

2006

J-POWER Group **Environmental Management Report**





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Harmonizing Energy with the Environment— The Power Source of the J-POWER Group

For the future of the planet, we want to deliver power to as many people as possible.

The J-POWER Group has been in business for more than fifty years, with operations throughout Japan and in a number of other countries.

Based on this record of achievement and the technological capacity supporting it, we are working toward creating new businesses in the field of energy and the environment, and increasing our corporate value.



Tomamae Winvilla Power Plant (Hokkaido pref.)

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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

- This report has been renamed "J-POWER Group Environmental Management Report" as it now includes all of the consolidated subsidiaries in the J-POWER Group.
- 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. The results have been independently verified by Shin Nihon Environmental Management and Quality Research Institute Co., Ltd. (see page 78 for details).
- In addition to expanded coverage of corporate governance, compliance, and other aspects of management, the "Society" section in last year's report has been reorganized and enhanced under the headings "Relationship with Local Communities and Society" and "Relationship with Employees."
- The "Independent Recommendations" in the "External Evaluation and Outside Opinions" section have been drawn from a wide spectrum of experts, researchers, and journalists with the goal of improving our environmental management and working to increase the reliability and transparency of our operations.

ability and transparency of our operations.

- This report is also available on the J-POWER website as "2006 Environmental Management Report" (from November 2006).
- Terms in the report marked  are listed in the Glossary on pp. 90-92.

Period covered: April 2005 to March 2006 (some items include information pertaining to April 2006 and beyond)

Scope: J-POWER and J-POWER Group companies (consolidated subsidiaries)
Where data applies only to J-POWER, or includes non-consolidated subsidiaries, this fact is noted in the text.

Guidelines referred to:

- Ministry of the Environment, Environmental Accounting Guidelines 2003
- Global Reporting Initiative (GRI), Sustainability Reporting Guidelines 2002

Report issued since: 1998

Next report due: October 2007 (tentative schedule)

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.

J-POWER Group Business: Outline (J-POWER and consolidated subsidiaries, as of the end of March 2006.)

◆ **Founded (J-POWER)** September 16, 1952
 ◆ **Employees** Group total 5,971
 (including 2,132 parent company employees)

77 power stations throughout Japan

◆ **Main business activities**

● **Wholesale power supply (J-POWER)**

Hydropower stations	59	Total output 8.55 GW
Thermal power stations (including geothermal)	8	Total output 7.82 GW
Transmission lines (total length)		2,404 km
Customers	10 general electric utilities (regional power companies)	

● **Other electricity business**

Wind farms	7	Total output 0.14 GW
Wholesale power supply to general electric utilities via independent power producers (IPP)	1	Total output 0.14 GW
Wholesale power supply to power producers and suppliers (PPS)	2	Total output 0.22 GW

● **Ancillary business related to electricity (J-POWER subsidiaries and affiliates)**

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

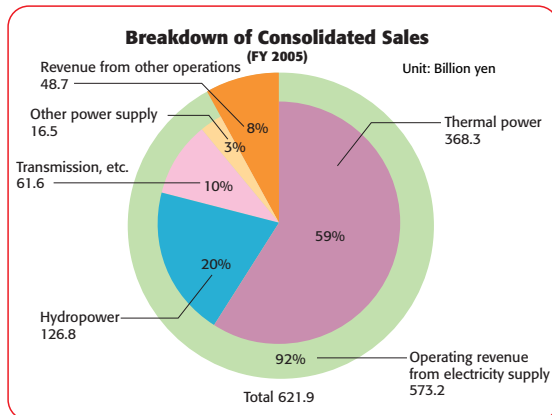
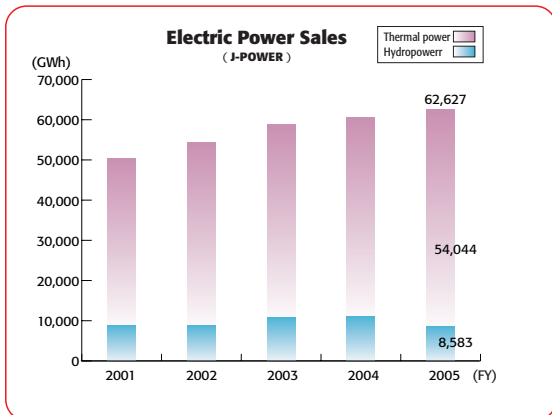
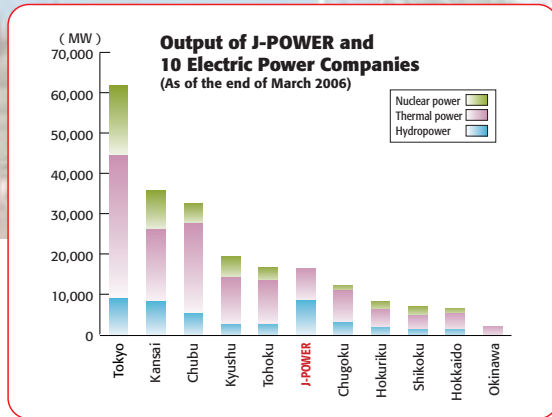
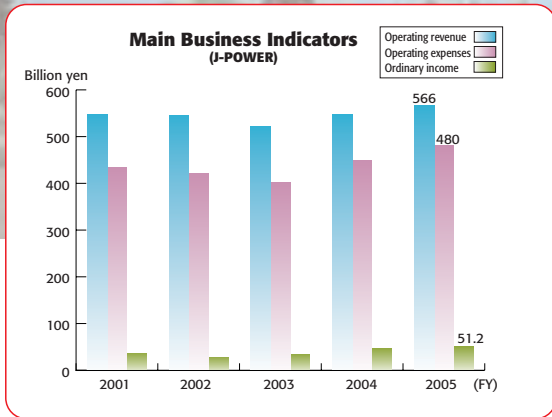
● **Diversified business (J-POWER affiliates)**

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

64,000 GWh of wholesale electricity supplied to power companies nationwide

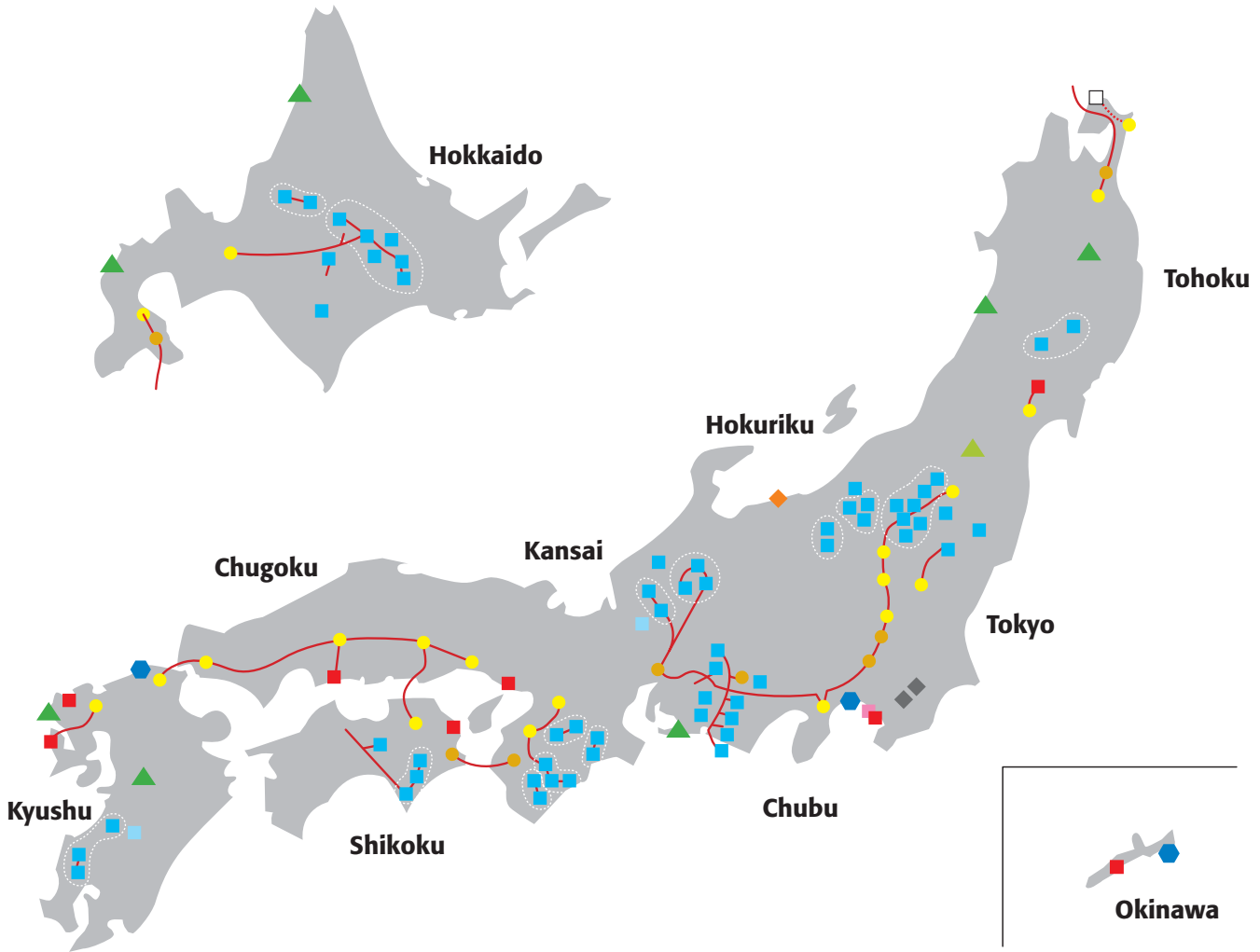
Japan's **homes and factories**

◆ **Total sales (consolidated basis)** 621,900 million yen
 Revenue from electricity supply 573,200 million yen



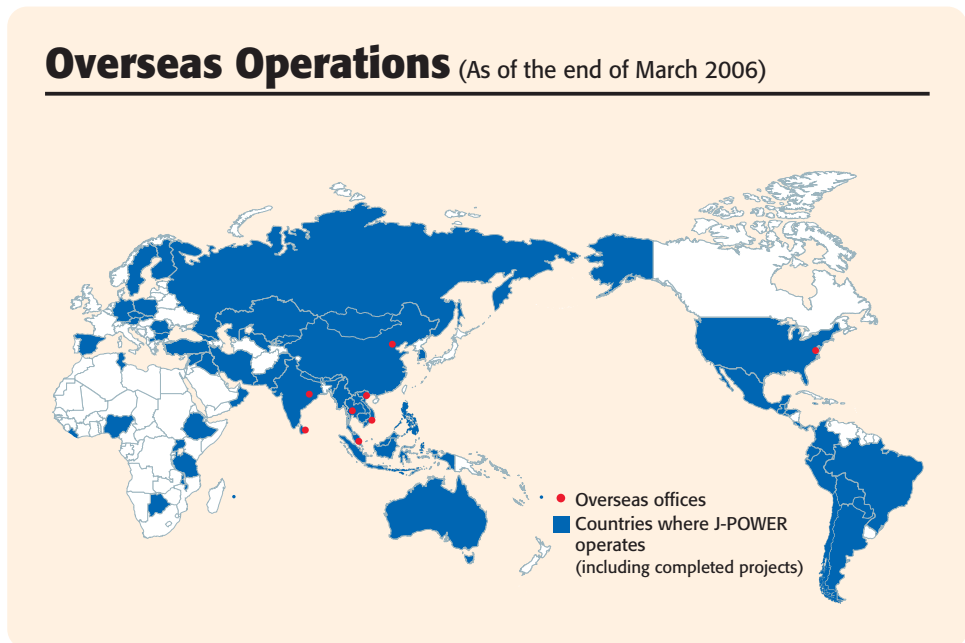
(Including equity method affiliates)

Facilities in Japan (As of the end of March 2006)



Note: The group also has dedicated communication facilities throughout Japan.

Overseas Operations (As of the end of March 2006)



J-POWER Group Business

Coal-Fired Power Generation

J-POWER's coal-fired power business began in the late 1960s with the construction and operation of coal-fired power stations in Japan aimed at supporting the domestic coal industry. Amid strong calls to diversify energy sources following the two oil shocks of the 1970s, the company set about constructing the first large-scale coal-fired power station in Japan fuelled by imported coal.

With seven power stations supplying a total output of 7.81 GW, J-POWER now possesses approximately 20 percent of Japan's coal-fired generation capacity, the largest share in the country.

Hydroelectric Power Generation

Hydroelectric generation offers complete independence from imported fuels. Moreover, it emits no CO₂ and is the most reliable source of renewable energy 💡 in terms of both quantity and quality.

J-POWER has built and operated hydroelectric power stations for 50 years, beginning with the Sakuma power plant in Shizuoka Prefecture, which started operation in 1956. The Sakuma plant is typical of the company's large-scale hydroelectricity developments, being a pumped-storage power plant capable of rapidly handling changes in power demand at peak periods.

Today J-POWER has 59 hydroelectric plants throughout Japan with a total output of 8.55 GW, representing a share of almost 20 percent in the country's total hydroelectric capacity.

5



Mitsuura Thermal Power Station (Nagasaki Prefecture)



Nukabira Power Station (Hokkaido)

Geothermal Power Generation

While geothermal generation is conducted on a small scale, it uses renewable and domestically available energy and emits no CO₂. J-POWER has operated the Onikobe geothermal power station in Miyagi Prefecture since 1975 (output: 12,500 kW).



Onikobe Geothermal Power Station (Miyagi Prefecture)

Wind Power Generation

Our Tomamae Winvilla Wind Farm in Hokkaido was a pioneer among large-scale facilities when it started operation in 2000. Since then, we have developed further wind farms around Japan. In fiscal 2005 the Setana Seaside Wind Farm in Hokkaido came on line, bringing the total number of operational facilities in Japan to seven, with output of approximately 140,000 kW.



Setana Seaside Wind Farm (Hokkaido)

Biomass Power Generation

Biomass refers to all organic material, including plants (which capture and store solar energy via photosynthesis) and other biological organisms (which capture and store energy via the food chain). Biomass is attracting attention as a new source of energy, particularly since net CO₂ emissions are reduced if it is used as a substitute for fossil fuels. We consider that the most efficient way to use large amounts of biomass material economically is to mix them with conventional fuel in coal-fired power plants. We will continue to actively promote the use of biomass energy.

Nuclear Power Generation

Nuclear power generation accounts for approximately one-third of total generating capacity in Japan. As well as benefiting from stable fuel supplies and prices, nuclear generation has the environmental advantage of emitting no CO₂, giving it a key role in measures to combat global warming.

Preparations are currently under way to commence construction of the J-POWER Group's first nuclear facility, the Ohma Nuclear Power Station in Aomori Prefecture, which is scheduled to start operating in March 2012.






Artist's conception of the Ohma Nuclear Power Station (Aomori Prefecture) on completion

Transmission and Transformation

The J-POWER Group owns 2,400 km of transmission lines and eight substations, which play a major role in the overall operation of Japan's electricity grid by linking different regions.

Other Power Supply Business

In 2003 J-POWER participated in an independent power producer (IPP)  project for coal-fired power generation. We also constructed and operate a gas-turbine combined cycle power plant  supplying electricity to a power producer and supplier (PPS) . In addition, the company has embarked on electricity sales in new markets created by liberalization in the power sector.

Overseas Business

◆ Overseas Consulting Projects

Over the past 45 years the J-POWER Group has conducted consulting projects around the world. As well as development of power sources, these have involved technical cooperation including surveying, planning and overseeing construction of transmission lines and substations. We have been engaged in a total of 263 projects in 61 countries.

◆ Overseas IPP Projects

Reflecting recent worldwide trends toward privatization and liberalization in the electricity sector, IPP projects have become a mainstream method of development. Making the most of our track record and the wealth of knowledge gained from our consulting activities, J-POWER is further boosting its efforts in the IPP field.

Group Companies

Electricity Business

Wind power generation	● Green Power Kuzumaki Co., Ltd.
	● Green Power Setana Co., Ltd.
	● Dream-Up Tomamae Co., Ltd.
	● Green Power Aso Co., Ltd.
	● Nagasaki-Shikamachi Wind Power Co., Ltd.
	● Nikaho Kogen Wind Power Co., Ltd.
	● J-Wind TAHARA Ltd.
IPP	● ITOIGAWA Power Inc.
Electricity supply to PPS	● Bay Side Energy Co., Ltd.
	● Ichihara Power Co., Ltd.



Ichihara Power's Ichihara Power Station
(Chiba Prefecture)



Nagasaki-Shikamachi Wind Farm (Nagasaki Prefecture)



Itoigawa Power Station (Niigata Prefecture)

Ancillary Business Related to Electricity

Group companies support a wide range of ancillary activities, including design, construction and management of power plants, transmission lines, and substations.

Facility design/construction/maintenance	<ul style="list-style-type: none"> ● JPHYTEC Co., Ltd. ● JPec Co., Ltd. ● KEC Corporation ● KDC Engineering Co., Ltd. ● EPDC Coal Tech and Marine Co., Ltd.
Supply of fuel for power generation	● J-POWER RESOURCES Co., Ltd.
Services	● JP Business Service Corporation

Message from the President

Sound Management for Sustainable Development

At the J-POWER Group, our primary social responsibility is to provide a reliable supply of electrical energy. At the same time, consumption of fossil fuels remains a key element in this process, so we are also actively seeking strategies to counter global warming. We are determined to fulfill the expectations of our stakeholders, demonstrate good corporate citizenship, and contribute to society at large.

Generating power while protecting the environment

Our corporate philosophy calls for providing reliable supplies of energy to support sustainable development in Japan and the world. This is fundamental to our ongoing efforts to deliver efficient, reliable electricity while protecting the environment.

The core business of the J-POWER Group is wholesale electricity supply in Japan. In addition, through business expansion initiatives undertaken since privatization, we have invested in overseas output and forecast that within a few years overseas generation will be equivalent to around 10 percent of domestic capacity.

We are also expanding beyond wholesale supply

into new fields of business in Japan, as liberalization opens up fresh opportunities in power generation and the use of renewable energy sources such as wind and waste.

The deregulation of electrical power in Japan has produced an increasingly competitive business environment, but we must also respond appropriately to society's growing concerns about safety and disaster prevention measures, as well as global environmental issues related to energy supply. In addition, the recovery of the Japanese economy has helped draw public attention to concerns such as corporate compliance, a falling birthrate, an aging society, and the need for barrier-free work environments. J-POWER is keenly aware of its responsibilities as a corporate citizen with regard to all of these developments.

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.

中 垣 喜 彦

Yoshihiko Nakagaki
President



Balancing effective use of coal with responsiveness to global environmental issues

In fiscal 2005, coal-fired generation achieved an unprecedented capacity utilization rate of 84 percent in our domestic wholesale electricity operations. This was due not only to a robust demand for electric power, but also to coal's solid reputation as a stable and economical fuel source in the face of soaring oil prices.

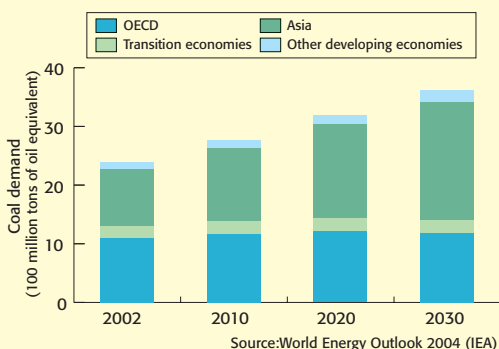
Coal reserves are more extensive than those of other fossil fuels, and they are distributed widely throughout the world in areas such as the U.S., Australia, Europe, and China. This makes coal an attractive resource, with the potential for reliable production and supply as well as greater price stability than oil or LNG. Coal is currently of key importance and is widely used throughout the world, supporting economic activity and people's livelihoods and in both the developed and devel-

oping countries. In the future, too, coal will be essential to meeting increased world energy demand, especially in countries showing remarkable economic growth such as China and India.

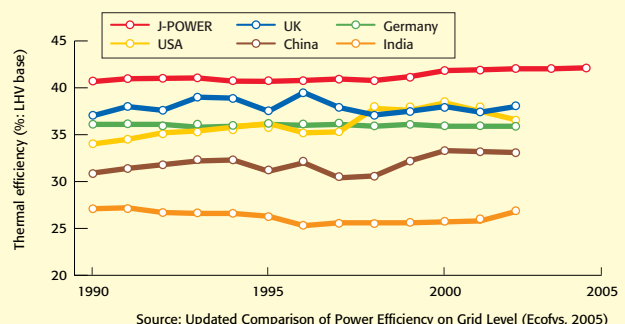
Coal-fired generation in Japan by J-POWER and other suppliers boasts the world's highest levels of thermal efficiency and environmental technology. It has been improved to the point that it now compares favorably in ecological terms with generation using other fossil fuels. Considering worldwide environmental issues, particularly those relating to global warming, the discovery of ways to reduce CO₂ emissions per unit of energy produced by coal combustion is of paramount importance.

The J-POWER Group is Japan's largest coal user, consuming more than 20 million tons a year. We are undertaking a variety of measures to consume coal cleanly and effectively. These range from expansion of procurement and supply sources to development of new technologies for high-efficiency coal use.

Projected World Coal Demand (Reference Scenario)



Thermal Efficiency of Coal-Fired Generation in Major Countries



Unique measures to combat global warming and address local issues

In view of global environmental problems, the J-POWER Group intends to continually reduce CO₂ emissions per unit of electric power sales (kWh) by its Japanese and overseas power generation businesses to achieve a reduction of 10% below fiscal 2002 levels by fiscal 2010.

To realize this goal, we are implementing the following **four policies**:

- 1) Maintain and enhance efficiency of energy use
- 2) Develop low-CO₂ power sources (nuclear energy, renewable energy)
- 3) Actively utilize Kyoto Mechanisms
- 4) Develop, transfer, and disseminate new technologies

If we are to successfully balance the effective use of coal with attention to global environmental problems over the long term, we must develop new coal-use technologies offering dramatic breakthroughs in efficiency, rather than simply preserving or improving the efficiency of existing equipment. **Commercialization of high-efficiency power generation through coal gasification is one such area requiring urgent action.**

Currently, the J-POWER Group is working to implement Integrated Gasification Combined Cycle (IGCC) systems that drive gas and steam turbines with gas produced in the coal gasification process. However, our long-term target is to develop Integrated Coal Gasification Fuel Cell Combined Cycle (IGFC) systems that combine IGCC technology with fuel cells. The ultimate aim for new power generation methods using coal gasification is to achieve zero CO₂ emissions through separation and disposal of CO₂.

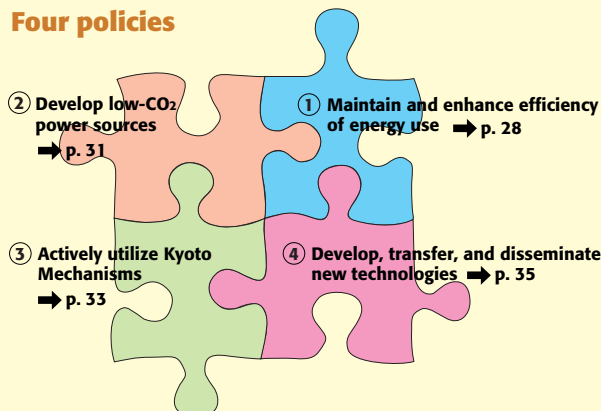
In addressing local environmental issues, the J-POWER Group will continue to work toward forging harmonious relationships between power generation facilities and the communities in which they are located. Such initiatives will include thoroughgoing measures to reduce the environmental burden of power generation and to eliminate industrial waste.

In terms of volume, the principal waste product from coal combustion is ash. We will maintain our effective use of coal ash and programs of reduction for all other forms of industrial waste emanating from power stations. **We aim to achieve an effective utilization rate of 97% for the J-POWER Group as a whole by fiscal 2010.**

In fiscal 2005, ISO 14001 certification was obtained for all J-POWER generation sites. By the end of fiscal 2007, **we will introduce environmental management systems (EMS) across the group** to ensure greater transparency and credibility in our corporate activities.

Our goal is to support a bountiful, safe, and secure way of life by making coexistence with the environment the keynote for development of our energy business.

Four policies



- 1) Maintain high-efficiency operation of electric power facilities, and improve efficiency when replacing equipment.
- 2) Proceed with development of Ohma Nuclear Power Station and renewable energy sources.
- 3) Obtain emission reduction credits through Joint Implementation (JI) and Clean Development Mechanism (CDM) projects as well as emission trading.
- 4) Develop coal gasification technology, and establish expertise for use of biomass-based fuels.

Creating a humane corporate culture and helping to resolve emerging social issues

The J-POWER Group has always placed importance on community relations, actively responding to opportunities for communication with local people and cooperation in local environmental conservation activities. As we develop our business on a global scale, we will continue working to build and maintain community trust.



In 2005, the long-feared decline in the Japanese population actually began. While there remains wide-ranging discussion of the effects this will have, it is clear that people are the source of our strengths as a nation and that a shrinking population coupled with an aging society will weaken Japan's social structure and have a detrimental impact on the country's development.

There are many reasons behind the falling birthrate, but one fundamental factor is that many people harbor profound concerns and a sense of uncertainty about Japan's future. For a country such as ours, facing an unprecedented decline in national strength, a crucial task is to engender a shared sense that together we are building a stable country where we can look to the future without concern, work to the best of our abilities, and start families and raise children without worry. We must reaffirm the idea that Japanese society is based on "people caring for other people." This is why the J-POWER Group acts not simply to pursue profits and beat the competition. By developing our energy business based on coexistence with the environment, we aspire to support a bountiful, safe, and secure way of life, not only in Japan but throughout the world.

Moreover, we constantly strive to create a corporate culture that cares for people and the environment, and to work **with people the world over** to give as much assistance as we can in resolving new issues that arise due to economic and social change.

Coal gasification technology ➔ p. 35

Reduction and effective utilization of waste ➔ p. 39

Introduction of environmental management systems (EMS) ➔ p. 17, p. 50

Working with people in Japan and around the world



Learning about energy and the environment at J-POWER's Wakamatsu Operations and General Management Office (Fukuoka Prefecture)



Staff from J-POWER's Corporate Planning & Administration Department work on a CDM project and site survey in Colombia ➔ p. 33

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.

Corporate Governance

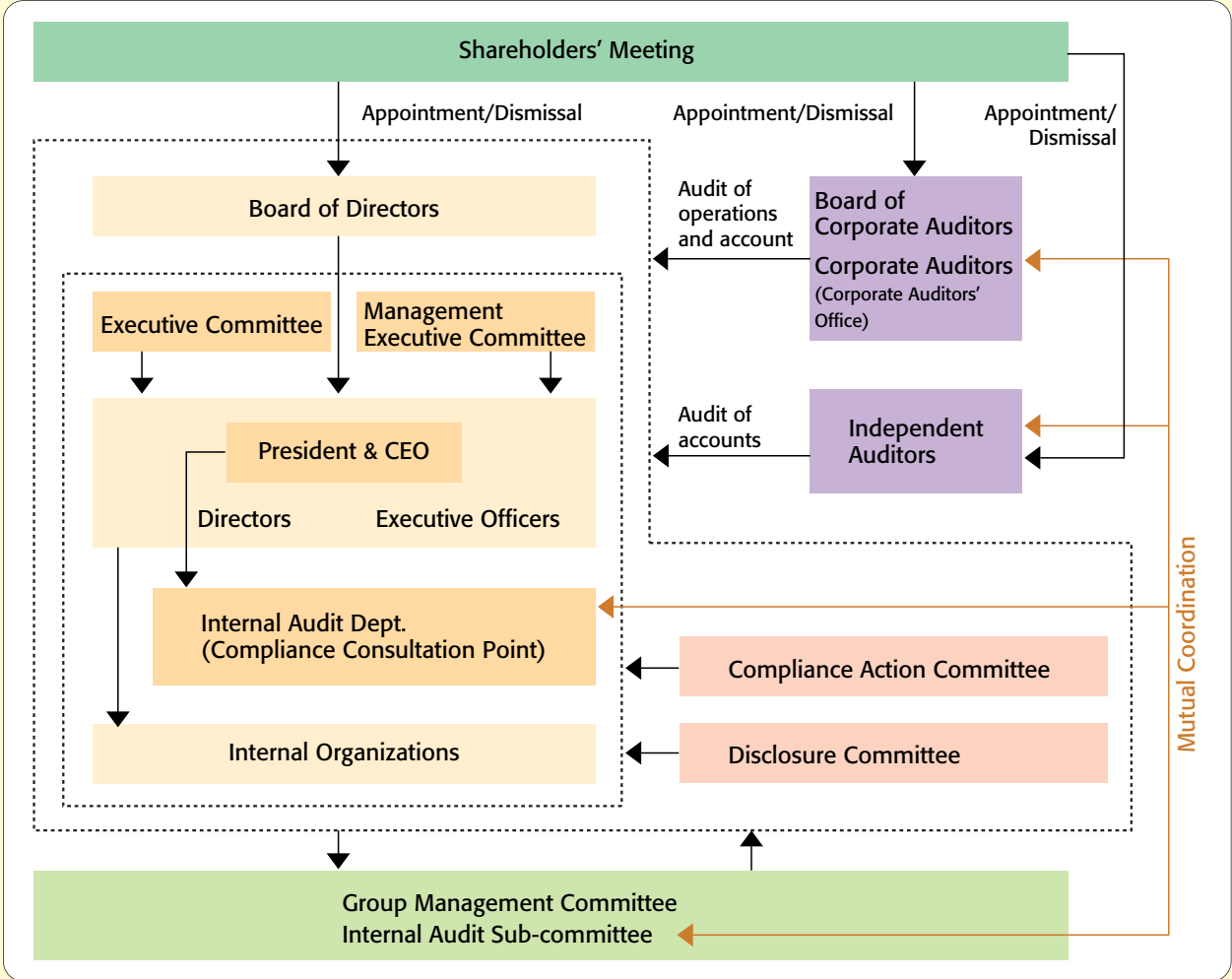
1. Basic Philosophy

Under its corporate philosophy of "ensuring constant supplies of energy to contribute to the sustainable development of Japan and the rest of the world," J-POWER treats enhancing corporate governance and thoroughly implementing compliance procedures as key management issues. By accomplishing this dual objective, we will ensure long-term corporate development, enhance corporate value, and gain more trust from our stakeholders.

The J-POWER Group has been taking the following measures to enhance its corporate governance since July 2006.

Corporate Governance and Internal Control Framework

As of July 1, 2006



2. Corporate Governance Framework

J-POWER has adopted an auditing system and has thirteen directors and five corporate auditors, three of the latter being outside auditors. An overview of corporate governance and its internal control framework are provided below. J-POWER has contracted Ernst & Young ShinNihon to provide auditing services.

(1) Directors' Duty Execution Structure

Under the Corporate Philosophy, directors take the initiative in providing guidance on displaying an honest and fair attitude based on a firm, law-abiding spirit and sense of ethics in accordance with the "J-POWER Corporate Conduct Rules." Simultaneously, they are promoting efforts to instill such an attitude in all J-POWER employees. Furthermore, in order to ensure that operations are conducted in an appropriate manner, J-POWER has established an Internal Audit Department under the direct control of the president to implement internal audits at its business sites. Moreover, each business unit conducts self-audits of its own business administration.

In an effort to improve the accountability and transparency of its corporate activities, J-POWER has established a Disclosure Committee, chaired by the president, which ensures that any information disclosed about the Company is vigorous, fair, and transparent.

The Board of Directors meets monthly in principle, but also convenes on an as-needed basis. The Executive Committee normally meets every week, with all executive directors present, and is where matters that need to be brought to the attention of the Board of Directors, as well as important matters

relevant to the overall administrative policy and management of the Company, come under discussion. Thus clarifying the management's responsibility and authority, J-POWER enables precise and prompt decision-making and efficient management. Furthermore, J-POWER holds Management Executive Committee meetings attended by all the representative directors, directors, and executive officers from areas related to the matters under discussion, and the full-time corporate auditors to discuss important matters concerning the management of each division.

J-POWER also introduced an executive officer system to encourage more effective and speedier business implementation, building up a management system in which directors and executive officers share duties based on the Board of Directors' decisions. In addition, J-POWER is striving to enhance its supervisory framework and clarify the management responsibility of directors, to create a management system that is able to respond rapidly to changes in the environment. To this end, J-POWER has shortened the terms of directors' appointments from two years to one year and has abolished retirement allowances for board members.

(2) Risk Management

With regard to potential risks in its corporate activities, J-POWER conducts mutual supervision in its decision-making process, holds discussions in various meetings and committees and develops its risk management framework on a routine basis in accordance with company regulations. Taking these initiatives demonstrates that we are fully aware of such risks, have adopted thorough measures to avert them, and endeavor to minimize any impact from them.

(3) Group Governance

The J-POWER Group will conduct fully consolidated accounting from fiscal 2006. We recognize the increasing importance of consolidated business results in terms of the comprehensive strength of the Group and aim to clarify the role of each Group company and increase value based on a system of specialization.

With regard to the administration of subsidiaries, J-POWER's basic policy calls for Group-wide development in accordance with the J-POWER Group's management plan. In addition to the administration of subsidiaries based on its company regulations, J-POWER has set up a Group Management Meeting to enhance fairness within the corporate group. J-POWER also conducts audits of its subsidiaries through corporate auditors and the Internal Audit Department.

(4) Audits by Corporate Auditors

J-POWER's corporate auditors supervise the directors in the execution of their business responsibilities by attending Board of Directors' meetings and other important meetings or committees and interviewing the Board of Directors. In addition, corporate auditors implement accounting audits and audit each of J-POWER's departments and main subsidiaries.

In the course of accounting audits, corporate and independent auditors liaise to coordinate each other's auditing schedule and exchange opinions regarding findings in order to examine each other's results.

Corporate auditors liaise with the Internal Audit Department on each department's audit and with each subsidiary's auditors in the case of subsidiary audit, receiving reports regarding findings.

Thorough Compliance

To promote compliance activities, in addition to the J-POWER Corporate Conduct Rules already in place, we have formulated a Compliance Code to provide specific behavioral guidelines for managers and employees in their daily business activities. We have also created a Compliance Action Committee, chaired by the president, to examine measures to promote compliance activities across the Company and to implement prompt action and take preventive measures regarding any issues that run counter to compliance. Simultaneously, J-POWER has established a Compliance Consultation Point in its Internal Audit Department to serve as a point of contact for employees seeking advice on compliance issues. The system shall protect privacy and ensure

that those employees who come forward are not penalized.

Furthermore, a Disclosure Committee chaired by the president has been established to enhance transparency and accountability in corporate activities. The committee actively discloses impartial and clear corporate information in a timely manner.

Regulations	Committees
<ul style="list-style-type: none"> ● J-POWER Corporate Conduct Rules ● Compliance Code ● Compliance Promotion Regulations 	<ul style="list-style-type: none"> ● Compliance Committee ● Compliance Consultation Point

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

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ISO 14001 Certification Obtained for All J-POWER Plants

Aiming to introduce environmental management systems throughout the J-POWER Group by the end of fiscal 2007



The J-POWER Group has built comprehensive systems to promote environmental management as part of initiatives taken under the action program set out in its Environmental Management Vision. By the end of fiscal 2005 all parent company power plants had obtained ISO 14001 certification.

Our environmental management initiatives for power stations are based on cooperation between J-POWER, which owns the facilities, and our affiliates JPec Co., Ltd. and JPHYTEC Co., Ltd., which maintain and operate them. We believe that working closely with these two companies is essential to proper environmental management in our power plants. Consequently, when obtaining ISO 14001 certification we determined that its scope should include not only J-POWER but also our affiliates responsible for maintenance and operation of power stations.

As a result, by the end of fiscal 2004 ISO 14001 certification had been acquired for all power stations managed by J-POWER's Thermal Power Department (seven coal-fired plants and one geothermal plant) and the scope of this certification includes both J-POWER as owner of the facilities and all business units of JPec as maintenance companies.

In fiscal 2005 certification was also obtained for all facilities managed by the Hydropower and Transmission System Department (59 hydroelectric plants, 6 substations/converter stations, 2,408 km of transmission lines, and communication facilities throughout Japan). The scope of this certification includes J-POWER as owner of the facilities and all business units of JPHYTEC as maintenance company.

ISO 14001 Certification

	Name of Organization	Date of Certification
Thermal Power Department	J-POWER Matsuura Thermal Power Station (Matsuura-shi, Nagasaki Prefecture)	July 23, 2004*
	J-POWER Takehara Thermal Power Station (Takehara-shi, Hiroshima Prefecture)	November 26, 2004
	J-POWER Tachibanawan Thermal Power Station (Anan-shi, Tokushima Prefecture)	December 17, 2004
	J-POWER Ishikawa Coal-fired Power Station (Uruma-shi, Okinawa Prefecture)	December 24, 2004
	J-POWER Isogo Thermal Power Station (Yokohama-shi, Kanagawa Prefecture)	December 24, 2004
	J-POWER Onikobe Geothermal Power Station (Osaki-shi, Miyagi Prefecture)	January 28, 2005
	J-POWER Matsushima Thermal Power Station (Saikai-shi, Nagasaki Prefecture)	January 28, 2005
	J-POWER Takasago Thermal Power Station (Takasago-shi, Hyogo Prefecture)	February 25, 2005
Hydropower and Transmission System Department	J-POWER Hokkaido Regional Headquarters JPHYTEC Hokkaido Business Unit (Sapporo-shi, Hokkaido)	December 16, 2005
	J-POWER Eastern Regional Headquarters JPHYTEC Eastern Japan Business Unit (Kawagoe-shi, Saitama Prefecture)	February 3, 2006
	J-POWER Chubu Regional Headquarters JPHYTEC Central Japan Business Unit (Kasugai-shi, Aichi Prefecture)	February 10, 2006
	J-POWER Western Regional Headquarters JPHYTEC Western Japan Business Unit (Osaka-shi, Osaka Prefecture)	February 24, 2006

*Date certification extended to JPec Co., Ltd.

The J-POWER Group has 77 power stations in total (10 thermal, 1 geothermal, 59 hydroelectric, and 7 wind farms), and 67 of these have now obtained ISO 14001 certification. The scope of certification covers 98 percent of output from the group's power plants.

ISO 14001 certification also extends beyond power generation activities, with certification having been acquired by J-POWER's Engineering Department, the Environmental Lab at JPec's Wakamatsu facility, and KEC Corporation's head office and branches. Fifty-one percent of group employees work in facilities covered by ISO 14001 certification.





We aim to introduce environmental management systems throughout the entire J-POWER Group by the end of fiscal 2007.

Construction of No. 2 Unit at Isogo Thermal Power Station Started in October 2005



First power plant in Japan to sign a pollution-control agreement with local government

Isogo Thermal Power Station (located in Yokohama's Isogo Ward) has been operating for more than 30 years. The aging facility is now being renovated in response to Yokohama City government plans for environmental improvements and to enhance the stability and reliability of power supply in the greater Tokyo region. To maintain electricity supply, construction of the No.1 unit began in 1998 while the old power station was still operating. The No.1 unit went into commercial operation in 2002. The old power station was then shut down and removed, making way for the No. 2 unit, construction of which began in October 2005 with commercial operation scheduled to commence in July 2009. The two new units are the first in Japan to use tower-type boilers, which take up less space than conventional boilers of the same capacity and are designed to overcome the limitations of the confined site.

Isogo Thermal Power Station has made significant environmental conservation efforts and is the first power plant in Japan to sign a pollution-control agreement with local government. While doubling the station's output, the new units have raised thermal efficiency to world-class levels through the introduction of USC  technology. Moreover, installing the latest environmental technology has reduced emissions of nitrogen oxide , sulfur oxide , and soot and dust  far below the levels recorded by the old plant.



Artist's conception of plant on completion



No. 1 Unit, Isogo Thermal Power Station
(Kanagawa Prefecture)

Care was also taken to harmonize the new power plant's shape and color with the surrounding cityscape, and Isogo was reborn as a new urban-style thermal power station. In 2002 it received the 17th Annual Public Color Award from the Study Group for Color in Public Places.

3

Voluntary Initiatives to Deal with Asbestos—Progressively Substituting Non-asbestos Materials

As part of measures to deal with asbestos, the J-POWER Group has conducted health checks and surveys of asbestos use in its equipment and buildings. Health checks have shown that to date no existing or retired J-POWER Group employees have suffered damage to their health. 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.

Overview of Asbestos Usage in Buildings and Other Facilities

As of June 2006

Item	Usage Sites	Current Situation	Measures Being Taken	
Spray-on materials including asbestos	Used for soundproofing, insulation and fireproofing in walls and ceilings of plant rooms, warehouses, exhibition halls, etc.	<ul style="list-style-type: none"> Usage sites have been identified and dealt with systematically. Detailed surveys will continue. No. of J-POWER buildings affected: 2 	Sites where asbestos usage has been identified are inspected periodically and entry is strictly controlled. The exhibition hall affected has been closed. Measures to remove asbestos are being taken as quickly as possible.	
Products containing asbestos	Building materials	Use in fireproof wall panels and flooring	These are all molded products presenting no risk of asbestos dust dispersal under normal conditions. Consequently, they will be progressively substituted with non-asbestos products as opportunities arise in line with periodic inspections and repairs.	
	Soundproofing materials	Soundproofing for transformers (substations)		• 2 units
	Asbestos cement pipes	Material used in conduits for underground lines (transmission lines)		• Approx. 0.6 km
	Heat insulation	Power stations (thermal plants)		• Remaining material containing asbestos: approx. 23,000 m ³ (approx. 20% of total)
	Sealants/joint sheets	Power stations (thermal plants)		• Remaining material containing asbestos: approx. 34,000 items (approx. half of total)
	Thickener	Overhead transmission lines		• Anticorrosive agents for power lines: Approx. 30 km
		Power stations (hydroelectric plants)		• Asphalt facing membrane: 3 facilities (Osumata dam, Fukushima Prefecture; Numappara dam, Tochigi Prefecture; open water channel at Honbetsu Power Station, Hokkaido)
Cushioning material	Suspension insulators in transmission facilities, etc.	• No. of units: Approx. 470,000 (Product containing asbestos used as cushioning material inside insulators. Not used in ceramic surface portion of insulators.)	Since the cushioning material is a molded product used on the interior of the insulator, there is no risk of dispersal under normal conditions, but it will be progressively substituted with non-asbestos products as opportunities arise in line with repairs.	



Toward a Sustainable Environment

Tomamae Winvilla Wind Farm (Hokkaido)

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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 (see pp. 79–84 for details).

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.

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 CO₂ emissions per unit of electric power sales through an economically reasonable combination of measures including maintenance and improvement of the efficiency of energy use; development of low CO₂ 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 CO₂.

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.

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.

* 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."



Ishikawa Coal-fired Power Station
(Okinawa Prefecture)






Sakuma Power Station (Shizuoka Prefecture)



Aso-Nishihara Wind Farm
(Kumamoto Prefecture)

Action Program

J-POWER Group Targets

	Efforts relating to global environmental issues (Measures against global warming) 	Efforts relating to local environmental issues (Formation of a recycling-based society) 	Ensuring transparency and reliability (Enhancement of our environmental management structure) 
Goal	Reduce CO ₂ emissions per unit of electric power sales (All J-POWER Group power plant operations worldwide, including non-consolidated companies in which J-POWER has a stake, both in Japan and overseas)	Zero industrial waste emissions	Introduce environmental management systems across the J-POWER Group
Target year	FY 2010	FY 2010	FY 2007
Numerical target or scope	10 % reduction (below 2002 levels)	97 % recycling rate	Entire J-POWER Group (all consolidated companies)
Action	Maintain and improve efficiency of energy use Develop low CO ₂ emission power sources Utilize Kyoto Mechanisms Develop, transfer, and disseminate new technologies	Promote the effective use of coal ash Reduce all types of industrial waste emitted from the maintenance and operation of power plants	Introduce environmental management systems (ISO 14001 certification acquired for all J-POWER plants by the end of FY 2005)

Business Activities and the Environment (FY 2005)

INPUT

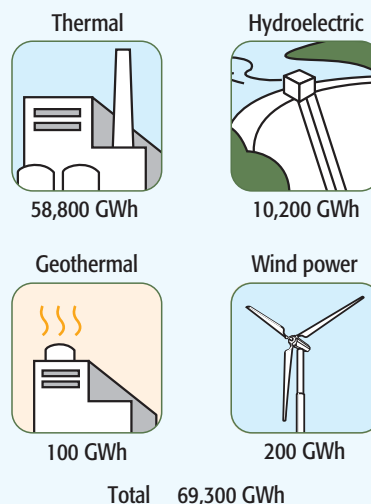
◆ Thermal Power Stations (including Wakamatsu Research Institute)	
Fuel	
Wet coal	21.08 million tons
Heavy oil	60,000 kl
Light oil	30,000 kl
Natural gas	124 million Nm ³
Biomass (dried sewage sludge)	1,000 tons
Water	
Industrial water	10.56 million m ³
Main Resources and Chemicals (100% basis)	
Limestone (CaCO ₃)	270,000 tons
Ammonia (NH ₃)	10,000 tons
Hydrochloric acid (HCl)	1,000 tons
Sulfuric acid (H ₂ SO ₄)	2,000 tons
Caustic soda (NaOH)	6,000 tons
◆ Hydroelectric Power Stations	
Water intake for power generation	49.5 billion m ³
Electric power consumption for pumped storage	2,000 GWh
◆ Geothermal Power Station	
Steam	1.02 million tons
Hot Water	4.28 million tons
◆ Offices/Other Business Units	
Electric Power Consumption	
Research Institute	26.94 GWh
Offices	22 GWh
Water	
	760,000 m ³
Fuel (vehicles, boats, heating, emergency generators, etc.)	
Gasoline/diesel/city gas (gasoline equivalent basis)	3,237 kl
Copy paper (A4 equivalent)	62 million sheets
Sanitary paper	94,000 rolls

Notes:

1. Excluding the amount emitted as waste water, most industrial water used in thermal power plants is released into the atmosphere as steam.
2. River water is used in hydroelectric stations, but all water is returned to rivers after power generation.
3. Natural steam is used in geothermal power stations, but hot water is returned underground after power generation via a returning well.

BUSINESS ACTIVITIES

◆ Electric energy output



◆ Auxiliary power for operation and transmission loss - 3,900 GWh

Note: Totals calculated for entire J-POWER group. Amounts for joint ventures included on a pro rata basis.

Life Cycle Assessment (LCA) Efforts

J-POWER's wholesale electricity business is certified under the Eco-Leaf environmental labeling program managed by the Japan Environmental Management Association for Industry (JEMAI), and the certification is publicized on the association's website.

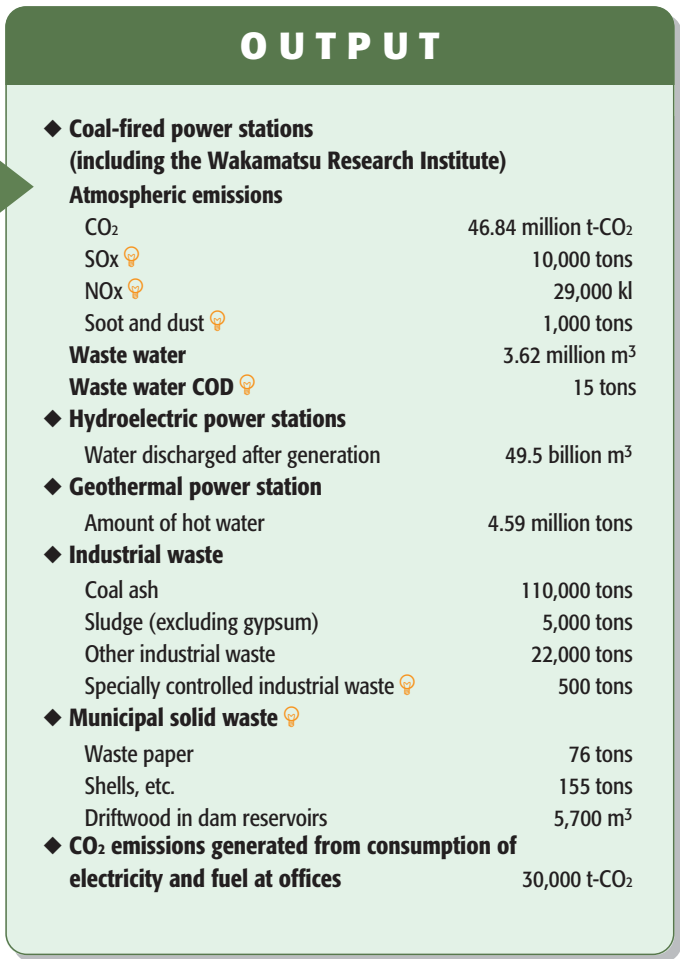
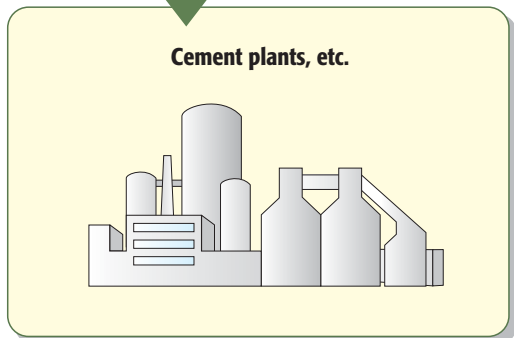
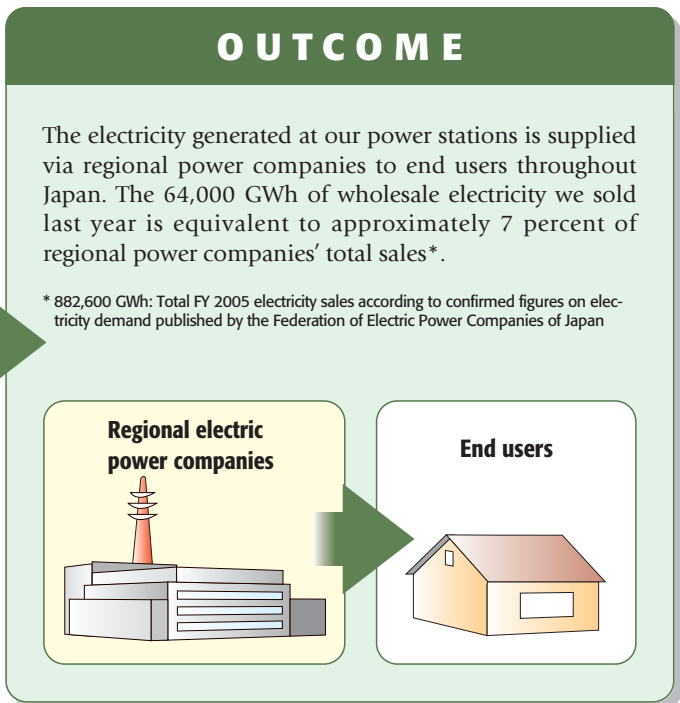
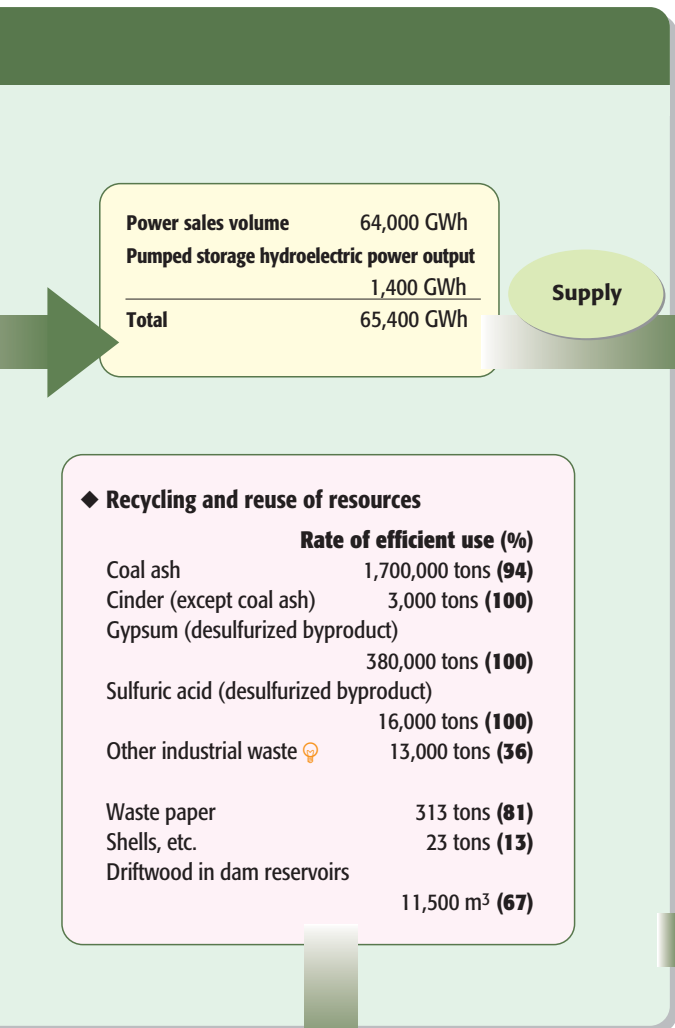
The ISO categorizes environmental labeling into Types I, II, and III. Our certification is in the Type III category, showing that the environmental impact of our products is calculated quantitatively by the LCA method at each of the production, use and disposal stages, and certified by a third party. Please refer to the JEMAI website for more details.




No.BF-04-001-A

Eco-Leaf environmental labeling

JEMAI website:
<http://www.jemai.or.jp/english/ecoleaf/index.cfm>



Environmental Accounting and 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. The basic stance outlined in the Basic Policy section of the J-POWER Group Environmental Management Vision (see p. 79) sets the goal of improving environmental efficiency (production per environmental load).

Environmental Accounting

In calculating the overall cost and effectiveness in fiscal 2005 of J-POWER Group environmental conservation activities 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, 2005 to March 31, 2006
Note: Fiscal year dates differ for some companies included in the scope of calculation
- **Format:** In accordance with Environmental Accounting Guidelines 2005 issued by the Ministry of the Environment
- **Scope:** Costs (including depreciation costs) for all thermal power generation companies, which have the highest environmental load in 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 again in fiscal 2005.

◆ Environmental Conservation Cost and Effectiveness


(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.	18.99
Global environmental conservation	Measures to reduce greenhouse gas emissions (maintaining high-efficiency operation of coal-fired plants, developing renewable and unutilized energy  sources, management costs for energy-saving equipment, emission control for greenhouse gases other than CO ₂).	2.12
Resource recycling	Waste reduction through reuse and recycling, treatment and disposal of waste	12.57
Management activities	Monitoring and measurement of environmental load, labor costs for environmental conservation organizations, costs for environmental education, etc.	1.49
Research and development	High-efficiency generation, use of fuel cells, storage and capture of CO ₂ , recycling of coal ash and gypsum, etc.	0.62
Social activities	Tree-planting, environmental advertising, environmental beautification, membership of environmental groups, preparation of environmental report, etc.	3.56
International projects	Overseas cooperation projects for environmental conservation technologies	1.03
Other	Pollution load levy	0.90
	Total	41.28

Environmental conservation effectiveness	FY 2005
SOx  emissions (tons)	10,200
NOx  emissions (tons)	28,900
Soot and dust emissions (tons)	1,000
CO ₂ emissions (million tons CO ₂)	46.84
Average coal-fired thermal efficiency (%)	40.4
Head office lighting electricity consumption (MWh)	17,580
SFe  recovery (%)	98
Development of renewable and unutilized energies (MW)	12
Coal ash generated (tons)	1,810,000
Gypsum generated (tons)	380,000
Driftwood recycled (m ³)	11,500
Employees completing internal environmental auditor training (cumulative total)	351 (1,516)
Recycled paper purchase rate (%)	92.0
Environmental activity report (circulation)	8,000
Environmental pamphlet (circulation)	15,000
Overseas consulting projects (cumulative total)	15 (263)
Foreign trainees accepted (cumulative total)	84 (2,114)

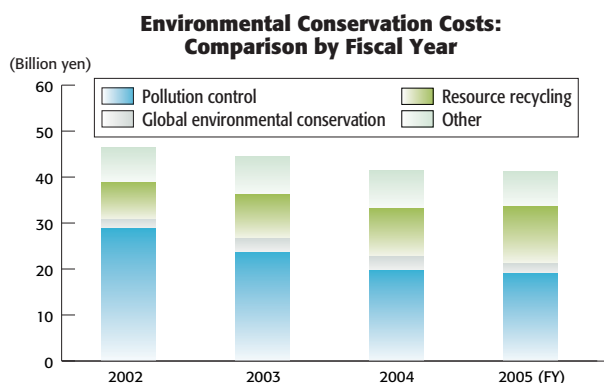
◆ Economic Effectiveness

(Unit: billion yen)

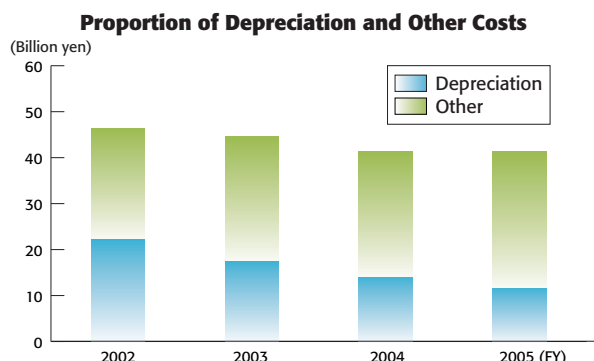
Category	Details	Amount
Revenue	Sales of valuable resources: coal ash, gypsum, sulfuric acid	0.36
Cost-reduction	Reduction in fuel costs due to improved coal-fired thermal efficiency (introduction of USC 	2.16
	Reduction in disposal costs due to recycling of coal ash, gypsum, and sulfuric acid	4.69
	Total	7.21

◆ Environmental Conservation Cost

The total cost of environmental conservation in fiscal 2005 was approximately 41.3 billion yen. Although costs associated with facility operation and maintenance escalated by approximately 2.5 billion yen, a reduction of some 2.6 billion yen in depreciation costs relating to environmental conservation equipment meant that total costs were 100 million yen less than in fiscal 2004. Costs for pollution control (such as air and water pollution control) accounted for 46% of the total.



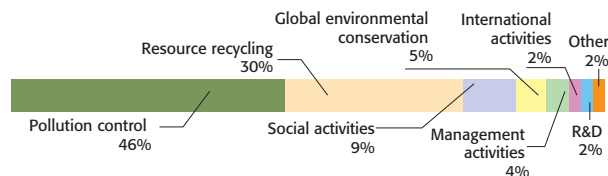
Note: Figures up to FY 2004 are on a non-consolidated basis



Notes:

1. Figures up to FY 2004 are on a non-consolidated basis
2. Depreciation: cost of depreciation related to environmental conservation equipment

Environmental Conservation Costs: Breakdown by Category



◆ Environmental Conservation Effectiveness

The effects of preventing environmental pollution, maintaining current levels of environmental load, and improving the environment were measured quantitatively.

◆ Economic Effect

Efforts contributing to earnings and cost reductions are calculated to have had a positive economic effect of approximately 7.2 billion yen.

Environmental Efficiency

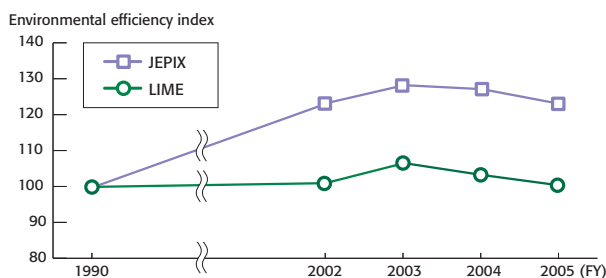
The Basic Policy section of the J-POWER Group Environmental Management Vision sets out our basic stance of reducing environmental risk and improving environmental efficiency (production per environmental load) while at the same time enhancing both environmental responsibility and economic value to contribute to sustainable development in Japan and the world as a whole.

In order to evaluate the status of environmental efforts across all our corporate activities on a single index, it is necessary to allocate certain weightings to the various items before calculating totals. In Japan, several methods for doing this have been developed, taking account of the country's particular characteristics. These include JEPIX (which uses policy targets as indicators) and LIME (which uses damage to human health and ecosystems as indicators). We have evaluated efforts for J-POWER as a whole and for coal-fired power generation using these two methods.

For J-POWER as a whole, environmental efficiency declined slightly in FY 2005 due to an increase in CO₂ emissions per unit of electric power sales. This resulted from growth in the use of coal-fired generation, which led to a relatively lower proportion of generation using renewable energy sources.

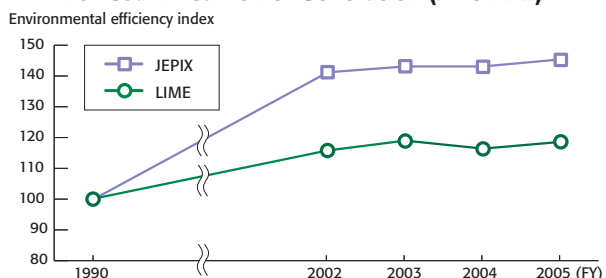
For coal-fired power generation, an upward trend in environmental efficiency is evident since 1990. This is the result of improved thermal efficiency and efforts to control SO_x and NO_x emissions.

Environmental Efficiency for J-POWER as a Whole



Note: The environmental efficiency indices use a base figure of 100 representing the overall index (electric power sales volume per environmental load) in FY 1990.

Environmental Efficiency for Coal-fired Power Generation (J-POWER)



Note: The environmental efficiency indices use a base figure of 100 representing the overall index (electric power sales volume per environmental load) in FY 1990.

Information on environmental efficiency for individual activities is included on the relevant pages of this report.

Efforts to Combat Climate Change

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. The J-POWER Group regards measures to combat global warming as a top management priority and is pursuing such actions vigorously.

CO₂ Emissions

Japan's total annual CO₂ emissions were approximately 1.28 billion t-CO₂ in fiscal 2004 (actual emissions for that period), of which about 30% was generated by power stations. Emissions from J-POWER Group companies (in Japan) account for about 3% of Japan's total.

We take this situation seriously, and to respond to it, we have compiled our Action Program (see p. 22 and pp. 81–82), which systematizes our efforts heretofore, with the focus on maintaining and improving efficiency of energy use; developing lower-CO₂-emissions power sources; utilizing the Kyoto Mechanisms; and developing, transferring, and disseminating technologies. Through this program, J-POWER has committed itself to “work to achieve around a 10% reduction from the fiscal 2002 level of annual CO₂ emissions per unit of electricity sold by J-POWER Group electric power businesses in Japan and overseas by fiscal 2010.”

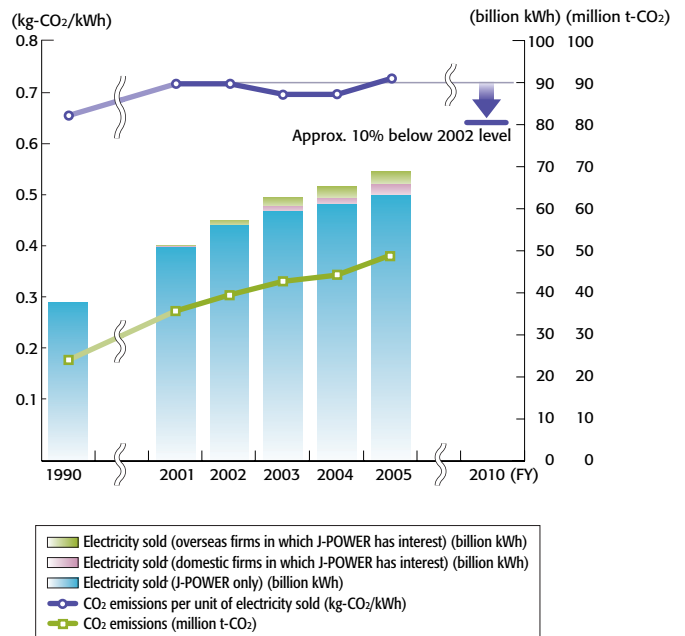
◆ CO₂ Emissions by J-POWER Group Companies (Domestic and Overseas)

In fiscal 2005, electricity 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 68.7 billion kWh, an increase of about 6% over the previous year. Owing to the increased utilization rate for coal-fired power plants resulting from growing domestic electricity demand and other factors, CO₂ emissions rose to 49.13 million t-CO₂, an increase of about 10% from the previous year.

At the same time, CO₂ emissions per unit of electricity sold rose approximately 4% from the previous year, to 0.72 kg-CO₂/kWh, owing to a drop in the amount of hydropower electricity sold as a result of drought conditions and the rising utilization rate for thermal power plants. This represents an increase of about 1% from fiscal 2002, when emissions per unit of electricity sold were 0.71 kg-CO₂/kWh.

We will continue to strive to reach our targets under

J-POWER Group (Japan and Overseas) CO₂ Emissions



Scope of Companies Included in the Calculation of CO₂ Emissions and Electricity Sold

Inasmuch as our focus is on global environmental problems, we have made an effort to include all energy-producing businesses in which J-POWER has a stake, both domestically and overseas, when calculating CO₂ emissions per unit of electricity sold (CO₂ intensity), the measure on which our corporate targets are based.

To this end, we have calculated the electricity sold and the CO₂ emissions of each of the Japanese and overseas companies in which J-POWER has a stake, including nonconsolidated affiliates, and prorated their figures in accordance with J-POWER's holding ratio.

CO₂ Emissions from Domestic Wholesale Power Supply (J-POWER Only)

With regard to the domestic wholesale power supply (J-POWER only) that was covered before fiscal 2005, CO₂ emissions increased 9% over the previous year to 46.09 million t-CO₂, reflecting such factors as the rising utilization rate for coal-fired power plants owing to the increase in electricity demand (electricity sold rose about 3% from the previous year to

approximately 62.6 billion kWh) in fiscal 2005.



Meanwhile, CO₂ emissions per unit of electricity sold rose about 5% from the previous year to 0.74 kg-CO₂/kWh owing to a drop in the amount of hydropower electricity sold as a result of drought conditions and the rising utilization rate for thermal power plants.

* In the data pertaining to “Business Activity and the Environment (FY 2005)” on pp. 23–24, under “Outputs,” the figure for CO₂ emissions from thermal power stations (46.84 million t-CO₂) includes emissions from three domestic thermal power companies that are consolidated subsidiaries of J-POWER, with figures prorated in accordance with J-POWER's stockholding ratio in each company.

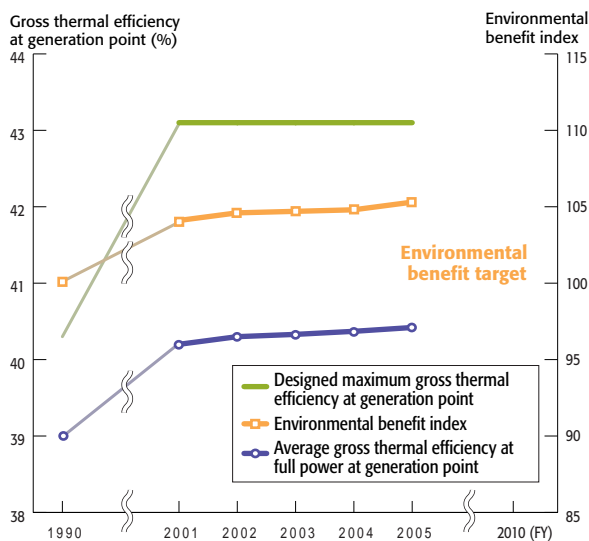
Maintaining and Improving Efficiency of Energy Use

The energy-use efficiency of J-POWER's coal-fired power-generating 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 when upgrading them. 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 2005, our gross thermal efficiency  (at point of generation) was 40.5% (as compared with 40.4% in FY 2004). Although thermal efficiency of coal-fired power generation equipment declines with age, J-POWER is working to maintain and improve efficiency of energy use by installing high-efficiency equipment in our new plants and minimizing the aging process in existing equipment.

J-POWER Coal-Fired Power Stations: Thermal Efficiency and Environmental Benefit



Note: Environmental benefit index: 100 = FY 1990 environmental benefit (electricity sold ÷ energy input)

Stable Operation of Geothermal Power Stations

In fiscal 2005, the electricity sold from the Onikobe Geothermal Power Station (Miyagi Prefecture; capacity 12,500 kW) was 94 million kWh, resulting in a CO₂ emissions reduction benefit* of approximately 40,000 t-CO₂.

Stable Operation and Measures to Improve Facilities of Hydroelectric Power Stations

In fiscal 2005, hydropower electricity sold by J-POWER totaled 8.583 billion kWh, resulting in an emissions reduction benefit* of approximately 3.6 million t-CO₂. We are working hard to ensure stable operation of our hydroelectric power stations by improvements in machinery efficiency, as well as proper maintenance and operation of facilities. For example, the aging main generating facilities at Tagokura Power Station are being replaced to prolong the life of the power station and improve the reliability of the facility. In the process the latest technology has been adopted to improve power generation efficiency and raise generating capacity by 5%.



Work continues on total replacement of main facilities at Tagokura Power Station (Fukushima Prefecture)

Kensuke Hamauzu, Power Employee Operating Group, Tachibanawan Thermal Power Station

Hamauzu has worked at power stations ever since he joined the company 25 years ago, and he has been at Tachibanawan Thermal Power Station for the past 10 years. Since June 2006 when he became chief operator, he has supervised and managed the station's electric power operations, which are carried out in three shifts. His most important goal is to ensure a stable power supply, and that is also the most rewarding part of his job. Where machines are involved, trouble inevitably occurs. Hamauzu is in a key position in this re-gard, as he must decide on the spot whether to temporarily halt power generation to address equipment issues. Hamauzu's mission henceforth is to work proactively to generate electricity efficiently and safely while abiding by all environmental agreements with the localities where power plants are situated.



* For purposes of this report, CO₂ 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-CO₂ ÷ kWh).

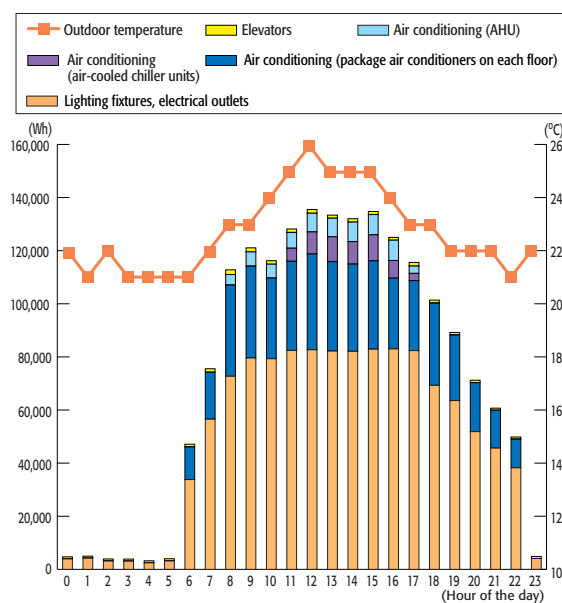
Promoting Energy Conservation

◆ Energy Conservation Activities

As part of our effort to prevent global warming, in each of our offices we rigorously implement such energy-saving policies as lights off during lunch break and reducing power supply to equipment on standby. In addition, we are actively installing energy-saving devices in every new office we build.

Beginning in fiscal 2005, in order to meet our office CO₂ emissions reduction goal under the Action Plan for the J-POWER Group Environmental Management Vision (annual reduction of 1%–2% at each company), we will have energy conservation audits carried out by J-POWER Group specialists at each of the major offices of each member company to further cut back on energy consumption through equipment upgrades as well as operating procedures. In fiscal 2005, audits were performed at five offices, and plans call for systematic implementation henceforth.

Results of Energy Conservation Audit at a Group Company's Head Office (September 16, 2005)



◆ Energy Conservation at J-POWER's Head Office

In accordance with our EMS, J-POWER has developed an energy conservation policy for its head office involving the use of exhaust heat from air conditioners and the recovery of exhaust heat from computer rooms, together with installation of regenerative heat pumps and strict enforcement of the "lights off when not in use" policy.

As a result of these energy-conservation efforts, only 1.80 million kWh of electricity were consumed for lighting purposes at the head office in fiscal 2005.

◆ Energy Conservation Services

Although our energy conservation activities center on supply-side measures, we are also keenly aware of the importance of demand-side efforts. For this reason, J-POWER group companies offer energy auditing and consulting services, as well as sales and installation of energy-saving equipment, both domestically and overseas.

Domestically, J-POWER has offered energy audits and implemented certain types of energy-saving renovations for national and local government, national universities, elementary, middle, and high schools, hospitals, office buildings, home improvement centers, and so on. As of the end of fiscal 2005, we had performed about 75 energy audits. In addition, we provide performance evaluation and sales support for quality energy-saving products (including the EcoSylphi for ensuring even indoor temperatures, high-efficiency capacitors and light bulbs, etc.).

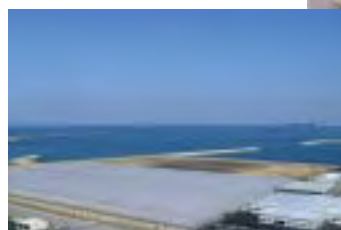


As one aspect of our energy-conservation business, a member of the J-POWER Group (JPHYTEC Co., Ltd.) carries out energy-conservation audits and installs a variety of energy-saving products, such as EcoSylphi and NeoLux.

Earth-Friendly Measures at Hibikinada Greenfarm Tomato-Growing Facility—An Application of Our Energy-Saving Technology

J-POWER and Kagome Inc. are working together to establish a tomato-growing operation on a section of reclaimed land belonging to J-POWER in the Hibikinada district of Wakamatsu Ward in Kitakyushu in Fukuoka Prefecture. On March 31, 2006, construction was completed on one of two planned greenhouses.

The temperature, humidity, and sprinkling system in the new greenhouse are all computer controlled. The shell is made of a special, highly light-permeable film to enhance the greenhouse effect. The greenhouse is also equipped with earth-friendly features, including a mechanism for recovering CO₂ generated in heating the facility and circulating it within the greenhouse, allowing tomato plants to use the CO₂ for their photosynthesis.



Hibikinada Greenfarm



Interior of the tomato greenhouse

Efforts Relating to Transport of Raw Materials

◆ Reducing Environmental Load by Enlarging Coal Carriers

In fiscal 2005, approximately 20 million tons of coal were imported to Japan from overseas (Australia, China, Indonesia, etc.).

While typical coal carriers have a carrying capacity of about 60,000 t, we have contracted with shipbuilders to build larger dedicated bulk carriers (90,00–150,000 t). Two new coal carriers were completed in fiscal 2005. 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 CO₂, sulfur oxides ☹️, nitrogen oxides ☹️, etc.).



Dedicated coal carrier JP Magenta

◆ Reducing Environmental Load through Marine Transport of Coal Ash

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

In fiscal 2005, J-POWER shipped some 1.7 million tons of coal ash from its power stations to cement plants and 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 this coal ash is transported over water by dedicated carriers and other ships. The use of maritime transport reduces the environmental load of shipping, such as CO₂ emissions, as compared with truck or train transport.



Dedicated coal-ash carrier Seisho-maru

Master of the Art of Reading Coal Markets and Scheduling Shipments

Power Employee

Hideyuki Ishizu

Fuel Group, Energy Business Department

The J-POWER Group is a wholesale electric utility that derives most its electricity from coal-fired power stations. As there is little fuel-grade coal to be found within Japan, we import most of the coal we use from Australia and Southeast Asia. Ishizu is involved in the crucial job of procuring that coal.

Shipping of coal depends on marine transport using dedicated bulk carriers as well as Panamax ships (the largest ships that will fit through the locks of the Panama Canal; 60,000–70,000 t deadweight capacity). We strive for maximum efficiency so as to transport the most coal possible with each shipment. In this way we are able to limit the number of ships used, which not only cuts expenses but also helps reduce CO₂ emissions from the heavy oil used to fuel the ships.

The price of coal and shipping costs are both determined by supply and demand, and prices may be surging just when

J-POWER needs the coal. In addition, as we charter a ship each time one is needed during the demand season, they are not always available. For this reason, arranging the timing of shipments can be a very tricky job. Ishizu directs the scheduling and booking of shipments single-handedly, with consummate skill.

Aware that J-POWER is one of the world's biggest coal users, Ishizu takes pride in his work, and this pride is doubtless a large part of what makes his job worthwhile.

Somewhere on the great blue expanses, a coal-laden ship secured for J-POWER by Ishizu is ploughing its way toward Japan.



Developing Low-CO₂-Emission Power Sources

The J-POWER Group is moving forward with the construction of a nuclear power station as a low-CO₂-emissions power source. While promoting the use of such alternative energy sources as wind power and biomass power, we are also working to develop micro-hydropower ⚡, one of the few natural resources remaining in Japan. In addition, we are moving forward with the construction of gas-turbine combined-cycle power stations ⚡, characterized by highly efficient energy use.

Construction of a Nuclear Power Plant

We are currently working on the construction of a nuclear power plant (full MOX-ABWR ⚡; 138.3 million kW) in Ohma-machi, Aomori Prefecture, designed to use MOX fuel ⚡ for the entire reactor core (scheduled to begin operation in March 2012).

In our construction plan we have paid close attention to rigorous safety measures, environmental conservation, and coexistence with local communities. Ohma Nuclear Power Station is expected to have an annual emissions-reduction benefit of approximately 3.2 million t-CO₂ (assuming a utilization rate of 80%).

Moving Forward with Wind Power

In fiscal 2005, with the launch of commercial wind power generation at Setana Seaside Wind Farm (Hokkaido), the installed capacity of J-POWER's domestic wind power facilities reached approximately 140,000 kW. Another wind power plant is currently under construction in Japan. Overseas, J-POWER has been operating windfarms in Spain, following the acquisition of an operating company from the Gamesa Group in March 2003.

The total planned annual output from our domestic wind power facilities is approximately 290 million kWh, representing an emissions-reduction benefit of approximately 120,000 t-CO₂.

Yohei Toriumi
Wind Power Development
Group (Business
Development Department)

Power Employee

"I do feel the weight of my personal responsibility, but it's a real thrill to be able to see through one aspect of the process leading to a plant's start-up, from beginning to end," says Yohei Toriumi, whose job involves choosing development sites for wind power facilities, steering such projects, and overseeing construction.



Because wind power projects have a direct impact on the local community, they involve a huge amount of negotiation and discussion with people outside the company. Even today Toriumi spends much of his time flying from one place to another as a spokesman for the company.

J-POWER Group Wind Power Facilities

Power station	Start-up date	Generating capacity (planned annual generation)
Tomamae Winvilla Wind Farm (Tomamae, Hokkaido)	Dec. 2000	30,600 kW (59 million kWh)
Nikaho Highland Wind Farm (Nikaho, Akita)	Dec. 2001	24,750 kW (51 million kWh)
Tokyo Bayside Wind Power Plant* (Tokyo)	March 2003	1,700 kW (2.5 million kWh)
Monte Sexio-Cando, Serra Do Cando, and Outeiro Do Coto Wind Farm (Galicia, Spain)	March 2003	64,210 kW (180 million kWh)
Green Power Kuzumaki Wind Farm (Kuzumaki, Iwate)	Dec. 2003	21,000 kW (54 million kWh)
Nagasaki-Shikamachi Wind Farm (Shikamachi, Nagasaki)	Feb. 2005	15,000 kW (28 million kWh)
Aso-Nishihara Wind Farm (Nishihara, Kumamoto)	Feb. 2005	17,500 kW (23 million kWh)
Tahara Bayside Wind Farm (Tahara, Aichi)	March 2005	22,000 kW (40 million kWh)
Setana Seaside Wind Farm (Setana, Hokkaido)	Dec. 2005	12,000 kW (35 million kWh)
Koriyama Nunobiki Kogen Wind Farm (Koriyama, Fukushima)	Under construction; commencement scheduled for FY 2006	65,980 kW (124.8 million kWh)

* Unconsolidated affiliate.

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 Ishihara Power Co., Ltd. (a joint venture between Mitsui Engineering & Shipbuilding Co., Ltd. and J-POWER) and Bay Side Energy Co., Ltd., which are working on gas-turbine combined-cycle power generation using natural gas as fuel.

Power Station	Capacity	Start-up date
Ichihara Power Station of Ichihara Power Co., Ltd. (Ichihara-shi, Chiba Prefecture)	110,000 kW	October 2004
Ichihara Power Station of Bay Side Energy Co., Ltd. (Ichihara-shi, Chiba Prefecture)	107,650 kW	April 2005

Efforts toward Power Generation Using Biomass Fuel

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

From fiscal 2001 to 2004, J-POWER was involved in a joint project with the Research Institute of Innovative Technology for the Earth (RITE) to develop technology for the co-firing of woody biomass fuel—specifically, wood from the thinning of forests—in coal-fired power stations.

Co-firing experiments were carried out in the No. 2 unit at the Matsuura Thermal Power Station (Nagasaki Prefecture) in 2004. Their results found that co-firing at a ratio of 0.5% was technically feasible. Based on this finding, we intend to study the feasibility of co-firing biomass fuel in each of J-POWER's thermoelectric power stations.



Woody biomass chips

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

Biosolid fuel is produced by mixing sludge from sewage treatment plants with discarded cooking oil and heating the mixture to remove the moisture from it (oil-heat depressurization drying method). The resulting fuel has approximately the same heat value of combustion as coal. From August 2003 to March 2006, in the first such attempt in Japan, we conducted test co-firing in actual power generation equipment at the Matsuura Thermal Power Station (Nagasaki Prefecture) and determined that the biosolid fuel can be burned at a maximum co-firing ratio of 1%. Encouraged by these results, we began co-firing biosolid fuel with coal at the Matsuura Thermal Power Station in fiscal 2006. If biosolid fuel is mixed with coal at a ratio of 1% in the No. 1 unit of the Matsuura Thermal Power Station (1 million kW), it should yield an annual emissions reduction benefit of approximately 50,000 t-CO₂.

In addition to the oil-heat depressurization drying method, we are working on the development of various other technologies for producing fuel from sewage sludge.



Biosolid fuel

◆ Development of Biomass Fuel Manufacturing Technology

In addition to biomass co-firing technology, we are working to develop technologies for manufacturing a variety of biomass fuels. For example, we are developing technology to produce fuel from sewage sludge using low-temperature carbonization technology. By utilizing lower temperatures than standard carbonization processes, we have been able to boost the heating value by about 40%. We now plan to build test facilities to carry out production trials.

We are also developing a process for manufacturing carbonized fuel from combustible MSW (municipal solid waste) ♻️. In fiscal 2005 we carried out production trials using test facilities at the Matsushima Thermal Power Station (Nagasaki Prefecture) in cooperation with Saikai City, Nagasaki Prefecture, and the New Energy and Industrial Technology Development Organization (NEDO).

◆ Biomass Power Project in Thailand (Dedicated Biomass Power Generation)

J-POWER has been working with the Thai private electric utility EGCO on a power generation IPP ♻️ project using biomass fuel, which launched commercial operations in Thailand in May 2003. This system utilizes about 76,000 tons of rice chaff each year as power-generator fuel and has an annual output of 64.39 million kWh (calculated), representing a CO₂ emissions reduction benefit of about 30,000 t-CO₂ for Thailand.

We are also involved in a plan that would use waste from rubber-wood sawmills as fuel. This would help reduce fuel consumption at the Thai Electricity Generation Authority's thermal power stations and enable reduction of CO₂ emissions on the order of 60,000 t-CO₂ annually.

Biomass Power Stations in Thailand

	Roi-Et Rice Chaff Thermal Power Station	Yala Biomass Power Station
Location	Roi-Et, Thailand	Yala, Thailand
Fuel	Chaff from rice-milling plants	Rubber-wood residue from local sawmills
Capacity	9,950 kW	23,000 kW
Start-up date	May 2003	Late September 2006 (scheduled)



Efforts Involving Micro-Hydropower Generation

J-POWER is working to utilize untapped energy sources through the development of a "hydro-agri" system, a micro-hydropower generation system that makes use of small waterfalls in existing irrigation channels. In addition, we were contracted to provide technical assistance for construction of the Taio Mini Hydropower Station (operated by Nakatsue-mura, Hita-shi, Oita Prefecture; start-up April 2004), which makes use of an existing erosion control dam. J-POWER was involved in each stage of the project, from planning through oversight of construction.

Utilization of Kyoto Mechanisms and Other Approaches

The J-POWER Group has been making proactive use of the Kyoto Mechanisms, particularly the development of CDM projects that can generate emissions credits even 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 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 had been 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 mounts, we have been applying ourselves diligently to the registration process. For six of the 12 projects, it was necessary to begin by developing methodologies, and three of these methodologies have been successfully registered with the CDM Executive Board. In July 2005 the Graneros Plant Fuel Switching Project at Nestle's plant in Chile was registered as the J-POWER Group's first CDM project, and in March 2006 the Caieiras Landfill Gas Emission Reduction Project in Brazil was registered as well. Thus, as of the end of July 2006, the J-POWER Group was involved in two registered CDM projects.

J-POWER Group Projects Oriented to Utilization of Kyoto Mechanisms

Country	Project Name	Description	Notes
Chile	(1) Nestle Graneros Plant Fuel-Switching Project	Switch to natural gas in conjunction with renovation of facilities	1, 2, 3
	(2) Metrogas Package Cogeneration Project	Introduction of cogeneration for improved energy-use efficiency	1
	(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 	1
	(5) El Henequen Landfill Gas Project	Combustion of landfill gas to reduce greenhouse gases	
Guatemala	(6) Candelaria Hydroelectric Project	Use of renewable energy sources	
Argentina	(7) PFC ^a Emissions Reduction at ALUAR Aluminio Argentino	PFC emissions reduction through improved aluminum production methods	2
Brazil	(8) Aquarius Hydroelectric Project	Use of renewable energy sources	1, 2, 3
	(9) Caieiras Landfill Gas Emission-Reduction Project	Combustion of landfill gas to reduce greenhouse gases	
Mexico	(10) Petrotex 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

Notes: 1. Approved by host country

2. Approved by Japanese government

3. Project registered

Major Activities in FY 2005

◆ Involvement in CDM Projects

In fiscal 2005, two CDM projects were registered with the CDM Executive Board: the Nestle Graneros Plant Fuel Switching Project in Chile and the Essencis Caieiras Landfill Gas Emission Reduction Project in Brazil.

In addition, we participated in two other projects, the El Henequen Landfill Gas Project (Colombia; combustion of landfill gases to reduce greenhouse gases) and the Alicorp/SdF Fuel Conversion Project (Peru; conversion to new power source at a food-processing plant and a textile factory to reduce CO₂ emissions).

◆ 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 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 have carried out feasibility studies for a biomass power project in Czech Republic, a waste power project in Poland, and landfill gas emissions-reduction projects in China and Latin America. We have also conducted joint feasibility studies with other companies on a project to save energy at beer-brewing plants in Mexico.

◆ International Conferences

In fiscal 2005 we co-sponsored Carbon Market Insights, an international conference on the subject of emissions trading held by Point Carbon (February 2006).

In addition, we took part as an exhibitor in the Carbon Expo held by the International Emissions Trading Association (IETA) in May 2005.

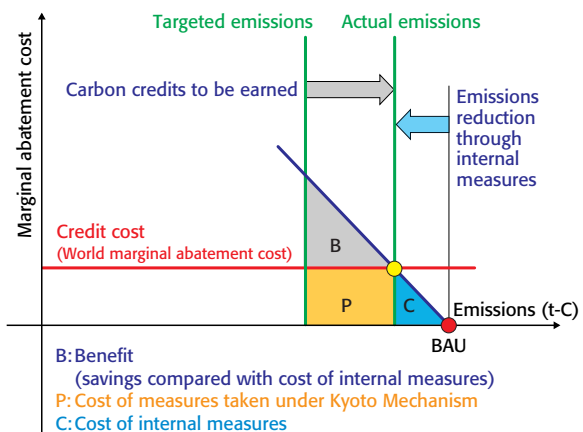
Activities to Support Utilization of the Kyoto Mechanisms

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.

Utilization of the Kyoto Mechanisms

The diagram on the right illustrates the basic concept for selecting an approach to emissions reduction. First a company considers a number of measures for curbing emissions internally and compares their costs with the cost of earning carbon credits through the Kyoto Mechanisms. If internal measures are judged more economical, they are implemented beginning with the least costly. If earning carbon credits is deemed less costly than internal measures, the company takes action to earn credits until the reduction target is achieved. In the diagram, the costs of achieving the target through internal measures alone are represented by the combined area of B, P, and C, while the costs when utilizing the Kyoto Mechanisms are the combined area of P and C. Following this method, one reaches the target at the lowest cost possible.

If the Kyoto Mechanisms function as they are intended to, and the world adopts such rational behaviors, then not only companies that apply the mechanisms but the entire world should be able to meet its emissions-reduction targets at minimum cost.



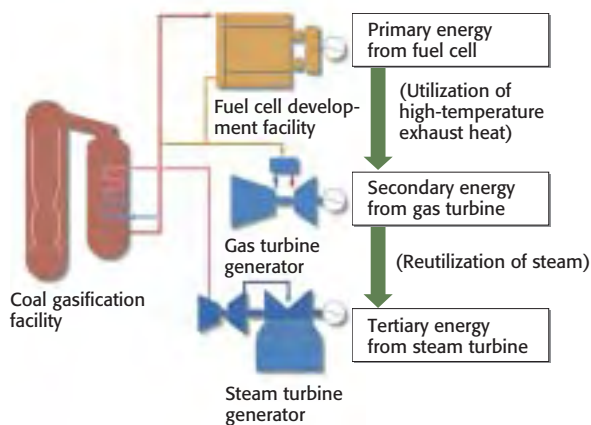
Developing, Transferring, and Disseminating New Technologies

Aiming for dramatic improvement in the efficiency of coal use, the J-POWER Group is pushing forward with the development of coal gasification technology, which can be effectively combined with CO₂ capture technology. We are also cooperating in research on CO₂ geological sequestration and experiments on recovery of CO₂ from coal-fired thermal power plants.

◆ Integrated Coal Gasification Combined Cycle (IGCC)/ Integrated Coal Gasification Fuel Cell Combined Cycle (IGFC)

Gasification of coal allows for far greater generation efficiency ☺ than thermal power generation using pulverized coal. In pulverized coal-fired power stations, electricity is generated by steam turbines alone, but an IGCC ☺ system uses two types of generator, gas turbines and steam turbines, resulting in a combined power generation system. Moreover, an IGFC ☺ system adds a fuel cell ☺ to this mix to yield a triple combined system. IGFC is considered the ultimate coal-use technology, and the J-POWER Group is leading the world in its development. If it succeeds, it should be possible to improve generation efficiency by as much as 60% while reducing CO₂ emissions by approximately 30% compared with conventional coal-fired power generation. With this goal in mind, the J-POWER Group is currently conducting research to develop a technology for producing coal gas for use in fuel cells (EAGLE) and a solid oxide fuel cell (SOFC ☺).

● IGFC System



◆ Technology for Producing Coal Gas for Use in Fuel Cells (EAGLE)/Large-Scale Testing of Oxygen-Blown Coal Gasification

In order to use coal as fuel in fuel cells, it is necessary to convert the coal to gaseous fuel and purify it by removing dust and sulfur content.

Through a joint research project with the New Energy and Industry Development Organization (NEDO), we are conducting the EAGLE pilot test (March 2002–March 2007) to obtain the experimental data we need to carry out testing on a larger scale.

The oxygen-blown coal gasification process is advantageous in terms of achieving zero emissions ☺ because it yields a gas with high concentrations of CO₂, which is easily captured.

As the next step toward the development of a commercially viable system, study has begun on the construction

of a large-scale oxygen-blown coal gasification demonstration system. The primary objective is to develop a large-scale coal gasifier with the immediate goal of commercializing an IGCC system. We view this as an important step toward an IGFC system and eventual achievement of higher efficiency and zero CO₂ emissions that can offer a solution to global warming.

◆ 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 conventional power generation processes, in which the heat generated by burning fuel is converted to electrical energy, this process generate electrical energy directly from the feedstock, resulting in little energy loss and high generation efficiency.

The SOFC under development by the J-POWER Group, which is made of an ion-conductive ceramic, produces high heat of 900°C–1,000°C during the electrochemical reaction, permitting combined generation using a gas turbine. This allows it to achieve higher generation efficiency than other fuel cells.

Currently preparations are under way for testing of a normal-pressure 150 kW-class SOFC system, scheduled to begin in January 2007.

◆ Study of CO₂ Geologic Storage

In a two-year project beginning in fiscal 2005 (joint project commissioned by the Ministry of Economy, Trade and Industry), we are conducting research on the behavior of CO₂ in aquifers after CO₂ injection using a numerical simulation technology. A natural analogue study including reactive geochemical transport simulation is performed to predict CO₂ behavior underground and to establish monitoring guidelines for CO₂ storage. In addition, we are involved in a three-year project beginning in fiscal 2005 to study the geological formation of an area near a source of large-scale CO₂ emissions in order to design survey and assessment methods to estimate the amount of CO₂ that can be geologically stored there (commissioned by the Engineering Advancement Association of Japan).

◆ **J-POWER's Patents and Other Industrial Property Rights**
(including those secured from research on local environment)

	Power Generation Technology	Recycling Technology	Environmental Technology	Other	Total
Filed individually	6	1	18	8	33
Filed jointly	30	7	21	91	149
Total	36	8	39	99	182

Note: Includes only patents currently held. Pending or surrendered patents are not included.

Reducing Emissions of Gases Other than CO₂

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 controls not only on CO₂ but also on the other greenhouse gases (SF₆, HFC, PFC, N₂O, and CH₄) and is doing its utmost to reduce emissions. 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 CO₂. With respect to emissions by the electric power industry, the contribution of these gases to global warming is about 1/400 that of CO₂. *

Sulfur hexafluoride (SF₆) 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 emissions through consistent recovery and reuse. In fiscal 2005, our recovery rate for SF₆ was 98%.

* The Federation of Electric Power Companies of Japan, Electric Power Industry Environmental Action Plan (September 2005).

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 by rigorously applying recovery and reuse methods during inspection and disposal. In fiscal 2005, our rate of recovery and reuse was
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 ₂ O)	The J-POWER Group is working to keep emissions to a minimum by improving thermal efficiency of coal-fired power stations. (In fiscal 2005, emissions of N ₂ O totaled approximately 1,670 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.

◆ **Protection of 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	At year-end, 2005 (t)		Application
Specified CFCs	Stock	1.8	Refrigerant
	Consumption	0.0	
Halons	Stock	3.9	Fire extinguisher
	Consumption	0.0	
Other CFCs, etc	Stock	15.8	Refrigerant
	Consumption	0.3	
Total	Stock	21.5	Consumption 0.3
CFC substitutes (HFCs)	Stock	7.7	Refrigerant
	Consumption	0.1	

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 SF₆, 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 Relating to the Local Environment

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.

Reducing the 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.

Reducing Emissions from Thermal Power Stations

◆ 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.

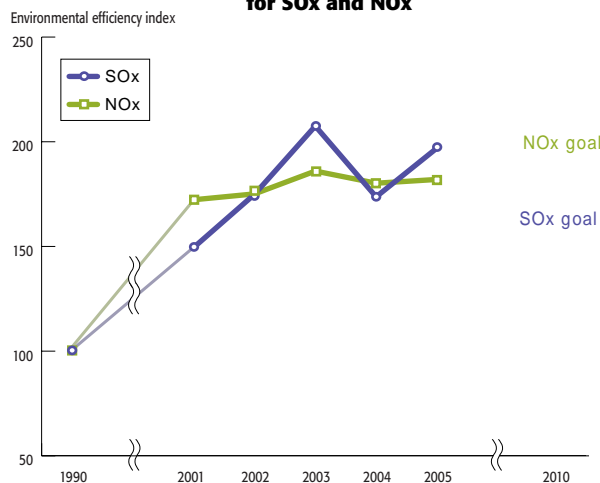
In fiscal 2005, the emissions intensity of NOx and soot and dust remained more or less constant compared with fiscal 2004. However, because the sulfur content of the coal was lower than in the previous year, SOx intensity decreased slightly in fiscal 2005, resulting in an improvement in environmental efficiency ☹️.

FY 2005 Performance (J-POWER)

Substance	Equipment efficiency (removal efficiency)	Emissions (tons)	Emissions intensity (g/kWh)
SOx	71%–99%	10,000	0.17 g/kWh
NOx	69%–91%	28,800	0.50 g/kWh
Soot and dust	99% (design value)	1,000	0.02 g/kWh

Notes: 1. Emissions intensity in the text of this report and accompanying charts has been calculated using the electricity output of coal-fired thermal power stations as the denominator.
2. Emissions of dust are calculated on the basis of measurements taken monthly.

J-POWER Environmental Efficiency Index for SOx and NOx



Note: For the environmental efficiency index, 100 = FY 1990 environmental efficiency (electric power sales volume ÷ SOx, NOx emissions).

J-POWER EnTech—the J-POWER Group's Dry-type Desulfurization and Denitrification Business

Our dry-type desulfurization and denitrification system uses regenerative activated coke technology (ReACT) to remove SOx, NOx, dust, and other pollutants from flue gas. What distinguishes this process from conventional systems is that it uses almost no water.

J-POWER has been using this system at two of its large-scale commercial plants, the Isogo Thermal Power Station new No. 1 unit and Takehara Thermal Power Station No. 2 unit.

In addition, J-POWER recently acquired the dry-type desulfurization and denitrification engineering division of Mitsui Mining and established the subsidiary J-POWER EnTech, which installs dry scrubbing equipment for domestic and overseas power plants—including J-POWER's Isogo Thermal Power Station new No. 2 unit—as well as steel mills and other industrial facilities.

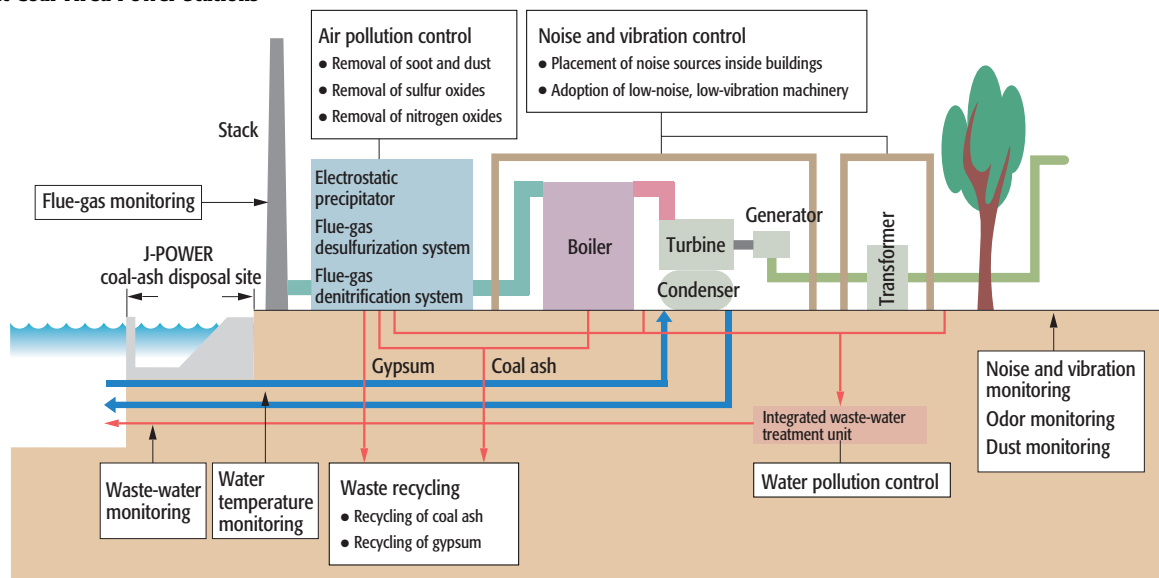
The J-POWER Group is helping to reduce environmental

impact in a wide range of fields with the ReACT dry scrubbing technology, both by using it in its own power stations and by making it available to other companies and industries.



Dry-type flue-gas desulfurization system at Isogo Thermal Power Station's new No. 1 unit.

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.

(For information on incidents involving waste water, see p. 53.)

◆ 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 plants and by keeping such equipment inside plant buildings. With regard to outdoor equipment at our coal-fired and hydropower plants, 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 windshielding 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.

Recycling and Reuse of Resources

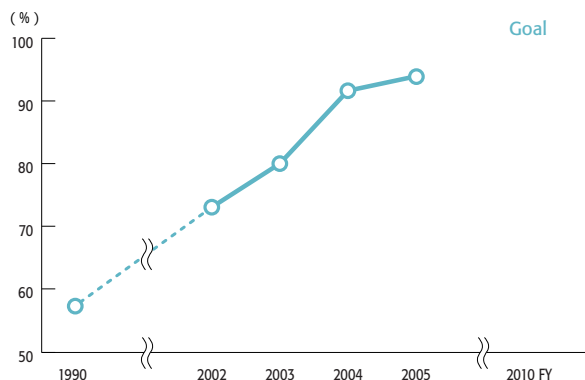
To help build a recycling-based society, the J-POWER Group is working hard to reduce the amount of waste we generate and to properly treat and recycle the waste we do produce. We are also involved in a number of environmental recycling programs to promote conservation measures, the use of untapped energy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

Effective Use and Reduction of Waste

In fiscal 2005, the J-POWER Group generated 2.23 million tons of industrial waste ♻️, of which recycled or reused resources totaled 2.09 tons, or 94%.

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 2005, 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

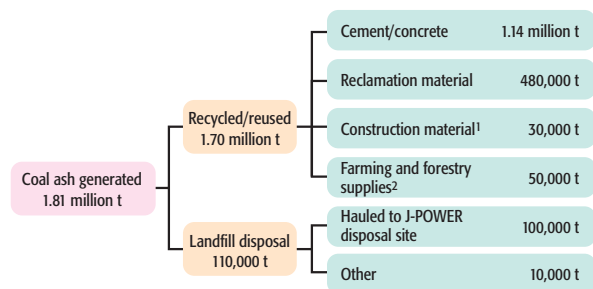
Coal ash, the residue from the combustion of coal at coal-fired power stations, accounts for the largest volume of waste we produce.

In fiscal 2005, we generated 1.81 million tons of coal ash, of which we recycled or reused 1.70 million tons, or 94% (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.

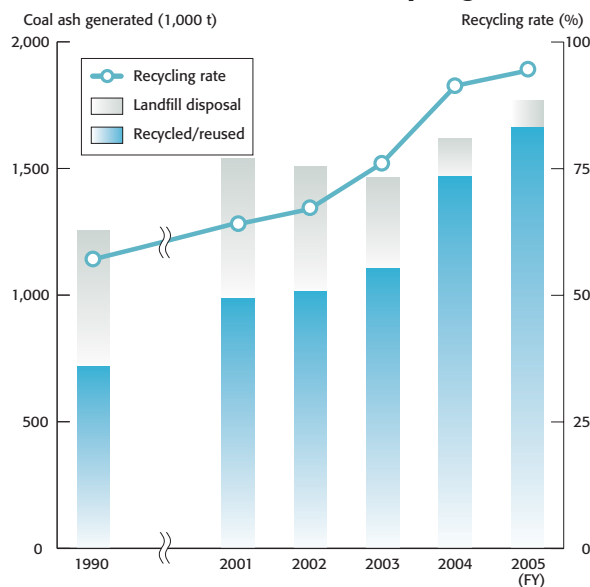
Most of the coal ash that cannot be recycled or reused is disposed of in landfill at our own disposal sites.

Breakdown of Coa-Ash Recycling (FY 2005)



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 2005, the amount of gypsum recycled or reused was 380,000 tons, 100% of the volume generated.

◆ **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 2005 was approximately 27 tons, a 6% reduction from the previous year.

◆ **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.

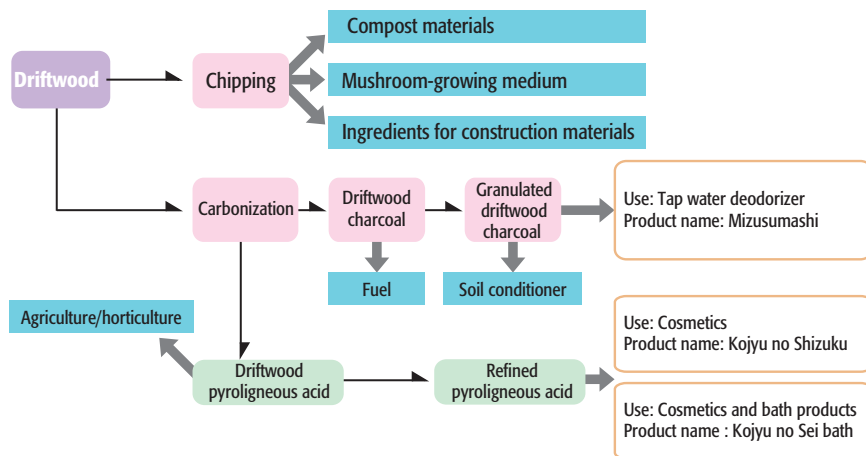
◆ **Effective Use of Driftwood**

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 2005, some 11,500 m³ of driftwood was recycled.



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

Effective Use of Driftwood



Kojyu no Shizuku Facial Cleanser

On Unfamiliar Ground, Dreaming of the Next Hit Cosmetic Product

Power Employee

Harumi Matsunaga
Marketing Department, Épuré Co., Ltd.

Épuré, a member of the J-POWER Group, markets skin care products made with "WV essence,"* an ingredient extracted from charcoal produced from the driftwood that collects in dams. Insofar as people tend to associate the name J-POWER with energy-related businesses, Épuré is a bit of an anomaly.

Matsunaga was transferred to the marketing department of Épuré in 2005. Lacking specialized knowledge in not only cosmetics but also sales and distribution systems, she found herself on unfamiliar ground. In the beginning, she must have found the whole experience baffling.

Pyroligneous acid is said to contain upwards of 200 beneficial ingredients, including plant phenols that help keep in moisture and stimulate the skin's metabolism. It is the key ingredient in a product line that includes Kojyu no Shizuku

Facial Cleanser with sodium hyaluronate and Kojyu no Sei cosmetics and bath products with vitamin C. These are being marketed through in-house sales events at the Group's member companies, Internet sales, and advertisements in free newspapers, but product awareness among ordinary consumers remains low.

"I believe that once people have the chance to experience these cosmetics and smell their natural fragrance, they'll see what fine products they are," says Matsunaga. "We get particularly high marks from users with dry skin and atopic allergies." Matsunaga is on the go today as always, dreaming of marketing the cosmetic industry's next hit product.



*Wood vinegar essence, or refined pyroligneous acid.

◆ Environmental Recycling Program

The J-POWER Group's environmental recycling program is centered on promotion of appropriate treatment of waste, environmental measures, and the use of untapped energy sources. In launching projects in the area of environmental recycling, we have focused on private operation of public infrastructure through PFI/PPP* schemes.

* 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.

Examples of PFI Waste-Power Generation Projects



Omuta Recycle Power Station (unconsolidated affiliate)
Omuta, Fukuoka Prefecture; startup December 2002
This RDF (refuse-derived fuel) power plant generates electricity efficiently using MSW ♻️ as fuel.



Narumi Waste Disposal Plant, Nagoya (unconsolidated affiliate)
Nagoya, Aichi Prefecture; startup (planned) July 2009
This project for waste-power generation using a gasification and melting system will not only generate electricity from MSW (thermal recycling) but also recycle materials for reuse.

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 ...and more

Other Efforts Relating to Environmental Recycling

- Utilization of sewage sludge (biosolid) fuels (co-combustion)
- Field testing of carbon fuel produced from MSW ♻️
- Development of technology for production of carbon fuel from sludge ...and more

Kenji Manda

Environmental Recycling Group, Business Development Department

Power Employee

Manda is involved in a J-POWER Group project to test-manufacture carbon fuel from MSW. The purpose of the project is to develop technology for producing fuel by carbonizing MSW and determine if such fuel can be used in place of coal at coal-burning thermal power stations.

Manda feels more motivated the longer he works on the project, the first such field test in Japan, as it promises to aid the earth's environment by reducing CO₂ levels as well as contributing to the growth of the J-POWER Group's environmental business.

That said, problem-solving in a ground-breaking endeavor like this is largely a matter of trial and error. As Manda faces one high hurdle after another, he could be forgiven for wondering if the undertaking might grind to a halt.

However, Manda never finds his work onerous, not even in those situations. "It's always interesting because you approach problems from a variety of angles," he says.

The recycling business Manda envisions, together with the widespread use of biomass energy, may be just over the horizon.



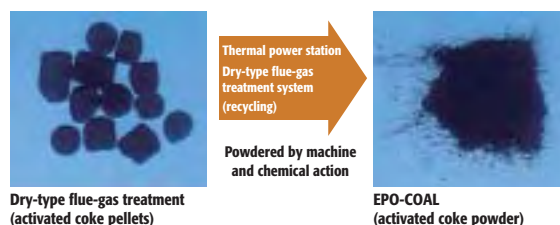
EPO-COAL: Recycled Granulated Coke Powder for Dioxin Removal

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 (from Takehara Thermal Power Station) was registered as a Hiroshima Prefecture Recycled Product. It has also been adopted by a waste-disposal consor-


tium 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.



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 plants, 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 sites for such purposes as carbonizing driftwood. At these specified 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 2005, 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 sub-

stances 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 2006 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 2006). This is stored and managed under stringent conditions in 31 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.

*For information on the asbestos problem, see p. 19.

Total PRTR-Substance Release and Transfer Volumes (FY 2005)

Chemical	Use	Volume handled	Volume released	Volume transferred through waste
40: Ethyl benzene	Coating for machinery and equipment	1.05 t/y	1,049 kg/y	0.0 kg/y
63: Xylene	Coating for machinery and equipment	7.03 t/y	4,066 kg/y	0.0 kg/y
253: Hydrazine	Additive for boiler water	3.75 t/y	0.0 kg/y	0.0 kg/y
179: Dioxins	Waste incinerators	—	0.02 mg-TEQ/y	0.0 mg-TEQ/y

Notes:

- Figures represent total release and transfer volumes for all facilities handling 1 ton or more of the specified substance annually.
- For dioxins, figures represent total emissions from waste incinerators.
- As stipulated by law, figures represent the total of the values reported by each business unit.



Machinery containing PCBs being shipped to treatment site

Steps to Protect the Natural Environment and Biodiversity

When building new power stations, we carry out environmental impact assessments and incorporate the views of the local residents as we work to minimize the facility's impact on the environment. During construction, we monitor construction activity and implement environmental conservation measures to ensure a harmonious balance with nature. We also work to preserve the natural environment and biodiversity of the area in our maintenance and management of facilities.

Environmental Assessment and Monitoring

The J-POWER Group carries out environmental assessments (environmental impact assessments) when planning for the construction of a new power facility 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 and assess the impact the siting of a power facility will have on that environment. During the process, we listen to the views of local residents and incorporate them in our plan.

After a power plant 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 Assessments for J-POWER Group Projects
(date: submission of environmental impact assessment document)

No.	Category	Name of Project	Prefecture	Date
1	Hydro-power	Shimogo	Fukushima	Feb. 1974
2		Sakuma No. 2	Shizuoka	Jan. 1978
3		Abunumagawa	Niigata	Jun. 1978
4		Hayakido	Nagano	Aug. 1981
5		Tadami	Fukushima	Nov. 1981
6		Tokuyama	Gifu	Dec. 1982
7		Kumaushi	Hokkaido	May 1983
8		Satsunaigawa	Hokkaido	Aug. 1986
9		Akiba No. 3	Shizuoka	Aug. 1987
10		Seawater Pumped Storage Demonstration Test	Okinawa	Jan. 1989
11		Kurotani	Fukushima	Feb. 1989
12		Isawa No. 1	Iwate	Jun. 1991
13		Okukiyotsu No. 2	Niigata	May 1992
14		Okutadami/Otori Expansion Projects	Fukushima	Sep. 1995
15	Thermal power	Matsushima	Nagasaki	Jan. 1976
16		Takehara No. 3	Hiroshima	Feb. 1980
17		Matsuura	Nagasaki	Apr. 1981
18		Ishikawa	Okinawa	Dec. 1982
19		Takehara No. 2 Fuel Conversion	Hiroshima	Feb. 1991
20		Tachibana-wan	Tokushima	Oct. 1994
21	Shin Isogo	Kanagawa	Aug. 1996	
22	Nuclear power	Ohma	Aomori	Sep. 1999
23	Transmission lines	Honshi Interconnection Line	Okayama	May 1983
24		Tadami Main Transmission Line Phase III	Gunma	Apr. 1995
25		Sakuma-Higashi Main Transmission Line	Shizuoka	Nov. 1995
26		Ohma Main Transmission Line	Aomori	Jun. 2000
27	Wind power	Nunobiki Kogen	Fukushima	Jun. 2003

Note: Assessments listed include those carried under not only the Environmental Impact Assessment Law but also the Public Waters Reclamation Law, the Forest Law, prefectural and municipal ordinances, and other statutes.

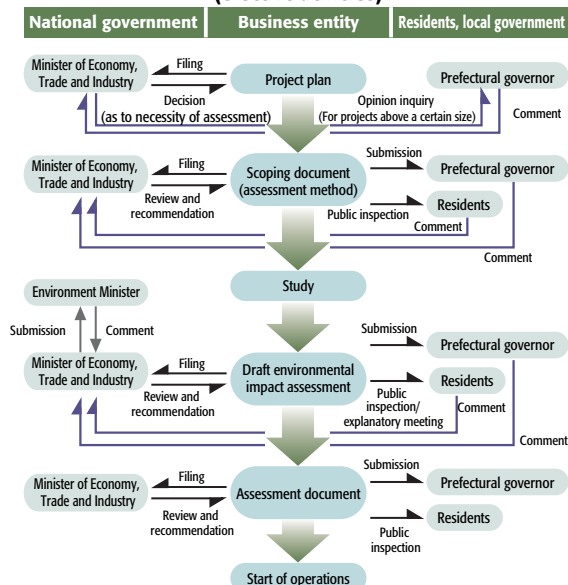
Outline of the Environmental Impact Assessment Law

The Environmental Impact Assessment Law, which came into effect in June 1999, mandates that businesses planning large-scale projects with the potential to markedly affect the environment conduct studies and make predictive assessments concerning the impact on the environment. It also establishes procedures whereby the prefectural governor, the relevant state minister, the local residents, and others can offer comments on the assessment's methods and conclusions, and it requires businesses to establish a mechanism for incorporating the results of the assessment and the comments into their project.


In respect to electric power plants, for twenty years we carried out environmental impact assessments in accordance with the environmental assessment system adopted by a resolution of the former Ministry of International Trade and Industry. Currently environmental impact assessments are carried out in accordance with the Environmental Impact Assessment Law and with the Electricity Utilities Industry Law, which was amended to conform with the EIA Law.

In addition to these statutes, we have also carried out environmental assessments under the provisions of the Public Waters Reclamation Law, the Forest Law, the Waste Management and Public Cleansing Law, and various local ordinances.

Procedures under the Environmental Impact Assessment Law (electric utilities)




◆ Environmental Conservation Measures During Preparatory Work on the Ohma Nuclear Power Station

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

Since preparatory construction work began in April 2000, we have been monitoring the environment in respect to air quality, noise and vibration, and water quality. In addition, we are conducting a status survey of rare species inhabiting the area around the site of the power station to make doubly sure of their protection. The results of the survey are made available for public inspection along with the results of our coastal water quality survey.




Survey of rare species

Type of measure	Content	
Protection of terrestrial animals and vegetation	<ul style="list-style-type: none"> 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 measures	<ul style="list-style-type: none"> Installing silt protectors in coastal waters and water quality monitoring 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 measures	<ul style="list-style-type: none"> Selecting low-noise, low-vibration machinery Implementing of anti-noise/vibration measures as necessary
	Disposal/handling of loose earth and rock during construction	<ul style="list-style-type: none"> Using loose earth and rock generated by excavation and dredging for reclamation, backfill, and building embankments; using surplus earth from construction to build a mound on in on-site disposal area that is incrementally greened
	Anti-dust measures	<ul style="list-style-type: none"> Installing washing facilities for construction vehicles Spraying and cleaning construction roads Installing anti-dust barriers and nets
	Traffic noise	<ul style="list-style-type: none"> Designating routes for construction vehicles Reducing road traffic through use of marine transport
	Industrial waste 	<ul style="list-style-type: none"> Appropriate disposal of waste in compliance with law Chipping and recycling cleared timber and roots as mulch, etc. for greening of site

Soil Pollution Measures

◆ Status Surveys Prior to Power Station Construction

For years we have carried out environmental assessments in advance of construction of power plants and other facilities, in conformance with the Environmental Impact Assessment Law that came into force in 1999 (and prior to that, in accordance with the environmental assessment system adopted by the former Ministry of International Trade and Industry in 1977), as well as local ordinances and other statutes. These assessments include status surveys of soil pollution  within sites slated for construction to confirm the presence or absence of contamination prior to construction.

◆ Prevention of Soil Pollution

When constructing a power plant, we design the facilities in accordance with the Fire Prevention Law and other statutes by building dikes around oil and chemical tanks and pipes and by separating hazardous substances and treating them with on-site waste treatment units, to ensure that in the unlikely event of a leak such substances do not spill into coastal waters or the surrounding area.

In the operation of our power stations we prevent leakage of chemicals into the environment by mandating appropriate handling methods and emergency procedures in our EMS and exercising careful oversight.

We also prevent soil and groundwater pollution by carrying out education and training programs for plant staff as necessary.

◆ Studies to Identify Potential Soil Pollution

The J-POWER Group has no sites that require a soil contamination survey under the Soil Contamination Countermeasures Law. Nonetheless, we have voluntarily drawn up plans to carry out soil contamination surveys. During fiscal 2004 and 2005, studies were conducted at all domestic sites (368 locations, including thermal power stations, hydroelectric power stations, transmission system facilities, offices, and company-owned housing).

These studies determined that none of the sites had a history of contamination before coming into our possession. They also established that chemicals presently being handled at power stations and other facilities were being properly managed by means of storage and transfer facilities designed to prevent infiltration into the ground, and that there was no risk of soil or groundwater pollution at these sites.

Hiroataka Uemura

Civil & Architectural
Engineering Group,
Ohma Nuclear Power Project
Construction Preparation Office

Power Employee

Uemura is involved in the construction of the J-POWER Group's first nuclear power station. The northern winters are harsh, and the work brings its share of hardship. But when Uemura witnesses the completion of the facilities that he himself designed and whose construction he oversaw, his satisfaction will surely make it all worthwhile.



Hydroelectric Power and Harmony with the River Environment

◆ Reservoir Water Quality

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.



Sakamoto Dam surface-water intake system under construction (Nara Prefecture)

◆ 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 2005, such measures were being implemented at 30 power plants over 527 km of river.



River maintenance discharge (circled area) at Nanairo Dam (Wakayama Prefecture/Mie Prefecture)

◆ Efforts to Preserve Our Forests

Recognizing the manifold value of our forests, the J-POWER Group decided to designate and preserve a portion of its own wooded land as riverhead forest. In December 2002, we adopted Provisional Guidelines for the Conservation of Riverhead Forests, and we have since been involved in conservation efforts based on these guidelines.

Since fiscal 2004, we have been at work on plans to offer a tract of wooded company land situated on the border between Kawasaki-shi, Kanagawa Prefecture, and Machida-shi, Tokyo—the site of our Nishi Tokyo Power Administration Office—as a “forest shared with the community” with the purpose of restoring the *satoyama* (village commons; communal forests) and preserving the scenery for local residents and hikers on the historic Fudamichi road.

◆ Control of Sediment in Reservoirs

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.

In fiscal 2005, we moved or removed approximately 1.28 million m³ of sediment at 13 dams nationwide. Of the roughly 760,000 m³ of sediment removed from the reservoirs, approximately 95% was recycled in the form of aggregate or cover soil.



Sediment dredging at Senbiri Dam (Hokkaido Prefecture)

Takatoshi Kunisaki

Totsukawa Power
Administration Office,
West Regional Headquarters

Power Employee

Kunisaki's job is maintenance and management of the civil engineering installations at power generation facilities. His major duties include direction and supervision of water discharge to prevent overflow from the dam and management of sediment control to remove excess sand and mud that accumulate in the dam, together with disposal and treatment of driftwood. Kunisaki was attracted to civil engineering when he first joined the company, and as his responsibilities have increased, so has the fulfillment that he gains from a job that is essential to maintenance of the power station.



Supporting Biodiversity

We are aware of the need to preserve biodiversity, and are striving toward coexistence with rare species through scrupulous study, planning, construction, and operation.

◆ Northern Japanese Macaques and Other Rare Species

The Ohma Main Transmission Line now being constructed in Shimokita-gun in Aomori Prefecture will extend a total of 60 km from the planned Ohma Nuclear Power Station (Ohma-machi) to the grounds of the Higashidori Nuclear Power Station (Higashidori-mura), scheduled to be built by Tokyo Electric Power Company and Tohoku Electric Power Company. During construction of the line, it was found 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, which has been designated a protected species. Since 1997 we have been soliciting the opinions of experts, conducting a variety of studies, and incorporating the results in protection measures implemented during construction. In this way we have kept the impact of power-line construction on the northern 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)

◆ Blakiston's Fish-owl

Among the inhabitants of the Tokachi district of Hokkaido Prefecture is Blakiston's fish-owl, categorized 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)

◆ Japanese Golden Eagle

The Japanese golden eagle, listed 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 noted among the eagles that have been confirmed 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.



A young Japanese golden eagle, 30 days after leaving the nest (July 16, 2003).

◆ Restoring a Wetland

The J-POWER Group has also carried out wetland restoration in conjunction with the Okutadami-Otori Hydro Power Project (Fukushima and Niigata prefectures).

The project involved construction of an underground generator and aqueduct tunnel, and plans called for the rock generated during excavation to be used to fill in a basin on the left bank downstream of the Okutadami Dam. However, because the ecosystem of the basin area provided habitat for rare wildlife species that inhabit wetlands within a mountain environment, the project faced the challenge of filling in the basin while simultaneously preserving the wetland ecology.

The solution arrived at was to create another wetland to substitute for the area to be filled in. The aim was to re-create an environment equivalent to that lost and, by allowing both to exist side by side for an extended period, to preserve the wetland ecology.



Site of re-created wetland near the Okutadami-Otori Hydro Power Project

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 investment projects as well, we provide technological consulting to the biomass plants, hydropower, gas-turbine combined-cycle, and other facilities in which we apply our environmental engineering know-how.

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. We apply the technology and experience accumulated here in Japan, send government experts to agencies in the host countries, and invite engineers from developing countries to train with us.

As of the end of fiscal 2005, we had been involved in a total of 263 international consulting projects in 61 countries.

In order to make international IPP investment our secondary revenue source, we established the IPP Business Office in 1997 and have been expanding our business in this area. As of the end of fiscal 2005, we were involved in 14 overseas power generation projects in five countries and territories.

◆ International Consulting

For many years now 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.

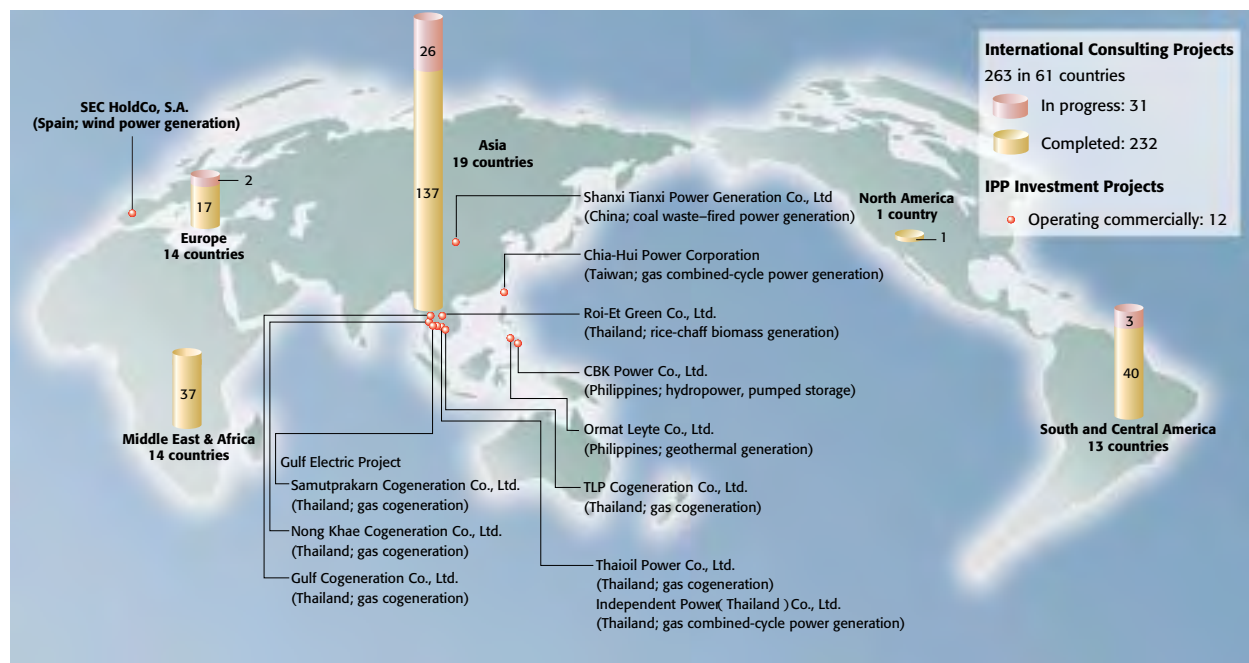
Examples of environmental technology consulting in the area of coal-fired thermal power are the transfer of SOx and NOx emissions reduction technology to countries of the European Union, technological advice on measures to reduce SOx emissions to East European coun-

tries plagued by acid rain, and in China, a demonstration test of technology to desulfurize coal with high sulfur content (commissioned by METI).

An additional example is the Rehabilitation Project for the Fourth Thermal Power Plant (540 MW) in Ulaanbaatar, which has been funded by a Japanese ODA loan. Since 1995 we have been involved in a project to renovate an existing thermal power plant. Its facilities, designed and installed by the former Soviet Union, are outdated and equipped with low-efficiency boilers that consume too much coal and emit a large amount of pollutants. Since 2001 we have been involved in work to refurbish the plant's boiler burners (Phase 2), by which we plan to improve the plant's heat efficiency by about 10%.

With respect to operation and maintenance, we are making recommendations to improve environmental efficiency by such means as raising the utilization rate and reducing internal electricity consumption.

International Consulting and IPP Investment Projects



(As of the end of March 2006)

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 in high-efficiency rehabilitation of thermal power plant
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 plant
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 Upgrading 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 minigrd

◆ International IPP Investment Program

In response to the worldwide trend toward privatization and deregulation of the electric power industry, we are involved in a wide range of businesses overseas. We are also 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 2005, we were involved in IPP projects in 5 countries and territories, operating 12 power generation facilities and constructing two others.



Roi-Et Rice-Chaff-Fired Thermal Power Generation Plant (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 investment program, we will continue to strive for more environmentally friendly business operations as we pursue overseas investment.



Ulaanbaatar Fourth Thermal Power Plant Rehabilitation Project (Mongolia)

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

Thermal Power Generation from Rice Chaff Brings Smiles to Local People

Power Employee

Hiroya Naramoto

IPP Business Office No. 2,
International Power Business Department

The belief that an effective use can be found for things commonly discarded as worthless gave rise to a project to use rice chaff—waste material generated when rice is polished—as fuel for thermal power generation.

The result: Thailand's Roi-Et Rice-Chaff-Fired Thermal Power Generation Plant, an electric power generation facility fueled with rice chaff. Naramoto was one of the driving forces behind this project.

The same rice chaff that was once left outside in piles to decay, or burned in a manner that fouled the air with smoke,

have been transformed into a valuable energy source. As a by-product, the ash remaining after the chaff is burned is used as fertilizer.

With the completion of the Roi-Et power plant, the local area now enjoys a stable electric power supply, and families can sit in brightly lit rooms as they eat their evening meal. Smiles also light the residents' faces. Naramoto's dedication has brightened their homes and their lives.



Pursuing Technological Research and Development

Through the research and development fostered by the J-POWER Group in fields ranging from energy, including the development of high-efficiency coal-use technology, to biotechnology, we have uncovered the potential for new technologies with great promise for the future, and are actively promoting R&D in these new areas.

◆ Agricultural Use of Coal Ash

Coal ash has the ability to adjust soil pH, provide nutrients essential to growth of crops, and improve water retention, qualities that make it highly suitable as a fertilizer or soil conditioner. Coal ash from thermal power plants is already being shipped to horticultural farmers for such purposes. For some crops, coal ash has the potential to increase yields, and depending on the state of the soil, application of coal ash as a conditioner can enable the growth of crops for which the soil was previously unsuited.

With an eye to exploiting the potential of coal ash as a fertilizer and soil conditioner, we are currently conducting soil conditioning tests on the red clay of Okinawa Prefecture and experiments to verify the usefulness of coal ash fertilizer for sugar cane. We are also engaged in the testing of other applications for coal ash, as well as other R&D efforts in partnership with government and academic institutions.



Verification test on usefulness of coal ash as fertilizer (sugar cane)

◆ Technology for Flushing Reservoirs

Earth and sand flowing into a dam reservoir from upstream build up sediment that reduces the reservoir's capacity. At the same time, the lack of earth and sand reaching the river below the dam results in a deepening of the river bed.

For this reason we are currently using hydraulic experiments, numerical analysis, and field surveys to develop an efficient, effective, and environmentally-friendly way to release the sediment to downstream rivers, together with methods for investigating and assessing the effect of such flushing on the river environment.

Collaborating institutions: Delft Hydraulics (Netherlands), HR Wallingford (UK)



Hydraulic model test of sediment flushing technology



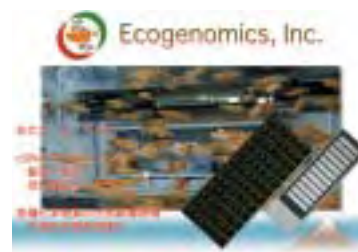
A Gene's-Eye View of the Environment: Developing and Commercializing DNA Microarray Technology to Assess the Effect of Chemicals on Organisms

In July 2003, the J-POWER Group teamed with Transgenics Corp. (headquartered in Kumamoto Prefecture) to set up Ecogenomics Corp. (headquartered in Fukuoka Prefecture). Ecogenomics is working to develop and commercialize DNA microarray technology to assess the effect of endocrine disruptors and other chemicals on living organisms and the ecosystem by analyzing genetic changes in killifish and mice.

In August 2005, the company launched sales of mouse and killifish DNA microarrays. Currently it is conducting R&D to further improve these products, while working to establish a strong sales base. We are hoping that this gene's-eye view assessment technique will eventually be adopted as the standard method for screening substances under the Law Concerning the Examination and Regulation of the Manufacture etc. of

Chemical Substances, and be used as well in assessing the water quality of rivers and other bodies of water.

For more information, see the Ecogenomics website at <http://www.ecogenomics.co.jp/english/>



Ensuring Transparency and Reliability

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

Continually Improving Our Environmental Management

With the aim of conducting environmental conservation activities based on our corporate philosophy, in 1997 we decided to introduce environmental management systems (EMS) complying with the ISO 14001 international standard for environmental management. By 2002 we had completed EMS introduction at all J-POWER sites and by the end of fiscal 2005 all parent company power stations had obtained ISO 14001 certification.

Major group companies have already completed EMS introduction, and the entire group is working to ensure that all consolidated subsidiaries will have EMS in place by the end of fiscal 2007.

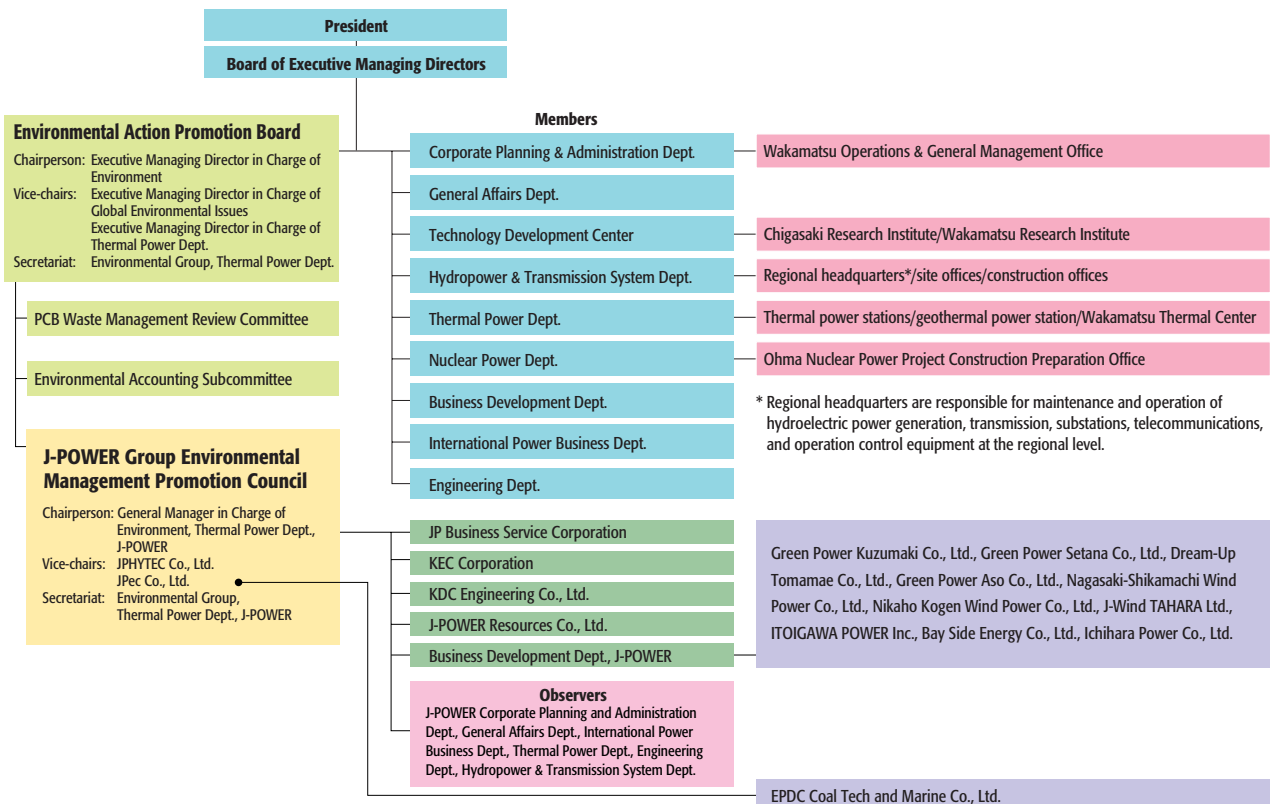
◆ Environmental Management Structure

The Environmental Action 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 divisional 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 pp. 83-84), J-POWER business units and group companies with EMS in place draw up their own Environmental Action Plans. They periodically review and evaluate their initiatives and revise measures to be taken (based on a PDCA cycle).

J-POWER Group Environmental Management Organization Chart (FY 2005)



◆ An Outline of EMS and the Operational Units Implementing It

Each business unit in the J-POWER Group establishes and operates EMS for planning/design, construction, and maintenance/operation, while continually striving to make improvements. Group companies engaged in maintenance and management of power plants operate EMS in conjunction with J-POWER maintenance/operating business units (thermal and geothermal power stations, regional headquarters).

J-POWER

* ISO 14001 certification received

Category	Business Unit Name	Outline
Planning/design	Engineering Dept.*	Introduced and operates EMS for construction of generation facilities as well as to ensure new business projects are environmentally responsible from the planning and design stage. Obtained ISO 14001 certification 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 West Tokyo Transmission Line Construction Office	Introduced and operate EMS to ensure implementation of measures arising out of environmental impact assessment, 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)	Introduced and operate EMS in accordance with environmental laws, regulations, and agreements in order to take measures aimed at reducing environmental load. Introduction began in 1998 with Matsuura Thermal Power Station, which completed introduction at the end of fiscal 2001. The station obtained ISO 14001 certification in June 1999.
Other	Technical research centers (including Chigasaki Research Institute) Wakamatsu Operations & General Management Office (including the Wakamatsu Research Institute and Wakamatsu Thermal Center)	In fiscal 2004 all other coal-fired and geothermal power stations obtained ISO 14001 certification. The scope of certification includes J-POWER Group company JPec. In fiscal 2005 ISO 14001 certification covering J-POWER and group company JPHYTEC was received for each regional headquarters (Hokkaido, East Japan, Chubu, West Japan), including hydropower and transmission facilities.
	Head Office	Introduced EMS for head office building.
Total: 20 business units (as of March 2006)		

J-POWER Group Companies

*ISO 14001 certification received (including expansion of scope of certification to cover group company)

Group Company	Outline
Consolidated subsidiaries including JPHYTEC Co., Ltd.*, JPec Co., Ltd.*, JP Business Service Corporation	Introduced EMS and are continually striving to improve. Introduction of EMS will be extended to other companies. Some business units/divisions have also obtained ISO 14001 certification.
KEC Corporation*	IT Maintenance Division obtained ISO 14001 certification in March 2005, followed by all head office divisions and some branch functions in December 2005. Preparations are under way to extend scope of certification to cover the entire company by the end of fiscal 2006.
IPP wind power generation companies	Tahara Seaside Wind Farm has completed EMS introduction. EMS scheduled for introduction at other wind farms during fiscal 2006.
IPP & PPS thermal generation companies (ITOIGAWA POWER Inc., Ichihara Power Co., Ltd.*, Bay Side Energy Co., Ltd.)	ITOIGAWA POWER Inc. introduced EMS in November 2005 and Bay Side Energy Co., Ltd. in April 2006. Ichihara Power Co., Ltd. obtained ISO 14001 certification via expansion of scope of certification in April 2006.

◆ 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 J-POWERs group magazine.



Environmental information network

Medium	Title	Content
Electronic bulletin board	Environmental laws, regulations, and data	• Implementation and revision of laws and regulations
	Information on environmental management and events	• Social trends • In-house environmental events • EMS
	Forum on nature, the environment, and animals, and plants	• Forum for free exchange of opinions among employees
Intranet	Environment information network	• Overview of laws and regulations • Overview of EMS • Environmental education and training

◆ **Education and Training**

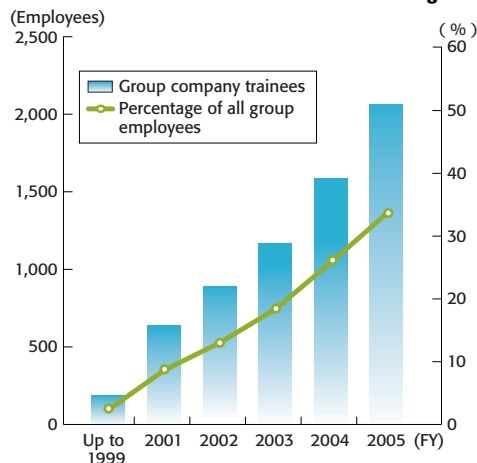
The J-POWER Group conducts a range of internal and external environmental training programs to raise employee awareness and cultivate a sense of personal responsibility regarding environmental issues. In fiscal 2005 new courses were added to the e-learning-based environmental education program available to group employees. An environmental awareness survey was also conducted in conjunction with the e-learning program. Including group employees, a total of 2,057 staff members have taken the course for EMS internal environmental auditors.

Environmental In-House Training in Fiscal 2005

Category	Topics	Trainees	Main content
Overall environmental management	Environmental report study groups	Approx. 760	J-POWER Group's efforts
Basic training for EMS operation	Internal environmental auditor training	470	Requirements of ISO 14001, internal environmental audit method
	Follow-up training for internal environmental auditors	35	Practice in identifying nonconformance, etc.
E-learning	Basic knowledge of environmental issues	569	General environmental issues
	J-POWER Group's efforts (group-wide)	1,940	Status of environmental efforts, etc.
	EMS course (system outline)	1,776	Outline of ISO 14001
	EMS course (advanced)	1,218	Requirements of ISO 14001, audit method, etc.
	Total	Approx. 6,768	

Note: Most training was aimed at all group employees
 *Includes employees of non-consolidated subsidiaries and partner companies outside the group

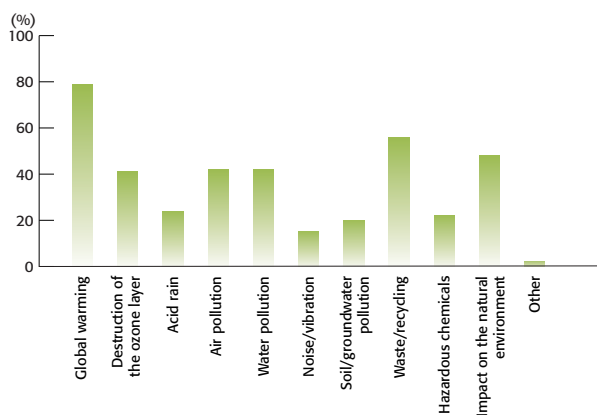
Cumulative Number/Percentage of Employees Who Have Received Internal Environmental Auditor Training



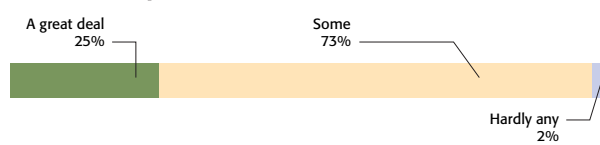
Extract from Group Employee Environmental Awareness Survey

(Results as of the end of March, 2006. Questionnaires distributed to 3,542 employees. 1,706 responses)

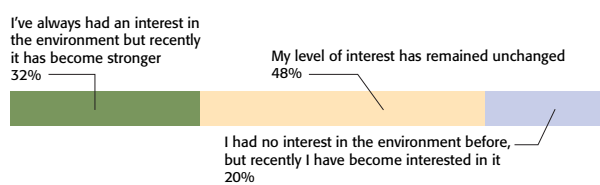
■ **What environmental issues are you interested in?**
 (Multiple responses allowed)



■ **In terms of your work and everyday life, how much interest do you have in the environment?**



■ **If you answered "a great deal" or "some," how has your thinking on the environment changed?**



◆ **Environment-Related Official Qualifications**

At power stations and other facilities, staff members with formal qualifications, such as Manager in Charge of Pollution Control Certificates, are assigned to positions where they can facilitate day-to-day environmental conservation activities. We will continue to provide employees with guidance and support to acquire various qualifications, with the aim of improving their knowledge and skills.

As of the end of March 2006

Qualification	No. of holders	Qualification	No. of holders	Qualification	No. of holders
Professional Engineer, Construction Division (Construction Environment)	13	Manager of Specially Controlled Industrial Waste	277	Hazardous Materials Officer, Class A	152
Professional Engineer, Environment Division (Environmental Conservation Planning)	2	Technical Manager in Charge of Industrial Waste Final Disposal Site	41	Boiler Technician (Special Grade, Grades 1 & 2)	1,863
Professional Engineer, Environment Division (Conservation of the Natural Environment)	4	Technical Manager in Charge of Waste Disposal Facilities	572	Boiler Mechanic	37
Manager in Charge of Pollution Control, Senior Level	18	Biotope Design Supervisor (Grades 1 & 2)	18	Works Supervisor for Specific Chemicals	804
Manager in Charge of Pollution Control, Air (Types 1-4)	252	Biotope Construction Supervisor (Grades 1 & 2)	16	Manager in Charge of Poisonous and Deleterious Substances (General and Specific)	11
Manager in Charge of Pollution Control, Water Quality (Types 1-4)	586	Technical Supervisor for Landscape Construction, Grades 1 & 2	32	Works Supervisor for Organic Solvents	407
Manager in Charge of Pollution Control, Noise	94	Chief Electrical Engineer, Classes 1-3	759	Sanitation Manager, Classes 1 & 2	339
Manager in Charge of Pollution Control, Vibration	40	Radiation Protection Supervisor, Classes 1 & 2	103	Certified Measurer, Environment	8
Manager in Charge of Pollution Control, General Dust	2	Energy Supervisor, Electricity	173	Work Environment Measurement Expert (Classes 1 & 2)	52
Manager in Charge of Pollution Control, Specific Dust	2	Energy Supervisor, Thermal	241	EMS Auditor (Prov. Auditor)	27
Manager in Charge of Pollution Control, Dioxins	23	Manager in Charge of High-pressure Gas Production and Storage (Classes A, B, & C)	1,163		



◆ **Environmental Incidents**

Seven environmental incidents occurred between May 2005 and March 2006. On each occasion a press release was issued and improvements were made to facilities and procedures to prevent a recurrence. Note that none of the incidents resulted in any impact on the surrounding environment.

Location	Situation/Response
Aso-Nishihara Wind Farm No. 4 Unit (Aso-gun, Kumamoto Prefecture)	On July 20, 2005 more than 10 liters of oil used to regulate windmills was leaked and scattered onto grassland. The cause of the leak was a damaged oil seal. The scattered oil was recovered and improvements were made to the facility to prevent a recurrence.
Tachibanawan Thermal Power Station (Anan-shi, Tokushima Prefecture)	On October 11, 2005, wastewater containing coal particles was discharged into the sea from the wastewater treatment plant in the coal unloading and transporting facility shared by J-POWER's Tachibanawan Thermal Power Station and Shikoku Electric Power Co. Inc.'s Tachibanawan power station (volume discharged: approximately 10 m ³). The cause was a blocked filter in the water treatment facility. Improvements were made to the facility and operating procedures.
Matsuura Thermal Power Station (Matsuura-shi, Nagasaki Prefecture)	During regular monitoring of treated wastewater on October 27, 2005, selenium levels were found to be higher than usual. The cause was investigated and operating procedures tightened up.
Isogo Thermal Power Station No. 2 Unit Construction Office (Yokohama-shi, Kanagawa Prefecture)	On January 17, 2006, approximately 13 m ³ (according to J-POWER investigations) of rainwater with a pH of 10.3 flowed into the sea from the main building construction yard. Water with high pH levels resulting from contact with concrete blocks used on the site as backfill material is treated in a turbid water treatment plant before being discharged, but this incident occurred when water overflowed from a storage tank before being treated and was discharged by a different route from usual. As well as introducing tighter procedures for monitoring and control, measures were taken to prevent such discharge.
Owase No.1 Power Station (Owase-shi, Mie Prefecture)	On January 18, 2006, insulating oil containing a low level of PCBs leaked from a transformer in a PCB storage depot on the power station site. It seeped into a section of the storage depot's exterior wall and an infinitesimal amount of PCB contamination was detected only in the soil directly below. The oil leaked from an insulator joint on the transformer. The contaminated soil was removed and the transformer in question was stored under more stringent conditions.
Sakuma Power Station (Hamamatsu-shi, Shizuoka Prefecture)	During work being carried out on the power station site on January 25, 2006, a can containing diesel oil was accidentally knocked over and approximately 3 liters of diesel flowed into a nearby river. An oil fence was immediately deployed to prevent spreading and the leaked oil was recovered.
Takehara Thermal Power Station (Takehara-shi, Hiroshima Prefecture)	On March 1, 2006, approximately 11 m ³ (according to J-POWER investigations) of rainwater with a pH of 9.7 flowed into the sea from a rainwater drainage outlet on the power station site. The cause was a portion of coal ash that had not been recovered during cleaning operations. Cleaning equipment and procedures were revised and a gate was installed on the drainage outlet.

Note: The following four incidents occurred in April 2005.

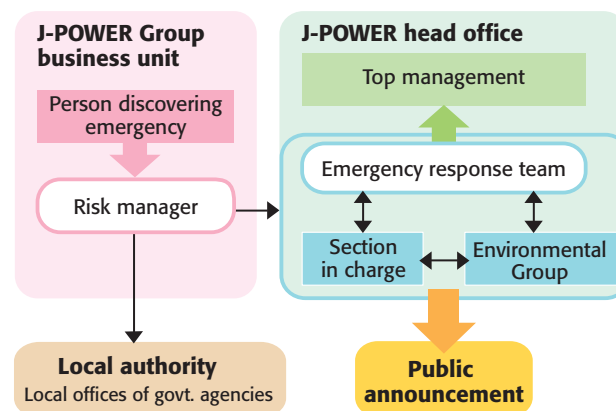
- 1) High selenium levels in a groundwater monitoring well at a final disposal site for industrial waste ♀ (Matsushima Thermal Power Station).
 - 2) Discharge of untreated wastewater into the sea (Ichihara Power Station, Bay Side Energy Co., Ltd.)
 - 3) Underground leakage of heavy oil (Class A) (on Okutadami Power Station site)
 - 4) Discharge into the sea of sponge balls used for cleaning (Isogo Thermal Power Station)
- Further details of these incidents and the measures taken are available in the 2005 Environmental Management Report. http://www.jpowers.co.jp/english/company_info/environment/er_2005index.htm

◆ **Response and Information Disclosure in the Event of an Environmental Emergency**

In the event of an environmental emergency:

- 1) The risk manager at each business unit will take the necessary steps to prevent damage from spreading, as well as contact the relevant local organizations, the head office emergency response team, and the head office section in charge of the business unit.
- 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



Legal Compliance

In fiscal 2005 outflows of rainwater with pH levels exceeding the standards set by the Water Pollution Prevention Law (pH 5.0 to 9.0) occurred at the construction site for the Isogo Thermal Power Station's new No. 2 unit and at Takehara Thermal Power Station. Steps have been taken to prevent a recurrence (see p.53).

◆ Main Environmental Laws

Name	Main business subject to the law
Environmental Impact Assessment Law Electric Utilities Industry Law	Forecasting and assessment of environmental impact of power plant construction on surrounding areas
Air Pollution Control Law	Control of SOx ♀, NOx ♀, and soot and dust ♀ emissions resulting from power plant operation
Water Pollution Control Law	Control of wastewater discharge from power stations to public waterways
Noise Regulation Law	Control of noise from operation of power stations and substations and construction of facilities
Vibration Regulation Law	Control of vibration from operation of power stations and substations and construction of facilities
Offensive Odor Control Law	Control of offensive odors from operation of power stations and substations
Factory Location Law	Greening of sites for power stations and other facilities
Industrial Water Law	Pumping of underground water used for power generation
Natural Parks Law	Construction of power stations, substations, transmission facilities, and communication equipment in national, quasi-national, and prefectural parks
River Law	Intake of water from rivers for power generation and construction of generating facilities in river areas
Pollutant Release and Transfer Register (PRTR ♀) Law	Management of release to the environment of chemicals used in power stations
Waste Management and Public Cleansing Law	Proper management of waste generated from business activities
Law Concerning the Improvement of Pollution Prevention Systems in Specific Factories	Appointment of manager in charge of pollution control in power plants

◆ Environmental Conservation Agreements

When constructing a thermal power plant, the J-POWER Group concludes an environmental agreement with the local authorities and strives to fully comply with the relevant terms.

While the content of environmental conservation agreements varies somewhat according to the particular characteristics of the site or region, the agreements generally cover the following points and include quantitative commitments on air and water quality.

- Air pollution control measures
- Water pollution control measures
- Noise and vibration control measures
- Offensive odor control measures
- Measures for the protection of the natural environment
- Accident response measures

Environmental conservation agreements concluded regarding J-POWER Group thermal power stations are set out in the chart below.

Power station	Local authority
Isogo Thermal Power Station	Yokohama-shi
Takasago Thermal Power Station	Takasago-shi, Hyogo Prefecture
Tachibanawan Thermal Power Station	Anan-shi, Tokushima Prefecture
Takehara Thermal Power Station	Takehara-shi, Hiroshima Prefecture
Matsushima Thermal Power Station	Saikai-shi, Nagasaki Prefecture
Matsuura Thermal Power Station	Matsuura-shi, Nagasaki Prefecture Imari-shi, Saga Prefecture
Ishikawa Coal-fired Power Station	Uruma-shi, Okinawa Prefecture
Itoigawa Power Station, ITOIGAWA POWER Inc.	Itoigawa-shi
Ichihara Power Station, Bay Side Energy Co., Ltd.	Ichihara-shi, Chiba Prefecture
Ichihara Power Station, Ichihara Power Co., Ltd.	Ichihara-shi, Chiba Prefecture

Allowable Level Set by Ordinance Exceeded in Fiscal 2002

In September 2002 the manganese concentration in discharge from the coal-ash final disposal site for Isogo Thermal Power Station exceeded the allowable level specified in Kanagawa prefectural ordinances.* Countermeasures were promptly taken, and as a result no abnormalities have since occurred.

Work at the landfill site was completed in March 2006, and procedures are now being taken to discontinue use of the site.

* Exceeding of allowable level: Manganese concentrations in wastewater discharged into a river from the final disposal site in Chigasaki-shi, Kanagawa Prefecture reached 1.1 mg/l, exceeding the allowable level of 1 mg/l or less specified by a Kanagawa prefectural ordinance on conservation of the living environment.

Green Purchasing

Conscious of the need to promote the “greening” of communities and economies and build recycling-based societies, we have adopted J-POWER Group Green Purchasing Guidelines. The entire group is engaged in green purchasing efforts including use of recycled paper and energy-saving office equipment such as PCs and photocopiers.

Promoting Green Purchasing

The scope of our green purchasing efforts goes beyond office supplies to encompass a broad range of initiatives, including purchase of other products used in our business activities and consideration of environmental factors when setting contractual specifications for ordering work from subcontractors to encourage environmental responsibility on the part of suppliers.

The chart below outlines the results of our green purchasing efforts for office supplies and other products in fiscal 2005.

◆ FY 2005 Green Purchasing

	Green purchasing volume	Green purchasing percentage
Copy paper (A4 equivalent)	57.22 million sheets	92%
Toilet paper	88,000 rolls	94%
Office equipment	117 units	40%
Uniforms/work clothes	6,826 units	99%
Vehicles	129 units	55%
Stationery	50,818 units	65%
Electrical appliances	52 units	73%
Other equipment	425 units	64%
Lighting	269 units	48%

◆ Uniforms & Work Clothes

As part of our efforts 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.



Work clothes featuring material made from recycled PET bottles.

◆ Office Desks

As a rule all replacement desks and related furniture comply with the Green Purchasing Law.



“Jpark,” J-POWER Head Office

Contributing to Greater Efficiency—Constructing the Green Purchasing Data Management System

Power Employee

Natsuko Fujii

IT Department, JP Business Service Corporation

Fujii originally joined JP Business Service Corporation on the administrative staff, but when she was in her sixth year there in 2004 she decided make a career change to better herself and became a systems engineer. After having a child and taking childcare leave she returned to work and now she is engaged in developing environmental data processing systems and training materials for environmental e-learning courses.

In fiscal 2005 Fujii was also involved in developing systems related to green purchasing. The J-POWER Group had been making progress on green purchasing for some time, but until that point data such as purchase records had been managed on a virtually manual basis using Excel spreadsheets. Because of that, collating data would often become a tremendously time-consuming task due to careless mistakes in data entry and so on. To resolve this issue, a team of five including her spent three months hammering out a system

that would be easy for everyone to understand and use. As a result, accurate data could be collected and the time required for collating data was drastically reduced.

So she has two roles: as an engineer and as a mother. Like all working mothers, she finds that life can be pretty demanding, both physically and mentally. She said “No matter how much time we have, it never seems to be enough, but look on the positive side—it also means we get twice the fulfillment and twice the sense of achievement!”

And she continued smiling gently, “No matter how tired I am, when I get home and see my child’s smiling face, I can’t help but feel all my energy surging back, ready for the next day, just like hitting the ‘reset’ button.”





For a Sustainable Society

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Shokawa cherry tree, Gifu Prefecture

This tree was transplanted in 1959 in conjunction with the construction of Miboro Dam (see page 62).

The Social Activities We Are Involved in Have a Close Relationship to the J-POWER Group Corporate Philosophy.

This section reports on the positioning of the five agendas contained in our corporate philosophy and provides specific examples of initiatives in each area. The agendas are:

- Building Community Trust
- Partnering and Collaborating with the Public
- Corporate Activities Rooted in Sincerity and Pride
- Continuously Refining Knowledge and Technologies
- Meeting Challenges with Skills and Enthusiasm

Building Community Trust

- Safety and peace of mind are major preconditions for maintaining corporate activities that enjoy the trust of local communities both domestically and overseas. To this end the J-POWER Group complies with local laws and ordinances, shows respect for different cultures and customs, conducts corporate activities in accordance with international standards, and publicizes and opens its facilities to local residents, among other efforts. Employees also participate in a variety of activities that benefit local communities.

Safety and Peace of Mind

The J-POWER Group has been involved in power generation for the past half-century as a wholesale power supplier, and throughout that time we have provided a stable supply of electric power.

Maintaining the safety of our facilities and ensuring they inspire peace of mind in local residents is a major precondition for ensuring the stable supply of power.



Inspection at the Aso-Nishihara Wind Farm in Kumamoto Prefecture



Inspection of insulators on the Matsushima Thermal Line in Nagasaki Prefecture




Inspecting the Kumano Main Transmission Line in Nara Prefecture

Facilities Maintenance

The J-POWER Group possesses various types of facilities for power generation, supply, and transformation as well as for communications, civil engineering, and construction. To ensure stable supplies of power, it is essential that high-quality maintenance work is conducted in order to maintain the functions of these facilities, prevent malfunctions and accidents before they occur, and minimize environmental impact.

Through on-the-job experience and other training programs, we work to maintain and improve the facilities maintenance techniques we have cultivated in these areas to date with the goal of improving overall facilities maintenance. In addition, we precisely monitor the status of equipment and use a computerized maintenance manage-

ment system (CMMS)  and other information technology to help ensure reliable maintenance work is carried out.

Moreover, we make improvements to facilities maintenance on an ongoing basis by developing optimal maintenance plans and conducting reliable maintenance work on the basis of sharing and utilizing data that has been collected from prior work and remote equipment monitoring. We also make improvements by checking on the substance of maintenance work and the status of facilities. This process includes revising rules and work manuals as needed.

Emergency Response

In readiness for the event of a disaster or accident, the J-POWER Group makes necessary preparations, develops prevention and response systems, and regularly conducts training drills.

● Disaster Prevention System

In the event that major damage is incurred by our facilities due to a natural disaster such as an earthquake, typhoon, or heavy snowfall, emergency response headquarters will be established at our head office and other organizations. We have a system in place to facilitate a Group-wide response to emergencies, limit the extent of damage, and promote a quick recovery.

● Disaster Prevention Drills

Each of our power stations runs drills several times a year that simulate a variety of potential accidents and natural disasters. The drills are designed to ensure appropriate actions are taken whenever an emergency occurs. General disaster prevention drills are conducted with coordination between the head office and local bodies. These drills have incorporated simulations since fiscal 2004. The general disaster prevention drill for fiscal 2005 was run in December.



General disaster prevention drill

Power Station Pipe Inspections

In light of the accident involving a pipe rupture at a nuclear power plant in August 2004, since September 2004 we have conducted pipe inspections on sections downstream of orifices, the site of the accident, and other similar areas at all J-POWER thermal power stations (including the Onikobe Geothermal Power Station). In accordance with the Electricity Utilities Industry Law, we sequentially inspected 5,793 areas in conjunction with our regular power station inspections. The inspections were completed in June 2006.

There were 12 confirmed areas that did not meet thickness requirements, but they all have since been made secure by replacing the pipes.

Based on the results of these inspections and other data, we intend to conduct appropriate pipe management and otherwise do our utmost to maintain safe operations.

Interacting with Local Residents

Participation in Traditional Performing Arts

Employees who live in the local community or are involved in corporate activities there participate in traditional local events, playing an important role in preserving and respecting local history and culture.

Participation in Traditional Performing Arts

Organization	Location	Event
J-POWER Kitahon Power Administration Office J-POWER North Regional Control Center J-POWER Hokkaido Transmission Line Maintenance Center J-POWER Hokkaido Telecommunication Engineering Center JPHYTEC Kitahon Interconnection Office JPHYTEC Hakodate Office KEC Corporation Hakodate Business Office	Hokkaido	Togeshita Inari Shrine Festival
J-POWER Ohma Main Transmission Line Project Construction Office	Aomori Prefecture	Tanabu Shrine Festival
J-POWER Towa Power Administration Office JPHYTEC Towa Office	Iwate Prefecture	Hanamaki Festival
J-POWER Kitayamagawa Power Administration Office JPHYTEC Kitayamagawa Office	Nara Prefecture	Maintenance of terraced rice paddies
JP Business Service Corporation	Tokyo	Fukugawa Hachiman Festival
J-POWER Isogo Thermal Power Station JPec Isogo Company Kaihatsu Hiryo	Kanagawa Prefecture	Kanagawa Yamato Awa Dance
J-POWER Takasago Thermal Power Station	Hyogo Prefecture	Ebisu Shrine River Festival; 9th Takasago Moon Viewing Noh Performance; Sone Tenmangu Autumn Festival
J-POWER Tachibanawan Thermal Power Station JPec Tachibanawan Company KEC Corporation Tachibanawan Business Office JP Business Service Tachibanawan Office	Tokushima Prefecture	Awa Dance (Anan Summer Festival)
J-POWER West Regional Control Center J-POWER Shikoku Telecommunication Engineering Center JPHYTEC Saijo Office JPHYTEC Shikoku Office KEC Corporation Saijo Business Office	Ehime Prefecture	Saijo Festival
J-POWER Matsushima Thermal Power Station	Nagasaki Prefecture	Nagasaki dragon boat races
J-POWER Wakamatsu Operations & General Management Office	Fukuoka Prefecture	Waita Gion Festival



JP Business Service



J-POWER Kitahon Power Administration Office



J-POWER Ohma Main-Transmission Line Project Construction Office



J-POWER West Regional Control Center



J-POWER Matsushima Thermal Power Station

Community Activities

Opening Facilities to the Public

We open our nationwide power stations, research labs, and other facilities on certain days in each region to provide the opportunity to the general public to see and learn about them.

Organizations Opening Facilities to the Public

Hiroshima Prefecture

J-POWER Takehara Thermal Power Station
J-POWER Group



Takehara facility opened to the public for a daylong event

Nagasaki Prefecture

J-POWER Matsuura Thermal Power Station
JPec Matsuura Company
JP Business Service Matsuura Office
KEC Corporation Matsuura Business Office
J-POWER Matsushima Thermal Power Station



Event held at Matsuura in 2005

Okinawa Prefecture

J-POWER Ishikawa Coal-Fired Power Station
JPec Ishikawa Company
JP Business Service Ishikawa Office
KEC Corporation Okinawa Business Office

Miyagi Prefecture

J-POWER Onikobe Geothermal Power Station
JPec Onikobe Office

Niigata Prefecture

J-POWER Koide Power Administration Office
JPHYTEC Koide Office, et al.

Hyogo Prefecture

J-POWER Takasago Thermal Power Station
JPec Takasago Company
JP Business Service Takasago Office
KEC Corporation Takasago Office

Tokushima Prefecture

J-POWER Tachibanawan Thermal Power Station

Fukuoka Prefecture

J-POWER Wakamatsu Operations & General Management Office
Wakamatsu J-POWER Group



Thermal power simulator tour

Fukushima Prefecture

J-POWER Shimogo Power Administration Office
JPHYTEC Shimogo Office, et al.

Saitama Prefecture

J-POWER East Regional Headquarters
J-POWER Kawagoe Power Administration Office
J-POWER East Regional Transmission Line Maintenance Center
J-POWER Kantou Telecommunication Engineering Center
JPHYTEC East Regional Company
JPHYTEC Kawagoe Office

Tokyo

J-POWER Head Office



Tsugaru shamisen concert and photo exhibit held in the first-floor lobby

Kanagawa Prefecture

J-POWER Isogo Thermal Power Station
J-POWER Isogo Thermal Power Station No. 2 Unit Construction Office
JPec Isogo Company
JP Business Service Isogo Office
KEC Corporation Isogo Business Office
Kaihatsu Hiryo

Activities of J-POWER Takasago Thermal Power Station (Hyogo Prefecture)

Website: www.bansyuu.com

J-POWER Cup Soccer Tournament

The J-POWER Cup Soccer Tournament has been held every year since fiscal 2001. In fiscal 2005 it was held on November 12. Eight youth teams participated, with all the games hard fought.



J-POWER Cinema Club

Twice a year, in spring and fall, we invite senior citizens' clubs in Takasago to attend a movie free of charge and go on a tour of the power station. In fiscal 2005, some 160 people participated.



J-POWER Community Concerts

J-POWER has held classical music concerts in 93 locations around the country since 1992 to express our appreciation to local residents living in the areas where we operate for their ongoing understanding and cooperation.

We have also held smaller-scale community concerts at 70 welfare facilities, schools, and other locations around Japan as a part of our public service activities.



J-POWER Wakamatsu Operations & General Management Office (Fukuoka Prefecture)



J-POWER Towa Power Administration Office, JPHYTEC Towa Office (Iwate Prefecture)

Local Events

We are committed to setting down roots in local communities and fulfilling our role as a good corporate citizen that contributes to the development of the community. Given this commitment, we participate in local events, provide support for them as a sponsor, and otherwise participate in community life.



J-POWER Ishikawa Coal-Fired Power Station (Okinawa Prefecture)
Maeganeku dragon boat races



J-POWER Tachibanawan Thermal Power Station (Tokushima Prefecture)
Anan marine festival sand sculpture contest



J-POWER Kitahon Power Administration Office (Hokkaido)
Flower planting campaign



J-POWER Koide Power Administration Office, JPHYTEC Koide Office (Niigata Prefecture)
Uonuma summer snow festival



J-POWER Isogo Thermal Power Station, JPec Isogo Company, JP Business Service Isogo Office (Kanagawa Prefecture)
Yokohama spring flower and plant fair

Local Environmental Conservation (Forest Conservation, Cleanup Activities, Planting Campaigns)

The Japanese government has designated June as Environment Month, during which we reexamine how companies and society should interact with the environment and consider ways, at the workplace and local levels, to help create a society in which energy production and the environment coexist in harmony. We conduct activities during the month on this basis.

Type of event	Content and offices participating
Lectures, instructional/educational meetings, etc.	Lectures organized: 8; Instructional/educational meetings: 11; Study groups: 18; Lecture attendance: 11;
Awards	Environment awards: 2
Panel exhibitions	Environmental panel displays: 4; Environmental exhibitions: 3
Slogan recruitment	Slogan offering: 1
Video screenings	Environmental education video screenings: 10
Posters, information provision, etc.	Display of Environment Month posters featuring the president's message: all domestic organizations; Distribution of pamphlets: 1; Exhibition on theme of Environment Month: 1
Forestry volunteering, nature walks	Forestry volunteer programs: 4; Nature walks: 3
Beautification activities	Beach cleanup: 7 total; Neighborhood cleanup: 43 total; Workplace environment improvement: 47 total; Tree and flower planting, Establishment of planters, distribution of seedlings: 16 total
Recycling activities	Recycling promotion activities: 10
Activities against global warming	Activities promoting energy-saving: 10; Campaign to encourage drivers not to leave car engines idling: 13; Campaign to encourage drivers to leave their cars at home: 1
Surveys	Environmental surveys: 8 total; Environmental inspections: 6
Site visits	Visits to environment-related sites: 10
Other	Non-smoking hours: 4; Environmental awareness-raising: 4; Opening facilities to the public: 1



Coinciding with Environment Month, a message from the president is posted at every organization and office in an effort to raise the environmental awareness of employees.



**J-POWER Totsukawa Power Administration Office
JPHYTEC Totsukawa Office
(Nara Prefecture, Wakayama Prefecture)**
Cleanup along Kumano Ancient Road, a World Heritage site



**J-POWER Kouchi Power Administration Office
JPHYTEC Sameura Representative Office
(Kochi Prefecture)**
Forest and lake enjoyment days



**J-POWER Minami-Kyushu Power Administration Office
JPHYTEC Minami-Kyushu Office
(Kumamoto Prefecture)**
Flower bed maintenance with the Kodabe Senior Citizens' Club



**J-POWER Onikobe Geothermal Power Station
JPec Onikobe Office (Miyagi Prefecture)**
Forest and lake enjoyment days



J-POWER Tachibanawan Thermal Power Station (Tokushima Prefecture)
Shokawa cherry tree planting

Partnering and Collaborating with the Public

- As the business domain of the J-POWER Group inside and outside of Japan has expanded and as the scope of our interactions with society has increased, it has become necessary to carry out initiatives in recognition of our stakeholders and their diversity.
- In order to bring about ongoing, stable growth, it is essential that we fulfill specific roles and responsibilities as a good corporate citizen with respect to societal problems that we are involved in through our business activities.

Energy and Environmental Education

The J-POWER Group aspires to help bring about a society in which energy production and the environment coexist in harmony. To this end the awareness of each individual must be raised. As an activity intended to raise the awareness of society as a whole, we provide opportunities for children, who will play an important role in making sustainable development a reality, to interact with energy and the environment alongside our employees.

Looking ahead, we intend to enhance programs in collaboration with organizations outside the company.

Hands-On Learning

Organization	Location	Description	Participants
J-POWER Isogo Thermal Power Plant	Kanagawa Prefecture	Shiomidai Elementary School challenge day (educational crafts to learn about electricity)	36 elementary school students
J-POWER Sakuma Power Administration Office JPHYTEC Sakuma Office JPHYTEC Chubu Tenryu Office KEC Corporation Sakuma Business Office	Shizuoka Prefecture	Computer classes	24 total
J-POWER Takasago Thermal Power Station JPec Takasago Company	Hyogo Prefecture	"Try it!" week	5 junior high school students (accepted)
J-POWER West Regional Transmission Line Maintenance Center	Okayama Prefecture	Electricity class	37 elementary school students
J-POWER Takehara Thermal Power Station J-POWER Group	Hiroshima Prefecture	Internship for junior and senior high school students	4 interns (accepted)
J-POWER Kouchi Power Administration Office	Kochi Prefecture	Bamboo shoot harvesting	22 elementary school students
J-POWER Tachibanawan Thermal Power Station JPec Tachibanawan Company	Tokushima Prefecture	Sweet potato harvesting	Approx. 40 kindergarteners
J-POWER Wakamatsu Operations & General Management Office Wakamatsu Research Institute JPec Wakamatsu Environmental Research Center	Fukuoka Prefecture	Class on rooftop gardening (organism survey, heat island phenomenon, global warming, food cultivation and harvesting, etc.) *Held eight times per year	Total of approx. 320 elementary school students



J-POWER Kouchi Power Administration Office



J-POWER West Regional Transmission Line Maintenance Center



J-POWER Tachibanawan Thermal Power Station
JPec Tachibanawan Company

Energy and Natural Science Classes

Organization	Location	Description	Participants
J-POWER Kamishihoro Administration Office	Hokkaido	Kamishihoro lifelong learning rally	40 elementary school students
J-POWER Ohma Nuclear Power Project Construction Preparation Office	Aomori Prefecture	Participation in school classes (tours of geological formations, etc.)	407 elementary school and junior and senior high school students
		Science classroom	71 elementary and junior high school students
J-POWER Isogo Thermal Power Station JPec Isogo Company	Kanagawa Prefecture	Environmental panel exhibit	
J-POWER Matsuura Thermal Power Station	Nagasaki Prefecture	Science Partnership Program (Promoted by the Ministry of Education, Culture, Sports, Science and Technology)	36 junior high school students
Wakamatsu J-POWER Group	Fukuoka Prefecture	Children's science classroom *Held as part of a local community exchange fair	



J-POWER Ohma Nuclear Power Project
Construction Preparation Office



J-POWER Matsuura
Thermal Power Station

Facility Tours

The local organizations of the J-POWER Group invite people of all generations, including local kindergartners, elementary school students, and members of neighborhood associations and senior citizens' clubs, on tours during which we explain our power stations and other facilities. Around 550 people nationwide participated in the tours during fiscal 2005.



J-POWER Takasago Thermal Power Station
JPec Takasago Company (Hyogo Prefecture)
J-POWER tour during summer vacation



J-POWER Shizuoka Transmission Line Maintenance Office
Tour of J-WIND Tahara Wind Power Station

Volunteering

Volunteer Activities

The J-POWER Group considers fulfilling its social responsibilities to be indispensable to bringing about a better society. For this reason, we provide support for the volunteer activities of employees by providing special leave when they volunteer or participate in local events. Thirteen employees took a total of 26 special leave days in fiscal 2005 to participate in volunteer activities.

Looking ahead, we plan to develop a system to make it easier to take the leave days and to create an environment that makes it easy for employees without volunteer experience to participate.

Organization	Location	Description	Participants
J-POWER Kitahon Power Administration Office J-POWER North Regional Control Center J-POWER Hokkaido Transmission Line Maintenance Center J-POWER Hokkaido Telecommunication Engineering Center JPHYTEC Kitahon Interconnection Office JPHYTEC Hakodate Office KEC Corporation Hakodate Business Office	Hokkaido	Cleanup along National Route 5 (Togeshita region)	20
J-POWER Kamishihoro Power Administration Office J-POWER Kamishihoro Transmission Line Maintenance Office JPHYTEC Kamishihoro Office JPHYTEC Tokachi Office KEC Corporation Kamishihoro Business Office	Hokkaido	Cleanup of roads around business offices	40
J-POWER Kamishihoro Power Administration Office	Hokkaido	Cleanup of Otofuke River	3
J-POWER Ohma Main-Transmission Line Project Construction Office	Aomori Prefecture	Higashidori tree-planting festival; Ohata tree-planting festival; Mt. Kamafuse cleanup climb	7 in each event
J-POWER Okukiyotsu Power Administration Office JPHYTEC Okukiyotsu Office	Niigata Prefecture	Yuzawa region snow removal volunteering	9
J-POWER Forest Club	Tokyo	Forest conservation activities	40
J-POWER Hashimoto Transmission Line Maintenance Office	Wakayama Prefecture	Flower planting volunteering	All affiliated employees
J-POWER Kiwa Power Administration Office J-POWER Hashimoto Transmission Line Maintenance Office J-POWER Kansai Telecommunication Engineering Center JPHYTEC Kiwa Office JPHYTEC Kansai Office KEC Corporation Hashimoto Business Office	Wakayama Prefecture	Kiwa River bank cleanup	16
J-POWER Takasago Thermal Power Station JPec Takasago Company	Hyogo Prefecture	Drama performance by the Genkai Club	300
Wakamatsu J-POWER Group	Fukuoka Prefecture	Bamboo thinning (sponsored by NPO)	5
		Beach cleanup (Kitakyushu clean campaign) *Conducted twice	100 total
		Cosmos cultivation	15
		Acorn cultivation (Part of Kitakyushu's greenbelt plan)	50



J-POWER Hashimoto Transmission Line Maintenance Office



J-POWER Ohma Main-Transmission Line Project Construction Office



Wakamatsu J-POWER Group

Using Volunteer Leave to Participate in a Tree-Planting Tour in the Philippines

Mihoko Kitayama
Business Solutions Department,
JP Business Service



For two years in a row starting in 2004 I participated in overseas tree planting tours sponsored jointly by the labor union and OISCA-International for the sake of helping preserve the environment. And now, having witnessed environmental destruction first-hand, I have a strong conviction to first do what I can in my local area.



Since returning to Japan I have participated in NGO volunteer activities as an individual and have

studied public service activities, and am now utilizing those experiences as a member of the organization in the initiatives being advanced by the Group.

The volunteer leave program does not simply allow an individual to volunteer; I think it is also extremely meaningful in that it allows greater contribution to society with the encouragement of the company. As someone who has participated in the program, I would like to create ways to make it easier for more employees to take advantage of it.

Collection & Fundraising

We participate in a broad range of volunteer activities that include collecting spare change in foreign currencies and other items and providing disaster recovery assistance.

Type	Organization	Location	Description
Collection of spare change in foreign currencies	J-POWER International Power Business Dept. J-POWER Corporate Planning & Administration Dept. Office Support Center	—	Donation to UNICEF's Change for Good program (spare foreign currency collection): Equivalent of ¥39,376 in currency from 35 countries collected in 2005
Other items	Onikobe Geothermal Power Station JPec Onikobe Office	Miyagi Prefecture	Deposit of items (used stamps, Bell Mark coupons, used prepaid phone cards)
	J-POWER Takasago Thermal Power Plant	Hyogo Prefecture	Donation of sales on appreciation day to the charity fund of the Takasago Social Welfare Council
			Deposit of items (used stamps, Bell Mark coupons, used prepaid phone cards)
	J-POWER Takehara Thermal Power Station J-POWER Group	Hiroshima Prefecture	Donation to the Wakatake Works (a small-scale workshop for people with mental disabilities)
J-POWER Matsuura Thermal Power Station	Nagasaki Prefecture	Donation of used books to local libraries	
Disaster recovery assistance			U.S.: Donation of 1 million yen (through Nippon Keidanren) for the victims of Hurricane Katrina
			Indonesia: Donation of 1 million yen (through Nippon Keidanren) for victims of the earthquake in central Java

Collecting Spare Change in Foreign Currencies

Employees of the J-POWER Group travel overseas on business over 1,000 times a year, so we have them donate spare change and small bills that cannot be converted back to yen when they return home to Japan.

The money is collected in a donation box and presented to the Japan Committee for UNICEF to contribute to UNICEF's Change for Good program. The money goes to helping support and improve the health, nutrition, sanitation, and education of children around the world.



President Nakagaki donating to UNICEF

Overseas Relations

India

We helped provide power to a school built by VVK, an NGO providing living assistance for ethnic minority groups in the Purulia District of West Bengal in India. We also donated refrigerators and couches to a state-run medical clinic.




J-POWER Purulia Pumped Storage Project Office (Purulia District, West Bengal, India)

Corporate Activities Rooted in Sincerity and Pride

- The J-POWER Group is a multinational energy company that engages in corporate activities not only in Japan but in many countries around the world. We are supported by a diverse range of stakeholders, including shareholders, customers, suppliers, and local communities. Accordingly, we operate the company premised on sincerity in order to earn the trust of our stakeholders.
- For this reason the J-POWER Group proactively discloses information on management and the company, engages in dialogue with external organizations, and maintains an appropriate relationship with the government.
- The J-POWER Group recognizes that it has a social responsibility to properly understand the importance of individual rights and interests, protect the personal information of customers, suppliers, and others, and maintain their trust. We act in accordance with this recognition.

Respect for Human Rights, Prohibition on Discrimination

Human Rights Training

The J-POWER Compliance  Code mandates that the company constantly work to maintain a healthy workplace environment, to respect the rights of each individual, and to entirely refrain from actions that lead to discrimination.

Fiscal 2005 Human Rights Training

- New manager training, new section manager training
- Training for group employees at the Takehara Thermal Power Station (Hiroshima Prefecture)

Respect for Privacy

As a company that works to promote compliance activities based on our Corporate Philosophy, the J-POWER Group complies with regulations related to protecting personal information. Management and all employees recognize the importance of managing personal information and handling it properly. We have established a basic policy for the protection of personal information as well as policies for the handling of personal information on our website.

Policy for the Protection of Personal Information Privacy (Basic Policy)

The J-POWER Group recognizes that it has a social responsibility to properly understand the importance of individual rights and interests, protect the personal information of customers, suppliers, and others, and maintain their trust. We strive to act as follows in accordance with this recognition.

- Because leakage, alteration, loss, improper use, disclosure without permission, and other such acts with respect to personal information possessed by the company damage the trust put in the J-POWER Group by society and exert a substantial impact on the promotion of our business activities, executives and all employees recognize the importance of managing personal information and their responsibilities with respect thereto and take sincere actions in this regard.
- Executives and all employees uphold laws and ordinances related to protecting personal information and relevant internal regulations, and they properly handle personal information possessed by the company.

Communication

In order to become a more trusted and familiar member of society and to promote good relations with local communities, the J-POWER Group publicizes its environmental conservation efforts and other activities and communicates various types of information through our public relations initiatives.

Environmental Report

The J-POWER Group has published an environmental report each year since fiscal 1998. Since fiscal 2005 it has been published as the Environmental Management Report. It is also available on J-POWER's website at: www.jpowers.co.jp/english/index.html.



Public Relations Media

J-POWER's corporate activities are introduced to the public through advertising in newspapers and magazines, on public transportation, and in other media.

Newspaper Advertisements

Every Sunday from October 2005 to January 2006 we introduced our business activities and publicized our goal of enabling the harmonious coexistence of energy production and the environment in conjunction with a column on environmental issues in "be on Sunday," a Sunday supplement put out by the *Asahi Shimbun* newspaper.

A number of these ads are featured in this report (see pages 5-7, 19, 33, and 62).



Advertisement that ran in the *Asahi Shimbun* newspaper on January 15, 2006

Magazine Advertisements

From April 2005 to March 2006 we published advertisements entitled "J-POWER's Power Employees" once a month in the *Shukan Bunshun* and *Shukan Shincho* magazines. Each ad introduced the expanding scope of J-POWER's business operations, especially our environmental reclamation initiatives (products and technologies), while also spotlighting one employee.



Television Commercials

Television commercials showing how our business activities aim to achieve the harmonious coexistence of energy production and the environment are broadcast during the NTV television program "Sound Sonority," sponsored by J-POWER.

"Sound Sonority" –brought to you by J-POWER

Saturdays 9:54 to 10:00 p.m. on NTV

In the music world, "sonority" is used to describe full and resonant tones. This program is based on the concept of presenting sounds from Japan's natural environment that can only be heard in certain places, bringing viewers a sense of both comfort and the power of nature.



Web

We strive to keep interactive communication open with the public through our website, www.jpowers.co.jp/english/, which features information on contacting us via e-mail or telephone.



"Contact Us" page on J-POWER's website

Reports and Brochures

Each year we publish a corporate brochure and an annual report for distribution to the public to explain our activities. Two additional brochures explaining our business, which is not always well known to the public, are produced for distribution at power stations and various events: *Oshiete J-POWER* (Tell Me about J-POWER) and *J-POWER wa chikara mochi* (Powerful J-POWER), which is aimed at children.



Corporate brochure



Annual report



Oshiete J-POWER
(Tell Me about J-POWER)

J-POWER wa chikara mochi
(Powerful J-POWER)



Public Relations Magazines



Global Edge
Published four times per year; approx. 6,000 copies

Global Edge is themed on "the harmonious coexistence of energy production and the environment" and features interviews with opinion leaders from various fields, as well as contributions from them. It also introduces the technologies and business activities of the J-POWER Group.



J-POWER News
Published around four times per year; approx. 9,500 copies

J-POWER News is a public periodical that seeks to make the J-POWER Group's latest business developments widely understood. It is actively used as a tool for providing information on business and sales activities.

Group-Wide In-House Magazine



J-POWERs
Published on the 15th of each month; approx 12,000 copies

The purpose of *J-POWERs* is to communicate top management insights and share information pertaining to developments in Group management as well as to stimulate communication among Group employees.

Communication outside the Organization

Communication with Non-Profit Organizations



In November 2005 a working group consisting of 14 people from J-POWER's various organizations and group companies discussed the types of public service activities the J-POWER Group should engage in following privatization.

As a part of the discussion process, a workshop was held with the help of the NPO Partnership Support Center, which resulted in a host of ideas and proposals that will serve as springboards for future activities.

Communication with Students

As a part of our environmental communication activities, we held an environmental seminar in September 2005 for the student group REFORM, which is made up of students from multiple universities. We introduced the environmental initiatives of the J-POWER Group and had a discussion session with the students, during which many provocative questions were posed. The questions touched on whether carbon dioxide was really causing global warming, the issue of wind farms disrupting scenery and creating noise, and whether environmental impact following power station construction is tracked. The seminar was so productive that it went beyond its scheduled time. We acutely realized once again that discussion truly serves to deepen understanding on both sides. The seminar will help in our future communication and disclosure activities.



Continuously Refining Knowledge and Technology

- Ever since its establishment, the J-POWER Group has constantly worked to solve difficult problems, which have included implementation of the latest technology, in order to contribute to the stable supply of electric power and energy. We have had many successes over this time.
- Through such initiatives, the J-POWER Group's employees have cultivated a pioneering spirit oriented toward leading the way in the pursuit of new knowledge and solutions. It is this pioneering spirit that supports the company over the long-term and serves as the driving force behind its development. The company in turn provides active support for the pioneering spirit of employees.

Employee Support System

We provide assistance for employees taking classes at specialty schools, business schools, and language schools and make correspondence classes available as a part of our training system for helping employees formulate career plans, learn business skills, and acquire official certifications on their own initiative.

In order to lighten the burden of expenses on participating employees, we allow them to utilize their cafeteria plan, one of their fringe benefits, and their accumulated paid vacation days.

Utilization of Training Programs

Educational Format	Number of Employees		
	FY 2003	FY 2004	FY 2005
Specialty School/Business School	17	19	19
Language School	72	57	69
Correspondence Classes	206	140	139

Utilization of Incentives

	Utilization
Cafeteria plan utilization	1.9%
No. of employees using accumulated paid vacation days	34 (total of 488 days)

Proposal Schemes

We established an in-house suggestion system consisting of performance improvement suggestions and idea awards in order to promote greater efficiency and improvements in operations, stimulate creative thinking, and foster the desire to participate in management by utilizing the creative ideas of employees in business processes.

Performance Improvement Suggestions

Started in 1965, this program involves soliciting suggestions for improvements from employees in order to streamline and rationalize operations.

Idea Awards

Established in 2000, this program solicits creative ideas for the sake of improving and streamlining overall operations. Employees can present ideas in areas outside their realms of responsibility.

Proposal Schemes

Scheme	Number of Suggestions			FY 2005 Outstanding Proposals
	FY 2003	FY 2004	FY 2005	
Performance Improvement Suggestions	195	241	275	Excellence Award – 2 <ul style="list-style-type: none"> ● Integrated NMS that uses middleware for multipurpose dispersed processing ● Effective use of scrap concrete and fly ash from construction on the new Isogo No. 2 unit
Idea Award	234	256	213	Gold Prize – 2 <ul style="list-style-type: none"> ● Attaching covers to onsite meters with plastic bottles ● Applicability of accumulated reservoir silt in gardening soil

Meeting Challenges with Skills and Enthusiasm

- Human resources are the foundation of a company's sustainability. And, with major changes taking place in the structure of society—a rapid generational shift and demographic changes marked by a low birthrate and aging population—in order to continue to grow a company needs to foster human resources with rich individuality and create a corporate culture that makes work meaningful. The J-POWER Group intends to carry out a variety of initiatives to hire and train such personnel and to endeavor to bring about workplace conditions where employees can work with peace of mind.

Utilizing Diverse Human Resources

With a changing social structure and an expanding business domain domestically and overseas, it will be even more important going forward for the J-POWER Group to attract and utilize personnel from a wide range of fields and age groups.

For this reason we are working to hire a diverse variety of people; not only new graduates but also experienced workers and people with specialized knowledge. We plan to put special effort into proactively hiring women and creating workplace conditions that allow women to thrive.

In addition, in order to further utilize the services of elderly employees the group as a whole instituted a program in April 2006 for the continued employment of personnel aged 60 to 63 years. In conjunction with a personnel registration system that has already been implemented (program for introducing employment opportunities in the group for

people aged 60 to 65 years), we intend to further leverage the experience, technical skills, and will to work of elderly group employees for the sake of our ongoing development.

At J-POWER, the ratio of employees with disabilities as of June 1, 2006 was 1.82 percent. We plan to continue making efforts to increase the ratio and develop barrier-free working conditions at our business locations.

Hiring Trends

	FY 2003		FY 2004		FY 2005	
	Men	Women	Men	Women	Men	Women
New Graduate Hires	26	0	32	1	39	1
Mid-Career Hires (including people with disabilities)	10	1	5	5	14	10
Total	36	1	37	6	53	11

Personnel Registration System Utilization

FY 2003	197 cases
FY 2004	46 cases
FY 2005	119 cases

Developing Talent

Based on a vision for our business operations, we clearly convey to our employees what we expect from them, and we have instituted a career development program with education and training components that are effective for developing their talent. The program provides employees with specific development guidelines and aims for interactive personnel development in which employees consider their careers and take the initiative in their own development.

Mechanisms for Developing Talent

J-POWER considers it important to use work itself to enhance the ability of employees to carry out their duties, primarily through on-the-job training, and to facilitate their overall growth. At the same time, as the scope of our business domain expands, we have put mechanisms in place to routinely and systematically train personnel so that the abilities of each and every employee are fully leveraged.

Concretely, we offer level-specific training to provide business knowledge and management skills commensurate

Academic Training Program Participation

Location	Number of Participants		
	FY 2003	FY 2004	FY 2005
Japanese and Overseas Graduate Schools	1	2	1

The fiscal year denotes the year the study period began.

with qualifications and age. We also have divisional training, objective-specific training, and other forms of off-the-job training to advance the knowledge and techniques

required by each division and facilitate necessary specialization in order to make us capable of responding quickly to changes in the business environment.

We further have a self-assessment program in which

employees report their future career wishes to us once a year, and an internal recruiting program and academic training program that facilitate human resources utilization and allow employees to fulfill their career aspirations.

Project Recruitment Program

	Project	Position and Number of People
FY 2004	Fuel cell development	Electrical and instrumentation staff: 1
FY 2005	Social contribution promotion	Administrative staff: 1

Fiscal 2005 Selected in Recruitment for Social Contribution Promotion Project

I have had an interest in the environment since I was in school, and even since starting work at J-POWER I have thought that for the sake of the environment it is important to consider the type of society a company should endeavor to create as well as what activities to conduct using company resources in order to bring it about. Having thought this, I saw the recruitment notice and applied because I thought it would be a valuable opportunity for me.

The biggest advantage of internally recruiting personnel in this way is that the person is highly motivated because he is

Osamu Yoshikawa

Planning & Administration Group,
Corporate Planning & Administration Department



doing work that he wants to do. Of course since the project fulfills my own personal aspirations the responsibility is also substantial, but I feel that it is a good challenge for me.

I want to ensure that the social contributions that J-POWER will make into the future will serve to raise the value of the company and provide a source of motivation for J-POWER Group employees.

Occupational Safety and Health

Each company in the J-POWER Group has drawn up a plan for occupational safety and health and is engaged in related activities on the basis of it.

In J-POWER's occupational safety and health plan for fiscal 2005, the following three safety issues were set forth as priorities, and efforts were made toward them.

- 1) Firmly establish an occupational safety and health management system under our integrated maintenance system
- 2) Prevent accidents that tend to occur repeatedly (falls, becoming trapped or pulled into machinery, being struck by flying or falling objects, electrical shocks)
- 3) Prevent on-the-job traffic accidents

We had ten accidents in fiscal 2005 that caused serious injury, which unfortunately represents an increase from the previous year. The accidents mainly involved contractors doing work associated with the J-POWER Group. For the next fiscal year we are planning to more thoroughly implement comprehensive safety management and provide proper instruction and advice to affiliated contractors.

People Injured in Accidents during J-POWER Group-Related Projects

	Deaths	Serious Injury	Slight Injury
FY 2003	0	7 people (5 incidents)	4 people (4 incidents)
FY 2004	0	2 people (2 incidents)	8 people (8 incidents)
FY 2005	0	10 people (10 incidents)	9 people (8 incidents)

J-POWER Group Accident Frequency and Severity

	Frequency Rate	Severity Rate
FY 2003	0.64	0.02
FY 2004	0.41	0.02
FY 2005	0.76	0.05

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. It expresses the frequency with which accidents occur.
2. The severity rate is the number of days of work missed due to an industrial accident per 1,000 hours worked. It expresses the severity of the accidents.

Maintaining the Health of Employees and Their Families

Health Management System

We administer regular health examinations in accordance with the Industrial Safety and Health Law, and advise or direct people as necessary to undergo reexaminations or other medical procedures.

Encouragement for Health Exams

Along with conducting regular health exams in accordance with the Industrial Safety and Health Law, we encourage employees on our own initiative to get full medical check-ups, dental exams, and eye exams.

	FY 2004	FY 2005
Percentage of J-POWER Group Employees Receiving Regular Spring Health Exam	85.9%	93.3%

Total Health Promotion Plan

The J-POWER Group is undertaking the Total Health Promotion Plan involving lifestyle guidance (health maintenance, nutrition, exercise, mental health), which is based on the results of health tests, level-specific mental health-care training, walking programs, and other forms of assistance for living a healthy lifestyle. The major aim of the plan is to facilitate physical health, mental health, and communication among group employees.



Tai chi exercise class held at the J-POWER head office

Promoting a Comfortable Workplace

Proper Management of Working Hours

We introduced an IC-card based work system in fiscal 2005 in an effort to properly manage working hours. Also, in order to ensure appropriate working hours, we sent out a message from the president, conducted an awareness-raising campaign, analyzed actual working situations, and based on the results of the analysis proposed improvements and attempted to correct employee consciousness regarding working hours. The results of these activities were communicated back to all employees. We plan to continue these activities in conjunction with efforts to help employees balance their work and private lives.

Assistance for Balancing Work and Private Life

We endeavor to create workplace conditions that enable employees to have their own time and to balance their jobs with their own diverse lifestyles. In accordance with the Law for Measures to Support the Development of the Next Generation, we are in the process of revising our programs to make them easy to take advantage of and to ensure employees involved in child-raising or nursing care at home can do their jobs with peace of mind. We plan to continue to utilize employees and develop workplace environments in a way that allows work to be balanced with private life.

	FY 2003	FY 2004	FY 2005
Childcare Leave Program	4	7	19
Shortened Working Hours for Childcare	4	6	10

Preventing Sexual Harassment

In order to ensure a pleasant work environment, we have established consultation desks for the prevention of sexual harassment and work to raise awareness by distributing guidelines to employees.

Using Childcare Leave

Tsuyoshi Onoguchi

Isogo Thermal Power Station No. 2 Unit
Construction Office,
Thermal Power Department



After having our third son in May 2005, my wife went back to work in January 2006. However, to be able to leave our son at daycare we had to wait until April when the daycare center started accepting additional children. With our oldest son being six years old and our middle son three, our childcare expenses are at their peak, but I thought of this as a good opportunity to get actively involved in raising them, so as their father I decided to take three months' worth of childcare leave.

During my leave period I was fortunate to make new connections. After returning to my job, all my work felt new and fresh and I feel like have a new reservoir of psychological breathing room.

External Evaluation and Outside Opinions

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

Sustainable Management Rating

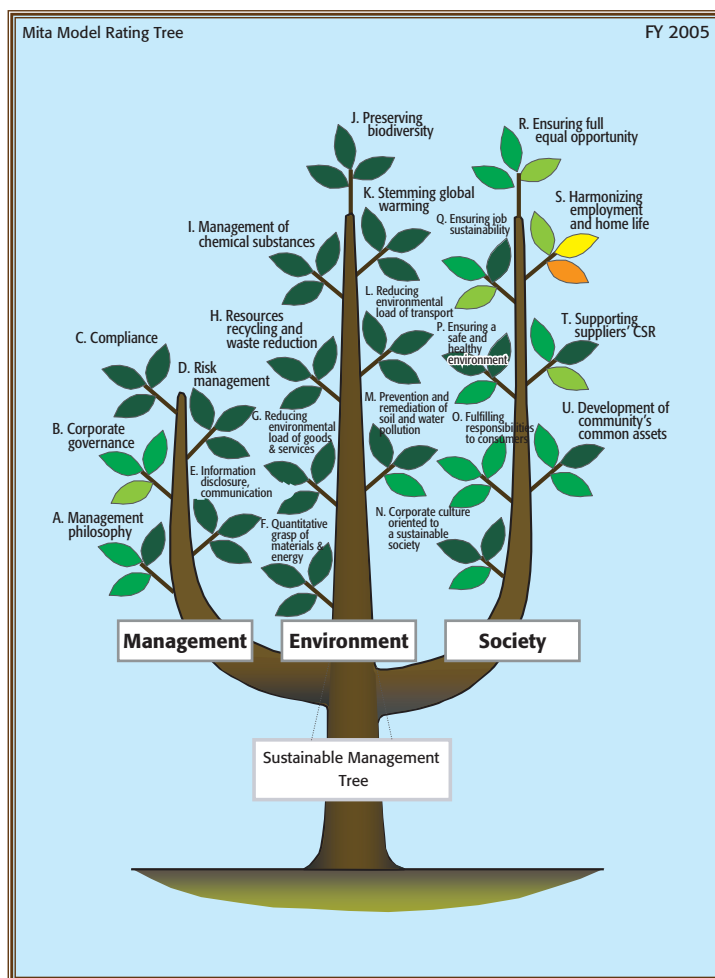
Information based on <http://www.smri.jp/>

The J-POWER Group participates in the sustainable management rating program carried out by Japan's Sustainable Management Rating Institute (SMRI). We make use of the institute's comprehensive review and the resulting ratings

to assess our own efforts on an area-by-area basis with regard to corporate responsibility and sustainable development, and to plan future efforts.

The review for fiscal 2005 included verification of answers to 175 questions and documentary and other evidence regarding 375 requirements, as well as interviews with corporate officers in charge of environmental affairs. In its overall rating, SMRI commented that the J-POWER Group "is close to realizing sustainable management in terms of its overall management."

FY 2005



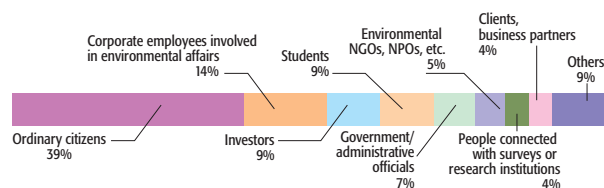
The results of the evaluation are expressed schematically in the form of a "sustainability management tree," seen at left. Corporate activities are divided into three major areas: management, environment, and society (symbolized by the tree's three large limbs). These are further broken down into various items for evaluation (small branches), each of which is assessed from three angles (leaves): strategy, results, and organization. The quality of the company's efforts with respect to each item is expressed by five possible leaf colors.

Readers' Opinions

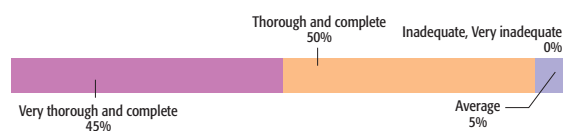
We received many comments from readers in response to our 2005 Environmental Management Report (published September 2005). We regard these valuable comments as important guidelines for our compilation of subsequent reports and our future conduct of environmental management, and intend to put their lessons to use in our corporate activities henceforth.

Aggregate Questionnaire Results (as of the end of March 2006; 58 respondents)

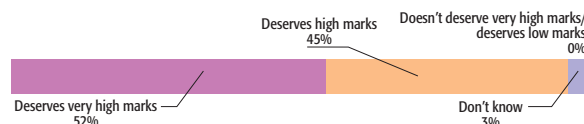
◆ Breakdown of Readership



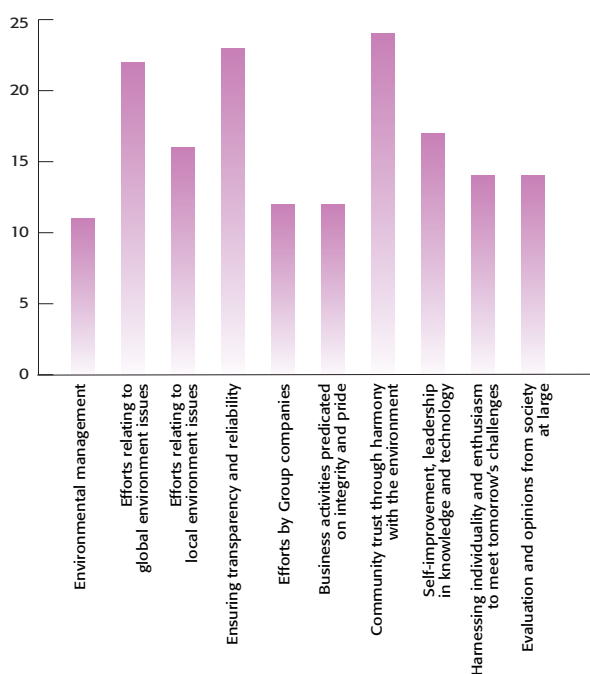
◆ Quantity and Quality of Information in the Report



◆ J-POWER Group's efforts in regard to environmental conservation



◆ Areas that the J-POWER Group should tackle more aggressively henceforth (choose up to five responses)



◆ Environmental/Social Efforts Sought from the J-POWER Group

Typical Comments	J-POWER Group's Efforts
I hope you will achieve your goals steadily and work continuously to generate power in an earth-friendly manner. (Student)	We are working hard to attain the goals of the Action Program by adopting concrete plans for their achievement, periodically assessing the plans' implementation, and using those assessments to improve our efforts.
Please approach such initiatives as trading in CO ₂ and other emissions from a global perspective. (Investor, citizen)	We are continuously reducing CO ₂ emissions per unit of electricity sold by combining a variety of approaches in an economically rational manner, considering cost and benefit from a global perspective. These approaches are maintaining and improving efficiency of energy use; developing low-CO ₂ -emissions power sources; developing, transferring, and disseminating new technologies; and utilizing the Kyoto Mechanisms.
I would like the J-POWER Group to do more to help make overseas power stations friendly to the environment. (Citizen)	We are working to transfer environmental technology through a variety of overseas projects that put to use technology developed here in Japan. In addition to our existing consulting services, we have begun providing technological advice through our overseas IPP program.
Please push ahead with R&D in the area of nuclear power to further improve safety and supply stability. (Citizen)	We are participating in the development of safer, more reliable, and more economical nuclear power plants and working in other ways to realize the promise of supply stability and CO ₂ -emissions-free power.
Back when the Miboro dam had just been completed, I remember being given a tour of the dam's interior on our way home from mountain climbing. We learned that J-POWER had transplanted the famous cherry trees that would have been flooded by the dam. (Citizen)	The J-POWER Group works hard to earn residents' trust as a responsible member of the community in both Japan and overseas by acknowledging that the key to harmony with the community is to ensure the safety and living environment of residents, and by using the latest technology and knowledge for that purpose.

For more comments and more on the J-POWER Group's efforts, visit the J-POWER Group website.

Independent Recommendations

We asked five experts to offer comments, each from his or her own perspective, on the 2006 J-POWER Group Environmental Management Report. These opinions will be put to use in planning and implementing the J-POWER Group's environmental management henceforth.

● Environmental Management and Corporate Social Responsibility

First, I would like to give the J-POWER Group credit for compiling an Environmental Management Report that lives up to its stated policy of including all consolidated subsidiaries. In addition, given the urgent need today for measures to stem global warming, the J-POWER Group is to be commended for directly tackling the challenges of coal-fired thermal power generation—the mainstay of its business operations—clearly articulating its approach, and working to improve energy efficiency. I have high hopes for its R&D efforts in such areas as coal gasification and geological storage of CO₂. I also look forward to the worldwide application of technology for coal use and recycling grounded in the experience and achievements of the J-POWER Group's overseas projects, one of the company's strengths.

Compared with the wealth of information on environmental management, however, the Society section does not treat "social sustainability"—cited as the company's top commitment—in sufficient depth, and the report on Group activities offers little more than a laundry list of examples.

Masahiko Kawamura

Senior Researcher
Insurance Research Group,
NLI Research Institute



● Environmental Communication and Education

The report clearly conveyed not only the importance of measures to stem global warming but a corporate commitment to meet the social responsibility of an energy supplier to "ensure constant supplies of energy to contribute to sustainable development" in the midst of changing environment and energy conditions in our society, including rising oil prices and impending constraints on resource usage.

The Message from the President stressed the importance of coal as one fossil fuel of which a stable supply can be secured for power generation purposes. I was especially impressed by the expression of determination to support the social infrastructure and the emphasis on advanced environmental technology to address CO₂ emissions and other problems. I look forward to further efforts to promote the use of renewable energy sources.

I also give this year's Environmental Management Report high marks for its detailed discussion of social efforts, including relations with and participation in the community and the creation of a comfortable work environment, and for stressing efforts to nurture understanding and trust among a variety of stakeholders. In the future, I would like to see the disclosure of a greater variety of data (such as site information and data concerning chemical substances) and further efforts at environmental communication, making use of this report and other vehicles.

Yuko Sakita

Journalist and environmental counselor



● Investor Feedback, Socially Responsible Investment (SRI)

First of all, I was very impressed by how easy the report was to understand overall. Not only the organization and but also enhancements added at the printing phase, such as typeface and use of color, combined to make it smooth reading. This is an important factor in facilitating readers' understanding of the content.

The Message from the President is thorough and conveys a clear image of the company as a whole.

In terms of specific activities, one can see efforts to address global environmental issues, such as management of chemical substances and biodiversity, based on an awareness of the latest developments. One also senses a sensitivity to social trends in ongoing efforts to make work more family-friendly with a view to increasing diversity in the workplace.

Since the J-POWER Group's business activities increasingly circle the globe, communication with stakeholders overseas will also be important in the future. I look forward to seeing a more inclusive accountability that extends beyond the disclosure of information in English.

Mizue Tsukushi

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



● Energy and Environmental Economics, Resource and Energy Strategy

Both hydropower, a purely domestic source of energy, and coal are excellent resources in terms of energy security, in that they are abundant and their distribution is less lopsided than other resources. I applaud the approach of using these stable resources to supply energy in its most useful form, electricity, while keeping the environmental load to a minimum, in line with the corporate philosophy of "Ensuring constant supplies of energy to contribute to sustainable development." Effective and environmentally-friendly use of coal through such technologies as integrated coal-gasification combined-cycle electricity generation systems can be considered an extremely promising and vital technology from the standpoint of Japan's energy security at a time when oil prices are rising and many are voicing concerns over the oil supply. This being the case, coal—often shunned because of its dirty image—can only grow more important as an energy resource. The J-POWER Group has already adopted an action plan based on four concrete approaches for achieving a 10% reduction in CO₂ emissions per unit of electricity sold, compared with the 2002 level, by 2010. Henceforth I am hopeful that Japanese research and development will play a central role in the emergence of technologies for separating and sequestering CO₂ from coal-fired thermal power stations.

Gento Mogi

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



● Plant Ecology, Conservation Ecology

The report outlines a policy that combines four approaches to reducing CO₂ emissions, which should be a top environmental priority for the energy industry. Each of these approaches encompasses a variety of options, and it seems to me that there is a need for the J-POWER Group to clarify a strategy, or guiding principle, for selecting and combining them. In considering the best combination of approaches, it must give due consideration not only to CO₂ emissions but also to other environmental burdens, as well as to safety, health, and good relations with the community, all of which are essential to human happi-

ness. With regard to the approach of developing more environment-friendly power sources, I would like to see the J-POWER Group work actively to promote the use of biomass, which can be used in existing facilities and which can contribute simultaneously to the solution of other problems.

Izumi Washitani

Professor of Conservation Ecology
Graduate School of Agricultural and Life Sciences,
The University of Tokyo



Independent Review

Since 2004, the J-POWER Group has submitted its Environmental Management Report for review and certification by the independent organization Shin Nihon Environmental Management and Quality Research Institute to ensure maximum credibility with regard to the environmental performance indicators presented in the report.

Review of the 2006 J-POWER Group Environmental Management Report by an Independent Organization

In 2006, the review included the following:

- 1) Verification of supporting documents to confirm that information in the report corresponds to the actual situation
- 2) Verification of facts by interview
- 3) Accuracy check of information in the report (evaluation of internal controls in compilation of numerical data; data check by sampling)

The 2006 review was conducted at our head office, Numappara Power Station, and JPec Co., Ltd. In addressing the issues raised in the review, we feel that we have been able to enhance our credibility with regard to numerical data, while at the same time making structural improvements in the gathering of statistics and other procedures that will serve us well henceforth.

Certification report from the independent review
of the 2006 J-POWER Group Environmental
Management Report

Independent Assurance Report

June 28, 2006

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

1. Purpose and Scope of our Assurance Engagement
The purpose of this assurance engagement, based on the engagement with Electric Power Development Co., Ltd. (the "Company"), is to express an independent opinion in relation to the Company's key environmental performance Indicators: "Input, Business Activities, Outcome, and Output" reported in the Company's "2006 Environmental Management Report" (the "Report") in respect of whether the information was measured and calculated accurately in accordance with the Reporting Standards of Environmental Indicators*1 and covers all material respects without omission. The management of the Company is responsible for the measurement and presentation of the Report. Our responsibility is to express an independent opinion on the Report.

*1 The Reporting Standard refers to the Ministry of Environment, Core Indicators: "Environmental Reporting Guidelines" 2003, and the Ministry of Environment, "Environmental Performance Indicators Guideline for Organizations", 2002

2. Outline of Assurance Procedures Performed
We have performed limited assurance procedures mainly composed of inquiry, review and analytical procedures in accordance with the "Practical Guideline for Assurance of Non-financial Statements (exposure draft)" of the Japanese Institute of Certified Public Accountants in July 2005. Therefore, our assurance engagement provides relatively limited assurance compared to a reasonable assurance engagement.
The following are an outline of the procedures performed:
1) Reviewed and Evaluated the Company's procedure for collection, aggregation of the subject matter reported in the Report.
2) Examined and recalculated evidence supporting the subject matter reported in the Report on a test basis.
3) Reviewed the consistency between the subject matter with the other related information reported in the Report.
4) Conducted on-site inspections*2 to inquire manager in charge of reporting, reviewed the operation of and examined evidences at selected power plants on a test basis.

*2 The on-site inspections were conducted at headquarters, the Numappara power administration office, and one of the subsidiaries; JPec Co., Ltd.

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 Environmental Indicators, or any material information that is not reported completely.

4. Independence
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 between the Company and us.

Yasuo Kuribara
Representative Director
Shin Nihon Environmental and Quality Management Research Institute Co., Ltd.

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

The review in progress



Numappara Power Station (Tochigi Prefecture)



Numappara Power Station (Tochigi Prefecture)



JPec Co., Ltd. (Tokyo)

J-POWER Group Environmental Management Vision



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 environmental efficiency by achieving higher productivity with lower environmental impact, thus enhancing both environmental responsibility and economic value.



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 CO₂ emissions per unit of electric power sales through an economically reasonable combination of measures including maintenance and improvement of the efficiency of energy use; development of low CO₂ emission power sources; development, transfer, and diffusion 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 CO₂.

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 CO₂ emissions per unit of electric power sales through an economically reasonable 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 CO₂ emission power sources; development, transfer, and diffusion of new technologies; and utilization of the Kyoto Mechanisms.

Recognizing that it will be necessary within this century to capture and store CO₂ 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 CO₂ 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 fostering good community relations.

We recognize that assuring attractive and safe living environments is the key to good community relations, both nationally and internationally, so 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 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

中 垣 喜 彦

President

Yoshihiko Nakagaki

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 against Global Warming)

Target	We aim to reduce CO ₂ emissions per unit of electric power sales in Japanese and overseas power plant operations to 10% below the 2002 level by fiscal 2010.
Action	We will implement the following measures by combining them economically, taking cost-effectiveness on a global scale into account.
Category	Measure
Sustainability and improvement of energy efficiency	<ul style="list-style-type: none"> ● Maintain high-efficiency operation of power facilities ● Adopt energy-efficient equipment in case of renewal ● Lower the auxiliary power ratio in our plants through effective operation and management ● Introduce high-efficiency technologies in new facilities
Development of various types of power generation with lower CO₂ emissions	<ul style="list-style-type: none"> ● Promote development of Ohma Nuclear Power Station ● Promote development of renewable energy ● Promote development of gas-turbine combined-cycle power generation ● Promote development of gas cogeneration systems
Utilization of the Kyoto Mechanisms	<ul style="list-style-type: none"> ● Procure emission reduction credits through Joint Implementation, CDM, and emissions trading
Development, transfer, and dissemination of technologies	<ul style="list-style-type: none"> ● Establish technologies for use of biomass fuel ● Continuously promote technological developments that reduce CO₂ emissions to power sales volume over the long term <ul style="list-style-type: none"> • Develop technology to improve efficiency of coal-fired plants • Develop coal gasification technology and Integrated Gas Fuel Cell technology (IGFC) • Research and develop CO₂ sequestration technology • Research and develop renewable energies

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

Target	We aim to achieve a recycling rate of 97% across the J-POWER Group by fiscal 2010, toward our ultimate objective of zero industrial waste emissions.
Action	<ul style="list-style-type: none"> ● Promote the effective use of coal ash ● Reduce all types of industrial waste emitted from the maintenance and operation of power plants

◆ Ensuring Transparency and Reliability (Enhance Our Environmental Management Structure)

Target	We plan to introduce environmental management systems (EMS) for the entire J-POWER Group by the end of fiscal 2007.
Action	<ul style="list-style-type: none"> ● We aim to acquire ISO 14001 certification for all thermal power plants by the end of FY 2005. ● We plan to implement an EMS for all consolidated subsidiaries 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 against Global Warming)

Key items

- Thermal Power Division: High-efficiency operation of power plants and introduction of high-efficiency equipment in new plants
- Hydropower Division: Improve productivity of hydroelectric power plants
- Common issues: Energy conservation in buildings and offices, savings on vehicle fuel

◆ Efforts Relating to Regional Environmental Issues (Air, Water, Waste)

Key items

- Thermal Power Division: Reduce SOx and NOx emissions, reduce volume of water for industrial use, effective use of coal ash
- Hydropower Division: Effective use of driftwood
- Common issues: Reduce resource use in offices, cut waste

◆ Ensuring Transparency and Reliability

(EMS, Comprehensive Environmental Communications, and Green Procurement)

Key items

- Acquire ISO 14001 certification, introduce EMS
- Promote environmental communications, participate in environmental volunteer programs
- Promote green purchasing/procurement (energy-saving office equipment, recycled paper, environmentally friendly vehicles, etc.)
- Promote measures to prevent environmental damage from accidents
- Thoroughgoing environmental education (e-learning, auditor training, etc.)

Note: Key goals are outlined on the relevant pages below

Fiscal 2006 J-POWER Group Environmental Action Guidelines

1 Efforts Relating to Global Environmental Issues

Maintenance and Improvement of Efficient Energy Use

- 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 hydropower 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 impact through efficient transportation of raw materials
 - Reduce environmental impact through use of public transport wherever possible, and efficient use of corporate vehicles when necessary, implementing eco-driving techniques.

Development of Low CO₂ 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 plants
 - Expand consulting business for development of renewable and unutilized energy
 - Promote biomass power plants overseas
- Encourage the use of natural gas
 - Promote gas-turbine combined cycle power generation and cogeneration plants

Utilization of Kyoto Mechanisms

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

Development, Transfer, and Diffusion of New Technologies

- Develop the Integrated Gas Fuel Cell (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 CO₂ sequestration technologies

Reducing Emissions of Greenhouse Gases Other Than CO₂

- Reduce sulfur hexafluoride (SF₆) emissions from gas-insulated switch gear
- Reduce hydrofluorocarbon (HFC) emissions from air conditioners

2 Efforts Relating to Regional Environmental Issues

Reduction of Environmental Load

- Ongoing reduction of emissions
 - Control combustion and manage facilities for environmental measures to reduce emissions of SO_x, NO_x, 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 and publicizing these efforts.
- 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

- Recycling and reuse of recyclable resources and efforts toward zero-emission production
 - Promote effective use of materials such as coal ash, gypsum, concrete blocks, scrap metal, and driftwood
 - 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
- Ensure proper disposal of waste materials
 - Work to minimize risk related to waste materials by selecting appropriate subcontractors for industrial waste disposal, etc.

Control of Chemicals

- PRTR system
 - Identify, control, notify, and disclose the emission and transfer volumes of chemicals subject to the Pollutant Release and Transfer Register (PRTR) Law
- Dealing 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
- Management and Disposal of PCBs
 - Properly store and manage PCBs in accordance with the Waste Management and Public Cleansing Law and the Law Concerning Special Measures against PCB Waste
 - Treat PCB waste in accordance with our basic policy, based on the government's regional waste-management program
- Strive to reduce volumes of hazardous chemicals handled
- Appropriate response to asbestos-related issues

Concern for Conservation of the Natural Environment and Biodiversity

- 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 surrounding 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 regional landscapes

Environmentally Conscious Projects Overseas

- 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

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

Note: 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 14001 certification at all J-POWER generation facilities
- Promote introduction and enhance operation of 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
 - Introduce environmental report study groups at each J-POWER workplace and in group companies
 - Conduct opinion surveys of employees and publicize the results
- Environmental accounting
 - Strive to improve methods of identifying costs and benefits of environmental conservation
 - Examine appropriate environmental efficiency indicators
- Request cooperation of business partners in environmental activities
- Renew Eco-leaf environmental labeling using life cycle assessment method

Efficient Operation of EMS

- Continuous improvement of EMS
 - Identify actual environmental loads and establish targets and plans for environmental conservation
 - Comply with laws and agreements, strive to meet targets, and periodically evaluate and improve activities
 - Systematically conduct environmental audits and review EMS on the basis of audit results to achieve continual improvement
- Undertake environmental risk management, ensure communication in case of emergency, and work to prevent environmental accidents

Green Procurement Efforts

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

(2) Communication with Society (Greater Transparency)

Publication of Environmental Information

- Improvement of Environmental Report
 - Seek third-party verification of Environmental Report data (substances, energy, etc.) and strive for greater reliability
- Publicizing of 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 offices and PR facilities
- Speedily communicate and release information on accidents and incidents with environmental impact

Active Communication

- Utilization of environmental reports, etc.
- Utilization of environmental events, etc.
- Diversification of external communications
 - Promote the diversification of communications by accepting external assessments such as of environmental management rating

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

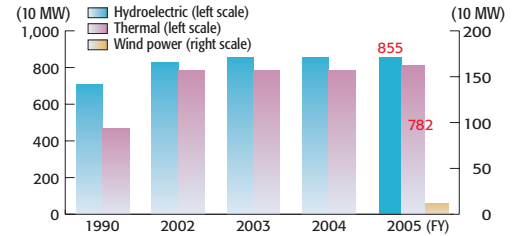
Fiscal Year Data

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 includes that of the Group companies.

Figures for FY 2005 in the graphs (red text) are for the J-POWER alone.

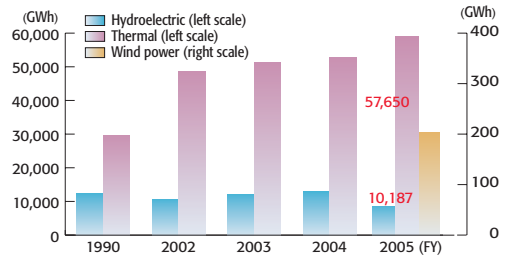
Power Facilities (maximum output)

	Unit	FY 1990	FY 2002	FY 2003	FY 2004	FY 2005
Hydroelectric	10 MW	709	826	855	855	855
Thermal	10 MW	465	782	782	782	810
Coal-fired	10 MW	464	781	781	781	792
Natural gas	10 MW					17
Geothermal	10 MW	1	1	1	1	1
Wind power	10 MW					12
Total	10 MW	1,174	1,609	1,637	1,637	1,677



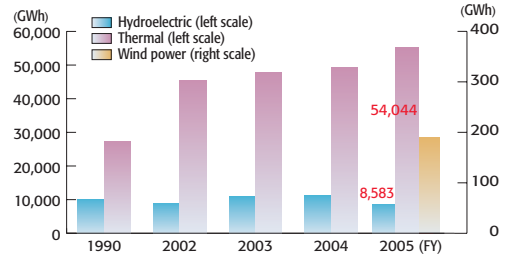
Electricity Output

	Unit	FY 1990	FY 2002	FY 2003	FY 2004	FY 2005
Hydroelectric	GWh	12,451	10,624	12,103	12,892	10,187
Thermal	GWh	29,551	48,679	51,237	52,708	58,922
Coal-fired	GWh	29,452	48,599	51,133	52,616	58,070
Natural gas	GWh					748
Geothermal	GWh	99	80	104	92	104
Wind power	GWh					203
Total	GWh	42,00	59,303	63,340	65,600	69,312



Electric Power Sales Volume

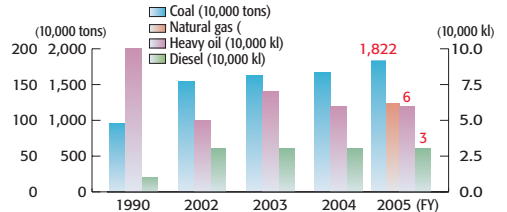
	Unit	FY 1990	FY 2002	FY 2003	FY 2004	FY 2005
Hydroelectric (excluding pumped storage)	GWh	10,046	8,902	10,850	11,172	8,583
Thermal	GWh	27,293	45,527	47,937	49,345	55,205
Coal-fired	GWh	27,206	45,453	47,841	49,261	54,413
Natural gas	GWh					698
Geothermal	GWh	87	74	96	84	94
Wind power	GWh					195
Total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



Fuel Consumption

	Unit	FY 1990	FY 2002	FY 2003	FY 2004	FY 2005
Coal (dry coal 28 MJ/kg conversion)	10,000 tons	956	1,543	1,621	1,669	1,839
Use intensity (coal-fired thermal)	t/GWh	351	340	339	339	338
Natural gas	mil. m ³					124
Heavy oil	10,000 kl	10	5	7	6	6
Diesel	10,000 kl	1	3	3	3	3

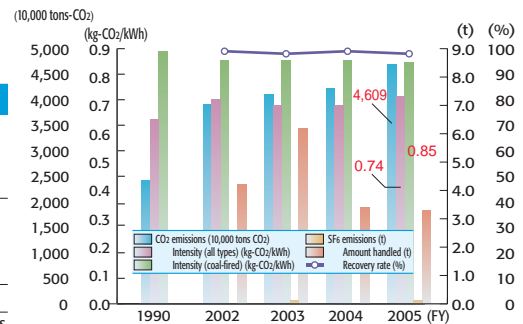
Note: Denominator for use intensity represents power sales from coal-fired thermal power stations.



Greenhouse Gas Emissions

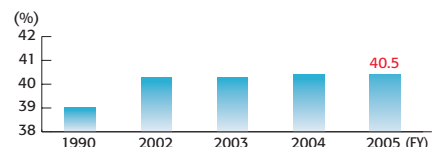
	Unit	FY 1990	FY 2002	FY 2003	FY 2004	FY 2005
CO ₂ emissions	10,000 tons-CO ₂	2,418	3,915	4,107	4,222	4,683
Intensity (all types)	-CO ₂ /kWh	0.65	0.72	0.70	0.70	0.73
Intensity (coal-fired)	-CO ₂ /kWh	0.89	0.86	0.86	0.86	0.86
SF ₆ emissions	t	—	0.0	0.1	0.0	0.1
Handled	t	—	4.2	6.2	3.4	3.3
Recovery rate	%	—	99	98	99	98
HFC emissions	t	—	0.0	0.0	0.0	0.0

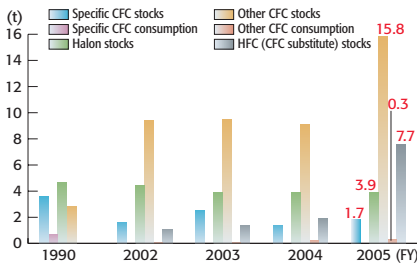
Notes: 1. Denominators for emission intensity represent power sales
2. Excluding Wakamatsu Research Institute



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

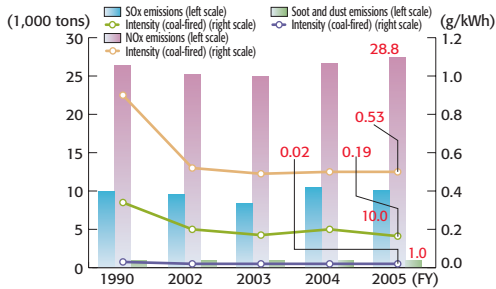
	Unit	FY 1990	FY 2002	FY 2003	FY 2004	FY 2005
Average thermal efficiency (at generation point)	%	39.0	40.3	40.3	40.4	40.5





Usage of Specific CFCs

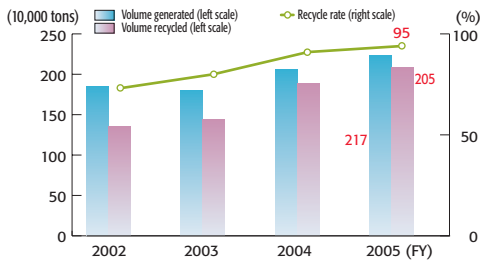
	Unit	FY 1990	FY 2002	FY 2003	FY 2004	FY 2005	
Specific CFCs	Stocked	t	3.6	1.6	2.5	1.4	1.8
	Consumed	t	0.7	0.0	0.0	0.0	0.0
Halons	Stocked	t	4.7	4.4	3.9	3.9	3.9
	Consumed	t	0.0	0.0	0.0	0.0	0.0
Other CFCs	Stocked	t	2.8	9.4	9.5	9.1	15.8
	Consumed	t	0.0	0.1	0.1	0.2	0.3
HFCs (CFC substitutes)	Stocked	t	—	1.1	1.4	1.9	7.7
	Consumed	t	—	0.0	0.0	0.0	0.1



SOx, NOx, and Soot and Dust Emissions

	Unit	FY 1990	FY 2002	FY 2003	FY 2004	FY 2005
SOx emissions	1,000 tons	9.9	9.5	8.4	10.4	10.2
Intensity (coal-fired)	g/kWh	0.34	0.20	0.17	0.20	0.19
NOx emissions	1,000 tons	26.4	25.2	25.0	26.6	28.9
Intensity (coal-fired)	g/kWh	0.90	0.52	0.49	0.50	0.53
Soot and dust emissions	1,000 tons	1.0	0.9	1.0	1.0	1.0
Intensity (coal-fired)	g/kWh	0.03	0.02	0.02	0.02	0.02

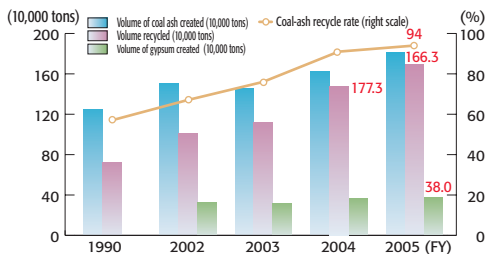
Notes: 1. Soot and dust emissions calculated from monthly measurements
2. Denominators for emissions represent power generation in coal-fired thermal power stations



Industrial Waste Recycling

	Unit	—	FY 2002	FY 2003	FY 2004	FY 2005
Volume generated	10,000 tons	—	185	180	206	223
Volume recycled	10,000 tons	—	135	144	189	209
Recycle rate	%	—	73	80	92	94

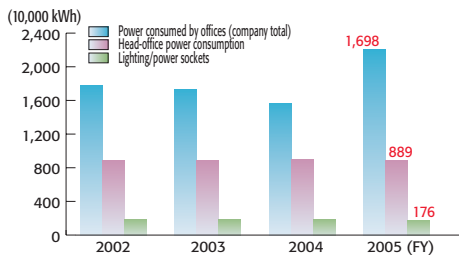
Note: Figures for FY 2004 are for the entire J-POWER Group



Coal-Ash and Gypsum Recycling

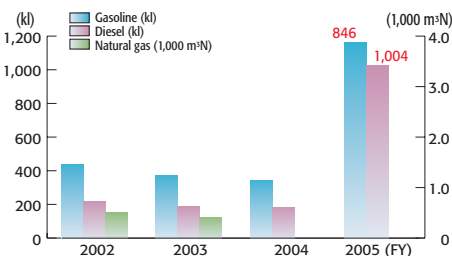
	Unit	FY 1990	FY 2002	FY 2003	FY 2004	FY 2005
Coal-ash created	10,000 tons	125.7	150.7	146.5	162.3	180.6
Coal-ash recycled	10,000 tons	71.9	101.4	111.9	147.4	169.6
Coal-ash recycle rate	%	57	67	76	91	94
Gypsum created	10,000 tons	—	33.0	32.0	37.1	38.0
Gypsum recycle rate	%	100	100	100	100	100

Note: Refer to p. 39 for details on coal-ash recycling rate



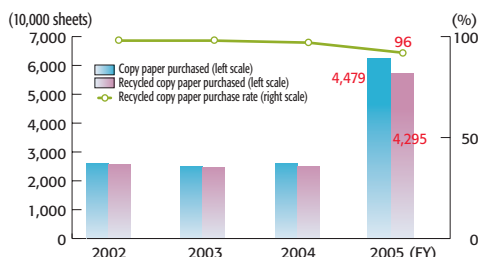
Office Power Consumption

	Unit	—	FY 2002	FY 2003	FY 2004	FY 2005
Power consumed by offices (company total)	10,000 kWh	—	1,781	1,728	1,564	2,200
Head office power consumption	10,000 kWh	—	884	881	899	889
Lighting/power sockets	10,000 kWh	—	185	179	179	176



Fuel Consumption (vehicles, ships, emergency generators, etc.)

	Unit	—	FY 2002	FY 2003	FY 2004	FY 2005
Gasoline	kl	—	438	372	342	1,162
Diesel	kl	—	217	185	182	1,026
Natural gas	1,000 m³N	—	0.5	0.4	0.0	0.0



Green Purchasing

	Unit	—	FY 2002	FY 2003	FY 2004	FY 2005
Copy paper purchased	10,000 sheets	—	2,617	2,492	2,597	6,241
Recycled copy paper purchased	10,000 sheets	—	2,560	2,453	2,511	5,722
Recycled copy paper purchase rate	%	—	98	98	97	92

Treaties and Laws Relating to Global Warming

Overview of the 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."

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.

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 ₂ O (nitrous oxide), HFCs (hydrofluorocarbons), PFCs (perfluorocarbons) 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, ¹ Joint Implementation (JI), ² and the Clean Development Mechanism (CDM) ³ 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.

Basic Directions for the Promotion of Measures to Stem Global Warming

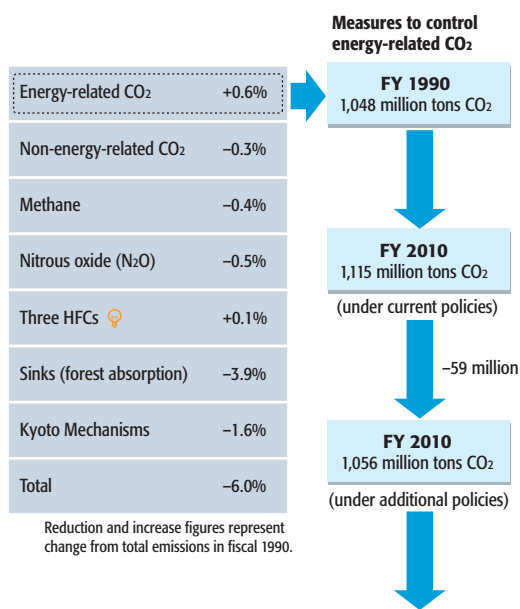
Goals for Fighting Global Warming

- 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




FY 2010 Emissions by Sector			
Industrial Sector	Residential and Commercial Sector	Transport Sector	Energy Conversion Sector
435 million tons CO ₂ (-8.6% from 1990)	302 million tons CO ₂ (+10.7% from 1990)	250 million tons CO ₂ (+15.1% from 1990)	69 million tons CO ₂ (-16.1% from 1990)
(-15 million tons)	(-31 million tons)	(-9 million tons)	(-4 million tons)

Breakdown by Sector

Environmental Action Plan of the Electric Power Industry

(Summarized from the Environmental Action Plan of the Electric Power Industry, Federation of Electric Power Companies of Japan, September 2005)

The Environmental Action Plan by the Japanese Electric Power 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.

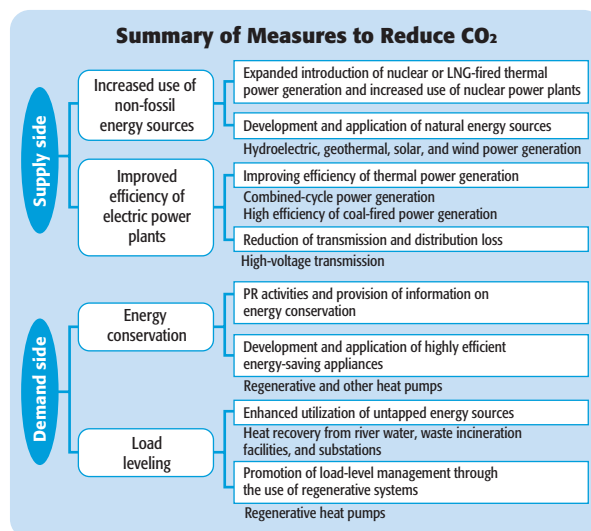
This plan is incorporated in the Keidanren Voluntary Action Plan on the Environment, adopted by Keidanren (now Nippon Keidanren) in June 1997. Progress toward the Keidanren plan as a whole and the various voluntary industry plans that make it up is regularly monitored by national councils and similar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

Measures for Stemming Global Warming

◆ CO₂ Emissions Reduction Target

The electric power industry has adopted as its indicator for CO₂ emissions reductions CO₂ emissions per unit of electricity used by consumers (CO₂ intensity at the point of consumption) and has set the following target for reduction from the fiscal 1990 level.

To work to reduce CO₂ emissions intensity at the point of consumption by about 20% from the level of fiscal 1990 by fiscal 2010 (to approximately 0.34 kg-CO₂/kW)



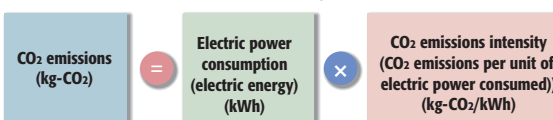
Japan's CO₂ Emissions

Item	FY 1990 (results)	FY 2002 (results)	FY 2003 (results)	FY 2004 (results)	FY 2005 (estimate)	FY 2010
Electricity consumption (billion kWh)	659	841	834	865	854	(Est.) 897
CO ₂ emissions (million t-CO ₂)	277 [2]	342 [17]	363 [20]	364 [26]	330	(Est.) 320
CO ₂ intensity at point of consumption (kg-CO ₂ /kWh)	0.421	0.407	0.436	0.421	0.39	(Est.) 0.36 → (Target) 20% reduction vs. FY 1990 (about 0.34)

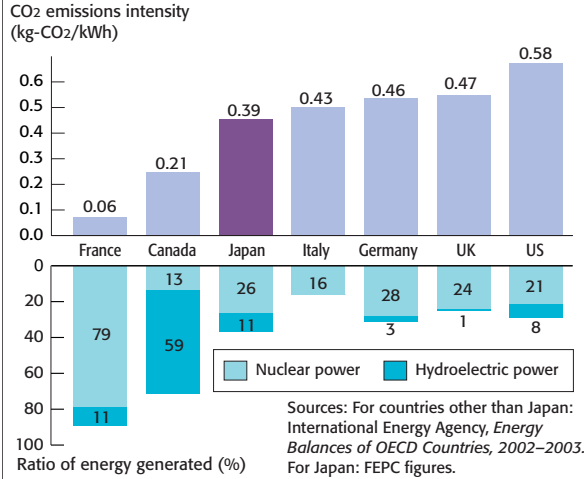
- CO₂ emissions intensity (user-end electricity) = CO₂ emissions ÷ energy consumption
- "CO₂ emissions" represents total of emissions for each type of fuel. It is calculated as follows:
CO₂ emissions = Calorific value attending fossil fuel combustion × CO₂ emission coefficient
- Calorific values used are those provided in the Agency for Natural Resources and Energy's Fiscal 2005 Fuel Plan for Steam Power Generation, etc. Fuel-specific CO₂ emission coefficients are those provided in the Ministry of the Environment's Comprehensive Report on the Calculation of Greenhouse Gas Emissions (August 2002).
- Estimates for fiscal 2005 and 2010 are based on the fiscal 2005 energy supply plan, which considers GDP indicators, demand trends, and other factors.
- Electric power consumption includes power purchased from cooperative thermal power plants, IPPs (independent power producers), and household generators and sold to customers; CO₂ emissions include those stemming from the generation of this purchased power.
- Figures in parentheses represent total CO₂ emissions from power purchased from IPPs and household generators; CO₂ reduction efforts are expected from each generation source. For purposes of calculation, calorific value is estimated from the amount of power purchased.

Goal of 12 FEPC-Affiliated Companies

Reduce CO₂ emissions intensity (user-end electricity) by about 20% from fiscal 1990 level by fiscal 2010

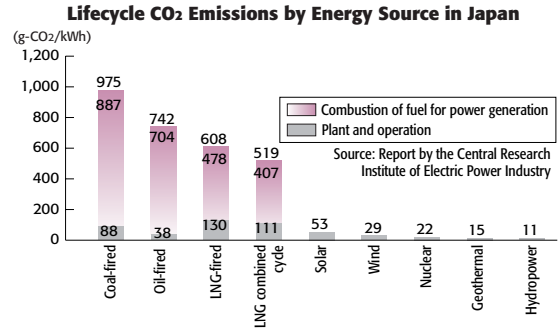


Country-by-Country Comparison of CO₂ Emissions Intensity (per unit of energy generated) Fiscal 2003 Preliminary Calculation by FEPC



Lifecycle CO₂ Emissions by Power Source, Japan

The chart below represents the CO₂ emissions for various power sources when the entire life cycle is taken into account (LCA CO₂). This method calculates CO₂ 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.



Measures for Waste Reduction and Recycling

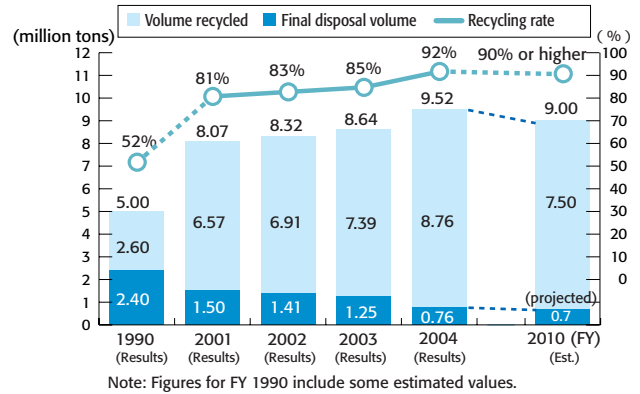
◆ Waste Recycling Rate Target

Until now the electric power industry has been working to achieve reduction of waste disposal using final waste disposal as the indicator, with the goal of reducing the volume of final waste disposal to 1.5 million tons, well below the level of fiscal 1990. Henceforth, however, the industry has decided to adopt the recycling rate as an indicator that is less influenced by fluctuations in demand and to embrace the following goal.

Coal ash is the waste generated in the largest amount compared with any other type of waste, so the electric

power industry regards the promotion of recycling of the waste as its highest priority and continues to make efforts to recycle it.

Electric Power Industry's Target for Waste Recycling Rate



Work to raise the recycling rate from the level of fiscal 1990 (52%) to at least 90% by fiscal 2010. (The forecast for final waste disposal in 2010, based on the current level of recycling, is approximately 700,000 tons.)

Trends in Recycling of Major Wastes and By-products

Unit: 1,000 tons

Type			FY 1990	FY 2002	FY 2003	FY 2004
Waste	Combustion residue, soot and dust (coal ash)	Volume generated	3,470	6,050	6,400	6,970
		Volume recycled (Recycling rate)	1,370 (39%)	4,740 (78%)	5,260 (82%)	6,310 (91%)
	Construction waste material	Volume generated	400	330	300	360
		Volume recycled (Recycling rate)	210 (53%)	310 (94%)	290 (96%)	350 (98%)
	Scrap metal	Volume generated	140	170	160	170
		Volume recycled (Recycling rate)	130 (93%)	160 (96%)	150 (97%)	160 (98%)
By-products	Gypsum from desulfurization process	Volume generated	850	1,600	1,610	1,830
		Volume recycled (Recycling rate)	850 (100%)	1,600 (100%)	1,610 (100%)	1,830 (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.)

Glossary

(Page numbers indicate major citations.)

ABWR (advanced boiling water reactor)

p. 31

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. 87

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

Biotope

p. 52

The habitat of a community of organisms. From the Greek *bio*, meaning life, and *topos*, meaning place. Originally used broadly to mean an ecosystem, it now often refers to an artificially created habitat for plants, fish, insects, etc.

CDM (Clean Development Mechanism)

pp. 11, 33, 34, 81, 83, 87

CDP (career development program)

p. 72

CMMS (computerized maintenance management System)

p. 58

A maintenance management system leveraging IT technology that has had excellent results in Western countries. By seamlessly linking management of facilities, operations, materials, procurement, etc. in an integrated database, it facilitates efficient operations and the integration and sharing of data and know-how relating to maintenance management.

COD (chemical oxygen demand)

p. 24

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.

Compliance

pp. 2, 9, 13, 16, 50, 67, 80

Observance of legal statutes.

Dioxins

pp. 41, 42, 52, 83, 95

Collective name for Polychlorinated dibenzo-p-dioxin (PCDD), polychlorinated dibenzofuran (PCDF), and coplanar poly-

chlorinated 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.

DNA microarray

p. 49

A wafer or microscopic slide on which DNA spots are densely fixed in a predetermined arrangement; used as a tool for genetic analysis. When the microarray is exposed to the sample DNA, which has been marked with fluorescent pigment, it is possible to identify the DNA in the sample by taking advantage of the structure of the DNA molecule, which consists of two complementary chains. DNA microarrays allow a large amount of genetic information to be analyzed in a short time and are expected to have wide application, including genomic drug discovery, tailor-made medical treatment, and inspection of genetically modified food.

EMS (environmental management systems)

pp. 11, 17, 22, 29, 40, 44, 50, 51, 52, 81, 82, 95

Environmental accounting

pp. 25, 84

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 of the Electric Power Industry

p. 88

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 warm-

ing, 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.

Environmental efficiency

pp. 26, 28, 37, 47, 79, 84

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.

Fuel cell

pp. 11, 35

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 CO₂ 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 cogeneration system

pp. 47, 81, 83

An energy system that burns natural gas to produce electricity with turbines or engines and uses the heat generated for air conditioning, hot water, etc. It achieves high thermal efficiency by generating two forms of energy at once.

Gas-turbine combined-cycled generation

pp. 7, 31, 81, 83

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.

Generating efficiency (thermal efficiency)

pp. 10, 28, 35, 47, 95

For an electric power generating facility, the ratio of electric power generated (converted to thermal units) to heat energy input.

Green purchasing

pp. 55, 82, 84, 86

Placing priority on minimizing the environmental burden in the purchase of goods and services by emphasizing environmental impact, as opposed to price, quality, convenience, or design.

HCFCs (hydrochlorofluorocarbons)

pp. 36, 86, 88

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 carbon dioxide, they were included among the gases targeted for reduction at COP3, held in Kyoto in December 1997.

HFCs (hydrofluorocarbons)

pp. 36, 83, 85, 87

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 CO₂.

IGCC (integrated coal gasification combined cycle)

pp. 11, 35

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.

IGFC (integrated coal gasification fuel cell combined cycle)

pp. 11, 35, 81, 83

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.

Industrial waste

pp. 11, 22, 24, 39, 44, 52, 53, 81, 83, 86

Wastes such as ash, sludge, waste acid, waste oil, 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.

IPP (independent power producer)

pp. 3, 4, 7, 8, 32, 47, 48, 51, 76

A business, other than a wholesale power supplier, that supplies electricity to general electric utilities.

ISO 14001

pp. 11, 17, 18, 22, 50, 51, 52, 81, 82, 84, 95

An international standard specifying the requirements for an environmental management system; one of the ISO 14000 series of international standards for envi-

ronmental management adopted by the International Standards Organization (ISO).

JEPIX (Environmental Priorities Index for Japan)

p. 26

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.

Jl (Joint Implementation)

pp. 11, 33, 34, 81, 83, 87

LCA (life-cycle assessment)

pp. 23, 84, 89

A method for quantitatively and objectively assessing the resources and energy used and the total environmental 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.

LIME (life-cycle impact assessment method based on endpoint modeling)

p. 26

A method for scientifically analyzing the contribution of substances such as CO₂ 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 (CH₄)

pp. 36, 87

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 CO₂.

Microhydropower

pp. 31, 83

Hydroelectric power produced in smaller plants (usually generating 100 kW or less, although there is no precise definition).

MOX fuel (mixed-oxide fuel)

p. 31

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 "plutothermal." While Japan's plutothermal plan originally called for use of a 1/3 MOX core for fuel, the "full MOX" plan calls for a 100% MOX core.

Municipal solid waste (MSW)

pp. 24, 32, 40, 41

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.

N₂O (nitrous oxide)

pp. 36, 87

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 CO₂. Said to be generated by combustion and application of nitrogen fertilizer.

NO_x (nitrogen oxides)

pp. 18, 24, 25, 26, 30, 37, 47, 54, 82, 83, 86

Collective term for compounds made up of nitrogen and oxygen. NO_x 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 (NO₂), 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.

ODA (Official Development Assistance)

p. 48

Financial and technological aid offered by government and governmental agencies to developing countries with the purpose of promoting economic development and human welfare. In Japan, ODA is carried out by the Ministry of Foreign Affairs and such entities as the Japan International Cooperation Agency (JICA) and the Japan Bank for International Cooperation (JBIC).

PCB (polychlorinated biphenyl)

pp. 42, 84, 95

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.

PDCA management cycle

p. 50

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

PFCs (perfluorocarbons)

pp. 36, 87

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 CO₂.

PPS (power producer and supplier)

pp. 3, 4, 7, 8, 51

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.

PRTR (Pollutant Release and Transfer Register)

pp. 42, 54, 83, 95

Renewable energy

pp. 5, 6, 9, 25, 26, 33, 47, 77, 81, 83

Energy derived from such natural phenomena as sunshine, 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

pp. 45, 95

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.

SF₆ (sulfur hexafluoride)

pp. 25, 36, 83, 85, 87

A compound of sulfur and fluorine produced industrially; SF₆ 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 CO₂.

SOFC (solid oxide fuel cell)

pp. 35, 83

Soil pollution

pp. 44, 95

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.

Soot and dust

pp. 19, 24, 25, 37, 54, 83, 86, 89

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.

SO_x (sulfur oxides)

pp. 18, 24, 25, 26, 30, 37, 47, 54, 82, 83, 86

Collective term for compounds made up of sulfur and oxygen, including sulfur dioxide (SO₂), sulfur trioxide (SO₃), and sulfuric acid mist (H₂SO₄). 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. 2, 96

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.

Specially controlled industrial waste

pp. 24, 52

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.

Sustainable development

pp. 9, 13, 21, 26, 48, 63, 77, 79, 87, 95

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. 38

In thermal and nuclear power generations, 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.

USC (ultra super critical)

pp. 18, 25, 28

A steam turbine technology that makes use of advanced steam conditions, beyond those used in conventional super critical turbines (pressure 246 kg/cm²; temperature 566°C), to improve the efficiency of thermal power plants.

Zero emissions

pp. 11, 21, 22, 35, 39, 80, 81, 83

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.

List of Organizations and Offices

(As of July 1, 2006)

In Japan	Name	Address	Phone Number
	Head Office	104-8165 6-15-1, Ginza, Chuo-ku, Tokyo	+81-3-3546-2211
	Hydropower & Transmission System Department		
	Hokkaido Regional Headquarters	060-0003 Daido Seimei Building, Kitasanjo, Nishi 3-chome, Chuo-ku, Sapporo-shi, Hokkaido	+81-11-221-8445
	East Regional Headquarters	350-1162 151, Oaza Minami Otsuka, Kawagoe-shi, Saitama	+81-49-246-9711
	Chubu Regional Headquarters	486-0815 3030-68-1, Jusanzuka, Jusanzuka-cho, Kasugai-shi, Aichi	+81-568-81-2300
	West Regional Headquarters	530-6691 Nakanoshima Center Building, 6-2-27, Nakanoshima, Kita-ku, Osaka-shi, Osaka	+81-6-6448-5921
	Ohma Main-Transmission Line Project Construction Office	035-0035 1-10, Hon-machi, Mutsu-shi, Aomori	+81-175-22-8177
	Nishi-Tokyo Main-Transmission Line Construction Office	350-1162 151, Oaza Minami Otsuka, Kawagoe-shi, Saitama	+81-449-247-7810
	Civil and Electrical Engineering Department		
	Ibigawa Hydro Project Survey Office	501-0603 675, Kamiminamigata, Ibigawa-cho, Ibi-gun, Gifu	+81-585-22-0722
	Kumagawa Hydro Project Survey Office	868-0022 860-13, Ganjoji-machi, Hitooyoshi-shi, Kumamoto	+81-966-24-3100
	Thermal Power Department		
	Isogo Thermal Power Station	235-8510 37-2, Shin-Isogo-cho, Isogo-ku, Yokohama-shi, Kanagawa	+81-45-761-0281
	Takasago Thermal Power Station	676-0074 6-4-1, Umei, Takasago-shi, Hyogo	+81-794-47-1301
	Takehara Thermal Power Station	729-2394 2-1-1, Tadanouminagahama, Takehara-shi, Hiroshima	+81-846-27-0211
	Tachibanawan Thermal Power Station	779-1631 3, Kokatsu, Tachibana-cho, Anan-shi, Tokushima	+81-884-34-3221
	Matsushima Thermal Power Station	857-2531 2573-3, Matsushimauchigo, Oseto-cho, Saikai-shi, Nagasaki	+81-959-22-2111
	Matsuura Thermal Power Station	859-4595 458-1, Aza Sezaki, Shirahamamen, Shisa-cho, Matsuura-shi, Nagasaki	+81-956-72-1201
	Ishikawa Coal-Fired Power Station	904-1103 3-4-1, Ishikawaakasaka, Uruma-shi, Okinawa	+81-98-964-3711
	Onikobe Geothermal Power Station	989-6802 16-10, Aza Suezawa Nishi, Naruko-onsen, Osaki-shi, Miyagi	+81-229-82-2141
	Thermal Power Engineering Department		
	Isogo Thermal Power Station No. 2 Unit Construction Office	235-8510 37-2, Shin-Isogo-cho, Isogo-ku, Yokohama-shi, Kanagawa	+81-45-761-0211
	Nuclear Power Department		
	Ohma Nuclear Power Project Construction Preparation Office	039-4601 20, Aza Omataira, Oaza Ohma, Ohma-machi, Shimokita-gun, Aomori	+81-175-37-2125
	Aomori Branch Office	030-0802 Sumitomo Seimei Aomori Yanagimachi Building, 1-2-20, Hon-cho, Aomori-shi, Aomori	+81-17-722-4772
	Business Planning Department		
	Wakamatsu Operations & General Management Office	808-0111 1, Yanagasaki-machi, Wakamatsu-ku, Kitakyushu-shi, Fukuoka	+81-93-741-0931
	Corporate Planning & Administration Department		
	Sendai Office	980-0811 Sendai Daiichi Seimei Tower Building, 4-6-1, Ichiban-cho, Aoba-ku, Sendai-shi, Miyagi	+81-22-267-2551
	Takamatsu Office	760-0023 Takamatsu-Chuodori Building, 1-4-3 Kotobuki-cho, Takamatsu-shi, Kagawa	+81-87-822-0821
	Fukuoka Office	812-0011 Nihon Seimei Hakata-ekimae Building, 3-2-1, Hakata-ekimae, Hakata-ku, Fukuoka-shi, Fukuoka	+81-92-472-3736
	Hokuriku Office	930-0004 Toyama Kogin Building, 5-13, Sakurabashi-dori, Toyama-shi, Toyama	+81-76-442-1151
	Chugoku Office	730-0013 Central Building, 15-10, Hatchobori, Naka-ku, Hiroshima-shi, Hiroshima	+81-82-221-0423
	Technology Development Center		
	Chigasaki Research Institute	253-0041 1-9-88, Chigasaki, Chigasaki-shi, Kanagawa	+81-467-87-1211
	Wakamatsu Research Institute	253-0041 1-9-88, Chigasaki, Chigasaki-shi, Kanagawa	+81-467-87-1211
		808-0111 1, Yanagasaki-machi, Wakamatsu-ku, Kitakyushu-shi, Fukuoka	+81-93-741-0931

Overseas	Offices	Address
	Washington Office (USA)	1101 17th Street, N.W., Suite 802, Washington D.C., 20036, U.S.A.
	EPDC Beijing Office (China)	Chang Fu Gong Office Building, Jia- 26, Jian Guo Men Wai Da Jie, Beijing 100022, PRC
	EPDC Bangkok Office (Thailand)	10th Floor, Nantawan Building, 161 Rajdamri Road, Lumpinee Pathumwan, Bangkok 10330, Thailand
	Kuala Lumpur Office (Malaysia)	Letter Box No. 38, 16th Floor, UBN Tower, 10 Jalan P. Ramlee, 50250 Kuala Lumpur, Malaysia
	Hanoi Office (Vietnam)	9th Floor, Sun Red River Building, 23 Phan Chu Trinh Str., Hoan Kiem Dist., Hanoi, Vietnam
	Purulia Pumped Storage Project Office (India)	WESEB PPSP Administrative Building, Patherdhi Village, P.O. Baghmundi, Purulia District, West Bengal State 723152, India
	Upper Kotomale Hydropower Construction Supervision Office (Sri Lanka)	Walkers Place, Talawakelle, Nuwara Eliya, Sri Lanka
	Dai Ninh Hydropower Construction Supervision Office (Vietnam)	Dai Ninh Gia, Duc Trong, Lam Dong, Vietnam

List of J-POWER's Consolidated Subsidiaries

As of the end of March 2006

Company Name	Investment Rate (%)	Head Office	Main Activities
Green Power Kuzumaki Co., Ltd.	100	Iwate-gun, Iwate	Construction and operation of wind power generation facilities
Green Power Setana Co., Ltd.	100	Kudo-gun, Hokkaido	Construction and operation of wind power generation facilities
Dream-Up Tomamae Co., Ltd.	100	Tomamae-gun, Hokkaido	Construction and operation of wind power generation facilities
Green Power Aso Co., Ltd.	81	Aso-gun, Kumamoto	Construction and operation of wind power generation facilities
Nagasaki-Shikamachi Wind Power Co., Ltd.	70	Kitamatsuura-gun, Nagasaki	Construction and operation of wind power generation facilities
Nikaho Kogen Wind Power Co., Ltd.	67	Nikaho-shi, Akita	Construction and operation of wind power generation facilities
J-Wind TAHARA Ltd.	66	Tahara-shi, Aichi	Construction and operation of wind power generation facilities
ITOIGAWA POWER Inc.	80	Itoigawa-shi, Niigata	Electric power supply
Bay Side Energy Co., Ltd.	100	Chuo-ku, Tokyo	Electric power supply
Ichihara Power Co., Ltd.	60	Ichihara-shi, Chiba	Electric power supply
JP Business Service Corporation	100	Koto-ku, Tokyo	Operation of welfare facilities; building management; undertaking of general affairs, labor, and accounting projects; development of computer software
J PHYTEC Co., Ltd.	100	Chiyoda-ku, Tokyo	Engineering, technical development, design, consulting, maintenance/surveys, construction, and management of hydropower and wind power generation facilities and transmission and transformer facilities; surveys and planning related to environmental conservation
JPec Co., Ltd	100	Chuo-ku, Tokyo	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
KEC Corporation	100	Bunkyo-ku, Tokyo	Construction and maintenance of electronics application facilities and communications facilities
KDC Engineering Co., Ltd.	100	Nakano-ku, Tokyo	Surveys, design, and construction management related to civil engineering, general architecture, and electric power generation facilities
J-POWER RESOURCES Co., Ltd.	100	Chuo-ku, Tokyo	Coal surveys, mining, development, and related investment
EPDC Coal Tech and Marine Co., Ltd	100	Chuo-ku, Tokyo	Marine transportation of coal ash

* Intermediate holding companies are not included in consolidated subsidiaries.

Environmental Chronology

WORLD	J-POWER	JAPAN
	1952 Establishment of our company	
	1960 Shokawa cherry trees transplanted at Miboro Power Station	
	1964 Pollution Control Agreement concerning Isogo Thermal Power Station concluded with Yohohama City (Yokohama method)	
1972 United Nations Conference on the Human Environment (UNCHE) held in Stockholm	1973 Numappara Power Station started operation (wetland conservation)	1967 Basic Law for Environmental Pollution Control 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)	1968 Air Pollution Control Law promulgated
1985 Vienna Convention for the Protection of the Ozone Layer adopted	1976 Totsugawa Power Station No. 1 improved water intake by introducing surface intake facilities	1968 Noise Pollution Regulation Law promulgated
1988 Intergovernmental Panel on Climate Change (IPCC) established	1977 Funagira Dam started operation (fish ladder installed)	1970 Water Pollution Control Law promulgated
	1980 Yanase Power Station improved water intake by introducing selective intake facilities	1970 Waste Management (Disposal) and Public Cleansing Law promulgated
	1982 Takehara Thermal Power Station No. 1 installed flue-gas denitrification system	1971 Offensive Odor Control Law promulgated
	1986 Isogo Thermal Power Station received Pollution Prevention Award from Kanagawa Prefecture	1974 Air Pollution Control Law amended and promulgated (regulation of total emissions introduced)
	1987 Ishikawa Coal-Fired Thermal Power Station selected as one of Public Color Prize Ten Environmental Winners	1975 Vibration Regulation Law promulgated
	1988 Takasago Thermal Power Station received Director General's Award (Energy Saving) from the Agency for Natural Resources and Energy	1977 Notification of Ministry of International Trade and Industry (currently Ministry of Economy, Trade and Industry) regarding the Ministerial Meeting on Assessment issued
		1984 Implementation Outline of Environmental Impact Assessment approved by the Cabinet
1992 United Nations Conference on Environment and Development (UNCED) held in Rio de Janeiro	1990 Committee for Coping with Global Environment Problems established	1990 Global Warming Prevention Action Plan approved
1994 Framework Convention on Climate Change came into force	1990 Nishi-Yoshino Power Station No. 1 started discharging for river flow maintenance (first hydraulic power station of J-POWER)	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	1990 Tagokura Power Station started producing driftwood charcoal	1993 Basic Environment Law promulgated
1996 2nd Conference of Parties to the UN Framework Convention on Climate Change (COP2) held in Geneva	1990 Takehara Thermal Power Station received Director General's Award (Energy Saving) from the Agency for Natural Resources and Energy	1994 Basic Environment Plan approved by the Cabinet
1996 ISO 14001 Environmental Management System formulated	1993 Environmental Activities Promotion Board established	1995 Law for Promotion of Sorted Collection and Recycling of Containers and Packaging promulgated
1997 3rd Conference of Parties to the UN Framework Convention on Climate Change (COP3) held in Kyoto	1993 Denpatsu Environmental Action Guidelines established	1997 Environment Impact Assessment Law promulgated
1998 4th Conference of Parties to the UN Framework Convention on Climate Change (COP4) held in Buenos Aires	1993 Driftwood charcoal received Minister's Prize (Recycling Concept) from Ministry of International Trade and Industry	1997 River Law amended (for not only irrigation and water use but also improvement and conservation of river environment)
1999 5th Conference of Parties to the UN Framework Convention on Climate Change (COP5) held in Bonn	1994 Kumaushi Power Station received Good Design Prize from Ministry of International Trade and Industry	1998 Law Concerning the Rational Use of Energy (Energy Saving Law) amended
	1994 Huang Dao Power Station in China started high-sulfur coal desulfurization demonstration test	1998 Law Concerning the Promotion of the Measures to Cope with Global Warming promulgated
	1997 Okukiyotsu Power Station No. 2 received Technology Award (Cohabitation with Local Community/Open Type Power Station) from the Japan Society of Civil Engineers	1999 Law Concerning Reporting, etc. of Releases to the Environment of Specific Chemical Substances and Promoting Improvements in Their Management promulgated
	1998 New J-POWER Environmental Action Guidelines established	1999 Law Concerning Special Measures against Dioxins promulgated
	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	
	1999 Matsuura Thermal Power Station acquired ISO 14001 certification	
	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	
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
2001 Resumed Session of 6th Conference of Parties to the UN Framework Convention on Climate Change (COP6 Resumed Session) held in Bonn	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 7th Conference of Parties to the UN Framework Convention on Climate Change (COP7) held in Marrakesh	2000 Tomamae Winvilla Wind Farm started operation	2001 Law Concerning Special Measures against PCB Waste enforced
2001 Operational Rules for the Kyoto Protocol adopted	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
2002 World Summit on Sustainable Development held in Johannesburg	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.)	2002 Law Concerning the Rational Use of Energy amended
2002 8th Conference of Parties to the UN Framework Convention on Climate Change (COP8) held in New Delhi	2000 Construction Division acquired ISO 14001 certification	2002 Law Concerning the Promotion of the Measures to Cope with Global Warming amended
2003 9th Conference of Parties to the UN Framework Convention on Climate Change (COP9) held in Milan	2001 Nikaho Kogen Wind Farm started operation	2002 Law for the Promotion of Nature Restoration promulgated
2003 3rd Water Forum held	2001 Isogo Thermal Power Station received Public Color Award and Top Ten Environmental Color Award from the Study Group for Color in Public Places	2003 Law Concerning Measures against Soil Pollution enforced
2004 10th Conference of Parties to the UN Framework Convention on Climate Change (COP10) held in Buenos Aires	2001 Introduction of EMS based on ISO 14001 throughout the company completed	2003 Law on Special Measures Concerning New Energy Use for Electric Utilities (RPS Law) enforced
2004 2004 version of ISO 14001 released	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 for Enhancing Motivation on Environmental Conservation and Promoting of Environmental Education enforced
2005 Kyoto Protocol came into force	2002 Omuta Recycling Power Station started operation	2004 Waste Disposal and Public Cleansing Law amended
	2002 Tokyo Bayside Wind Power Plant started operation	2004 Air Pollution Control Law amended
	2003 Omuta Power Recycling Station received New Energy Award and Chairman's Prize from the New Energy Foundation	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
	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 Scenery Law enforced
	2003 Green Power Kuzumaki Wind Farm put into commercial operation	2005 Waste Disposal and Public Cleansing Law amended
	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 J-POWER certified and registered for EcoLeaf Environmental Labeling Program	
	2004 Ichihara Power's Ichihara Power Station put into commercial operation	
	2005 Three J-POWER-owned wind power stations (Tahara Wind Farm, Aso Wind Farm, and Shikamachi Wind Farm) put into commercial operation	
	2005 All of J-POWER's coal-fired thermal power stations and a geothermal power station acquired ISO 14001 certification	
	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 stations acquired ISO 14001 certification	

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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-B7CF-12A601AB3831/0/2002_Guidelines_ENG.pdf

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Harmonizing Energy with the Environment



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