicles and the noise level, taking into account the advice of local ornithologists, so as to minimize the impact on nesting activity.

Young Japanese gold eagle
(photographed July 18, 2000)

● Blakiston's Fish-owl

Among the inhabitants of the Tokachi district of Hokkaido Prefecture is Blakiston's fish-owl, ranked as "endangered IA" in the Japanese Environment Ministry's Red Data Book.

We are taking care to plan and carry out work in the area during times other than the nesting season to minimize the impact on the owl population.

Blakiston's fish owl
(Photo: Kushiro Zoo)

● Northern Japanese Macaque and Other Rare Species

Ohma Main Transmission Line, now under construction, will extend 61 km, stretching from the Ohma Nuclear Power Station (Ohma-machi), scheduled to be built in Shimokita-gun, Aomori Prefecture, to Tohoku Electric Power Company's Higashidori Nuclear Power Station (Higashidori Village). During construction of the transmission line, it has been determined that the area bordering the planned route is a rich natural environment populated by various rare species of wildlife.

Among these is the northern Japanese macaque, designated a protected species. Since 1997 we have been soliciting the opinions of experts and incorporating the results in measures implemented during construction to keep the impact of power-line construction on Japanese macaques to an absolute minimum.

In addition to Japanese macaques, the area around the planned route is known to be home to a number of endangered birds, including the northern goshawk and the mountain hawk-eagle. As with the Japanese macaque, we are taking precautions to minimize the impact on the

growth and development of these rare bird species.

Northern Japanese macaque (April 18, 1999)

Wetland Restoration

Plans connected with the Okutadami-Otori Hydro Power Expansion Project (Fukushima and Niigata prefectures), called for rock generated during excavation to be used to fill in land on the left bank downstream of the Okutadami Dam. However, the area to be filled hosted an ecosystem that depended on wetlands within a mountain environment. The solution arrived at was to create another wetland to substitute for the area to be filled in so that the plan could go forward while preserving the wetland ecology. To preserve the wetland, meticulous attention was paid, allowing the original wetland environment and the substitute environment to exist side by side for as long as possible, transplanting flora carefully, and encouraging wildlife to migrate naturally. In fiscal 2005, this project received the Japan Society of Civil Engineers Environment Award.

Since then, we have confirmed the continuous presence of precious dragonfly species in the restored wetland area and the newly created pond downstream from it. In fiscal 2007, we plan to carry out a survey to determine changes in the flora and fauna since the pond was created.

Pond Oike created next to the substitute wetland

Sign explaining the substitute wetland

Hydroelectric Power and Harmony with the River Environment

Reservoir Water Quality Management

Typhoons or torrential rains can send large amounts of muddy water flowing into dam reservoirs, where it builds up. The release of water for power generation purposes can then lead to prolonged river turbidity.

For this reason, we are constantly monitoring the water quality of reservoirs by making measurements using turbidimeters and carrying out water quality analyses on water samples. In this way we are able to discharge turbid water quickly or, at dams where turbidity threatens to become chronic, implement appropriate countermeasures, such as installation of surface-water intake systems that enable the intake of the relatively clear water at the surface.

At sites where the problem of turbid water is severe, we are taking preventive measures by cooperating with the national and prefectural governments in forest management and afforestation programs.

Control of Reservoir Sediment

Each year large quantities of earth flow into dams from upstream and are deposited there as sediment. To avoid damage from flooding when rains cause the water level to rise, we control sediment by dredging to remove it or move it to another area of the reservoir.

River Maintenance Discharge

Downstream from power station dams, river flow falls off between the dam and the generator outlet. For this reason, we carry out river maintenance flow discharge, in consultation with the Ministry of Land, Infrastructure and Transport and other relevant agencies, to preserve a normal flow of the river. As of the end of fiscal 2006, such measures were being implemented at 30 power stations over 527 km of river.

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Wakamatsu Research Institute Award from the Ministry of Environment

As one of our efforts oriented to biodiversity, Wakamatsu Research Institute (Fukuoka Prefecture) has equipped its service buildings with rooftop gardens with the aim of creating a biotope network that connects with the adjoining natural environment, such as mountain forests. Another goal is to give these areas the function of "classrooms" for the kind of energy and environmental education to which J-POWER Group is committed, by using natural energy such as wind and solar power. The rooftop garden facilities of the Wakamatsu Research Institute, together with those of the Wakamatsu Environmental Research Center of JPec in charge of construction and management received the Minister of Environment Prize of the first prize for Rooftop Greening Technology of the fifth annual Competition for Specialized Greening Technology for Rooftops, Wall Facings and New Green Spaces sponsored by the Organization for Landscape and Urban Green Technology Development.

Rooftop garden at the J-POWER Wakamatsu Research Institute

Environmental Assessment and Monitoring

The J-POWER Group carries out environmental assessments (environmental impact assessments) when planning for the construction of a new power station or the expansion of an existing one. We make a survey of the current state of the area's natural environment (air quality, water quality, soil quality, ecology, etc.) and social environment (industry, land use, traffic, etc.) and predict the impact that the siting of a power station will have on the surrounding area. During the process, we listen to the views of local residents and incorporate them in our plan.

After a power station starts operating, we continue monitoring the environment for a certain period of time to ensure that the impact on the environment falls within the parameters of our predictive assessment.

● Environmental Conservation Measures during Preparatory Works of Ohma Nuclear Power Station

The J-POWER Group is taking appropriate measures to protect the environment in carrying out preparatory works of Ohma Nuclear Power Station as outlined in the Ohma Nuclear Power Station Environmental Impact Assessment. We have also adopted an environmental management system (EMS) and are proceeding with measures to protect, improve, and enhance the environment.


Survey of rare species

In addition, since preparatory construction work began in April 2000, we have been monitoring air quality, noise, vibration, and water quality. We are also conducting a status survey of rare species inhabiting the area around the site of the planned power station.

The results of the survey are made available for public inspection along with the results of our coastal water quality survey.

● Environmental Measures during Construction of the Isogo New No. 2 Unit

The J-POWER Group is taking appropriate measures to protect the environment during construction of the new No. 2 unit of the Isogo Thermal Power Station as outlined in the Environmental Impact Assessment for the Isogo Thermal Power Station (New No.1 and No. 2 Units) Renewal Plan. We have also adopted an environmental management system (EMS), under which we are working to protect, improve, and enhance the environment.

In addition, we are carrying out environmental monitoring of air quality, noise, vibration, and water quality, including coastal waters, in accordance with our Plan for Follow-up Study in Connection with the Isogo Thermal Power Station (New No. 1 and No. 2 Units) Renewal Plan.

Finally, to ensure that J-POWER Group's policies for protecting the environment are correctly transmitted to our construction contractors, we have prepared a Contractor's Manual, which contractors are required to follow. We also provide environmental education periodically.

■ **Ohma Nuclear Power Station Environmental Measures**

Focus of measures		Content
Protection of terrestrial animals and vegetation		• Preserving about 30% of site unaltered to protect rare species, etc. • Protecting small animals' migratory paths by constructing crossing tunnels under roads and gently sloping ditches along roads to allow animals to climb out
During construction	Water pollution	• Installing silt protectors in coastal waters and monitoring water quality • Neutralizing the chemical effects of concrete emplacements in seawater • Channeling runoff into temporary settling ponds at construction sites and releasing clear supernatant water
	Noise/vibration	• Selecting low-noise, low-vibration machinery • Implementing anti-noise/vibration measures as necessary
	Disposal/handling of loose earth and rock during construction	• Using loose earth and rock generated by excavation and dredging for reclamation, backfill, and embankments; using surplus earth from construction to build a mound on an on-site disposal area that is incrementally greened
	Dust	• Installing washing facilities for construction vehicles • Spraying and cleaning construction roads • Installing anti-dust barriers and nets
	Traffic noise	• Designating routes for construction vehicles • Reducing road traffic through use of marine transport
	Industrial waste	• Disposing of waste appropriately in compliance with law • Chipping and recycling cleared timber and roots as mulch, etc. for greening of site

■ **Isogo New No. 2 Unit Environmental Measures**

Focus of measures	Content
Air pollution	• Evenly distributing construction work over work period to avoid concentrated emissions from construction equipment and vessels • Conducting periodic inspections of construction equipment and vessels
Water pollution	• Using silt protectors to prevent dispersion of pollution and monitoring water quality during offshore construction • Treating construction waste water and rainfall runoff during construction in temporary waste-water treatment facilities, monitoring water quality with continuous measuring equipment and conducting water quality checks by manual analysis when water is discharged • Using integrated waste-water treatment facilities to treat effluent such as that from cleaning of equipment during test operation of the power station
Soil contamination	• Refraining from use of substances that can cause soil contamination
Noise/vibration	• Using low-noise and low-vibration equipment • Measuring noise and vibration and taking remedial steps
Ground subsidence	• Refraining from pumping of groundwater • Periodically measuring ground level
Handling/disposal of earth and rock generated during excavation, dredging	• Using excavated earth and rock for backfill and landscaping at power station site • Spraying to prevent dust • Disposing of dredged soil appropriately in consultation with relevant authority

Recycling and Reuse of Resources

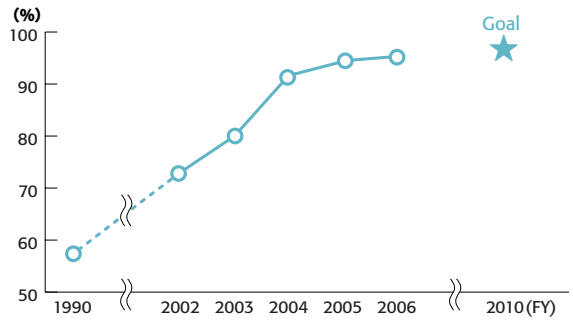
To help build a recycling-based society, the J-POWER Group is working hard to reduce the waste we generate and to properly treat and recycle the waste we do produce. We are also involved in a number of recycling programs that promote environmental conservation measures, the use of untapped energy sources, and so forth.

Effective Use and Reduction of Waste

In fiscal 2006, the J-POWER Group generated 1.96 million tons of industrial waste, of which recycled or reused resources totaled 1.86 million tons, or 95%.

Henceforth we intend to promote more extensive recycling of coal ash and reduction of industrial waste generated from maintenance and operation of power stations to "achieve a recycling rate of 97% within the J-POWER Group as a whole by the end of fiscal 2010, with the goal of zero emissions of industrial waste."

■ **Industrial Waste Recycling Rate**



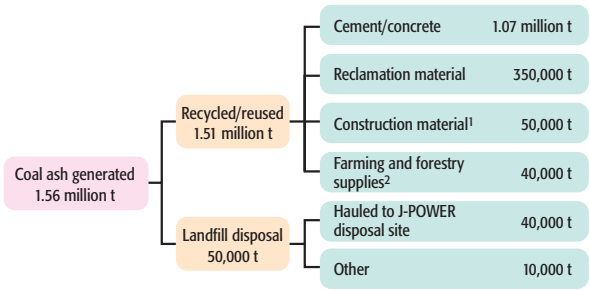
Note: The figure for FY 1990 represents J-POWER's recycling rate for coal ash only; figures for FY 2002–FY 2003 are the rate for all industrial waste produced by J-POWER; and the FY 2004–FY 2006 and goal figures represent the recycling rate for all industrial waste generated by all companies of the J-POWER Group.

Effective Use of Coal Ash

Coal ash, the residue from the combustion of coal at coal-fired power stations, accounts for the largest volume of waste we produce. In fiscal 2006, we generated 1.56 million tons of coal ash, of which we recycled or reused 1.51 million tons, or 97% (see graph at right).

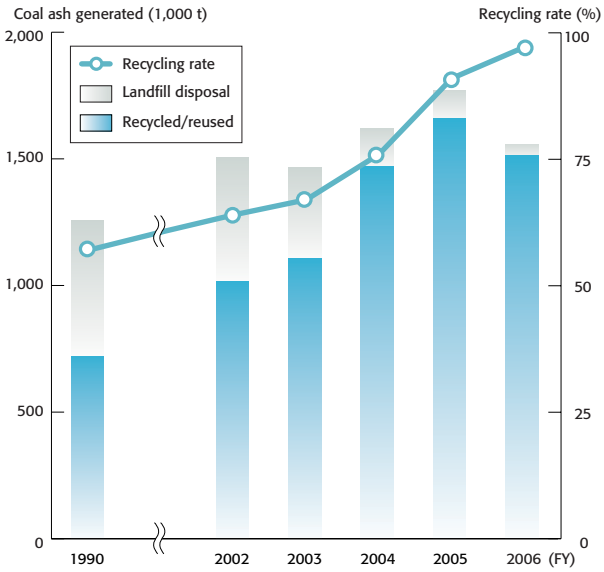
Recycled coal ash is used in such areas as land reclamation materials, construction materials, and farming and forestry supplies. The bulk of it is recycled as raw material for cement or concrete admixture. In the field of agriculture and forestry supplies, we sell potassium silicate fertilizer manufactured from recycled coal ash at a fertilizer plant operated by a J-POWER Group company. Most of the coal ash that cannot be recycled or reused is disposed of in landfill at our own disposal sites.

■ **Breakdown of Coal-Ash Recycling (FY 2006)**



Notes: 1. Primarily facing and filling material
2. Potassium silicate fertilizer, etc.

■ **Trends in Coal-Ash Recycling**



Fertilizer Made Primarily from Coal Ash

The J-POWER Group (JPec Co.) has developed the world's first potassium silicate fertilizer soluble in citric acid, made primarily from coal dust generated at coal-fired thermal power stations, and is marketing it nationwide.

Effective Use of Gypsum

Gypsum is generated as a by-product of wet-type flue-gas desulfurization systems at coal-fired power stations. We recycle all of this gypsum in the form of gypsum board and raw material for cement. In fiscal 2006, we generated approximately 330,000 tons of gypsum, and we maintained a recycling rate of 100%.

Office Recycling Efforts

We are working hard to reduce municipal solid waste by such measures as sorting waste paper, bottles, cans, and plastics, using both sides of copier paper, and reusing envelopes.

With regard to waste paper and other refuse from the J-POWER head office, employees have familiarized themselves with and implemented a new waste-sorting policy based on the main office's EMS. As a result of such efforts the amount of municipal solid waste, including paper, generated by the head office in fiscal 2006 was approximately 30 tons.

Finally, the J-POWER Group as a whole has adopted the goal of achieving an 85% paper recycling rate by fiscal 2010 (a year-on-year increase of at least 1%), and we intend to promote our efforts at resource conservation henceforth.

Effective Use of Construction By-products

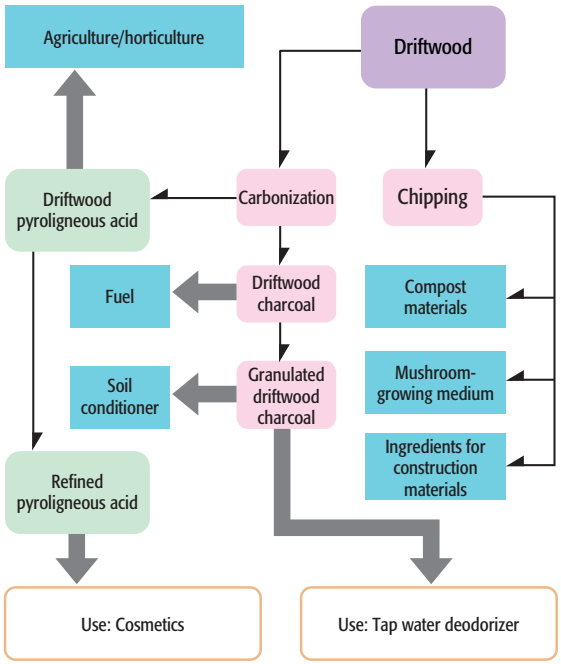
We work with contractors and others to promote effective use of the by-products of new construction, expansion, and renovation of electric power facilities by a variety of means, including the recycling of concrete scrap and cleared trees and the use of loose earth generated during construction within the grounds of the facility.

Effective Use of Driftwood

We voluntarily retrieve driftwood that collects in dam reservoirs at our hydroelectric power stations and recycle it by manufacturing charcoal, extracting pyroligneous acid, or chipping the wood for use as building materials and mulch. In fiscal 2006, some 16,800 m³ of driftwood was recycled.

Driftwood collecting in a dam reservoir (Sakuma Dam, Shizuoka Prefecture)

■ **Effective Use of Driftwood**



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Hibikinada Greenfarm: A Tomato-Growing Facility Springs from Coal-Ash Landfill

Coal ash has been put to effective use as landfill for the Hibikinada district reclamation project in Wakamatsu Ward, Kitakyushu, Fukuoka Prefecture. J-POWER and Kagome Inc. are partnering in a tomato-growing operation using the reclaimed land in Kitakyushu, a business that was established in Japan's "Special Zone for Structural Reform."

On March 31, 2006, construction was completed on one large-scale, high-tech greenhouse featuring automatic control of temperature, humidity, and watering, and the first tomato shipments began the following July. Completion of second greenhouse, scheduled for August 2007, will bring the total greenhouse area to 8.5 hectares and give the operation the production capacity to ship about 2,500 tons of tomatoes annually.

The shells are made of a special, highly light-permeable film to enhance the greenhouse effect, and the greenhouses are also with earth-friendly features, including a system for capturing CO_2 generated by the heating system and so that it can be used by the tomato plants in photosynthesis.

Environmental Recycling Program

The J-POWER Group's environmental recycling program comprises the promotion of appropriate treatment of waste, environmental measures, and the use of untapped energy sources. We are utilizing PFI/PPP* schemes in environmental recycling projects that have been launched.

* PFI (Private Finance Initiative) and PPP (Public-Private Partnership) are schemes that take advantage of private funds, management know-how, and technical expertise in the design, construction, maintenance, and operation of public facilities or projects.

PFI Waste-Power Generation Projects

● Omuta Recycle Power Station

J-POWER Group has a stake in an RDF (refuse-derived fuel)* power station, which is the most efficient waste power station ever built, and it supports the operation and maintenance of this power station.

Omuta, Fukuoka Prefecture; startup December 2002

* RDF (refuse-derived fuel): a pelletized fuel derived from municipal solid waste

● Narumi Waste Gasification Plant, Nagoya

J-POWER also has a stake in this municipal solid waste (MSW) gasification power station that makes use of cokes bed. The slag produced is recycled as material.

Nagoya, Aichi Prefecture; startup (planned) July 2009

Demonstration Trials of MSW Carbonization

Municipal solid waste contains biomass resources, and its utilization as an energy source is anticipated.

In the J-POWER Group, we are developing a technology for producing carbonized fuel from MSW. Currently we are involved in a NEDO (New Energy and Industrial Technology Development Organization) project scheme for a field test of biomass and other untapped energy sources in collaboration with the city of Saikai in Nagasaki Prefecture. As a more effective use of biomass, we are conducting research on the use of carbonized fuel derived from MSW as fuel in coal-fired power generation, as well as on the technology of producing carbonized fuel. Beginning in March 2006, test production of carbonized fuel was launched at the demonstration test facility at the Matsushima Thermal Power Station, and in fiscal 2006 about 20 tons of carbonized fuel was produced from approximately 90 tons of combustible MSW.

Test facility for manufacture of carbonized fuel from MSW

Examples of PFI/PPP Environmental Recycling Projects
Kanda Eco Plant Project
Samukawa Water Purification Plant Waste-Water Treatment PFI Project
Edogawa Water Purification Plant Waste-Water Treatment Facility Construction and Operation PFI Project
PFI consulting services for local governments
Examples of Other Efforts Relating to Environmental Recycling
Utilization of sewage sludge (biosolid) fuels (co-combustion)
Development of technology for production of carbonized fuel from sludge

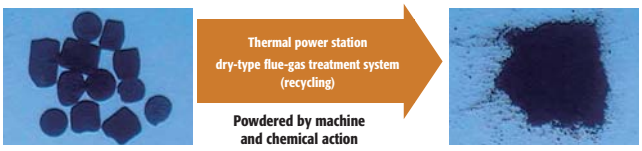
column

EPO-COAL: Recycled Granulated Coke Powder for Dioxin Removal

The powdered dioxin remover EPO-COAL for waste incinerators is made from activated coke powder produced in and shipped from the dry-type flue-gas desulfurization unit at J-POWER's Isogo Thermal Power Station new No. 1 Unit and the dry-type flue-gas denitrification unit at Takehara Thermal Power Station No. 2 Unit.

EPO-COAL has received high marks thus far. Its carbon load during manufacturing is close to zero, unlike that of commercially available activated charcoal products, and it has been found to be the equal of such products in performance tests for the dioxin removal in conventional incinerators.

In fiscal 2005, EPO-COAL was registered as a Hiroshima Prefecture Recycled Product (product of Takehara Thermal Power Station). It has also been adopted by a waste-disposal consortium in the Kyushu area. We will continue to actively market and promote the use of EPO-COAL, not only to cut back on waste and increase the recycling rate within the J-POWER Group but also to contribute to the building of a recycling-based society in Japan's local communities.



Dry-type flue-gas treatment (activated coke pellets)

EPO-COAL (activated coke powder)

Environmental Measures in the International Power Business

The J-POWER Group is applying the environmental technology it has nurtured in its domestic power generation business and transferring that technology overseas as it expands its operations. Through our international consulting work we conduct environmental impact assessments, transfer of desulfurization and denitrification technology, and similar activities. In our IPP projects as well, we apply our environmental engineering know-how to the biomass plants, hydropower, gas-turbine combined-cycle, and other facilities.

Power Generation Services Worldwide

Our international power business, centered on international consulting, has earned high marks and confidence since it was launched more than 40 years ago, at the beginning of the 1960s. Based on the technology and experience we have accumulated here in Japan, we have served as a technical adviser to overseas organizations or institutions on feasibility studies, design, and construction supervision of power generation stations. We also send JICA experts to agencies in the host countries and invite engineers from developing countries to train with us.

As of the end of fiscal 2006, we had been involved in a total of 277 international consulting projects in 61 countries.

We established the IPP Business Office in 1997 and subsequently redoubled our efforts in this area with a view to making the international IPP business our second important revenue source. As of the end of fiscal 2006, we were involved in 17 overseas power generation projects (15 of which have begun commercial operation) in seven countries and territories.

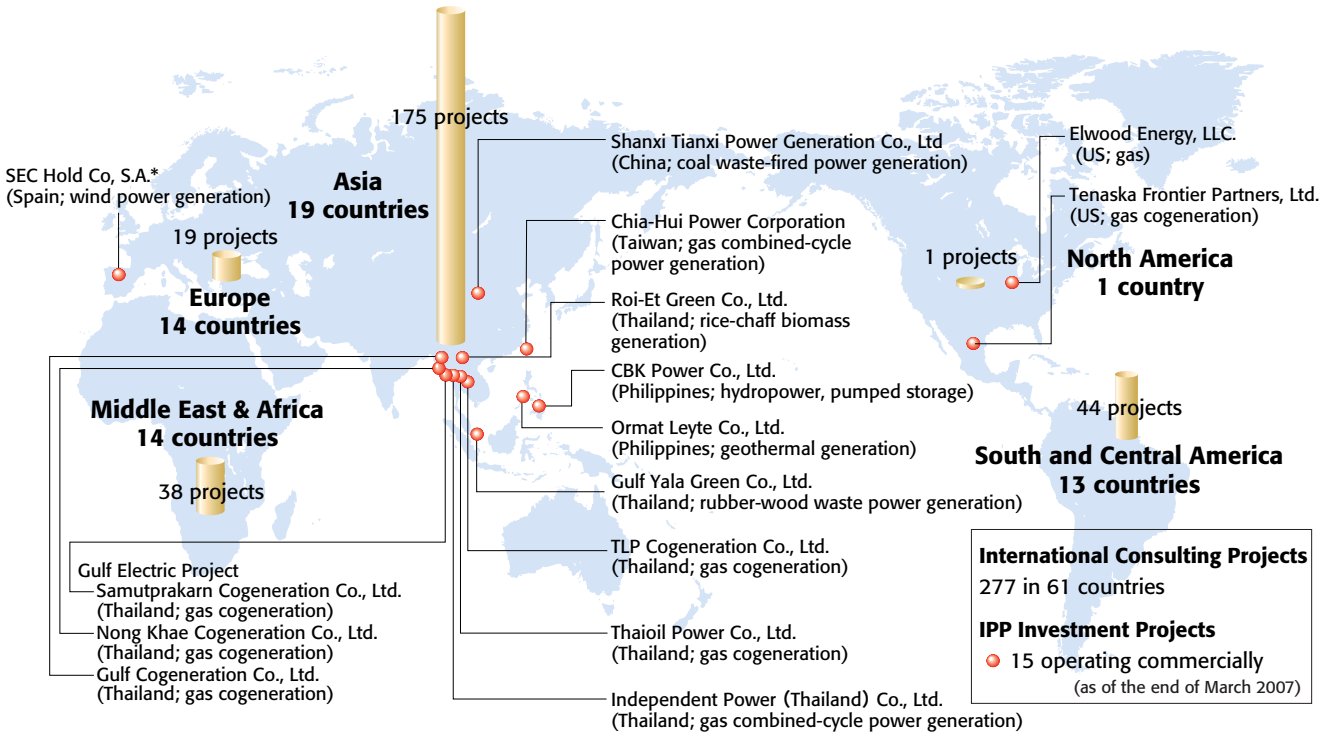
International Consulting

For many years we have been making use of the technologies nurtured in our domestic hydropower operations to assist countries around the world in developing hydropower—a renewable energy source—through such means as supervision of construction projects.

Examples of environmental technology consulting in the area of coal-fired thermal power are the transfer of SOx and NOx emissions reduction technology to countries of the European Union, technological advice on measures to reduce SOx emissions to East European countries plagued by acid rain, and in China, a demonstration test of technology to desulfurize coal with high sulfur content (commissioned by METI).

In connection with the Rehabilitation Project for the Fourth Thermal Power Plant in Ulaanbaatar (540MW, funded by a Japanese ODA loan), we have been involved as consultants since 1995 in a plan to renovate an existing thermal power station that had become difficult to maintain

■ International Consulting and IPP Investment Projects



* SEC Hold Co., SA, a wind-power power generation company in Spain, was sold on June 15, 2007.

■ **Major Recent Consulting Projects**

Project type	Name	Country	Duration	Description
Thermal	Rehabilitation Project for the Fourth Thermal Power Plant in Ulaanbaatar	Mongolia	Nov. 2001 – Oct. 2006	Supervision of construction for high-efficiency rehabilitation of thermal power station
Thermal	Tashkent Thermal Power Plant Modernization Project	Uzbekistan	Jan. 2005 – Dec. 2009	Support in bidding process and supervision of construction of high-efficiency gas cogeneration thermal power station
Hydropower	Purulia Pumped-Storage Hydropower Project	India	Jul. 2003 – Feb. 2008	Detailed design and construction supervision of dam and power station
Hydropower	Upper Kotmale Hydropower Project	Sri Lanka	Nov. 2003 – Nov. 2009	Bidding support and construction supervision
Power transmission	Transmission and Distribution Development Project in Paraguay's Metropolitan Area	Paraguay	Aug. 1996 – Sept. 2006	Detailed plan and supervision of construction of metropolitan power grid
Power transmission	Cebu-Negros-Panay Interconnection Uprating Project	Philippines	Jul. 2004 – Sept. 2006	Detailed plan and supervision of construction project linking small islands with underwater cable
Water works	Zletovica Basin Water Utilization Improvement Project	Macedonia	Mar. 2005 – Aug. 2010	Detailed plan and construction supervision of multipurpose system to improve water supply
Solar power	Demonstration Research on Dispersed Power Generation System Technologies: Photovoltaic, Wind Power, and Advanced Storage Batteries	China	Oct. 2003 – May 2006	Demonstration test of wind power, new storage battery, and minigrid
Heat supply	Study for a District Heating and Cooling System in Shanghai	China	Sept. 2006 – Mar. 2007	Compilation of guidelines for promoting the adoption of a district heating and cooling system

after the collapse of the Soviet Union. Since 2001 we have been involved in work to refurbish the plant's boiler burners (Phase 2), which is expected to improve the boiler thermal efficiency, and we have also held technology transfer seminars concerning plant operation and maintenance as well as on-the-job-training, which should contribute to operational improvements. Having completed the repairs and upgrades in December 2006, we are devoting the two-year guarantee period to confirmation operation (through December 2008).

Rehabilitation Project for the Fourth Thermal Power Plant in Ulaanbaatar (Mongolia)

International IPP Investment Program

Responding to the worldwide trend toward privatization and deregulation of the electric power industry, we are involved in a wide range of businesses overseas. At the same time, we are applying domestically developed technologies connected with high-efficiency thermal power generation and environmental conservation in order to achieve environmentally sustainable economic growth. As of the end of fiscal 2006, we were involved in IPP projects in 7 countries and territories, operating 15 power generation facilities and involved in plans for 2 others.

In Thailand, where we are involved in 9 projects (one under construction), fiscal 2006 saw the startup of the Yala Biomass Power Station, which uses waste from rubber-wood sawmills as fuel. This is our second successful biomass power project in Thailand, following the Roi-Et Rice Chaff Thermal Power Station. Through these projects we are contributing to the effective use of untapped resources and CO_2 emissions reduction.

Yala Biomass Power Station (Thailand)

Future Business Development and Our Contribution to Sustainable Development

In our international consulting business, while remaining focused on electric power projects using ODA, we plan to branch out into new areas, such as water supply and irrigation, where we can apply our technological know-how. We are also expanding our business operations to non-ODA areas, such as private development projects. In our IPP business, we will continue to strive for more environmentally friendly business.

We believe that through overseas technology transfers in our consulting and IPP business, we can contribute to global sustainable development in the future.

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International Wind Power Projects

In January 2007, J-POWER joined Mitsui & Co., Ltd. and WFL Windfarmer AG of Switzerland in establishing a joint venture, Zajaczkowo Windfarm Sp.zo.o., marking the first time that a Japanese company has participated in a wind power project in Poland. We are currently at work on the construction of a 48,000 kW-capacity wind power station (24 generators, 2,000 kW each) in Zajaczkowo in northern Poland, with an eye to launching commercial operation in 2008. J-POWER is actively pursuing wind power projects in Poland and other countries of Central and Eastern Europe, as well as other regions around the world.

Ensuring Transparency and Reliability

The J-POWER Group is working to improve environmental management and ensure legal compliance in all its business activities. We also disclose a wide range of environmental information. Through good communications with our stakeholders, we strive to earn society's trust.

Continual Improvement in Environmental Management

In 1997 the J-POWER Group decided to put in place environmental management systems (EMS) complying with the ISO 14001 international standard for environmental management to guide our implementation of environmental initiatives based on our corporate philosophy. By 2002 EMSs had been put in place at all J-POWER business sites, and by the end of fiscal 2005 all of J-POWER's power generation, transmission, and communication facilities had obtained ISO 14001 certification.

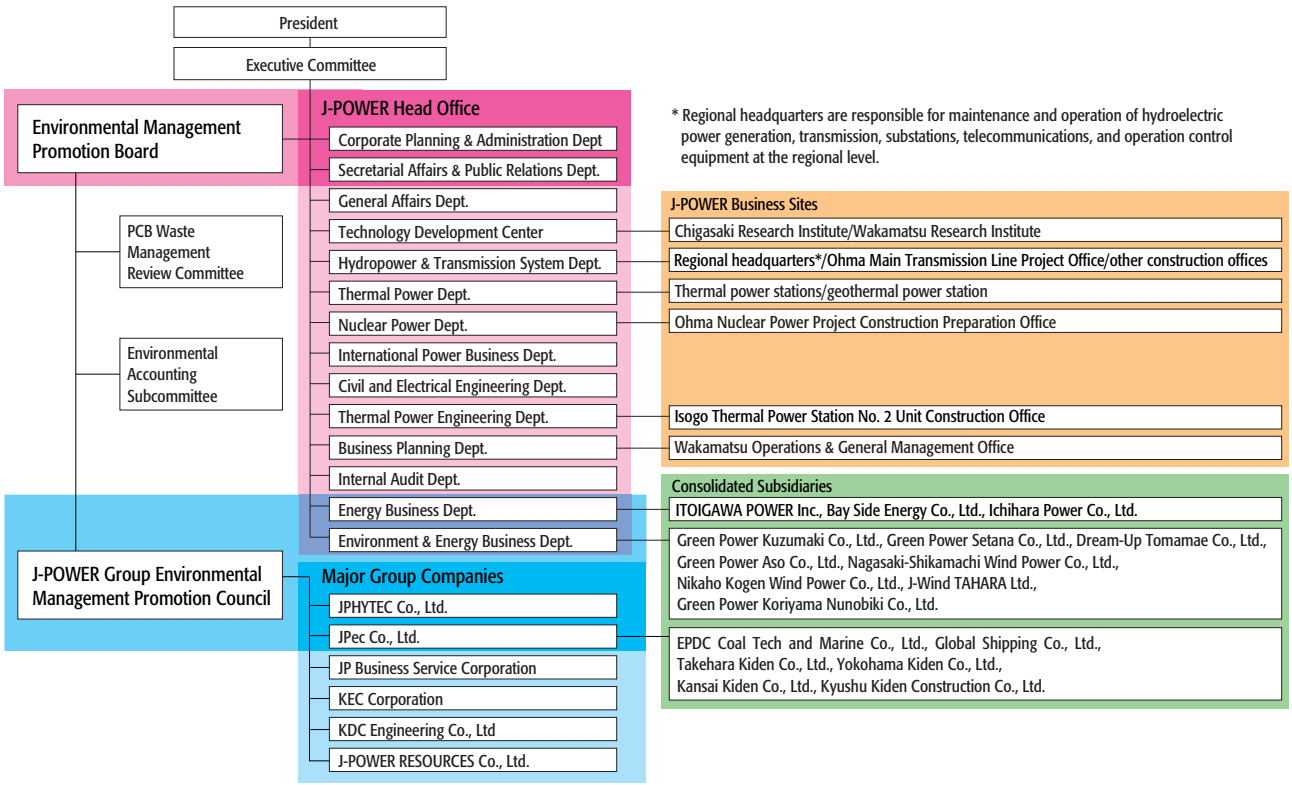
The major group companies have each completed the introduction of an EMS as well, and the entire group is working to ensure that each of our consolidated subsidiaries has an EMS in place by the end of fiscal 2007.

Environmental Management Structure

The Environmental Management Promotion Board was established to discuss, coordinate, and report on overall environmental management in the J-POWER Group. It is led by an executive managing director in charge of environment and made up of relevant executives and division heads. In addition, the J-POWER Group Environmental Management Promotion Council was established as a subgroup of the Board to encourage cooperation and coordination throughout the group.

Based on the J-POWER Group Environmental Action Guidelines reviewed annually by management (see pages 71–72), J-POWER business sites and group companies with an EMS in place draw up their own Environmental Action Plans. They periodically review and evaluate their initiatives and revise measures to be taken, following the PDCA (plan-do-check-act) cycle.

■ **J-POWER Group Environmental Management Organization Chart (FY 2006)**



Overview of EMS Adoption in J-POWER Group Business Sites

Each business site in the J-POWER Group establishes and implements its own EMS for planning/design, construction, and maintenance/operation, while continually striving to make improvements in the system. Group companies engaged in maintenance and management of power facilities implement an EMS in each maintenance/operating business site (thermal and geothermal power stations and regional headquarters for hydropower stations) in close cooperation with J-POWER.

■ **J-POWER**

* ISO 14001 certification received

Category	Business site name	Overview
Planning/ design	Civil and Electrical Engineering Dept.* Environment & Energy Business Dept. (Water Treatment Engineering Group, Subsurface Space Engineering Group)*	EMS adopted and implemented for construction of generation facilities as well as to ensure new business projects are environmentally responsible from the planning and design stage. ISO 14001 certification obtained in February 2001.
Construction	Ohma Nuclear Power Project Construction Preparation Office Isogo Thermal Power Station No. 2 Unit Construction Office Ohma Main-Transmission Line Construction Office Nishi-Tokyo Main Transmission Line Construction Office	EMS adopted and implemented to ensure implementation of measures arising from environmental impact assessments, such as prevention of water pollution, noise and vibration, and the reuse of byproducts.
Maintenance/ operation	Thermal power stations* (Isogo, Takasago, Takehara, Tachibanawan, Matsushima, Matsuura, Ishikawa Coal), Onikobe Geothermal Power Station*, Regional headquarters (Hokkaido, East Japan, Chubu, West Japan)*	EMS adopted and implemented in accordance with environmental laws, regulations, and agreements with the aim of reducing environmental load. Adoption began in 1998 at Matsuura Thermal Power Station and was completed by the end of fiscal 2001. Matsuura Thermal Power Station obtained ISO 14001 certification in June 1999. In fiscal 2004, ISO 14001 certification was obtained for all other coal-fired and geothermal power stations, with scope of registration covering JPec, which is involved in operation and maintenance. In fiscal 2005, J-POWER and group company JPHYTEC jointly received ISO 14001 certification for all regional headquarters (Hokkaido, East Japan, Chubu, West Japan), including hydropower and transmission facilities.
Other	Technology Development Center (including Chigasaki Research Institute) Wakamatsu Operations & General Management Office (including Wakamatsu Research Institute)	
	Head Office	EMS adopted for Head Office
	Total: 21 business sites (as of the end of March 2007)	

■ **J-POWER Group Companies**

*ISO 14001 certification received (including extension of scope of registration)

Group company	Overview
Consolidated subsidiaries including JPHYTEC Co., Ltd.*, JPec Co., Ltd.*, JP Business Service Corporation	Adopted EMS and are striving for continual improvement. Push for adoption at all subsidiaries continues. Some business sites/divisions have also obtained ISO 14001 certification.
KEC Corporation*	ISO 14001 certification previously received by individual divisions was applied to the company as a whole by extending scope of registration at the end of November 2006. The company is striving as a team for continual improvement.
IPP wind power generation companies	EMS adoption complete at Tahara Seaside Wind Farm (J-Wind TAHARA). EMS to be adopted in April 2007 at other wind power farms (Green Power Kuzumaki, Green Power Setana, Dream-Up Tomamae, Green Power Aso, Nagasaki-Shikamachi Wind Power, Nikaho Kogen Wind Power, and Green Power Koriyama Nunobiki).
PPS-oriented thermal power generation companies (ITOIGAWA POWER Inc., Ichihara Power Co., Ltd.*, Bay Side Energy Co., Ltd.)	EMS adopted by ITOIGAWA POWER in November 2005. In April 2006, scope of registration extended to cover Ichihara Power. EMS adopted by Bay Side Energy in July 2006.
Other consolidated subsidiaries	EMS adopted by EPDC Coal Tech and Marine and Global Shipping in April 2006 and by each of the thermal power maintenance companies (Takehara, Yokohama, Kansai, Kyushu) by September 2006. These companies are working with each thermal power plant unit of J-POWER to continually improve their systems.

Environmental Information for Employees

In order to enhance environmental management and raise group employees' awareness, information is made available for all employees to view at any time through media such as electronic bulletin boards, an environmental information network, and the group magazine, *J-POWERs*.

Medium	Name	Content
Electronic bulletin board	Environmental Laws, Regulations, and Data	• Implementation and revision of laws and regulations
	Environmental Management and Events	• Social trends • In-house environmental events • EMS
	Nature, Environment, and Wildlife Forum	• Forum for free exchange of ideas among employees
Intranet	Environmental Information Network	• Overview of laws and regulations • Overview of EMS • Environmental education and training

Education and Training

The J-POWER Group conducts various in-house and external environmental training programs to raise employee awareness and cultivate a sense of personal responsibility regarding environmental issues.

In fiscal 2006 we implemented a wide range of training programs with the goal of promoting a better understanding of environmental statutes and ensuring full compliance. In particular, two training programs that placed emphasis on the Waste Management and Public Cleansing Law were carried out. One was on Industrial Waste Disposer Selection Skills Upgrade and the other was on Waste Management Risk Assessments, which was conducted by outside specialists.

We also added a new course, Global Warming, to our e-learning program for group employees to enhance their knowledge of measures to stem global warming in Japan and abroad, as well as J-POWER Group's own measures, while deepening their understanding of environmental issues.

■ Environmental In-House Training in Fiscal 2006 (group-wide programs)

Category	Type of training	Trainees	Main content
Environmental management (general)	Environmental briefings, various lecture presentations on the environment	1,425	J-POWER Group's efforts
EMS implementation	Internal environmental auditor training	180	Requirements of ISO 14001, internal environmental audit method
	Follow-up training for internal environmental auditors	44	Practice in identifying noncompliance, etc.
Environmental laws and regulations	Industrial waste disposer selection skills upgrade	168	Waste Management and Public Cleansing Law, skills upgrade for selection of waste disposers, etc.
	Waste management risk assessments	3 sites	Agreements, manifestos, check of legal requirements concerned, etc.
E-learning*	Introduction to environmental issues	4,220	General overview of environmental issues
	J-POWER Group's efforts (group-wide efforts)	3,184	Content and status of environmental efforts, .etc
	The J-POWER Group Environmental Management Report ("Environmental Management")	1,752	Overview of the Environmental Management Report
	Global warming	1,745	J-POWER Group's efforts to fight global warming, etc.
	EMS course (overview)	3,167	Overview of ISO 14001
	EMS course (advanced)	6,176	Requirements of ISO 14001, audit method, etc.

Note: The list consists primarily of programs sponsored by J-POWER. Numbers include employees of non-consolidated subsidiaries and J-POWER partner companies.
* The number of e-learning trainees is the cumulative total, including those who took courses last year.

Employees with Official Environment-Related Qualifications

In the J-POWER Group we take pains to assign employees with the appropriate official qualifications in such a way that they can best support our business activities. At the same time, we actively encourage employees to acquire various professional qualifications and guide and support them in these efforts with a view to enhancing knowledge and skills.

As of the end of March 2007

Qualification	No. of holders
Professional Engineer, Construction Division (Construction Environment)	13
Professional Engineer, Environment Division (Environmental Conservation Planning)	3
Professional Engineer, Environment Division (Environmental Measurement)	1
Professional Engineer, Environment Division (Conservation of the Natural Environment)	3
Manager in Charge of Pollution Control, Air (Types 1-4)	244
Manager in Charge of Pollution Control, Water Quality (Types 1-4)	196
Manager in Charge of Pollution Control, Noise	98
Manager in Charge of Pollution Control, Vibration	45
Manager in Charge of Pollution Control, Dioxins	45
Manager in Charge of Pollution Control, Senior Level	8
Manager in Charge of Pollution Control, General Dust	3
Certified Measurer, Environment	21
Working Environment Measurement Expert (Classes 1 & 2)	29
Manager of Specially Controlled Industrial Waste	501
Technical Manager in Charge of Industrial Waste at Final Disposal Site	52
Technical Manager in Charge of Waste Disposal Facilities	38
Technical Supervisor for Landscape Construction (Grades 1 & 2)	72
Biotope Design Supervisor (Grades 1 & 2)	5
Biotope Construction Supervisor (Grades 1 & 2)	3
Chief Electrical Engineer (Classes 1-3)	909
Radiation Protection Supervisor (Classes 1 & 2)	97
Energy Supervisor, Thermal	320
Energy Supervisor, Electricity	275
Manager in Charge of High-pressure Gas Production and Storage (Classes A, B, & C)	598
Hazardous Materials Officer, Class A	75
Boiler Technician (Grades 1 & 2)	1,421
Boiler Mechanic	65
Sanitation Manager (Classes 1 & 2)	544
Sanitary Engineering Sanitation Manager	2
Works Supervisor for Specific Chemicals	1,700
Manager in Charge of Poisonous and Deleterious Substances (General and Specific)	45
Works Supervisor for Organic Solvents	1,132
Works Supervisor for Lead	1
Works Supervisor for Tetraalkyl Lead	3
EMS Auditor (Prov. Auditor)	37
Internal Environmental Auditor	1,621

Environmental Incidents

One environmental incident occurred between April 2006 and March 2007. On this occasion a press release was issued, and improvements were made to facilities and procedures to prevent a recurrence. No impact on the surrounding environment was detected as a result of this incident.

Location	Situation/Response
Taki Power Station (Onuma-gun, Fukushima Prefecture)	On October 23 and 27, 2006, during a regular maintenance check (overhaul) of the Taki Power Station, oil was found mixed in with the water in the draft tube under the hydraulic turbine of the power generator, and this was mistakenly discharged into the river (oil slick measuring 30 m x 30 m). The cause was a malfunction of a pump resulting from the fact that the discharge-pump water-level detection equipment was not in its proper position. The route of the water discharge was altered to ensure that effluent is not discharged directly into the river.

Violations of Environmental Statutes (see page 22)

In August 2006, the Japan Coast Guard issued instructions to prevent recurrence of the following three violations of environmental statutes.

Location	Situation/Response
Ohma Nuclear Power Project Construction Preparation Office (Shimokita-gun, Aomori Prefcture)	The Japan Coast Guard issued instructions in connection with the following violation of the Law Relating to the Prevention of Marine Pollution and Maritime Disasters, which prohibits the disposal of waste at sea from vessels. In September 2003, owing to the impact of Typoon No. 14, approximately 27 tons of floating kelp had accumulated offshore around the site of port construction for the Ohma Nuclear Power Station and was hindering construction work. After consulting with the local fisheries cooperative, construction personnel transported the kelp further offshore by ship and disposed of it there without determining the legality of this action. We are working to provide employees with rigorous compliance education and training to prevent any recurrence.
Isogo Thermal Power Station No. 2 Unit Construction Office (Yokohama, Kanagawa Prefecture)	The Japan Coast Guard issued instructions in connection with the following violation of the Water Pollution Control Law. On January 17, 2006, approximately 18.8 m^3 of untreated rainwater with a pH of 9.9 overflowed from the construction site owing to an error in the water-level setting for the new No. 2 unit pump station, which was being used as a water storage tank. The water ran off into the coastal waters via the new No. 1 unit wastewater pit. To prevent recurrence, we enhanced water level control of the water storage tank and closed the drain hole from which the water had escaped. In addition, we improved management guidelines and strengthened monitoring by initiating patrols.
Takehara Thermal Power Station (Takehara, Hiroshima Prefecture)	The Japan Coast Guard issued instructions in connection with the following violation of the Water Pollution Control Law. On March 2, 2006, workers failed to recover all the coal ash that had dispersed as a result of operations to remove ash accumulated in the boiler as part of a regular inspection of the No. 2 unit, and the dispersed coal ash came into contact with rainwater, resulting in coastal discharge of rainwater with an alkalinity in excess of the wastewater standards established under the Water Pollution Control Law. To prevent recurrence, we installed automatic gates hooked up to pH meters at all rainwater drain outlets. In addition, we tightened management through training of construction personnel and a revision of the checking process in the new work procedures document.

In addition to the above, surveys or inspections of power generating facilities uncovered the following three cases of improper operation.

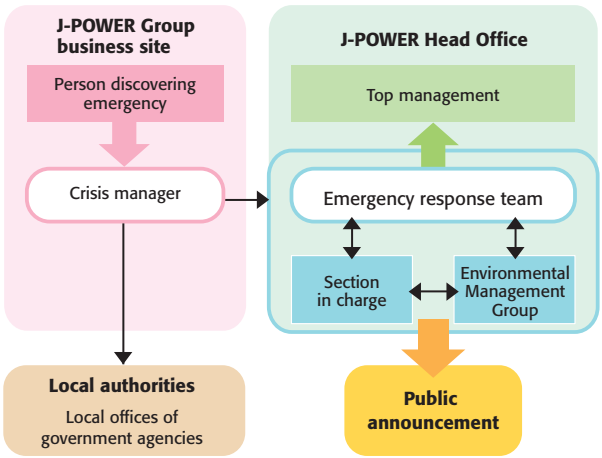
Location	Situation/Response
Matsushima Thermal Power Station (Saikai, Nagasaki Prefecture)	From 2000 to about 2004, and again in 2006, ash and other industrial waste found at the final disposal site within the power station site (of which construction was completed in 1989) were used as landfill within the site. We are working to ensure that henceforth improperly managed industrial waste is disposed of properly in a timely fashion in keeping with instructions from the relevant government agencies.
Ishikawa Thermal Power Station (Uruma, Okinawa Prefecture)	From 1986 to 2005, unauthorized refuse was disposed of at the station's final disposal site, including muddy refuse, sludge-like matter consisting of dead leaves mixed with dirt, and waste water generated when pipes were cleaned at the time of start-up. We have taken corrective measures after consultation with the relevant agencies and are working to prevent any recurrence.
Numappara Power Station (Nasushiobara, Tochigi Prefecture)	Construction waste materials (asphalt, etc.) generated during work to repair the station's regulating reservoir in 1993 were used as landfill in a (company owned) land disposal site. After consultation with the relevant agencies, we have since disposed of the material in accordance with the Waste Management and Public Cleansing Law (disposal completed at the end of May 2007).

Response and Information Disclosure in the Event of an Environmental Emergency

In the event of an environmental emergency:

1. The official in charge of crisis management at each business site will take the necessary steps to prevent damage from spreading and will contact the relevant local organizations, the Head Office Emergency Response Team, and the Head Office section in charge of the business site.
2. The Head Office Emergency Response Team will promptly report to top management and provide information on the emergency to the media and other interested parties.

■ Response and Information Disclosure in the Event of an Environmental Emergency



Promoting Green Purchasing

With a view to contributing to the development of a recycling-based society, we have adopted the J-POWER Group Green Purchasing Guidelines. The entire group is involved in green purchasing efforts, including use of recycled paper and energy-saving office equipment such as PCs and photocopiers.

The scope of these efforts goes beyond office supplies to encompass a broad range of initiatives, including purchase of other products used in our business activities, consideration of environmental factors in our contractual specifications when ordering work from subcontractors, and efforts to promote environmental responsibility among our suppliers. We are currently conducting a questionnaire survey of our major suppliers to assess their environmental management programs.

In addition, we have specified the type of copy paper to be purchased and are working toward the goal of 99% green purchasing for copy paper by 2010 (a year-on-year improvement of 1%).

The chart below outlines the results of our green purchasing efforts for office supplies and other products in fiscal 2006.

■ FY 2006 Green Purchasing

Item	Green purchasing volume	Green purchasing ratio
Copy paper (A4 equivalent)	65.87 million sheets	95%
Toilet paper	114,000 rolls	86%
Uniforms/work clothes	7,941 units	99%
Stationery items (cost)*	–	68%

* Green purchasing ratio for stationery items is calculated on a cost basis.

Uniforms and Work Clothes

As part of our effort to reduce environmental load, since fiscal 2004 material made from recycled PET bottles has been adopted as standard for all J-POWER Group uniforms and work clothes.

Harmony with Society

The J-POWER Group is committed to bringing about a sustainable society through its core operations at the local and global levels.

Partnering with Local Communities

Our corporate activities are supported by community members in areas where our power stations and other facilities are located. As a good corporate citizen, every J-POWER employee strives to maintain harmony with the community by earning the trust and goodwill of local residents.

Community Activities

Local Environmental Conservation Activities

Environmental conservation is one of the priority public service activities engaged in by the J-POWER Group. We participate in forest conservation, planting campaigns, and cleanup activities in and around worksites across the country.

● J-POWER Forest Club

This volunteer club is made up of around 30 members of the J-POWER Group. It conducts activities in collaboration with the Japanese Alpine Club's Society for Naturalization of Takao's Forests.

Community Interaction

J-POWER engages in various activities to help local community members better know the company and deepen trust. These activities include participating in local events and performances of traditional arts and having days when our power stations and other facilities are opened to the public.

J-POWER Community Concerts

WEB http://www.jpower.co.jp/concert/index.html
(available in Japanese only)

We have held classical music concerts since 1992 to express our appreciation to local residents living in the areas where we operate for their ongoing understanding and cooperation. In fiscal 2006, we held three community concerts and six smaller-scale concerts.

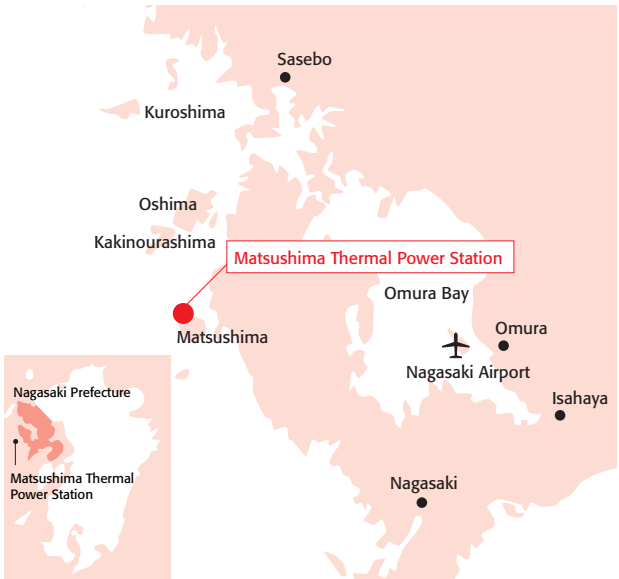
Living with Peace of Mind on an Isolated Island (Matsushima Thermal Power Station, Nagasaki Prefecture)

The Matsushima Thermal Power Station is located on the island of Matsushima in Oseto-cho of the city of Saikai in Nagasaki Prefecture. Power station maintenance workers live and work on the small island, which is 16 kilometers around, together with its approximately 700 residents.

This isolated island is located some distance away from emergency medical facilities, so J-POWER participates in Nagasaki Prefecture's "Doctor-Heli" program (Note) in order to bring safety and peace of mind to the island's residents. We provide a site on the grounds of the power station as an emergency helipad, which is maintained in partnership with local residents. Maintenance was performed on the site in January 2007. Volunteer employees from the J-POWER Group teamed with residents to cut the grass and prepare the area for use in an emergency.

Cutting grass at the helipad

Note: Under this program, special helicopters equipped with emergency medical equipment and carrying doctors and nurses trained in emergency medicine fly directly to sites where emergency medical assistance is needed on the request of a fire department or other medical dispatcher. The doctors and nurses perform emergency medicine on patients while transporting them from the site to an emergency medical center. The program has been supported by grants from the national government and the prefectures.
The Doctor-Heli program makes it possible to transport emergency doctors and nurses from a medical center in Nagasaki Prefecture to Matsushima Island in just 15 minutes.



Support for Energy and Environmental Education

Raising the awareness of every individual is a crucial element in bringing about a society that harmonizes energy with the environment, the goal of the J-POWER Group. We provide opportunities for many people to interact with energy and the environment in various ways. Such activities lead to higher awareness of these issues among the general public.

Science Classes and Support for Energy and Environmental Education

● Learning About the Environment through Rooftop Gardening (J-POWER Wakamatsu Operations & General Management Office: Fukuoka Prefecture)

We utilize management resources to provide opportunities for local elementary school students to learn about energy and the environment. Seven programs were conducted in fiscal 2006 for two schools.

Children planting rice in the rooftop garden on our office building

● Excursion to the Ohma Geological Formations (J-POWER Ohma Nuclear Power Project Construction Preparation Office: Aomori Prefecture)

We conduct an excursion to geological formations in the Ohma area for local elementary and middle school students (116 students participated in fiscal 2006). By not only learning about geology in the classroom but also directly touching geological formations and rocks, the students acquire a greater familiarly with the subject.

J-POWER employees observing rock formations with elementary school students

Collaborating with Non-Profit Organizations

J-POWER provides support for hands-on energy and environmental education programs through collaboration with non-profit organizations (NPOs) to deepen relations with residents and provide education that encompasses both energy and the environment.

● Kazenoko Juku Wind School (J-POWER, Asahi Beer, Green Power Aso: Kumamoto Prefecture)

In October 2006 we held a hands-on environmental class for local elementary school students. The goal of the class was to deepen understanding of wind generation mechanisms and roles as well as local grassland recovery and tree planting initiatives by providing the children the experience of feeling the wind. It was conducted with the cooperation of the Japan Environmental Education Forum, the NPO Commu-Net Association, and local educators.

The participating students experienced the direction of the wind by closing their eyes and feeling it and the strength of the wind by using furoshiki (wrapping cloth). After this, the students were given a tour of the facilities and taught about the mechanisms of power generation. Discussions were also held on what everyone can do to protect nature and the environment locally and globally.

The children took away a variety of impressions, making such comments as, "the wind was 'heavier' than I thought," "windmills are surprisingly big," and "I learned that wind power helps prevent global warming."

Children experiencing the wind

● Satoyama Woodland Education (Nishi Tokyo Power Administration Office: Tokyo)

The Nishi Tokyo Power Administration Office conducts a woodlands educational program using land owned by the company. In December 2006 we invited children from local elementary schools and conducted a program centered on tree planting and featuring a history lesson and observation of nature and a tour of transformer facilities in order to teach the importance of the local environment and culture. The children planted sawtooth oak trees, the main tree in the woodlands area, and other tree varieties. With the help of the local NPO Midorinoyubi (Green Thumb), we also taught the children about the woodlands and gave them a history lesson about Fuda Path, which was once used by the commander and other leaders of Shinsengumi, a group of samurai warriors organized by the Tokugawa government to protect Kyoto at the end of the Tokugawa era, when they traveled to a village to give sword lessons.

J-POWER Group employees planting trees with children

Initiatives as a Global Citizen

The corporate philosophy of the J-POWER Group calls on us to contribute to the sustainable development of Japan and the rest of the world. Based on this philosophy, we have developed our international power business. We provide support for the international community by drawing on experience and networks acquired through providing power services worldwide for over 40 years.

Educational Support for Ethnic Minority Groups in Purulia, India

Staff at the J-POWER Purulia Pumped Storage Project Office supervise a pumped storage power generation project in the Purulia District of West Bengal, India. The office staff had wanted to contribute to the local community in ways other than building dams and power stations, so a local resident introduced us to VVK, a local non-governmental organization (NGO).

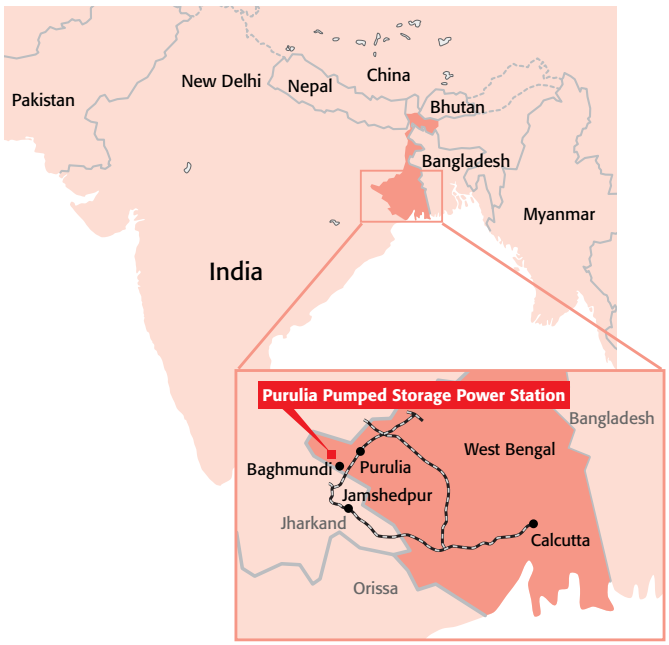
Helping Power Schools

VVK helps tribes impoverished by caste restrictions (specifically, ethnic minority groups living in highland areas) support themselves through education, and has established a school located about five kilometers from our office. The school focuses not only on book learning but also on agricultural techniques, like vegetable and medicinal herb cultivation, that directly lead to better living conditions for the tribe. Some graduates of the school have even returned to serve as teachers.

We told VVK members that we agreed with their philosophy and activities and wondered if we could do anything to help. They responded by saying that the school needed electricity, so in July 2005 we helped provide the school with power. Additionally, a new schoolhouse was scheduled to be built to enable the school to accommodate more children, but a lack of funding was proving problematic. We talked with the Consulate-General of Japan in Calcutta about the project and helped VVK make a request for grassroots assistance.

Grassroots Assistance Discovers Latent Local Need

The Consulate-General of Japan in Calcutta is responsible for four states and receives about 100 requests for grassroots assistance every year. The criteria are demanding, so only a handful of those requests are approved per year. The new schoolhouse project passed the screening without a problem and funding was granted. J-POWER received thanks for the project from the consulate: "We inevitably end up focusing on cities when searching for potential aid recipients, and we get almost no information from outlying regions. However, we now plan to increase assistance for remote areas. The information we received from J-POWER served to put us in touch with latent local need, so the schoolhouse project had added significance in this regard." J-POWER plans to actively support the school in its operations and other areas where we can be of assistance.



Local residents and J-POWER employees participate in a ribbon-cutting ceremony before breaking ground on the new schoolhouse

A Compost Project in Indonesia

The JPec Wakamatsu Environmental Research Center conducts research on composting organic waste, primarily food scraps. In 2004 the city of Kitakyushu and the Kitakyushu International Techno-cooperative Association requested our help in connection with composting technologies and compost system construction in Surabaya, Indonesia, and we began activities for this project.

Project Utilizes Local Characteristics

A field study conducted in June 2004 found that household garbage is collected by the city without being sorted and disposed of in landfills. Some of the garbage is thrown out in outdoor receptacles, rivers, open spaces, and elsewhere. A majority of the garbage is food scraps. The garbage rots immediately in the heat, producing foul odors and other problems, so the situation needed to be rectified as quickly as possible.

In conducting local activities it is important to do so in line with local characteristics in order to make the activities sustainable. First of all, we researched and collected native bacteria for composting (Note) and created a fermentation bed from optimal bacteria. Using indigenous bacteria makes it possible for them to be procured locally.

The cooperation of local residents in initiatives is also crucial. We considered the local culture and customs and made containers for composting the food scraps using baskets readily available at local hardware stores, which enabled local residents to begin compositing activities at a low cost. If every household were to begin using the composters, garbage would be eliminated completely in one to three days and converted to fertilizer.

It was not easy to change the habit people had of throwing garbage away outside. We worked together with local engineers, members of the NGO Pusdakota, and others to popularize composting. We were also able to obtain the help of a local women's association, which further accelerated the process. Being able to see improvement in living conditions with their own eyes is translating into sustained participation by local residents. The project is becoming firmly established in the local area and has started to spread to surrounding areas as well.

Note: Indigenous bacteria are put into the fermentation bed to decompose food scraps into compost.

From Project Promotion to Sustainable Cycle

In addition to this project, we also developed efficient composting technology to facilitate the maturation of immature compost and food scraps collected at a community compost center run by a local NGO. Composting had taken three months with existing technologies, but this was shortened to 10-15 days, improving the efficiency of the center, drastically reducing the occurrence of foul odors and harmful insects, and substantially improving the surrounding environment. The compost center purchases compost collected by local residents.

This composter has become widely known as the Takakura Home Method (THM), named after an employee involved in local technical guidance. As of 2007 it is being used in 7,000 households. The city of Surabaya has plans to expand the technology to 200,000 households in the next four years (one million people and one-third of all households). The project is also drawing interest from nearby regions and surrounding countries facing similar challenges.

The composting project in Surabaya was selected by Japan's Ministry of the Environment for the 2006 Environment Minister's Award for Global Warming Prevention Activities in the International Contribution category. We have also received a certificate of appreciation from the mayor of Surabaya.

Local residents listen to a J-POWER Group employee explain the composter

Developing Human Resources and Creating a Dynamic Workplace

The J-POWER Group creates workplaces that prioritize safety and legal compliance and creates conditions that provide employees with job satisfaction. Executives and employees work together toward the goal of sustained growth.

Basic Philosophy on J-POWER Group Human Resources

Human resources hold the key to a company's sustainability. The structure of Japanese society is undergoing major change, brought on by a major generational shift and a rapidly aging population with a low birthrate. For a company to continue to grow, it must foster personnel with rich individuality and endeavor to create a corporate culture, that enhances employees' passion to contribute to our stakeholders. Various initiatives are necessary in order to hire and develop this type of personnel, and efforts must be made to ensure that workplace conditions allow employees to stay focused on their work.

The J-POWER Group has worked to develop this type of workplace environment, but our goal is to ensure ongoing, stable growth over the long term, so we believe it is necessary to further enhance initiatives in this area. In order to ensure that our workplace enables employees to robustly engage in their jobs, we intend to refine work processes and workplace conditions, and, to the extent possible, enhance programs that address challenges faced directly by individual employees, like child-raising and caring for elderly family members. We want to create a company where our employees can gain the understanding of their colleagues in their workplaces about the problems they are facing, where executives and employees support one another, and where each and every employee can vigorously engage in their work on an ongoing basis. In order to achieve these goals, the J-POWER Group will tackle work-life balance issues as a part of its management strategy.

Employment

With society changing and the scope of our business expanding both in Japan and overseas, we believe that it will become even more important for the J-POWER Group to attract talented people from a broad range of fields and age groups and enable them to flourish.

Utilizing Diverse Human Resources

In addition to recent graduates, we are working to hire a diverse array of human resources, including people with extensive experience and professionals with specialized knowledge. In particular, we are making progress in creating workplace conditions that enable female employees to fully demonstrate their abilities and are hiring foreign nationals in order to accelerate overseas business development.

■ **Recent Graduate Hiring (J-POWER)**

	FY 2005	FY 2006	FY 2007 (as of April)
Men	27	23	36
Women	1	2	5
Total	28	25	41

Harnessing the Abilities of Elderly Employees

In order to further harness the abilities of elderly employees, we instituted a continued employment program in April 2006 that allows employees who have reached the mandatory retirement age to continue working until age 63. We also already have a personnel registration system that introduces job opportunities in the Group for employees when they are between the ages of 60 and 65. We intend to further utilize the experience, technical skills, and will to work of elderly employees in the Group for the sake of our ongoing business development.

■ **Use of Continued Employment Program**

Employees using continued employment program (as of March 31, 2007)
71

Employing People with Disabilities

Our employment ratio for people with disabilities as of June 1, 2007, was 1.93%, which exceeds the legal minimum. We have established a consultation desk to support employees with disabilities and provide information on workplace conditions. We will continue to work to enhance the workplace environment, by making office buildings barrier-free, for example, and promote understanding about disabilities at workplaces.

Profile of an Academic Training Program Participant

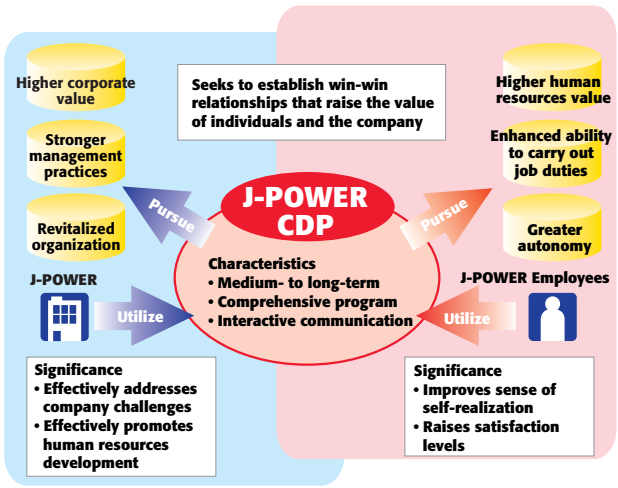
Satoshi Kurihara / Personnel & Employee Relations Department

After being involved in construction projects as a civil engineer, I began working in new business areas related to energy and information technology. I became acutely aware that in addition to technical skills it was also important to have managerial expertise, so I applied to the academic training program in the hopes of attending business school abroad. I made preparations to study abroad while continuing my work. With the help of my managers and colleagues, I was accepted into the university I wanted to attend, and I am now enjoying a busy life as a student in the United States. I am working hard not only to improve my management skills but also to excel in the future as a person with a global outlook.

Human Resources Development

We clearly convey to our employees what we expect from them, and we have instituted a career development program to serve as an education and training system for effectively developing employee skills and abilities. The program provides management with specific guidelines for developing employees. For employees, it constitutes an interactive human resources development tool that helps them think about their own career trajectories and helps them take the initiative in developing their own abilities and raising their value as human resources. We are currently promoting active utilization of the program.

■ Career Development Program Overview



Human Resources Development Programs

J-POWER considers it important to use work itself, particularly on-the-job training, to enhance employees' ability to carry out job duties and facilitate employee growth. At the same time, with the scope of our business expanding, we have established programs to systematically train personnel on a well-designed plan so that the abilities of each and every employee are fully utilized.

Training Programs

We offer level-specific training to provide business knowledge and management skills commensurate with employee qualifications and age as well as career training for employees to reflect on their careers to date and consider their next step. We also conduct divisional training, objective-specific training, and other forms of off-the-job training to advance the knowledge and technical skills required by each division and facilitate necessary specialization to ensure we can quickly accommodate changes in the business environment.

We have established technical training facilities in Chigasaki, Kanagawa Prefecture for civil and architectural engineering divisions; Kawagoe, Saitama Prefecture for hydropower, transmission, and telecommunications divisions; and Kitakyushu, Fukuoka Prefecture for thermal power divisions. We systematically conduct training for engineers in technical divisions at these facilities. Level-specific training is held at the Human Resources Development Center in Tokyo's Chuo Ward. In this way we are working to develop our human resources in accordance with career development programs.

■ Participating in Level-Specific Training and Career Training

	FY 2004	FY 2005	FY 2006
New managers	61	78	69
New section managers	126	97	83
Career plan training	75	87	57
CLDS*	—	125	79
Total	262	387	288

* Career & Life Design Seminar

Career Development Programs

J-POWER has a self-assessment program in which employees report their future career wishes to us once a year and discuss them with their respective managers to facilitate communication on careers between management and employees. We have also instituted an internal recruiting program and academic training program, which seek to utilize our human resources while helping employees to fulfill their career aspirations.

Helping Employees Develop Their Abilities

J-POWER has a self-study incentive program that provides financial assistance to employees who use time after work or on weekends to attend foreign language classes or business school, or a take a correspondence course.

■ Participation in the Self-Study Incentive Program

	FY 2004	FY 2005	FY 2006
School attendance	76	88	47
Correspondence	140	139	116

Occupational Safety and Health

Based on the recognition that safety must be a priority in every corporate activity, the J-POWER Group is working to further strengthen safety management throughout the Group.

To this end, every fiscal year the companies of the J-POWER Group draw up a plan for occupational safety and health and engage in activities on the basis of the plan. Under the fiscal 2006 plan, our efforts centered on the following three safety-related priorities.

1) Ensure the effectiveness of occupational safety and health management under our integrated maintenance system
2) Prevent workplace accidents involving contractors associated with the J-POWER Group (especially those which tend to occur repeatedly)
3) Prevent on-the-job traffic accidents

Specifically, in order to raise safety awareness through better communication, J-POWER Group companies work together with their management, labor unions, and others to conduct safety patrols of plant facilities and engage in discussions on safety issues in an effort to strengthen the workplace safety management system for the J-POWER Group. In addition, at all local facilities we work to appropriately carry out the occupational safety and health management system that has already been instituted while striving to strengthen related initiatives.

There were two incidents in fiscal 2006 involving a serious injury, a decrease of eight incidents from the previous year. In fiscal 2007 we plan to work to raise safety awareness in Group employees, an effort that includes further improving communication, and proactively prevent workplace accidents and injuries by ensuring the overall effectiveness of our safety management practices.

■ **Incidence of Workplace Accidents**

	Deaths	Serious Injury	Minor Injury
FY 2004	0	2	18
FY 2005	0	10	18
FY 2006	0	2	10

■ **Accident Frequency and Severity**

	Frequency	Severity
FY 2004	0.41	0.02
FY 2005	0.76	0.05
FY 2006	0.48	0.01

Notes:
1. The frequency rate is the number of deaths and injuries caused by industrial accidents that lead to at least one day of missed work per one million hours worked.
2. The severity rate is the number of days of work missed due to an industrial accident per 1,000 hours worked.

Maintaining the Health of Employees and Their Families

J-POWER is involved in the following two areas on a priority basis.

● Encouraging Health Exams

J-POWER works to improve the ratio of employees receiving health examinations which are conducted in accordance with the Industrial Safety and Health Law. In addition, as a voluntary initiative, we team with health insurance associations to actively encourage employees to get full medical checkups, dental exams, and eye exams.

■ **Participation in Health Exams**

	FY 2005	FY 2006
Ratio of employees receiving regular spring health exams	98%	99%

● Total Health Promotion Plan

The J-POWER Group is involved in the Total Health Promotion Plan (THP) in order to improve lifestyle habits, facilitate physical and mental health, and improve workplace communication. The plan consists of lifestyle guidance in the areas of health maintenance, nutrition, exercise, and mental health, based on health exam results, level-specific mental healthcare training, walking programs at business sites and facilities, and other forms of assistance for living a healthy lifestyle.

column

Welcome Families Day (THP Communication Event)

The J-POWER Group held a Welcome Families Day in December 2006 for families of employees working in the vicinity of the head office. The event, which featured exchanges of views and a tour of the head office, was designed to serve as an opportunity to deepen understanding of the work of employees among their family members and reconfirm the importance of the relationship between family and company in light of the work-life balance concept. Our operational facilities have also established opportunities for interaction with families, taking advantage of local customs like evening festivals.

Group employees and their families doing electrical work

Utilizing the Short-term Childcare Leave Program

Youji Yoshikawa / Nuclear Power Department

I took childcare leave in connection with the birth of my first daughter on April 6, 2007. Neither my wife nor I have relatives who we could have expected to do housework and look after our son after my wife gave birth, so I originally felt that I had no choice but to take paid vacation when my daughter was born. But, as luck would have it, the short-term childcare paid leave program was started in fiscal 2007, so I immediately applied. I managed to help relieve the stress on my wife after she gave birth, and also spent fulfilling days during the leave period deepening my relationship with my son, who is approaching elementary school age.

The Workplace Environment

Work-Life Balance Initiatives

We are working toward a shared awareness and understanding of this issue through discussions among upper and middle management and lectures given by outside experts. We have also established the Work-Life Balance Promotion Committee to discuss and promote further enhancements to work-life balance initiatives. The committee is chaired by an executive vice-president and its membership consists of the heads of major business-related divisions. A number of working groups have also been established under the committee that will include the participation of employees, as the J-POWER Group intends to broadly tackle this issue.

The committee will reassess whether the various labor policies that have been instituted to accommodate societal changes meet the needs of employees, sort out issues that the J-POWER Group needs to be involved in on a priority basis, and consider various measures for enactment. The current priority issues identified by the committee are 1) changing the methods and awareness of work, 2) improving employee skills and promoting diversification, and 3) enhancing work environments. We plan to survey employee attitudes about work and incorporate the findings into future initiatives.

Enhancing Childcare and Nursing Care Programs

Up until now we have revamped programs, based on the Law for Measures to Support the Development of the Next Generation and other regulations, in order to make it easier for employees involved in raising children or caring for elderly relatives at home to work with peace of mind. Now we are using the work-life balance point of view to continue to revise the programs and develop conditions that make them easy to use. Starting in fiscal 2007 we have established a short-term childcare leave program that offers two weeks of paid leave in an effort to establish conditions that makes it easier for employees to care for their children. We also partially revised the nursing care leave program in order to improve its usability.

■ **Program Usage**

	FY 2004	FY 2005	FY 2006
Childcare leave program	7	15	13
Shortened working hours for childcare	5	8	8

Managing Working Hours

In fiscal 2005 we instituted a labor management system using an ID card with an embedded IC chip for the Group in an effort to appropriately manage working hours. Also, J-POWER has conducted a campaign for appropriate working hours that involves publicizing and awarding organizations with strong track records in this area. For individuals working long hours, we strongly encourage meetings with physicians and otherwise strive to manage the health of our employees.

Preventing Sexual Harassment

J-POWER strives to prevent sexual harassment as a part of our efforts to ensure good working conditions for everyone. We have established an avenue of communication for complaints and consultation, distributed a manual to all employees, emphasized the importance of prevention, and introduced how to respond in the case of an actual incident and the process for seeking consultation. In this way we work to prevent incidents before they occur and create better working conditions for all.

Healthy Labor Relations

J-POWER has a labor agreement with the J-POWER Group Worker's Union (JPGU) that contains provisions on working conditions and the status of labor unions that have been discussed and agreed upon, and we strive to maintain stable working conditions on this basis. In addition, we have work committees that facilitate the smooth implementation of work processes, and we constantly endeavor to maintain sufficient lines of communication between labor and management.

Surveying Employee Attitudes (Designing Work-Life Balance Initiatives)

To help design work-life balance initiatives, it is important to know how employees view their jobs, workplaces, and day-to-day life. For this reason we are planning to conduct a questionnaire on this topic and use the findings to help shape and promote future policies. An outside consultant has been hired to help administer the survey, and adequate considerations will be given to privacy issues. The questionnaire is set to be conducted in the first half of fiscal 2007.

External Evalution and Outside Opinions

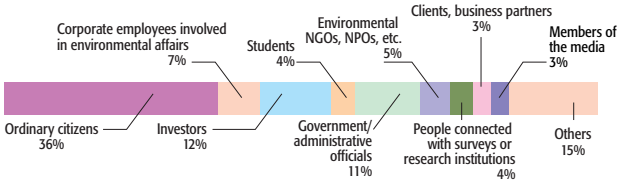
The J-POWER Group strives to incorporate various forms of independent evaluations and recommendations into its activities, including reviews, questionnaires on our Environmental Management Report, and expert opinions. By means of these evaluations and opinions, we determine the kind of business development and environmental activities that others expect of the J-POWER Group and work to improve our sustainable management. By making such comments public, we also enhance our transparency and reliability.

Readers' Opinions

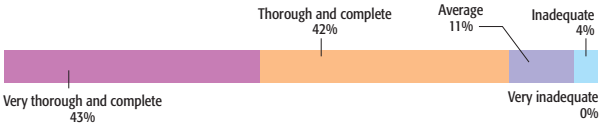
We received many comments from readers in response to our *2006 Environmental Management Report* (published August 2006). We consider these valuable comments to be important guidelines for compiling subsequent reports and conducting sustainable management in the future, and intend to put their lessons to use in our corporate activities.

Aggregate Questionnaire Results (as of the end of March 2007; 64 respondents)

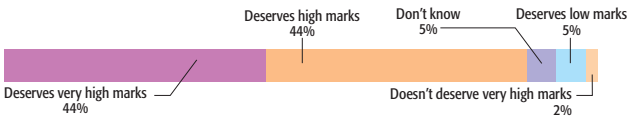
■ **Readership**



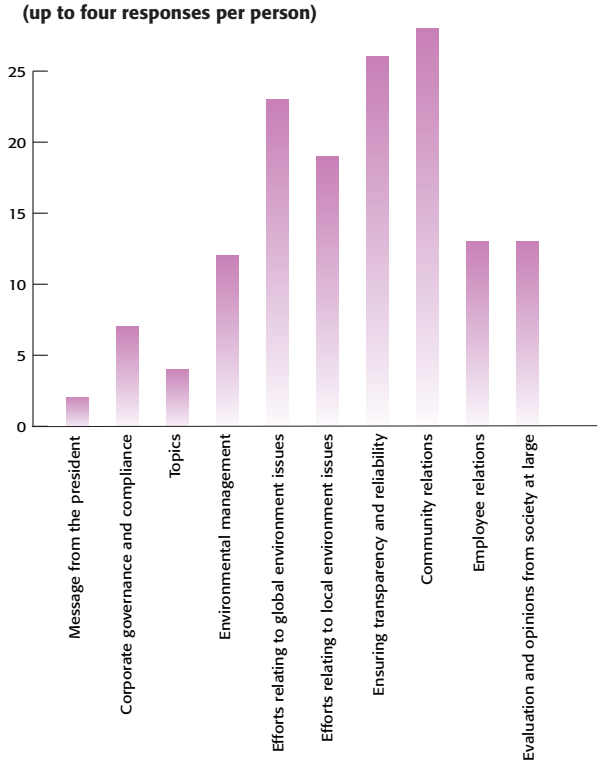
■ **Quantity and Quality of Information in the Report**



■ **Environmental Management**



■ **Areas That the J-POWER Group Should Tackle More Aggressively (up to four responses per person)**



■ **Environmental/Social Efforts Sought from the J-POWER Group**

Typical comments	Response of J-POWER Group
I would like to see the J-POWER Group harness the pioneering spirit that constitutes its corporate culture and remain on the cutting edge of the power industry in terms of environmental management. I also would like to see your progress in environmental management effectively publicized (this is extremely important for environment-related issues).	In the 2007 report, we present coal usage and carbon dioxide measures as top-priority environmental issues and include them in featured sections. The report incorporates the belief that in order to conduct effective initiatives to address global environmental problems, it is necessary for everyone to recognize those problems as his or her own. We appreciate your further comments.
"Expectations for environmental management" (on the independent recommendations page) will not do. I think this line of questioning is inadequate for promoting CSR initiatives. It makes clear that the J-POWER Group has not adopted a CSR perspective.	The 2007 report features a new structure and has been published as a sustainability report that takes the viewpoint of sustainable development for society and the company. A CSR viewpoint has been incorporated into this approach. We would appreciate your further comments.
I think you should share more environmental technologies with other countries. Please continue with your initiatives to counteract global environmental problems.	As your comment indicates, we recognize initiatives to address global-scale environmental problems as one of our key agendas. We will work to develop various overseas initiatives that utilize technologies fostered in Japan and transfer environmental technologies overseas. In addition to our established consulting business, we have also started providing technical advance through our IPP program.
I think it is important for power stations to earn the understanding, cooperation, and trust of the local community. I think in the case of nuclear power stations in particular you are required to work to earn the trust not only of local communities but also of the nation as a whole. Activities that play an active role are needed in order to facilitate greater understanding. I think it is necessary to inform even more people of your activities and conduct environmental management that can be supported by everyone.	We very much respect your opinion and intend to work to earn greater understanding, cooperation, and trust.

WEB Other comments and our responses can be viewed on our website at http://www.jpower.co.jp (available only in Japanese).

Independent Review

In order to reinforce the credibility of environmental data contained in the *2007 J-POWER Group Sustainability Report*, the data has been independently reviewed and certified by the Shin Nihon Environmental Quality Management Research Institute Co.,Ltd.

In 2007 a review was conducted on the accuracy and comprehensiveness of important environmental information among environmental performance indicators, which were stipulated by the environmental report review and registration system of the Japanese Association of Assurance Organizations for Environmental Information (WEB http://www.j-aoei.org/: available only in Japanese). The J-AOEI mark on the back cover indicates that the environmental information contained in this report fulfills the reliability criteria established by the association.

Ishikawa Coal-Fired Thermal Power Station (Okinawa Prefecture)

Kouchi Power Administration Office (Kochi Prefecture)

Ishikawa Coal-Fired Thermal Power Station (Okinawa Prefecture)

Independent certification of *J-POWER Group Sustainability Report 2007*

TRANSLATION

Independent Assurance Report

June 29, 2007

Mr. Yoshihiko Nakagaki
President
Electric Power Development Co., Ltd.

1. Purpose and Scope of our Assurance Engagement

We have performed certain assurance procedures, based on the engagement with Electric Power Development Co., Ltd. (the "Company"), to express an independent opinion on the Company's Key Environmental Performance Indicators (the "Key Environmental Data" as provided in the Assurance and Registration Scheme of the Environmental Report*1) of the Company and the major subsidiaries for the year ended March 31 2007, reported in the Company's "J-POWER Group Sustainability Report 2007" (the "Report"), with respect to whether the Key Environmental Performance Indicators are measured and calculated accurately in accordance with the reporting standards of sustainability reports*2 and whether material information is disclosed completely.

The collection of information and the presentation of the Report is the responsibility of Company's management. Our responsibility is to express an independent opinion on the Report.

*1 The Key Environmental Data as provided in the Assurance and Registration Scheme of the Environmental Report refer to the conditions set by the Japanese Association of Assurance Organizations for Environmental Information ("J-AOEI") in order to allow companies to display the trademark shown above (The trademark is shown in the original Japanese version).

*2 The reporting standards refer to the Ministry of Environment's "Environmental Reporting Guidelines 2003", and the Global Reporting Initiatives' "Sustainability Reporting Guidelines 2002", and the complementary guidelines made by the Company.

2. Outline of Assurance Procedures Performed

We have performed limited assurance procedures in accordance with the "Practical Guidelines for the Assurance of Non-financial Statements (exposure draft)" of the Japanese Institute of Certified Public Accountants in July, 2005 and the "Practical Guidelines for the Assurance of Environmental Information" of the J-AOEI in January, 2006 which is mainly composed of inquiries, reviews and analytical procedures. Therefore, our assurance engagement provides relatively limited assurance compared to a reasonable assurance engagement.

The following is an outline of the procedures performed:

We have reviewed and assessed the Company's procedures for the collection and aggregation of the Environmental Performance Indicators, as well as recalculated and reconciled them with the corroborating evidences on a test basis. In addition, we have performed on-site inspections*3 and reviewed the Environmental Performance Indicators generated at each site.

*3 The on-site inspections were performed at the headquarters, the Ishikawa Coal Thermal Power Station, the Kouchi Power Administration Office, the JPec Co., Ltd. Ishikawa Company, and the JPHYTEC Co., Ltd. Kouch Office.

3. Conclusion

Based on the assurance procedures performed, we were not aware of any data that is not measured and calculated in accordance with the reporting standards of sustainability reports.

4. Independency

We, as a member of the Ernst & Young ShinNihon Group, comply with the "Certified Public Accountant Law", "Ethics Regulation" of the Japanese Institute of Certified Public Accountants; and the "Ethics Procedure" of Ernst & Young ShinNihon. Therefore, there has been no interest to be noted between the Company and us.

Akihiro Nakagome
Representative Director
Shin Nihon Environmental and Quality Management Research Institute Co., Ltd.

Note: This Independent Assurance Report was prepared as a translation of the original Japanese version.

Acquisition of Eco-Leaf Certification

J-POWER's wholesale electricity business is certified and registered under the Eco-Leaf environmental labeling program managed by the Japan Environmental Management Association for Industry (JEMAI). This information is available on the association's website. There are three types of environmental labels: "q," "w," and "e." Eco-Leaf is an "e" type label, which means that product's environmental load has been quantitatively calculated for every stage of its lifecycle—manufacture, use, and disposal—using the lifecycle assessment approach and this fact has been independently verified.

Information on the Eco-Leaf label can be found on the Japan Environmental Management Association for Industry's website at
WEB http://www.jemai.or.jp/ecoleaf/index.cfm (in Japanese)

Roundtable Discussion with Distinguished Experts

On October 18, 2006 we held a discussion session on our social responsibilities with experts in various fields. The central topic of discussion was what the J-POWER Group can do to fulfill its social responsibilities.

Masahiko Kawamura
Senior Researcher
Insurance Research Group
NLI Research Institute

- As the J-POWER Group's overseas business operations have progressed, to what extent will it be possible to spread initiatives related to societal sustainability being engaged in at the head office level? I would like to see impact on the ecosystem adequately monitored and relevant countermeasures taken.
- In terms of the social dimension of sustainability, unless domestic and worldwide social issues are first recognized and then focus is placed on how to address those issues through the company's core operations, a company will become confused about what to do. It is important to think about the characteristics of the industry in which the company operates and then make decisions on what kind of initiatives to implement.
- As a communication tool, this report is of course aimed outside of the J-POWER Group, but I wonder if it is fully understood internally as well, which is most important. The J-POWER Group should survey penetration and understanding levels within the group and respond accordingly.

Yuko Sakita
Journalist and environmental counselor

- With crude oil and gasoline prices rising sharply and the public becoming increasingly interested in energy issues, the J-POWER Group has clearly expressed its view on the importance of coal. However, some people may be surprised that coal is still being used. I would like to see more information provided to such people on measures to address CO_2 emissions when using coal.
- I would like to see the J-POWER Group strategically take on the challenge of various renewable energies.
- It is important to contribute to the environment in local communities. It may be possible to utilize unused local resources for local energy production. A "zero emissions" type initiative needs to take place at the local level with the involvement of citizens, corporations, and local governments.
- The J-POWER Group's communication with its power stations and their surrounding communities around the country has been expanded. It would be good to see environmental reports used in corporate communications, environmental education, and energy education.

Mizue Tsukushi
President and Chief Executive Officer
The Good Bankers Co., Ltd.

- On the social side, I applaud the news that one of the male employees has taken childcare leave. The overall rate of employees taking childcare leave in Japan is extremely low, and the fact that the J-POWER Group's employees are actually taking it reflects the efforts the Group has made in this area.
- I would like to see the J-POWER Group become the green power of Japan. I think this is steadily happening. The belief that energy is not "green" because coal is being used or the portion of renewable energy is small does not reflect simplistic thinking, but rather the level of awareness.
- Green energy should be made an option for consumers (this is happening in Europe). This would be difficult for existing power companies, but I believe the J-POWER Group can make it happen, so I would like to see the group on the frontline of this effort. I would want to invest in that kind of company.
- The J-POWER Group's competitors are not limited to domestic power companies. It is necessary for the J-POWER Group to consider how to appeal to worldwide SRI investors as a green power company that represents Japan.
- The J-POWER Group is recommended to sell technologies for developing power sources and techniques (skills) for managing power stations. In other words, it can sell its power development services and expertise as a power station operator on world markets. Japanese companies tend to resist turning their business into a service business, but companies that take this step as a strategy at the earliest stage receive investment.

Participants:

Masahiko Kawamura, Senior Researcher, Insurance Research Group, NLI Research Institute

Yuko Sakita, Journalist and environmental counselor

Mizue Tsukushi, President and Chief Executive Officer, The Good Bankers Co., Ltd.

Gento Mogi, Associate Professor, Department of Technology, Management for Innovation, School of Engineering, The University of Tokyo

Izumi Washitani, Professor, Department of Ecosystem Studies, Graduate School of Agricultural and Life Sciences, The University of Tokyo

Masayoshi Kitamura, Executive Vice-President, J-POWER

Gento Mogi
Associate Professor
Department of Technology, Management for Innovation
School of Engineering, The University of Tokyo

- It is difficult to predict the exact date, but it is clear that a problem will occur in the near future in connection with the oil supply. This problem is referred to as "peak oil." The production of oil, which currently plays a leading role in energy and accounts for about 40% of overall energy consumption, is expected to begin decreasing by 2–4% per year at some point in the future. The amount of energy that will be lost every year due to this decrease will be enormous, equivalent to one million of the largest class of wind generators. Because of this, realistically, almost all the lost energy will have to be replaced with natural gas and coal. But natural gas will likely suffer the same fate as oil some 10 to 20 years later, so the time will again come when coal plays the leading role in energy. However, despite relatively large coal deposits, coal is also an exhaustible resource, so coal will only provide a temporary delay while preparing to harness solar energy flows to cover all energy needs, which is of ultimate significance to humankind. During this period it will be necessary to continue to raise the efficiency of energy consumption and accumulate stock in order to acquire necessary new energy flows. How much investment is made in this will determine the future of humankind.
- The J-POWER Group's main business is coal-fired power generation and it supplies coal to the public in its most efficient, easy-to-use form: electricity. Considering the aforementioned future energy situation, there is no doubt that this business will increase in importance into the future. The problem with coal however is its high environmental load. For this reason the most important priority for the time being should be to further improve usage efficiency and develop innovative clean coal technologies.

Izumi Washitani
Professor, Department of Ecosystem Studies
Graduate School of Agricultural and Life Sciences,
The University of Tokyo

- Though there are major differences depending on how energy is made, creating energy does not always entail environmental load. Up until now economic efficiency and how much profit could be made were the metrics for assessing energy production methods, but I think it is important that we assess energy production with other metrics as well, like the environment and human happiness.
- Woodlands are not being adequately managed, so in some regions there is a troubling excess of biomass resources. Garbage that is thrown out is also a biomass resource. It is not enough to simply produce energy: energy production must be tied to solving environmental problems and reducing environmental load. There are some systems that have enough merit to be worth doing, for local communities as well.
- In the 20th century, larger and larger scale was pursued in order to raise economic efficiency. But when considering objectives other than economic efficiency, a micro approach, which has not been considered, is also possible. For example, due to the level of efficiency and competition involved, thermal power would not be an option, but if micro thermal power were to contribute to preserving local environments, it would be important from the viewpoint of social contribution. We have no choice but to emphasize the metric of economic competitiveness, but ways to take into account other metrics should be organized conceptually. I hope the J-POWER Group will consider ideal forms for the next generation of energy production by examining international energy trends, taking into account the characteristics of Japan's natural environment, and giving much thought to the relationship between people and nature.

J-POWER Response

The J-POWER Group is committed to working toward achieving sustainable development together with society, and we very much appreciate your critical but kind opinions on how we should fulfill our social responsibilities. We have taken your comments to heart. As we steadily advance initiatives in this area, we will consider what we should do for society, what we are capable of doing, and which of the ideas you have presented we can act on. Our thoughts and initiatives have been published in this report, so we hope to hear your opinions, advice, and recommendations in the future as well.

Masayoshi Kitamura
Executive Vice-President
Chairperson, Environmental Management Promotion Board

Fiscal 2007
J-POWER Group Environmental Action Guidelines

1 Efforts Relating to Global Environmental Issues

Maintenance and Improvement of Energy Use Efficiency

- Maintain highly efficient operations at existing thermal power stations and employ highly efficient technologies in new facilities
- Maintain stable operation of existing hydro and geothermal, as well as wind and recycling power stations
- Improve productivity of existing power stations by improvements in efficiency when replacing equipment
- Promote energy saving
  - Manage power station operations efficiently and reduce auxiliary power ratio
  - Promote energy saving in offices through energy-conservation checkups, etc.
  - Promote energy saving projects and encourage widespread use of energy-saving products
  - Reduce environmental load through efficient transportation of raw materials
  - Reduce environmental load through use of public transport wherever possible, and efficient use of corporate vehicles when necessary, implementing eco-driving techniques
  - Promote energy and resource saving in employees' homes

Development of Low CO_2 Emission Power Sources

- Construct nuclear power stations
  - Steadily prepare for construction of Ohma Nuclear Power Station
- Effectively utilize renewable and unutilized energy
  - Promote the development of new sites in our hydro, geothermal, wind, and recycling power operations
  - Promote mixed use of biomass fuel in existing thermal power stations
  - Expand consulting business for development of renewable and unutilized energy
  - Promote biomass power stations overseas
- Encourage the use of natural gas
  - Promote gas-turbine combined cycle power generation and cogeneration stations

Development, Transfer, and Dissemination of New Technologies

- Develop the integrated gasification fuel cell combined cycle (IGFC) and the solid oxide fuel cell (SOFC)
- Conduct the integrated coal gasification combined cycle (IGCC) trial in collaboration with power companies
- Promote micro-hydropower stations
- Promote R&D on CO_2 sequestration technologies

Utilization of the Kyoto Mechanisms

- Identify, cultivate, and utilize opportunities for Joint Implementation (JI), the Clean Development Mechanisms (CDM), and emissions trading

Reducing Emissions of Greenhouse Gases Other Than CO_2

- Reduce sulfur hexafluoride (SF_6) emissions from gas-insulated switch gear
- Reduce hydrofluorocarbon (HFC) emissions from air conditioners

2 Efforts Relating to Local Environmental Issues

Reduction of Environmental Load

- Continue to reduce emissions
  - Control combustion and manage facilities for environmental measures to reduce emissions of sulfur oxides (SOx), nitrogen oxides (NOx), and soot and dust
  - Manage wastewater treatment facilities to restrict release of pollutants
  - Restrict noise, vibration, and odors through proper management of equipment
  - Prevent soil and underground water pollution through proper management of facilities
- Prepare appropriate and timely countermeasures to deal with oil spills from equipment, etc.
- Design and introduce efficient and environmentally friendly plant and equipment when constructing or renovating facilities

Recycling and Reuse of Recyclable Resources and Ensuring Proper Waste Disposal

- Recycle and reuse recyclable resources and make efforts toward zero emission* production
  - Promote reduction of emissions and reuse and recycling of waste materials from construction, renovation, and demolition sites
  - Promote reduced use of water, chemicals, and lubricating oils
  - Promote use of electronic documents and work to reduce consumption of consumables such as copier paper and other office supplies
  - Separate paper, bottles, cans, and plastics prior to collection and promote the reuse and recycling of such materials
- Properly maintain and manage landfill sites and implement closing procedures

Management of Chemicals

- Properly comply with Law Concerning Reporting, etc. of Releases to the Environment of Specific Chemical Substances and Promoting Improvements in Their Management (PRTR Law)
  - Identify, control, notify, and disclose the emission and transfer volumes of chemicals subject to the PRTR Law
- Take appropriate measures to deal with dioxins
  - Properly manage waste incinerators, conduct surveys of exhaust gas and bottom ash, and report the results in accordance with the Law Concerning Special Measures against Dioxins
  - Promote widespread use of continuous measuring monitors for dioxin precursors
- Properly manage and dispose PCBs
  - Properly store and manage PCBs in accordance with the Waste Management and Public Cleansing Law, the Law Concerning Special Measures against PCB Waste, and the Fire Service Law
  - Treat PCB waste in accordance with J-POWER's basic policy on PCB waste treatment formulated based on the government's regional waste management program
- Strive to reduce volumes of hazardous chemicals handled
- Respond appropriately to asbestos-related issues
  - Properly manage asbestos based on J-POWER's policy on asbestos treatment, including taking steps to prevent dispersal, while pursuing systematic removal and replacement

Natural Environment and Biodiversity Conservation Initiatives

- Planning and design initiatives
  - Evaluate the effects of our operations on the environment through monitoring and strive to reduce environmental impact from the planning and design stages
- Construction initiatives
  - Take environmental conservation measures, and work to reduce impact on the local biosphere and preserve the diversity of species in the area
- Maintenance and management initiatives
  - Consider preservation of the surround-

ing natural environment in the maintenance and management of plant and equipment
  - Consider conservation of river environments (sedimentation, turbid water, water quality, etc.) when controlling impounding and balancing reservoirs
- Forest conservation initiatives
  - Work to use forests owned by J-POWER as sites for environmental conservation and education
- Consider preservation of local landscapes

Environmental Conservation Initiatives in Overseas Projects

- Promote overseas transfer of environmental protection technologies
  - Promote transfers of environmentally friendly technologies for thermal power and hydropower generation
  - Promote cooperation in environmentally conscious technologies such as power generation from wind, solar, and waste materials, as well as energy conservation
- Formulate and implement development plans based on an appropriate level of environmental consciousness

Promotion of Technological R&D

- Promote technology R&D for cleaning up aquatic environments, treatment of sediment in reservoirs, and effective use of lakebed sediment

* Zero emissions—A concept proposed by the United Nations University for the creation of a system that would enable cooperation between different industries (and companies) to transform waste materials into resources, working to reduce waste emissions (final disposal amounts) as close to zero as possible.

3 Ensuring Transparency and Reliability

(1) Continual Improvement of Environmental Management (Greater Reliability)

Improvement of Environmental Management Level

- Maintain ISO 14001certification at all J-POWER power generation, transmission, substation, and communication sites
- Promote introduction and enhance operation of the environmental management system (EMS) at all J-POWER group companies
- Raise employee awareness
  - Systematically implement environmental management education and training through use of e-learning and other methods
  - Hold presentations on the environment at each J-POWER business site and group company
  - Conduct opinion surveys of employees and publicize the results
- Utilize environmental accounting and eco-efficiency indicators
  - Strive to identify the costs and benefits of environmental conservation
  - Examine appropriate eco-efficiency indicators
- Request cooperation of business partners in environmental activities
- Renew Eco-Leaf environmental labeling using life cycle assessment method

Efficient Operation of EMS

- Continuously improve EMS
  - Identify actual environmental loads and establish targets and plans for environmental conservation
  - Periodically evaluate and improve activities toward the achievement of goals
  - Review EMS through such means as systematically conducting environmental audits to achieve continual improvement
- Strengthen risk management
  - Work to prevent environmental accidents, and in case of an emergency ensure full communication and take appropriate action

Full Compliance with Laws, Regulations, Agreements, and other Rules

- Identify applicable laws, regulations, agreements, and other rules, and work to raise awareness and compliance
  - Clearly identify the laws, regulations, agreements, and other rules that apply to our business and work to make employees aware of them and comply with them
- Fully comply with the Water Pollution Control Law
  - Taking past cases as examples, pursue appropriate facilities improvement and compliance
- Fully comply with the Waste Management and Public Cleansing Law
  - Enhance checking and reviewing functions by such means as introducing third-party evaluations
  - Properly adhere to J-POWER Group's guidelines for the selection of industrial waste disposal subcontractors
  - Make efforts to expand application of the electronic manifest

Green Purchasing Efforts

- Promote green purchasing efforts in line with J-POWER Group guidelines
- Expand use of environmentally friendly vehicles

(2) Communication with Society (Greater Transparency)

Publication of Environmental Information

- Improve environmental reports
  - Seek third-party verification of environmental report data (substances, energy, etc.) and strive for greater reliability
- Publicize environmental conservation activities
  - Publicize environmental conservation activities through media such as newspapers, business magazines, websites, and in-house publications for group companies
  - Publicize activities to visitors to business sites and PR facilities

Active Communication

- Utilize environmental reports, etc.
- Utilize environmental events, etc.
- Diversify external communications
  - Promote the diversification of communications by accepting external assessments such as of environmental management ratings
  - Hold roundtable discussions on the environment with experts

Promotion of Social Activities Program

- Participate in regional environmental conservation activities
  - Take part in municipal/regional cleanup and beautification programs, afforestation projects, etc. as part of environmental action month and similar initiatives
- Take a leading role in regional environmental conservation activities

Fiscal Year Data

The following data represent annual values or year-end values in each fiscal year.
Unless specially noted, data for FY 2004 or earlier is for J-POWER only; data for FY 2005 onward includes that of the Group companies.

Notes: 1. The sum of the figures in each column may not equal the total due to rounding.
2. All figures include J-POWER and its consolidated subsidiaries. Excluding the chart for power facilities, figures for joint investments are prorated according to the ratio of capital contribution.

■ Power Facilities (maximum output)

	Unit	FY 1990	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006
Hydroelectric	GW	7.09	8.26	8.55	8.55	8.55	8.56
Thermal	GW	4.65	7.82	7.82	7.82	8.18	8.18
Coal-fired	GW	4.64	7.81	7.81	7.81	7.95	7.95
Natural gas	GW					0.22	0.22
Geothermal	GW	0.01	0.01	0.01	0.01	0.01	0.01
Wind power	GW					0.14	0.21
Total	GW	11.74	16.09	16.38	16.38	16.87	16.94

■ Electricity Output

	Unit	FY 1990	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006
Hydroelectric	GWh	12,451	10,624	12,103	12,892	10,187	12,212
Thermal	GWh	29,551	48,679	51,237	52,708	58,922	52,429
Coal-fired	GWh	29,452	48,599	51,133	52,616	58,070	51,624
Natural gas	GWh					748	701
Geothermal	GWh	99	80	104	92	104	104
Wind power	GWh					203	255
Total	GWh	42,002	59,303	63,340	65,600	69,312	64,895

■ Electric Power Sold

	Unit	FY 1990	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006
Hydroelectric (excluding pumped storage)	GWh	10,046	8,902	10,850	11,172	8,583	10,633
Thermal	GWh	27,293	45,527	47,937	49,345	55,205	49,128
Coal-fired	GWh	27,206	45,453	47,841	49,261	54,413	48,381
Natural gas	GWh					698	652
Geothermal	GWh	87	74	96	84	94	94
Wind power	GWh					195	245
Total	GWh	37,338	54,429	58,787	60,517	63,983	60,006

■ Fuel Consumption

	Unit	FY 1990	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006
Coal (dry coal 28 MJ/kg conversion)	million t	9.56	15.43	16.21	16.69	18.39	16.30
Use intensity (coal-fired thermal)	t/GWh	351	340	339	339	338	337
Natural gas	million m^3N					124	117
Heavy oil	million kl	0.1	0.05	0.07	0.06	0.06	0.06
Diesel	million kl	0.01	0.03	0.03	0.03	0.03	0.02

Note: Denominator for use intensity represents electric power sold by coal-fired thermal power stations.

■ Greenhouse Gas Emissions

		Unit	FY 1990	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006
CO_2 emissions	(domestic and overseas power generation)*	million t-CO_2	24.67	40.06	43.27	44.76	49.49	45.36
		kg-CO_2/kWh	0.66	0.72	0.70	0.69	0.72	0.68
	(domestic power generation)	million t--CO_2	24.67	39.36	41.37	42.54	47.18	42.14
		kg-CO_2/kWh	0.66	0.72	0.70	0.70	0.74	0.70
SF_6 emissions		t	–	0.0	0.1	0.0	0.1	0.1
Handled		t	–	4.2	6.2	3.4	3.3	6.4
Recovery rate		%	–	99	98	99	98	99
HFC emissions		t	–	0.0	0.0	0.0	0.0	0.0

* Figures for CO_2 emissions (domestic and overseas power generation) include all consolidated subsidiaries and joint venture companies.

Notes: 1. Denominators for emission intensity represent electric power sold.
2. Excluding Wakamatsu Research Institute.
3. Please refer to page 33 for the CO_2 calculation method.

■ Average Thermal Efficiency of Coal-fired Power Stations (at generation point)

	Unit	FY 1990	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006
Average thermal efficiency (at generation point)	%	39.0	40.3	40.3	40.4	40.5	40.3

■ Usage of Specific CFCs

		Unit	FY 1990	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006
Specific CFCs	Stocked	t	3.6	1.6	2.5	1.4	1.8	1.8
	Consumed	t	0.7	0.0	0.0	0.0	0.0	0.0
Halons	Stocked	t	4.7	4.4	3.9	3.9	3.9	4.3
	Consumed	t	0.0	0.0	0.0	0.0	0.0	0.0
Other CFCs	Stocked	t	2.8	9.4	9.5	9.1	10.2	9.9
	Consumed	t	0.0	0.1	0.1	0.2	0.3	0.3
HFCs (CFC substitutes)	Stocked	t	–	1.1	1.4	1.9	7.7	8.4
	Consumed	t	–	0.0	0.0	0.0	0.1	0.0

■ SOx, NOx, and Soot and Dust Emissions

	Unit	FY 1990	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006
SOx emissions	1,000 tons	9.9	9.5	8.4	10.4	10.2	9.9
Intensity (coal-fired)	g/kWh	0.36	0.21	0.18	0.21	0.18	0.20
NOx emissions	1,000 tons	26.4	25.2	25.0	26.6	28.9	28.0
Intensity (coal-fired)	g/kWh	0.97	0.55	0.52	0.54	0.52	0.57
Soot and dust emissions	1,000 tons	1.0	0.9	1.0	1.0	1.0	0.9
Intensity (coal-fired)	g/kWh	0.04	0.02	0.02	0.02	0.02	0.02

Notes: 1. Soot and dust emissions calculated from monthly measurements.
2. Denominators for emissions represent electric power sold by thermal power stations.

■ Industrial Waste Recycling

	Unit	–	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006
Volume generated	million t	–	1.83	1.80	2.06	2.23	1.96
Volume recycled	million t	–	1.35	1.44	1.89	2.09	1.86
Recycle rate	%	–	73	80	92	94	95

Note: Figures for FY 2004 are for the entire J-POWER Group.

■ Coal-Ash and Gypsum Recycling

	Unit	FY 1990	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006
Coal-ash created	1,000 t	1,257	1,507	1,465	1,623	1,806	1,556
Coal-ash recycled	1,000 t	719	1,014	1,119	1,076	1,696	1,512
Coal-ash recycle rate	%	57	67	76	91	94	97
Gypsum created	1,000 t	–	330	320	371	380	334
Gypsum recycle rate	%	100	100	100	100	100	100

Note: Please refer to page 49 for details on coal-ash recycling rate.

■ Office Power Consumption

	Unit	–	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006
Power consumed by offices (company total)	GWh	–	17.81	17.28	15.64	22.00	17.38
Head office* power consumption	GWh	–	8.84	8.81	8.99	8.89	8.73
Lighting/power sockets	GWh	–	1.85	1.79	1.79	1.76	1.78

* J-POWER head office building

■ Fuel Consumption at Business Sites (vehicles, ships, emergency generators, etc.)

	Unit	–	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006
Gasoline	kl	–	438	372	342	1,162	1,191
Diesel	kl	–	217	185	182	1,026	1,984
Natural gas	1,000 m^3N	–	0.5	0.4	0.0	0.0	0.0

■ Green Purchasing

	Unit	–	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006
Copy paper* purchased	million sheets	–	26.17	24.92	25.97	62.41	69.53
Recycled copy paper* purchased	million sheets	–	25.60	24.53	25.11	57.22	65.87
Recycled copy paper* purchase rate	%	–	98	98	97	92	95

* A4 paper-size equivalent

Treaties and Laws Relating to Global Warming

Overview of the United Nations Framework Convention on Climate Change

The United Nations Framework Convention on Climate Change is a treaty that establishes an international framework for stemming global warming. It was adopted in June 1992 at the first World Summit on Sustainable Development in Rio de Janeiro (commonly known as the Earth Summit), and came into force on March 21, 1994. Thus far it has been ratified by 188 countries and one territory.

The ultimate aim of the convention is to stabilize the concentration of greenhouse gases in the atmosphere at levels that will not cause dangerous human disruption of the earth's climate system.

Principles

1) Protection of the climate on the basis of common but differentiated responsibility
2) Consideration of special circumstances
3) Implementation of precautionary measures*
4) Right and duty to promote sustainable development
5) Cooperation to promote a supportive and open international economic system

*** Complete text of Principle 3:**
"The Parties should take precautionary measures to anticipate, prevent or minimize the causes of climate change and mitigate its adverse effects. Where there are threats of serious or irreversible damage, lack of full scientific certainty should not be used as a reason for postponing such measures, taking into account that policies and measures to deal with climate change should be cost-effective so as to ensure global benefits at the lowest possible cost. To achieve this, such policies and measures should take into account different socio-economic contexts, be comprehensive, cover all relevant sources, sinks and reservoirs of greenhouse gases and adaptation, and comprise all economic sectors. Efforts to address climate change may be carried out cooperatively by interested Parties."

Overview of the Kyoto Protocol

The Kyoto Protocol is a resolution establishing the greenhouse gas emissions-reduction targets for the Annex I countries.*It was adopted in December 1997 at the Third Session of the Conference of the Parties to the UN Framework Convention on Climate Change (COP3) and came into force on February 16, 2005.

* 35 developed countries (including 11 economies in transition) and the European Community.

Targeted greenhouse gases (GHGs)	6 categories of gases: CO_2 (carbon dioxide), methane, N_2O (nitrous oxide), HFCs (hydrofluorocarbons), PFCs (perfluorcarbons), and SF_6 (sulfur hexafluoride)
Commitment period	2008–2012 (first commitment period)
Goal	To reduce average yearly emissions of greenhouse gases by the Annex I countries by 5% from 1990. In Annex B of the Kyoto Protocol, the Annex I countries commit themselves to specific reduction targets; Japan's reduction target is 6%.
Use of sinks (absorption forests)	Countries may include in their calculation of emissions reduction the removal of CO_2 by "sinks" resulting from land-use change and forestry activities, limited to afforestation, reforestation, and deforestation since 1990.
Kyoto Mechanisms	Emissions trading, Joint Implementation (JI), and the Clean Development Mechanism (CDM) have been adopted as means to achieve reduction targets on a global scale through economically rational behavior.

Notes:
1. Emissions trading: International trading of emissions allowances (or emissions reduction units earned through CDM or JI). Annex I countries may add allowances acquired from other countries to their own allowances.
2. Joint Implementation (JI): Mechanism whereby Annex I countries can jointly carry out GHG emissions-reduction projects and distribute the resultant reduction volume among the countries concerned. Applicable to reductions between 2008 and 2012.
3. Clean Development Mechanism (CDM): Mechanism whereby Annex I countries can carry out GHG emissions-reduction projects in developing countries and distribute the resultant-reduction volume among the countries concerned. Applicable to reductions carried out in 2000 and after.

Plan to Meet the Targets of the Kyoto Protocol

In accordance with the Law Concerning the Promotion of the Measures to Cope with Global Warming (Law no. 117, 1998), the Japanese government has formulated a Kyoto Protocol Target Achievement Plan establishing the measures and mechanisms needed for Japan to be certain of meeting its Kyoto Protocol commitment to reduce emissions by 6% from the 1990 level. On April 28, 2005, the plan was adopted by cabinet resolution.

Basic Directions for the Promotion of Measures to Stem Global Warming

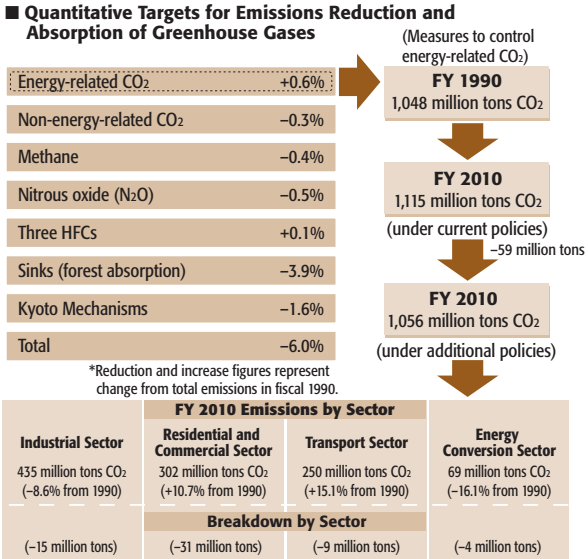
Goals for Fighting Global Warming

- Achieve the 6% reduction target under the Kyoto Protocol without fail
- Aim for long-term, continuing reductions
- Take a global leadership role as an "advanced environmental nation"

Basic Approach to Fighting Global Warming

- Reconcile environmental and economic imperatives
- Promote technological innovation, encourage participation by and partnership among all entities in all sectors of society
- Make use of a variety of policy tools
- Forge international partnerships

■ **Quantitative Targets for Emissions Reduction and Absorption of Greenhouse Gases**



Environmental Action Plan by the Japanese Electric Utility Industry I

(Summarized from the Environmental Action Plan by the Japanese Electric Utility Industry, Federation of Electric Power Companies of Japan, September 2006)

The Environmental Action Plan by the Japanese Electric Utility Industry lays out the electric industry's policy and plan for dealing with global warming and other environmental issues. Each year the plan is reviewed in relation to the industry's progress toward its goals and domestic and international trends.

This plan is incorporated in the Keidanren Voluntary Action Plan on the Environment, adopted by Keidanren (now Nippon Keidanren) in June 1997. Progress toward the Keidanren plan as a whole and the various voluntary industry plans that make it up is regularly monitored by national councils and similar organs.

Measures for Stemming Global Warming

● CO_2 Emissions Reduction Target

The electric utility industry has adopted as its indicator for CO_2 emissions reductions CO_2 emissions per unit of electricity used by consumers (CO_2 intensity at the point of consumption) and has set the following target for reduction from the fiscal 1990 level.

> Work to reduce CO_2 emissions intensity at the point of consumption by about 20% from the level of fiscal 1990 by fiscal 2010 (to approximately 0.34 kg-CO_2/kWh).

Goal of 12 FEPC-Affiliated Companies

Reduce CO_2 emissions intensity (user-end electricity) by about 20%* from fiscal 1990 level by fiscal 2010

CO_2 emissions (kg-CO_2) = Electric power consumption (electric energy) (kWh) × CO_2 emissions intensity (CO_2 emissions per unit of electric power consumed)) (kg-CO_2/kWh)

* In April 2007 the goal was revised as follows.
"To work to reduce CO_2 emissions intensity (user-end electricity) by about 20% on average for fiscal 2008 to 2012 from the fiscal 1990 level"

■ Summary of Measures to Reduce CO_2

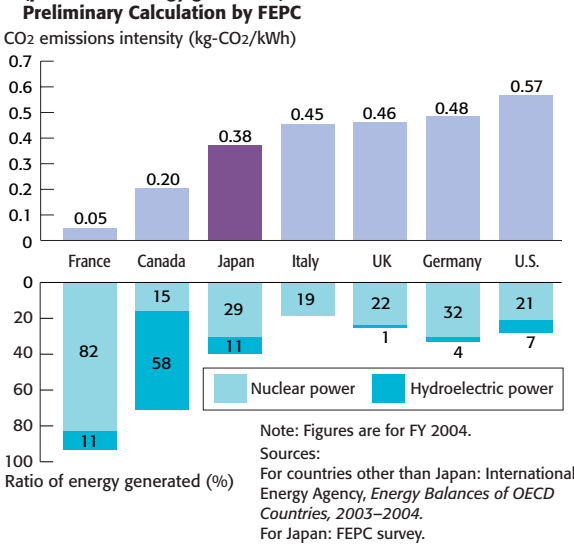
- **Supply side**
  - Increased use of non-fossil energy sources
    - Expanded introduction of nuclear or LNG-fired thermal power generation and increased use of nuclear power plants
    - Development and application of renewable energy sources
      - Hydroelectric, geothermal, solar, wind power and biomass generation
  - Improved efficiency of electric power plants
    - Improving efficiency of thermal power generation
      - Combined-cycle power generation
        High efficiency of coal-fired power generation
    - Reduction of transmission and distribution loss
      - High-voltage transmission and low-loss transformers
- **Demand side**
  - Energy conservation
    - Development and application of highly efficient energy-saving appliances
      - Heat pump and heat storage air conditioning
    - PR activities and provision of information on energy conservation
    - Enhanced utilization of untapped energy sources
      - Heat recovery from river water, waste incineration facilities, substations, and geothermal
  - Load leveling
    - Promotion of load-level management through the use of regenerative systems
      - Heat storage air conditioning

■ Japan's CO_2 Emissions

Item \ Fiscal year	FY 1990 (results)	FY 2003 (results)	FY 2004 (results)	FY 2005 (results)	FY 2010
Electric power consumption (billion kWh)	659	834	865	883	(estimate) 897
CO_2 emissions (million t-CO_2)	277 [2]	363 [20]	364 [26]	375 [27]	(estimate) 320
CO_2 intensity at point of consumption (kg-CO_2/kWh)	0.421	0.436	0.421	0.425	(estimate) 0.36

Notes:
1. CO_2 emissions intensity (user-end electricity) = CO_2 emissions ÷ energy consumption
2. "CO_2 emissions" represents total of emissions for each type of fuel. It is calculated as follows: CO_2 emissions = Calorific value attending fossil fuel combustion x CO_2 emission coefficient
3. Calorific values used are those provided in the Agency for Natural Resources and Energy's *Monthly Report on Electric Power Statistics* (FY 2005 Results), etc. Fuel-specific CO_2 emission coefficients are those provided in the Ministry of the Environment's *Comprehensive Report on the Calculation of Greenhouse Gas Emissions* (August 2002).
4. Estimates for fiscal 2010 are based on the fiscal 2006 energy supply plan, which considers GDP indicators, demand trends, and other factors.
5. Electric power consumption includes power purchased from cooperative thermal power plants, IPPs (independent power producers), and household generators and sold to customers; CO_2 emissions include those stemming from the generation of this purchased power.
6. Figures in brackets represent total CO_2 emissions from power purchased from IPPs and household generators; CO_2 reduction efforts are expected from each generation source. For purposes of calculation, calorific value is estimated from the amount of power purchased.

■ Country-by-Country Comparison of CO_2 Emissions Intensity (per unit of energy generated) Preliminary Calculation by FEPC

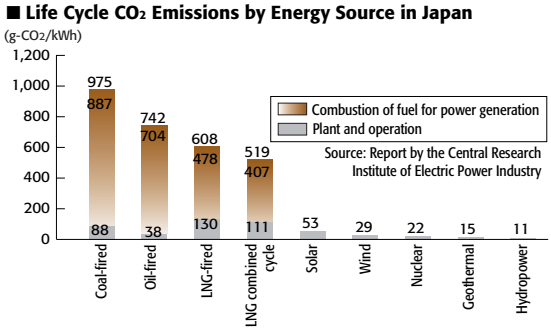


Note: Figures are for FY 2004.
Sources:
For countries other than Japan: International Energy Agency, *Energy Balances of OECD Countries, 2003–2004.*
For Japan: FEPC survey.

Life Cycle CO_2 Emissions by Power Source, Japan

The chart below represents the CO_2 emissions for various power sources when the entire life cycle is taken into account (LCA CO_2). This method calculates CO_2 emissions not only from the combustion of fuel for power generation but also from all energy consumed from such activities as mining and drilling, building power generation facilities, transporting fuel, refining fuel, operating and maintaining facilities, and so forth.

■ Life Cycle CO_2 Emissions by Energy Source in Japan



J-POWER's Contribution for Japan to Achieve the Kyoto Target

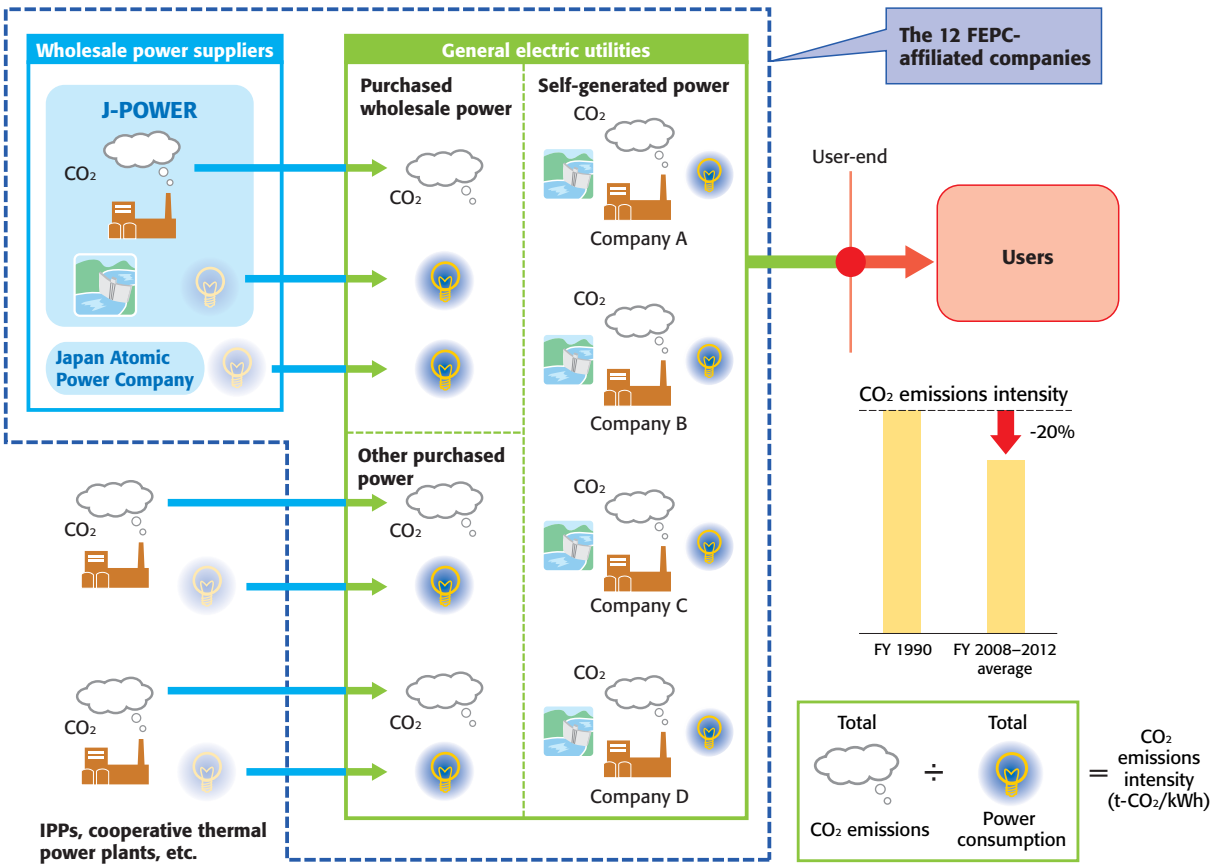
J-POWER, one of the 12 members of the Federation of Electric Power Companies of Japan (FEPC), is supporting the federation's program—the Environmental Action Plan of the Electric Power Industry—to contribute to Japan's achievement of its Kyoto target.

The Japanese government adopted the Kyoto Protocol Target Achievement Plan, a program to provide a series of necessary measures for surely achieving the Kyoto target of the 6% reduction in greenhouse gas emissions from 1990 levels in a Cabinet resolution on April 28, 2005, based on the Law concerning the Promotion of the Measures to Cope with Global Warming (Law no. 117, 1998). As part of the industrial sector's efforts, the Keidanren Voluntary Action Plan on the Environment of the Nippon Keidanren has been incorporated into the governmental program, and the FEPC's program, composing a part of Nippon Keidanren's program, has in turn been included in the governmental program. The FEPC's program has also been incorporated into the governmental program as part of the energy supply sector's efforts to reduce CO_2 emissions.

The FEPC's program, the Environmental Action Plan of the Electric Power Industry, has set the following target: To work to reduce CO_2 emissions intensity (user-end electricity) by about 20% on average for fiscal 2008 to 2012 from the fiscal 1990 level. As seen in the figure below, J-POWER's emissions are calculated to be zero because J-POWER is a wholesale power supplier without consumption points.

Because J-POWER operates power plants according to the demand of general electric utilities, their actual operation is directly reflected in the volume of CO_2 emissions of these utilities. Therefore, J-POWER's efforts to reduce CO_2 emissions would be necessary in areas other than power plant operation itself. For example, J-POWER is working to maintain and improve the generation efficiency of coal-fired power plants, to develop energy sources with low CO_2 emissions such as nuclear power, to research and develop the technologies associated with these efforts, and to utilize CDM and JI credits. Through these efforts, J-POWER continues to support the Environmental Action Plan by the Japanese Electric Utility Industry to jointly achieve the FEPC's target.

Note:
The 12 companies affiliated with the Federation of Electric Power Companies of Japan are the 10 FEPC member companies (Hokkaido Electric Power Co., Inc., Tohoku Electric Power Co., Inc., Tokyo Electric Power Co., Inc., Chubu Electric Power Co., Inc., Hokuriku Electric Power Co., Inc., Kansai Electric Power Co., Inc., Chugoku Electric Power Co., Inc., Shikoku Electric Power Co., Inc., Kyushu Electric Power Co., Inc., and Okinawa Electric Power Co., Inc.) plus J-POWER and Japan Atomic Power Company.



Environmental Action Plan by the Japanese Electric Utility Industry II

(Summarized from the Environmental Action Plan by the Japanese Electric Utility Industry, Federation of Electric Power Companies of Japan, September 2006)

Measures for Waste Reduction and Recycling

● Waste Recycling Rate Targets

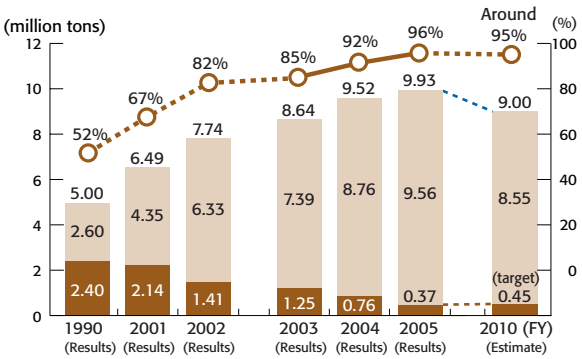
The electric utility industry has been working to reduce the volume of final waste disposal to an initial target value lower than the fiscal 1990 level of 2.4 million tons. By pursuing the 3R initiative (reduce, reuse, recycle), it has made steady progress in achieving reductions and the target volume of final disposal was revised first to no more than 2.0 million tons and then further down to no more than 1.5 million tons.

In the previous Environmental Action Plan the industry adopted the recycling rate as an indicator that is less influenced by fluctuations in demand and embraced the goal of raising the recycling rate to at least 90% by fiscal 2010. And in the latest Environmental Action Plan the target was further raised as follows.

> Work to raise the recycling rate to around 95% by fiscal 2010.

Coal ash is the waste generated in the largest amount compared with any other type of waste, so the electric utility industry regards the promotion of recycling of the waste as its highest priority and continues to make efforts to recycle it.

■ Electric Utility Industry's Waste Recycling Rate and Target



Note: After landfills for final disposal are closed, the land is utilized to expand power generation facilities or for other industrial purposes. A portion of the coal ash used at such sites has been included in "volume recycled" from fiscal 2004 as land reclamation material in accordance with the position taken by the national government.

■ Trends in Recycling of Major Wastes and By-products

Unit: 1,000 tons

Type			FY 1990	FY 2003	FY 2004	FY 2005
Waste	Combustion residue, soot and dust (coal ash)	Volume generated	3,470	6,400	6,970	7,240
		Volume recycled (Recycling rate)	1,370 (39%)	5,260 (82%)	6,310 (91%)	6,970 (96%)
	Construction waste material	Volume generated	400	300	360	360
		Volume recycled (Recycling rate)	210 (53%)	290 (96%)	350 (98%)	350 (97%)
	Scrap metal	Volume generated	140	160	170	190
		Volume recycled (Recycling rate)	130 (93%)	150 (97%)	160 (98%)	180 (99%)
By-products	Gypsum from desulfurization process	Volume generated	850	1,610	1,830	1,900
		Volume recycled (Recycling rate)	850 (100%)	1,610 (100%)	1,830 (100%)	1,900 (100%)

Notes: 1. Waste includes products of value.
2. FY 1990 figures for construction waste materials and scrap metal are estimates.
3. All gypsum from desulfurization process is sold.
4. Recycling rates are calculated on an actual volume basis. (Figures for volume generated and volume recycled are rounded to the nearest 1,000 tons.)

Number of Patent Rights Held by J-POWER (As of the end of March 2007)

	Global environment	Local environment/ recycling	Power generation/ transmission/ transformation	Civil engineering/ construction	Frontier technologies	Total
Independent application	0	23	9	7	0	39
Joint application	23	30	89	5	6	153
Total	23	53	98	12	6	192

Global environment-related research includes the following areas: high efficiency power generation using coal gasification technology, solid oxide fuel cells, and carbon dioxide capture and storage.

Glossary

(Page numbers indicate major citations.)

Advanced boiling water reactor (ABWR)
p. 35
A nuclear reactor that incorporates all the latest BWR (boiling-water reactor) technologies, including use of steel reinforced concrete for the containment vessel and a self-contained reactor recirculation pump, resulting in significant improvements in terms of safety, reliability, and cost.

Annex I countries
p. 75
Countries, designated in Annex I of the United Nations Framework Convention on Climate Change, that have committed themselves to reducing emissions of greenhouse gases (also referred to as "developed countries" in this report).

Biomass
pp. 8, 16, 27, 29, 35, 36, 51, 52, 53, 70, 71, 76
Renewable organic resources of plant and animal origin other than fossil fuels.

Biotope
pp. 47, 56
The habitat of a community of organisms. The concept originated in Germany and the term was initially used to mean a broad-ranging ecosystem. It now often refers to an artificially created habitat for plants, fish, insects, etc.

Carbon dioxide capture and storage (CCS)
pp. 15, 40
Please refer to pages 15 and 40.

Chemical oxygen demand (COD)
p. 30
The amount of oxygen required to oxidize the pollutants (primarily organic) in water. Used as an indicator to measure pollution of coastal waters and lakes.

Clean Development Mechanism (CDM)
pp. 16, 27, 37, 38, 71, 75, 77
A component of the Kyoto Mechanisms. Please refer to page 75.

Compliance
pp. 5, 17, 21, 22, 26, 54, 56, 67
Observance of legal statutes.
Please refer to pages 21 and 22.

Corporate Governance
pp. 17, 67
Governance of corporations.

Dioxins
pp. 45, 51, 56, 71
Collective name for polychlorinated dibenzo-p-dioxin (PCDD), polychlorinated dibenzofuran (PCDF), and coplanar polychlorinated biphenyl (coplanar-PCB). Toxic substances generally present in the environment in trace amounts and suspected of posing grave danger to human life and health. Under the Law Concerning Special Measures against Dioxins, which came into force in January 2000, dioxin emissions from waste incinerators and other sources are strictly regulated.

Environmental accounting
pp. 31, 54, 72
A mechanism for accurately determining and disclosing what a company invests and spends on environmental conservation and the effect of such spending—something not reflected in traditional financial analysis. Environmental accounting benefits companies by providing a quantitative assessment of their efforts to protect the environment so that they can improve the cost-effectiveness of their business activities with respect to environmental costs. It benefits stakeholders by making available corporate environmental accounting data in the form of environmental reports, etc., which can be used as yardsticks for measuring and comparing the environmental efforts of different companies.

Environmental Action Plan by the Japanese Electric Utility Industry
p. 27, 41, 76, 77, 78
Plan for positive, voluntary environmental action by electric utilities, compiled by 12 organizations affiliated with the Federation of Electric Power Companies of Japan. Establishes concrete goals and outlines active efforts to address global warming, build a recycling-based society, etc. To ensure transparency, progress under the plan is reviewed each year and the results are made available to the public.

Eco-efficiency
pp. 25, 31, 32, 34, 43, 72
A method for quantifying, comparing, and evaluating activities to reduce the amount of water, electricity, and raw materials used and to reduce the volume of waste, effluent, and exhaust gas generated in business operations, as well as efforts at legal compliance and control of environmental pollution.

Environmental management system (EMS)
pp. 28, 48, 50, 54, 55, 56, 72
Please refer to page 54.

Environmental Priorities Index for Japan (JEPIX)
p. 32
A method for assessing the overall environmental impact of a company and expressing it by means of a single figure by assigning weights to 300 environmental pollutants in terms of their impact on water and air quality using a single index model called ecopoint.

Fuel cell
pp. 13, 14, 31, 39, 40, 71
A device that converts externally supplied hydrogen and oxygen into electricity through a chemical reaction. Because fuel cells can achieve high generating efficiency and the heat generated can also be utilized, they have a high net energy efficiency and offer an effective means of saving energy and reducing CO_2 emissions. Fuel cells are particularly friendly to the environment because they dispense with combustion, thus giving off few air pollutants, and because they generate electricity without using rotating parts, and thus are relatively quiet.

Gas-turbine combined-cycle generation
pp. 8, 27, 35, 52, 71
A power generation method combining gas turbines and steam turbines. The pressure of the exhaust gas created when the fuel is burned within compressed air drives the gas turbine, and the residual heat is used to run the steam turbine. Combining these two processes results in high generating efficiency.

Generation efficiency (thermal efficiency)
pp. 13, 14, 16, 31, 32, 34, 35, 39, 41, 53, 73, 76, 77
For an electric power generating facility, the ratio of electric power generated (converted to thermal units) to heat energy input.

Green purchasing
pp. 28, 58, 72, 74
Placing priority on minimizing the environmental burden in the purchase of goods and services by emphasizing environmental load, as opposed to price, quality, convenience, or design.

Hydrochlorofluorocarbons (HCFCs)
pp. 41, 74, 75
Chemicals used in refrigerators and in the manufacture of semiconductors in place of chlorofluorocarbons, which destroy the ozone layer. Because their greenhouse effect is several thousands or even tens of

thousands times that of CO_2, they were included among the gases targeted for reduction at COP3, held in Kyoto in December 1997.

Hydrofluorocarbons (HFCs)
pp. 41, 71, 74, 75
Chemicals used in refrigerators, car air conditioners, etc., beginning around 1991, after CFCs and HCFCs were subject to controls out of concerns that they destroy the ozone layer. HFCs are artificial greenhouse gases with a greenhouse effect ranging from 140 to 11,700 times that of CO_2.

Independent power producer (IPP)
pp. 1, 2, 35, 52, 53, 55, 67, 76, 77
A business, other than a wholesale power supplier, that supplies electricity to general electric utilities.

Industrial waste
pp. 28, 30, 31, 48, 49, 56, 57, 71, 72, 74
Wastes such as ash, sludge, waste oil, waste acid, waste alkali, and waste plastics generated in the course of business operations. The Waste Management and Public Cleansing Law calls for proper disposal and incineration of industrial waste.

Integrated coal gasification fuel cell combined cycle (IGFC)
pp. 13, 14, 27, 39, 40, 71
A triple combined power generation system achieved by combining the fuel cell, gas turbine, and steam turbine; the ultimate coal-fired thermal power generation system.

Integrated coal gasification combined cycle (IGCC)
pp. 13, 14, 39, 40, 71
A combined power generation system consisting of gas turbines that generate electricity by firing gas produced from coal and steam turbines that use the exhaust heat from the gas turbines.

IPCC (Intergovernmental Panel on Climate Change)
pp. 6, 13, 15
Please refer to page 13.

ISO 14001
pp. 28, 54, 55, 56, 72
An international standard specifying the requirements for an environmental management system; one of the ISO 14000 series of international standards for environmental management adopted by the International Standards Organization (ISO).

Japanese version of the SOX Act (J-SOX)
p. 18
A common name given to certain stipulations of the Financial Instruments and Exchange Law, generally referring to Article 24.4.4 and Article 193, which set forth matters relating to corporate governance. Preparations are now being made toward application of these stipulations based on the recommendation issued by the Financial Services Agency's Business Accounting Council titled "On the Setting of the Standards and Practice Standards for Management Assessment and Audit concerning Internal Control Over Financial Reporting (Council Opinions)." J-SOX was inspired by the enactment in the United States of the Public Company Accounting Reform and Investor Protection Act (commonly known as the Sarbanes-Oxley Act) in 2002. It requires applicable corporations and corporate groups to issue internal control reports evaluating the internal structures essential to ensuring validity of financial reports and other information and to be audited by certified public accountants or audit firms.

Joint Implementation (JI)
pp. 27, 37, 38, 71, 75, 77
A component of the Kyoto Mechanisms.
Please refer to page 75.

Kyoto Mechanisms
pp. 6, 16, 26, 27, 34, 37, 38, 71, 75
Please refer to page 75.

Kyoto Protocol
pp. 37, 38, 41, 75, 77
Please refer to page 75.

Life cycle assessment (LCA)
pp. 68, 72, 76
A method for quantitatively and objectively assessing the resources and energy used and the total environmental load from emissions produced by a product in all its phases—including manufacture, transport, use, and disposal—and the impact of this consumption and burden on the earth and its ecosystems.

Life cycle impact assessment method based on endpoint modeling (LIME)
p. 32
A method for scientifically analyzing the contribution of substances such as CO_2 to various environmental problems, such as global warming and destruction of the ozone layer, and calculating the potential damage caused to various objects of protection, such as human health and ecosystems; weighting the relative importance of these objects; and integrating the information into an overall impact assessment.

Methane (CH_4)
pp. 41, 75
A main component of natural gas. Also produced through the decay or fermentation of organic matter. The second most common greenhouse gas, after carbon dioxide, with a greenhouse effect 21 times that of CO_2.

Micro-hydropower
pp. 36, 71
Hydroelectric power produced in smaller plants (usually generating 100 kW or less, although there is no precise definition).

Mixed-oxide fuel (MOX fuel)
p. 35
Mixed oxide fuel consisting of uranium mixed with plutonium recovered by reprocessing spent nuclear fuel. In Japan, light-water and other reactors that use MOX fuel to generate electricity are referred to as "pluthermal." While Japan's pluthermal plan originally called for use of a one-third MOX core for fuel, the "full MOX" plan calls for a 100% MOX core.

Municipal solid waste (MSW)
pp. 30, 50, 51
Defined as waste other than industrial waste under the Waste Management and Public Cleansing Law. Further divided into household waste, business waste (waste from offices, eating and drinking establishments, etc.) and excrement.

Nitrogen oxides (NOx)
pp. 28, 30, 31, 42, 43, 44, 52, 71, 74
Collective term for compounds made up of nitrogen and oxygen. NOx is invariably produced during combustion as oxygen binds with nitrogen in the air and/or in the substance being burned. High-temperature combustion in the boilers of electric power plants or in automobile engines yields nitrogen monoxide, and this NO is further oxidized to form the stable compound nitrogen dioxide (NO_2), which is emitted into the atmosphere. Ultraviolet light from the sun reacts with nitrogen oxides in the atmosphere to create ozone and other photochemical oxidants.

Nitrous oxide (N_2O)
pp. 41, 75
Also known as dinitrogen monoxide. A major greenhouse gas (along with carbon dioxide, methane, tropospheric ozone, and chlorofluorocarbons) with a greenhouse effect 310 times that of CO_2. Said to be generated by combustion and application of nitrogen fertilizer.

PDCA management cycle
p. 54
Management cycle, consisting of *plan*, *do*, *check*, and *action*, whose repetition provides the basis for continuous improvement in environmental management systems.

Perfluorocarbons (PFCs)
pp. 41, 75
Chemicals used for semiconductor manufacturing beginning in the 1980s. PFCs are artificial greenhouse gases with a greenhouse effect 6,500 to 9,200 times that of CO_2.

Pollutant Release and Transfer Register (PRTR)
pp. 45, 71
Please refer to page 45.

Polychlorinated biphenyl (PCB)
pp. 45, 54, 71, 83
An organic chlorinated compound first produced industrially in 1929 and thereafter used for a wide range of applications because of its stability, heat resistance, and performance as an insulator. In time it became clear that PCB, which takes a long time to break down, tends to accumulate in living tissue and cause long-term toxicity, and its manufacture, import, and use in new products was banned in 1974 under the Law Concerning the Examination and Regulation of Manufacture, etc., of Chemical Substances. In addition, the Law Concerning Special Measures Against PCB Waste, which came into force in July 2001, calls for detoxification treatment of PCB waste currently in storage by 2016.

Power producer and supplier (PPS)
pp. 1, 2, 55
A business that provides electricity to meet a certain level of demand (in general, contract demand of at least 2,000 kW in a single service area served by extra-high voltage lines maintained by general electric utilities, excluding Okinawa Electric Power Co.; in the case of Okinawa Electric Power Co., contract demand of at least 20,000 kW in a single service area served by power lines carrying at least 60,000 volts), excluding the general electric utilities that maintain the transmission lines. A new category of business established under the revised Electric Utility Law of 1999.

Renewable energy
pp. 15, 27, 31, 32, 35, 37, 52, 69, 71, 76
Energy derived from such natural phenomena as sunlight, water, wind, waves, and biomass, as opposed to such fossil fuels as coal and oil that exist in the earth in limited quantities.

River maintenance flow
p. 47
A minimum river flow determined for each river by considering all the conditions needed to restore or create a sound river environment, as by restoring habitat for fish, improving the scenery, etc. Established with the goal of minimizing problems caused by low water around hydroelectric power stations, as a tool for improving the river environment and restoring clean water flow.

Soil pollution
pp. 44, 48
Contamination of soil or groundwater by hazardous substances, or the state of being so contaminated. May occur directly, as when raw materials leak from containers or pollutants enter the soil from dumped waste matter or landfills, or indirectly, via air or water pollution. Soil pollution is not easily visible and is difficult to mitigate.

Solid oxide fuel cells (SOFC)
pp. 39, 71, 78
Please refer to page 39.

Soot and dust
pp. 30, 31, 43, 44, 71, 74, 78
The Air Pollution Control Law classifies particles that remain suspended in the atmosphere according to source. Soot and dust is that generated when matter is burned, general dust is that generated or dispersed when matter is broken up by mechanical treatment or from deposition of resultant particles, and particulate matter is that generated by the operation of motor vehicles.

Specially controlled industrial waste
pp. 30, 56
Explosive, toxic, or infectious industrial waste requiring strict controls under the Waste Management and Public Cleansing Law. Includes waste oil with a low flash point, medical waste, PCBs, asbestos, and sludge containing high concentrations of heavy metals.

Sulfur hexafluoride (SF_6)
pp. 41, 71, 73, 75
A compound of sulfur and fluorine produced industrially; SF_6 does not exist in nature. Because it is chemically stable and an excellent insulator, it is widely used in the electric industry as a gas insulator in circuit breakers and other devices. Its greenhouse effect is 23,900 times that of CO_2.

Sulfur oxides (SOx)
pp. 28, 30, 31, 42, 43, 44, 52, 71, 74
Collective term for compounds made up of sulfur and oxygen, including sulfur dioxide (SO_2), sulfur trioxide (SO_3), and sulfuric acid mist (H_2SO_4). Sulfur oxides are generated from the sulfur content in coal and heavy oil when they are fired as fuel in factories and thermal power plants and are released into the atmosphere in exhaust gases. As a substance responsible for acid rain, they are a source of atmospheric pollution.

Sustainability Reporting Guidelines
pp. 3, 84
Set of guidelines adopted by the Global Reporting Initiative (GRI; an international nongovernmental organization involving the UN Environmental Programme, environmental groups, institutional investors, accountants' associations, and corporations from various countries) to standardize sustainability reports, i.e., company reports that cover not only environmental but also social and economic aspects of business activity from the standpoint of sustainable development.

Sustainable development
pp. 4, 5, 6, 25, 26, 32, 53, 61, 67, 70, 75
The 1987 report of the World Commission on Environment and Development, *Our Common Future*, defines sustainable development as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs." The 1991 report *Caring for the Earth*, jointly compiled by the International Union for Conservation of Nature, the United Nations Environmental Programme, and the World Wide Fund for Nature, defines it as "improving the quality of people's lives while living within the carrying capacity of supporting ecosystems."

Thermal water discharge
p. 44
In thermal and nuclear power generation, the steam that powers the turbine is cooled and turned to water in a condenser so that it can be used again. In almost all Japanese power plants, seawater is used to cool the condensers. As the seawater passes through the condenser, its temperature rises. It is then returned to the ocean through the discharge outlet, at which point it is referred to as thermal water discharge.

Ultra super critical (USC)
pp. 13, 14, 32, 34, 39
A steam turbine technology that makes use of advanced steam conditions, beyond those used in conventional super critical turbines (pressure 246 kg/cm^2; temperature 566°C), to improve the efficiency of thermal power plants.

Zero emissions
pp. 8, 15, 26, 28, 40, 49, 69, 71
A concept developed by United Nations University in 1994 in response to the idea of sustainable development put forth at the 1992 Earth Summit. It aims to build a system of recycling-based industries in which one industry uses the waste of another to create a situation in which no net waste is generated. It involves a process of continuous improvement in the quest for that ideal. In Japan different entities are now approaching the goal of "no garbage" (as the concept is popularly known) in a variety of different ways.

J-POWER Business Sites and Significant Consolidated Subsidiaries

J-POWER Business Sites

(As of the end of March 2007)

In Japan	Name	Location
Head Office		Chuo-ku, Tokyo
Hydropower & Transmission System Department		
	Hokkaido Regional Headquarters	Sapporo-shi, Hokkaido
	East Regional Headquarters	Kawagoe-shi, Saitama
	Chubu Regional Headquarters	Kasugai-shi, Aichi
	West Regional Headquaters	Osaka-shi, Osaka
	Ohma Main-Transmission Line Project Construction Office	Mutsu-shi, Aomori
	Nishi-Tokyo Main Transmission Line Construction Office	Kawagoe-shi, Saitama
Civil and Electrical Engineering Department		
	Ibigawa Hydro Project Survey Office	Ibi-gun, Gifu
	Kumagawa Hydro Project Survey Office	Hitoyoshi-shi, Kumamoto
Thermal Power Department		
	Isogo Thermal Power Station	Yokohama-shi, Kanagawa
	Takasago Thermal Power Station	Takasago-shi, Hyogo
	Takehara Thermal Power Station	Takehara-shi, Hiroshima
	Tachibanawan Themal Power Station	Anan-shi, Tokushima
	Matsushima Thermal Power Station	Saikai-shi, Nagasaki
	Matsuura Thermal Power Station	Matsuura-shi, Nagasaki
	Ishikawa Coal Thermal Power Station	Uruma-shi, Okinawa
	Onikobe Geothermal Power Station	Osaki-shi, Miyagi
Thermal Power Engineering Department		
	Isogo Thermal Power Station No. 2 Unit Construction Office	Yokohama-shi, Kanagawa
Nuclear Power Department		
	Ohma Nuclear Power Project Construction Preparation Office	Shimokita-gun, Aomori
	Aomori Branch Office	Aomori-shi, Aomori
Business Planning Department		
	Wakamatsu Operations & General Management Office	Kitakyushu-shi, Fukuoka
Corporate Planning & Administration Department		
	Sendai Office	Sendai-shi, Miyagi
	Takamatsu Office	Takamatsu-shi, Kagawa
	Fukuoka Office	Fukuoka-shi, Fukuoka
	Hokuriku Office	Toyama-shi, Toyama
	Chugoku Office	Hiroshima-shi, Hiroshima
Technology Development Center		Chigasaki-shi, Kanagawa
	Chigasaki Research Institute	Chigasaki-shi, Kanagawa
	Wakamatsu Research Institute	Kitakyushu-shi, Fukuoka

Overseas Offices
Washington Office (U.S.A.)
EPDC Beijing Office (China)
Kuala Lumpur Office (Malaysia)
Hanoi Office (Vietnam)
Purulia Pumped Storage Project Office (India)
Upper Kotomale Hydropower Project Office (Sri Lanka)
Dai Ninh Hydropower Project Office (Vietnam)

Significant Consolidated Subsidiaries

(As of the end of March 2007)

Company Name	Investment Rate (%)	Main Activities	Head Office
Bay Side Energy Co., Ltd.	100	Electric power supply	Chuo-ku, Tokyo
Green Power Kuzumaki Co., Ltd.	100	Construction and operation of wind power generation facilities	Iwate-gun, Iwate
Green Power Setana Co., Ltd.	100	Construction and operation of wind power generation facilities	Kudo-gun, Hokkaido
Green Power Koriyama Nunobiki	100	Construction and operation of wind power generation facilities	Koriyama-shi, Fukushima
Dream-Up Tomamae Co., Ltd.	100	Construction and operation of wind power generation facilities	Tomamae-gun, Hokkaido
Green Power Aso Co., Ltd.	81	Construction and operation of wind power generation facilities	Aso-gun, Kumamoto
ITOIGAWA POWER Inc.	80	Electric power supply	Itoigawa-shi, Niigata
Nagasaki-Shikamachi Wind Power Co., Ltd.	70	Construction and operation of wind power generation facilities	Kitamatsuura-gun, Nagasaki
Nikaho Kogen Wind Power Co., Ltd.	67	Construction and operation of wind power generation facilities	Nikaho-shi, Akita
J-Wind TAHARA Ltd.	66	Construction and operation of wind power generation facilities	Tahara-shi, Aichi
Ichihara Power Co., Ltd.	60	Electric power supply	Ichihara-shi, Chiba
JPec Co., Ltd	100	Engineering, technical development, design, consulting, and maintenance/surveys of thermal and nuclear power generation facilities; coal loading at thermal power plants; sale of fly ash and marine transportation of coal fuel; surveys, construction, and management related to green landscaping; surveys and planning related to environmental conservation	Chuo-ku, Tokyo
JPHYTEC Co., Ltd.	100	Engineering, technical development, design, consulting, maintenance/surveys and work related to land compensation for hydropower facilities and transmission and transformer facilities; land surveying; civil engineering; general construction; and construction management	Chiyoda-ku, Tokyo
KEC Corporation	100	Construction and maintenance of electronics application facilities and communications facilities	Bunkyo-ku, Tokyo
EPDC Coal Tech and Marine Co., Ltd	100	Marine transportation of coal ash and fly ash	Chuo-ku, Tokyo
KDC Engineering Co., Ltd.	100	Civil engineering, general construction, surveys and design related to electric power generation facilities, and construction management	Nakano-ku, Tokyo
J-POWER EnTech, Inc.	100	Engineering of equipment for the removal of air and water pollutants	Minato-ku, Tokyo
J-POWER RESOURCES Co., Ltd.	100	Coal surveys, mining, development, and related investment	Chuo-ku, Tokyo
JP Business Service Corporation	100	Operation of welfare facilities; building management; provision of general affairs, labor, and accounting services; development of computer software	Koto-ku, Tokyo
Omuta Plant Services Co., Ltd	100	Operation and maintenance of waste power generation stations	Omuta-shi, Fukuoka
Japan Network Engineering Co., Ltd.	100	Telecommunications; operation and maintenance of telecommunications equipment	Chuo-ku, Tokyo
Kaihatuhiryou Co., Ltd.	100	Production of fertilizers using coal ash	Takehara-shi, Hioshima
Kaihatuhiryou Hanbai Co., Ltd.	100	Sale of fertilizers made from coal ash	Shinjuku-ku, Tokyo
J-Power Investment Netherlands B.V.	100	Management of overseas investments	Netherlands
J-POWER North America Holdings Co., Ltd.	100	Management of overseas investments	U.S.A.

Note: Kaihatuhiryou Co., Ltd. merged with Kaihatuhiryou Hanbai Co., Ltd. in April 2007.

Environmental Chronology

World	J-POWER Group	Japan
	1952 Establishment of J-POWER	
	1960 Shokawa cherry trees transplanted at Miboro Power Station	
	1964 Pollution Control Agreement concerning Isogo Thermal Power Station concluded with Yohohama City (Yokohama method)	
		1967 Basic Law for Environmental Pollution Control promulgated
		1968 Air Pollution Control Law promulgated
		1968 Noise Pollution Regulation Law promulgated
1972 United Nations Conference on the Human Environment (UNCHE) held in Stockholm	1973 Numappara Power Station started operation (wetland conservation)	1970 Water Pollution Control Law promulgated
1975 Washington Convention (Convention on International Trade in Endangered Species, CITES) came into force	1975 Flue-gas desulfurization system completed at Takasago Thermal Power Station No.1 (Japan's first complete flue-gas desulfurization system)	1970 Waste Management (Disposal) and Public Cleansing Law promulgated
	1976 Totsugawa Power Station No. 1 improved water intake by introducing surface intake facilities	1971 Offensive Odor Control Law promulgated
	1977 Funagira Dam started operation (fish ladder installed)	1974 Air Pollution Control Law amended and promulgated (regulation of total emissions introduced)
1985 Vienna Convention for the Protection of the Ozone Layer adopted	1980 Yanase Power Station improved water intake by introducing selective intake facilities	
	1982 Takehara Thermal Power Station No. 1 installed flue-gas denitrification system	1975 Vibration Regulation Law promulgated
1988 Intergovernmental Panel on Climate Change (IPCC) established	1986 Isogo Thermal Power Station received Pollution Prevention Award from Kanagawa Prefecture	1977 Notification of Ministry of International Trade and Industry (currently Ministry of Economy, Trade and Industry) regarding the Ministerial Meeting on Assessment issued
	1987 Ishikawa Coal-Fired Thermal Power Station selected as one of Public Color Prize Ten Environmental Winners	
	1988 Takasago Thermal Power Station received Director General's Award (Energy Saving) from the Agency for Natural Resources and Energy	1984 Implementation Outline of Environmental Impact Assessment approved by the Cabinet
	1990 Committee for Coping with Global Environment Problems established	
1992 United Nations Conference on Environment and Development (UNCED) held in Rio de Janeiro	1990 Nishi-Yoshino Power Station No. 1 started discharging for river flow maintenance (first hydraulic power station of J-POWER)	
1994 Framework Convention on Climate Change came into force	1990 Tagokura Power Station started producing driftwood charcoal	1990 Global Warming Prevention Action Plan approved
	1990 Takehara Thermal Power Station received Director General's Award (Energy Saving) from the Agency for Natural Resources and Energy	1993 Law for Promotion of Utilization of Recyclable Resources promulgated
1995 1st Conference of Parties to the UN Framework Convention on Climate Change (COP1) held in Berlin	1993 Environmental Activities Promotion Board established	1993 Basic Environment Law promulgated
	1993 Denpatsu Environmental Action Guidelines established	1994 Basic Environment Plan approved by the Cabinet
1996 2nd Conference of Parties to the UN Framework Convention on Climate Change (COP2) held in Geneva	1993 Driftwood charcoal received Minister's Prize (Recycling Concept) from Ministry of International Trade and Industry	1995 Law for Promotion of Sorted Collection and Recycling of Containers and Packaging promulgated
	1994 Kumaushi Power Station received Good Design Prize from Ministry of International Trade and Industry	1997 Environment Impact Assessment Law promulgated
1996 ISO 14001 Environmental Management System formulated	1994 Huang Dao Power Station in China started high-sulfur coal desulfurization demonstration test	
1997 3rd Conference of Parties to the UN Framework Convention on Climate Change (COP3) held in Kyoto	1997 Okukiyotsu Power Station No. 2 received Technology Award (Cohabitation with Local Community/Open Type Power Station) from the Japan Society of Civil Engineers	1997 River Law amended (for not only irrigation and water use but also improvement and conservation of river environment)
	1998 New J-POWER Environmental Action Guidelines established	1998 Law Concerning the Rational Use of Energy (Energy Saving Law) amended
1998 4th Conference of Parties to the UN Framework Convention on Climate Change (COP4) held in Buenos Aires	1998 Afforestation operation in Australia began	
	1998 Matsuura Thermal Power Station No. 2 received Director-General's Prize from the Agency of Industry Science and Technology (Prevention of Air Pollution) for its microfiltration-type flue-gas desulfurization wastewater treatment system	1998 Law Concerning the Promotion of the Measures to Cope with Global Warming promulgated
1999 5th Conference of Parties to the UN Framework Convention on Climate Change (COP5) held in Bonn	1999 Matsuura Thermal Power Station acquired ISO 14001 certification	1999 Law Concerning Reporting, etc. of Releases to the Environment of Specific Chemical Substances and Promoting Improvements in Their Management promulgated
	1999 Okutadami-Otori Hydro Project Construction Office acquired ISO 14001 certification (first construction organization in Japan to receive ISO 14001 certification)	
	1999 Matsuura Thermal Power Station No. 2 Generator Turbine received an award (improvement of combustion efficiency, etc.) from the Japan Society of Mechanical Engineers	1999 Law Concerning Special Measures against Dioxins promulgated
2000 6th Conference of Parties to the UN Framework Convention on Climate Change (COP6) held in The Hague	2000 Environmental Management Regulations and J-POWER Environmental Policy formulated	2000 Fundamental Law for Establishing a Sound Material-Cycle Society promulgated
	2000 Okinawa Seawater Pumped-Storage Project Demonstration Test Office received the Technology Award (Restored Environment Area) from the Japan Society of Civil Engineers and recognition for Energy PR Facility/PR Activities, receiving the Steering Committee Chairman's Prize (for activities promoting understanding of environmental problems)	2001 Inauguration of Ministry of the Environment following the reorganization of ministerial offices
2001 Resumed Session of 6th Conference of Parties to the UN Framework Convention on Climate Change (COP6 Resumed Session) held in Bonn	2000 Tomamae Winvilla Wind Farm started operation	2001 Law Concerning Special Measures against PCB Waste enforced
	2000 Received Technical Development Award of the Japanese Geotechnical Society (Cyclic Use of Resources) for deep-chemical mixing method for utilizing coal ash	2001 Law Concerning the Promotion of Procurement of Eco-Friendly Goods and Services by the State and Other Entities (Law on Promoting Green Purchasing) enforced
2001 7th Conference of Parties to the UN Framework Convention on Climate Change (COP7) held in Marrakesh	2000 Tachibanawan Thermal Power Station received award from the Japan Society of Civil Engineers (measures for peripheral environmental conservation and harmonizing, reuse of sea-floor dredging earth, recycling of coal ash in large quantities, etc.)	
2001 Operational Rules for the Kyoto Protocol adopted	2000 Construction Division acquired ISO 14001 certification	2002 Law Concerning the Rational Use of Energy amended
	2001 Nikaho Kogen Wind Farm started operation	2002 Law Concerning the Promotion of the Measures to Cope with Global Warming amended
2002 World Summit on Sustainable Development held in Johannesburg	2001 Isogo Thermal Power Station received Public Color Award and Top Ten Environmental Color Award from the Study Group for Color in Public Places	2002 Law for the Promotion of Nature Restoration promulgated
2002 8th Conference of Parties to the UN Framework Convention on Climate Change (COP8) held in New Delhi	2001 Introduction of EMS based on ISO 14001 throughout the company completed	
	2002 Received Japan Institute of Energy Award for development of ash-circulating-type PFBC technology (improvement of desulfurization efficiency and combustion efficiency, reduction of coal ash, etc.)	2003 Law Concerning Measures against Soil Pollution enforced
2003 9th Conference of Parties to the UN Framework Convention on Climate Change (COP9) held in Milan	2002 Omuta Recycling Power Station started operation	2003 Law on Special Measures Concerning New Energy Use for Electric Utilities (RPS Law) enforced
2003 3rd Water Forum held	2002 Tokyo Bayside Wind Power Plant started operation	2003 Law for Enhancing Motivation on Environmental Conservation and Promoting of Environmental Education enforced
2004 10th Conference of Parties to the UN Framework Convention on Climate Change (COP10) held in Buenos Aires	2003 Omuta Power Recycling Station received New Energy Award and Chairman's Prize from the New Energy Foundation	2004 Waste Disposal and Public Cleansing Law amended
2004 2004 version of ISO 14001 released	2003 Okutadami-Otori Hydro Project Construction Office received Technology Award from the Japan Society of Civil Engineers (for natural environmental conservation and overcoming of obstacles to technological development)	2004 Air Pollution Control Law amended
2005 Kyoto Protocol came into force	2003 Green Power Kuzumaki Wind Farm put into commercial operation	2004 Law Concerning the Promotion of Business Activities with Environmental Consideration by Specified Corporations, etc., by Facilitating Access to Environmental Information, and Other Measures promulgated
2005 11th Conference of Parties to the UN Framework Convention on Climate Change (COP11) and 1st conference of the parties serving as a meeting of the parties to the Kyoto Protocol (COP/MOP 1) held in Montreal	2004 Report prepared by Okutadami-Otori Hydro Project Construction Office received an encouragement prize at 7th Environmental Report Awards ceremony	
	2004 Concrete action plan for the J-POWER Group Environmental Management Vision formulated	2004 Scenery Law enforced
	2004 J-POWER certified and registered for Eco-Leaf Environmental Labeling Program	2005 Waste Disposal and Public Cleansing Law amended
	2004 Ichihara Power's Ichihara Power Station put into commercial operation	
2006 12th Conference of Parties to the UN Framework Convention on Climate Change (COP12) and 2nd conference of the parties serving as a meeting of the parties to the Kyoto Protocol (COP/MOP 2) held in Nairobi	2005 Three J-POWER-owned wind power stations (Tahara Wind Farm, Aso Wind Farm, and Shikamachi Wind Farm) put into commercial operation	2006 Law Concerning the Promotion of the Measures to Cope with Global Warming amended
	2005 All of J-POWER's coal-fired thermal power stations and a geothermal power station acquired ISO 14001 certification	2007 Green Contract Law promulgated
	2005 Bay Side Energy's Ichihara Power Station put into commercial operation	
	2005 Okutadami/Otori Power Station expanded, received Environment Award from the Japan Society of Civil Engineers (for wetland restoration)	
	2005 Setana Rinkai Wind Power Plant started operation	
	2006 All of J-POWER's power generation, transmission, substation, and communication sites acquired ISO 14001 certification	
	2006 Yala Biomass Power Plant in Thailand started operation	
	2007 Koriyama Nunobiki Kogen Wind Farm started operation	

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The Table of Correspondences represents the J-POWER Group's understanding of how the specific information contained in this report corresponds to the sections of the GRI Guidelines.

* GRI (Global Reporting Initiative): A global network of NGOs, corporations, and international organizations, a goal of which is to encourage reporting of the economic, environmental, and social aspects of corporate activities. A copy of the GRI Guidelines is available at the following web address: http://www.globalreporting.org/NR/rdonlyres/529105CC-89D8-405F-87CF-12A601AB3831/0/2002_Guidelines_ENG.pdf

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Electric Power Development Co., Ltd.

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