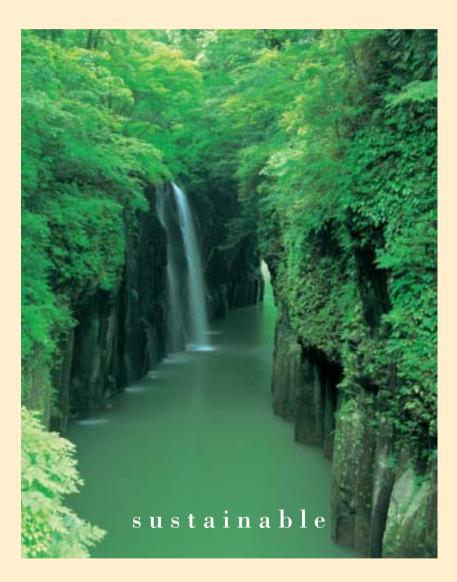
## Towards an Environmentally Friendly Corporate Stance

2004 Kyushu Electric Power Environment Action Report







Manai Falls of Takachiho Gorge Takachiho Town, Miyazaki Prefecture

Mythology has it that, in the making of this country, gods descended on the beautiful mountain ranges that surround Takachiho Town. The Takachiho Gorge is the creation of about a half a billion years of work by the Gokase River that eroded the thick lava layer that had erupted from Mt. Aso. The dark walls of the banks along the streams sometimes rise a hundred meters above water level, displaying majestic views and instilling visitors with awe.

In common usage, the word "sustainable" means continuing or steady. The term has become a keyword in environmental conservation since the World Commission on Environment and Development proposed "Sustainable Development" in 1987. "Sustainable development" may be defined as "able to implement development in a way that both satisfies the needs of future generations and answers the demands of today." The objective is to reduce environmentally damaging emissions to the extent that the Earth's self-purification capacity can deal with the damages and thereby stimulate economic and societal growth while keeping the global environment intact.

## Scope and editorial policies for the 2004 **Kyushu Electric Power Environment Action Report**

This report compiles the activities of Kyushu Electric Power Co., Inc. in fiscal 2003 (ending March 31, 2004) and covers some future plans and activities of the group companies. Since fiscal 2001, our economic and social involvementrelated information has been reported in addition to our environmental activities.

This report was prepared in accordance with the Guidance for Publishing Environmental Reporting published by the Ministry of the Environment. In addition, reference was made to the Environmental Reporting Guidelines (FY2003 version) published by the Ministry of the Environment; the Environmental Reporting Guidelines 2001 with Focus on Stakeholders published by the Ministry of Economy, Trade and Industry; and the 2002 Sustainability Reporting Guidelines published by the Global Reporting Initiative (GRI).

Contents added and revised since the 2003 report are listed below:

#### New items:

Comparative chart based on the Guidance for Publishing Environmental Reporting published by the Ministry of the MOR (inside front cover), promoting communication on environmental issues through Environment Action Report (P31), acquisition of certificates from various organizations (P20, 33) and evaluation from third party (P61)

The next report is scheduled to be published in June 2005.

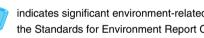
Kyushu Electric Power is committed to disclosing information about its business activities on the environment and mitigating the resulting impact with the belief that such commitment is the social responsibility of an enterprise. Further, as an extension of this corporate responsibility, the company is dedicated to promoting environmental activities. The Environment Action Report has been published since 1996 to summarize Kyushu Electric Power's environmental activities and make it widely known to the public.

#### Enhanced reliability of report

To ensure the reliability of the report contents, the company voluntarily has the report contents and basic reference materials reviewed by a third party\*. Also, environment information contained in this report, which is defined as significant in Standards for Environment Report Compilation (Proposal), was reviewed based on the said standards (proposal).

In June 2004, the Law to Encourage Specific Businesses to Pursue Eco-Friendly Operations through the Active Provision of Environmental Information was enacted, and a framework for review by a third party was established for the future.

\*The review was conducted by Tohmatsu Environmental Research Institute Ltd., a subsidiary of Deloitte Touche Tohmatsu, Environmental Department.



indicates significant environment-related information reviewed in accordance with the Standards for Environment Report Compilation (Proposal)

#### Comparative chart with the Environmental Reporting Guidelines (FY2003 version) published by the Ministry of the Environment

	Information recommended for the report		Location in this report				
	information recommended for the report	Page	Headline				
1	Reporting period and entity	Inside front page	Scope and editorial policies				
0	utline of business						
	Type and scale of major operations	54	Company Profile				
2	Sales, net profit, total assets and number of employees (compared to immediate prior three years)	54	Financial Information				
3	Policy for environmental measures in business activities	8	Kyushu Electric Power Environment Charter				
4	Summary of plans, targets and records for environmental measures incorporated in business activities	18	Records and Targets of Environmental Load				
5	Status of environmental management system	8-11	Environmental Management Framework				
6	Status of conformity to environmental regulations	11	Conformity to Environmental Regulations				
A	ctivities for reducing environmental load						
	Overview of environmental load	12, 13	Business activities, environmental activity benefits and environmental load				
	Total energy input	12	Business activities, environmental activity benefits and environmental load				
	Amount of water input	12	Business activities, environmental activity benefits and environmental load				
0	Total amount of waste water discharged	13	Business activities, environmental activity benefits and environmental load				
	Amount of greenhouse gas emissions	13 17-21	Business activities, environmental activity benefits and environmental load; measures taken on the supply side for greenhouse gas reduction				
	Total amount of waste produced	22, 23	Industrial and general waste				
	Amounts of chemical substance emitted and transferred	30	Chemical substance control				
8	Status of eco-friendly products and services	19	Changes in sales of electricity and CO <sub>2</sub> emissions intensity in end use electricity (our business being electric utility)				

#### CONTENTS

Message from the President	2
2004 Environment Action Report Highlights	2

#### **Promotion of** Part I **Environmental Management**

Introduces the environmental management framework that provides the basis of our environmental activities, the details of the PDCA Cycle, and the costs and benefits of the environmental activities

- 1. Environmental Management Framework Describes our policies and promotional scheme for environmental management, information related to activities conducted by incompany/external committees, the status of conformity to environmental regulations and emergency measures, as well as our Fiscal 2004 Environment Action Plan
- 2. Environmental Accounting 12 Reports the results of environmental activity costs and benefits for fiscal 2003

#### **Our Commitment to** Part II **Environmental Activities**

Describes yearly changes in environmental targets and records of our environmental activities

- 1. Records and Targets of Environmental Load 18 Details records for immediate prior three years and findings compared to the prior year as well as major environmental activities related targets for fiscal 2006
- 2. Measures for Global Environmental Issues 19 Describes measures to reduce greenhouse gas emissions, including the promotion of the optimal combination of nuclear power; to increase the use of renewable energy sources, including the promotion of wind and solar power generation and to encourage energy conservation, including reduction of transmission/distribution loss as well as measures for Kyoto Mechanism utilization and ozone layer protection
- 3. Establishing a Recycling-oriented Society 24 Describes zero emissions and green procurement
- 4. Maintaining Harmony with the Local Environment 27 Describes our environmental conservation activities, including environmental impact assessment and prevention of air, water and noise pollution; and environmental protection management, including environmental monitoring and chemical substance control
- 5. Working with Society 31 Describes communication and publicity activities, including environment-related study tours; participation in a tree planting event for the Kyushu Homeland Forestation Program and volunteer activities during Environment Month
- 6. Environment-related Research and Development ...... 36 Describes research and development activities related to the prevention of global warming and water purification

#### Kyushu Electric Power Group's Part III **Environmental Activity Progress**

- 1. Environmental Management Framework 2. Outline of Fiscal 2004 Environmental Activity Plan 41
- 3. Fiscal 2003 Environmental Activity Records
- 4. Main Steps by Kyushu Electric Power Group for Environmental Conservation 48
- 5. Business Outline of the 40 Kyushu Electric Power 50 **Group Companies**

#### Part IV **Company Profile**

1. Financial Information		54
2. Main Offices and Facil	lities	55

2. Main Offices and Facilities

#### **Opinion from Outside** Part V the Company

Reflects the results of questionnaire for the Fiscal 2003 Kyushu Electric Power Environment Action Report and outside opinions

1. Results of the Questionnaire from 58 the Previous Report 2. Principal Opinions of the Kyushu Electric Power Environmental Advisory Council 59 3. Awareness and Actions of Mothers 60 on Environmental Issues 4. Results of the "7th Nikkei Environmental Management Survey Conducted by Nihon Keizai Shimbun, Inc. 61 5. Main Opinions from Customer Surveys 62 6. Items Reflecting Opinions 63

#### **Review of the Environment Action** Report by Third Party 65

Displays Report on Review Results and Third-Party Opinions about the Environment Action Report

#### Glossarv

Explains terms contained in this report and basic environment-related words or expressions

★ Appears in the glossary



**Opinions from Outside the Company** 



## Message from the President

Today's socio-economic system of mass production, mass consumption and mass disposal has clearly made our daily lives more convenient. However, this system has placed a greater burden on the environment, and its latent recuperative power is now being threatened. To cope with this environmental crisis on a global level and to find a balance between social development and the concerns for the environment, we must review the current socio-economic system and find a course to a "sustainable society," so that we can share blessings that the environment can offer with our future generations.

The issue of global warming poses a great threat to the world. The establishment of frameworks for solutions is actively promoted in and outside Japan, and various measures have been taken by each country. However, greenhouse gas emission has been constantly increasing in Japan and around the world.

To address global warming and other environmental issues, it is vital for industry, administration and the community to pursue environmentally-friendly activities at an individual level and unite such efforts systematically to further enhance the effects.

### Kyushu Electric Power shall maintain close contact with the community at all times and act in pursuit of valuable social goals

Kyushu Electric Power Co., Inc. operates its business under the corporate philosophy: "Kyushu Electric Power shall maintain close contact with the community at all times and act in pursuit of valuable social goals." We established the "Environment Charter" in February 2001 to raise awareness of environment conservation and to promote the

stablishing a Sustainable Society through Concerted Efforts with Our Customers

president nessage

disclosure of environment-related information in our corporative activities aiming to contribute to a sound environment. Specifically, we commit ourselves to:

- 1) Promote environmental management throughout the Kyushu Electric Power Group Companies
- 2) Reduce carbon dioxide emissions while focusing on promotion of nuclear power development
- 3) Promote a zero emissions campaign to create a recycling-oriented society
- 4) Implement the "Kyushu Homeland Forestation Program" in collaboration with local communities

We will continue to further expand and improve environmental activities, based on cooperative efforts among individual company staff members, with enhanced awareness on compliance.

In addition, we believe that our consulting services on energy conservation, which help to reduce the environmental load with the cooperation of customers, will be increasingly important to create a recyclingoriented and sustainable society. Accordingly, we will work closely with local communities to promote energy and environment education as well as practical environmental activities.

## Furthering environmental activities resulting from communication with our customers

This is the eighth edition of the "Environment Action Report." Opinions of outside experts and customers have been integrated in the report for the readers' in-depth understanding.

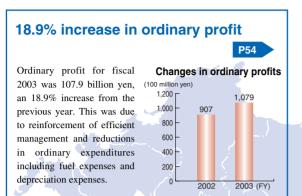
In the future, we hope to foster environmental activities through increased communication about the environment with a broader audience. Your opinions and suggestions will be highly appreciated.



Kyushu Electric Power Company Inc.

Shingo Matsuo President

## **2004 Environment Action Report Highlights**



## Completion of company-wide Environmental Management System (EMS) implementation

With EMS established at 79 additional sites in fiscal 2003, all our operational establishments (145 sites) have now completed EMS implementation.

## Changes in the number of sites implementing EMS



## Recycling rate of industrial waste rose to 92% P24

The industrial waste recycling rate in fiscal 2003 rose to 92%, an increase of 18 points from the previous year, due to the rise in the coal ash recycling rate.



## Economy

#### **Compliance Management promotion**

The company established the Compliance Committee in October 2002 and created the Compliance Guideline in December 2002 to promote compliance management and ensure that business activities are conducted in a fair manner and in conformity with corporate ethics.

## Environment

## Operation of binary cycle geothermal power generation facility

In order to effectively utilize geothermal energy, a new binary cycle geothermal power generation facility, which can generate electricity with steam and hot water at lower temperatures than the existing systems, was built at Hatchobaru Geothermal Power Station. The facility began its operation in February 2004 as a verification test facility.

# Binary cycle power generation facility

#### Environmental management promotion at Kyushu Electric Power Group P40

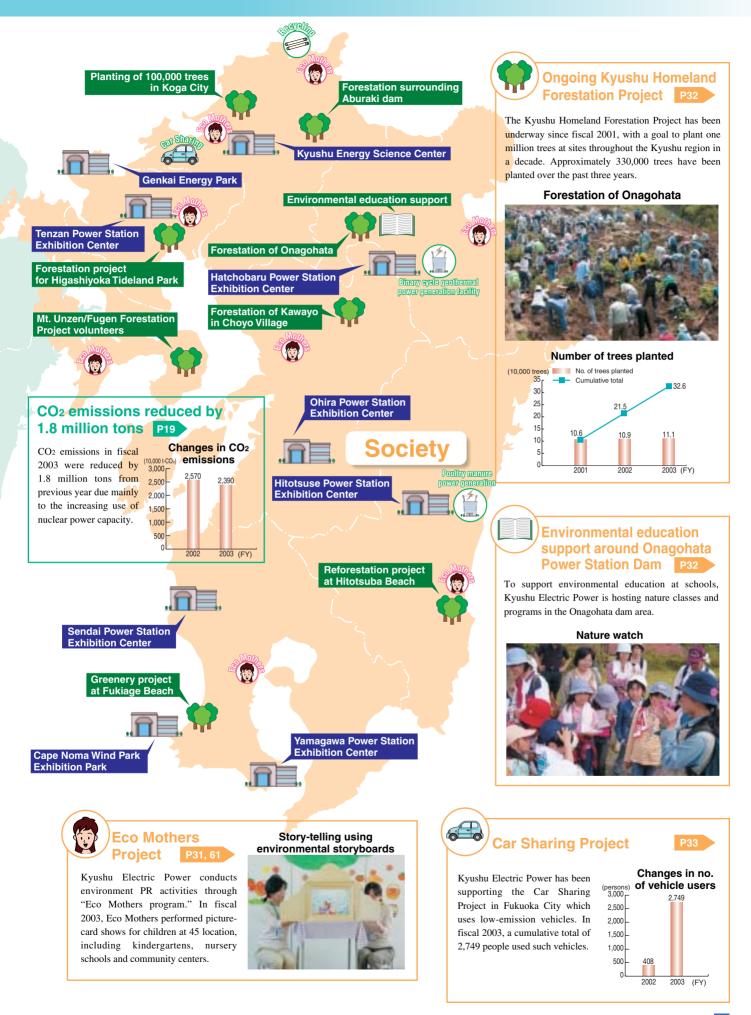
In fiscal 2003, the number of group companies selected for environmental management promotion increased from 26 to 40, in order to promote environmental activities at Kyushu Electric Power Group as a whole.

Nishinippon Environmental Energy Co., Inc. has been proceeding with the establishment of a power generation facility burning poultry manure as a fuel, in cooperation with local poultry farmers since December 2003.

Japan Recycling Light Technology & System is the first company in Japan to produce and distribute fluorescent tubes made from recycled parts of fluorescent lights. It has been operating since November 2002.

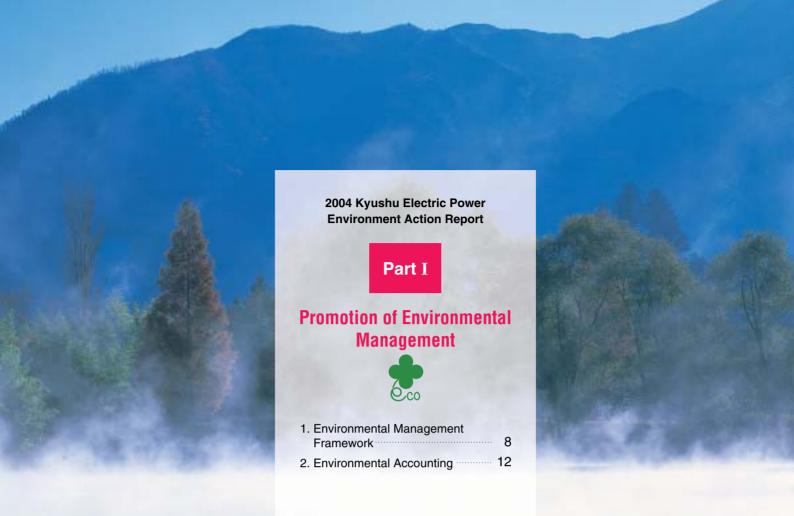


**Poultry manure incineration** 



#### Kinrin Lake in autumn Yufuin Town, Oita Prefecture

Yufuin Town, Oita Prefecture A prime tourist attraction in the hot spa resort of Yufuin Town is Kinrin Lake or Golden Scale Lake. The lake is said to have been named in 1884 by a visiting Confucian Kuso Mori, after he saw golden scales on the surface of the lake. Both cold and hot springs well up from the bottom of the lake, keeping the water warm even in the winter. This causes fog to rise and cover the lake surface on chilly mornings. Visitors will be soothed and gently embraced by the fog, which reveals nature's visionary scene.



## Promotion of Environmental Management

Kyushu Electric Power prioritizes environmental conservation in its management activities. The company and its group businesses unify their efforts to put into practice the five core policies of the Environment Action  $Plan^*$ , which has been devised based on the Kyushu Electric Power Environment Charter. Due to these efforts, Kyushu Electric Power was ranked the top among 17 companies of the electric and gas industry in the 7th Corporate Environmental Management Level Survey conducted by Nihon Keizai Shimbun, Inc. in 2003. See P61 IST This issue of the Environment Action Report summarizes the environmental activities implemented in accordance with the Fiscal 2003 Environment Action Plan<sup>\*</sup> (formulated in March 2003) as well as their results and developments.

## Environmental Management<sup>\*</sup> Framework

#### **Environmental Policy**

We have established the Kyushu Electric Power Environment Charter to define the stance and direction of environmental activities to be pursued. We have also developed the Kyushu Electric Power Group<sup>\*</sup> Environment Philosophy for group companies<sup>\*</sup> to set forth the principles of their commitment to environmental activities, and the Kyushu Electric Power Group<sup>\*</sup> Environment Policies, which set out specific guidelines for implementing such activities. Kyushu Electric Power will actively implement environmental activities based on these policies to ensure outstanding environmental management.

#### **Corporate Philosophy**

- 1 Kyushu Electric Power shall keep energy aglow forever.
- 2 Kyushu Electric Power shall maintain close contact with the community at all times and act in pursuit of valuable social goals.
- <sup>3</sup> Kyushu Electric Power shall create a dynamic corporate culture by being a step ahead of the times.

#### 

February 15, 2001

President

\* See P40 13 for Kyushu Electric Power Group Environment Philosophy and the Kyushu Electric Power Group Environment Policies.

#### Promotional Scheme

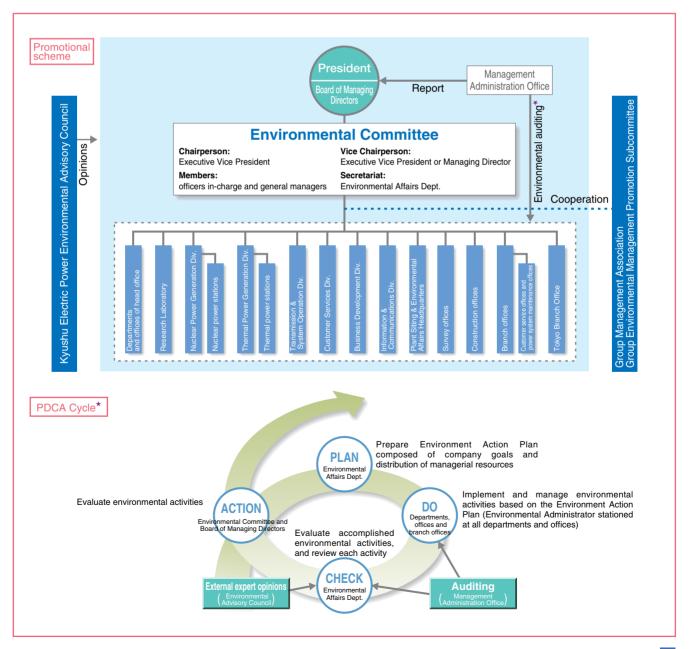
Kyushu Electric Power has structured a company-wide scheme to promote the implementation of environmental management<sup>\*</sup>.

 The Environmental Committee has been established to better review the environmental activity strategies of Kyushu Electric Power as a whole. The committee's agenda is authorized by the Board of Managing Directors and will be adopted as the company's environmental management\*
 guidelines.

The Kyushu Electric Power Environmental Advisory Council, composed of experts in various fields, has been established for external evaluation of our environmental activities. Internal evaluation is conducted by the Management Administration Office. We will ensure that the results of both internal and external evaluations are reflected in future activities.

Further, the Group Environmental Management<sup>\*</sup> Promotion Subcommittee of the Group Management Association has been set up to promote the environmental management<sup>\*</sup> of the Kyushu Electric Power Group<sup>\*</sup> as a whole. The Subcommittee serves to discuss and draft common object<sup>P41</sup> for all the group companies as well as action plans.

These activities are subject to evaluation by the Kyushu Electric Power Environmental Advisory Council.



#### **Environmental Committee**

Kyushu Electric Power strongly promotes environmental management<sup>\*</sup> by building an environmentally conscious administrative system closely tied to company management.

- The Environmental Committee discusses and drafts environmental activity strategies and the Environment Action Plan<sup>\*</sup>, for example the extent of managerial resources to be distributed to environmental management<sup>\*</sup>.
- The Environmental Committee is chaired by the Executive Vice President and composed of officers-in-charge and general managers.
- Matters deliberated by the Environmental Committee are first submitted to the Board of Managing Directors, then adopted within the business plans of each division, department and branch office, and implemented company-wide in the form of specific environmental

activities.

• Environmental admini strators<sup>\*</sup> (156 administrators as of April 2004) have been appointed in all departments and offices to support and s u p e r v i s e



s u p e r v i s e Environmental Committee en vironmental (held on January 27, 2004)

#### Kyushu Electric Power Environmental Advisory Council

Kyushu Electric Power attaches great importance to external evaluation from experts in promoting environmental management<sup>\*</sup>.

- The Kyushu Electric Power Environmental Advisory Council was established in April 2001 to evaluate externally the environmental management<sup>\*</sup> efforts of Kyushu Electric Power and the Group companies<sup>\*</sup>.
- The Council is composed of 11 experts in various fields and from each prefecture in Kyushu.
- The feedback for the 4th Advisory Council is listed on page 59.



Advisory Council (held on June 7, 2004)

#### Environmental Management System\*

Kyushu Electric Power has implemented efficient and effective environmental management systems (EMS)<sup>\*</sup> at all 145 operational sites.

- ISO 14001 certification<sup>\*</sup> was acquired at six model sites selected by taking into account the significantly different functions of the company's operational establishments, such as branch offices, power stations, power system maintenance offices and customer service offices.
- An ISO-based system<sup>\*</sup> was applied to nine thermal power stations before fiscal 2001.
- As for branch offices, customer service offices, power system maintenance offices and nuclear power stations, the implementation of an ISO-based system<sup>\*</sup>, which was formulated based on the system adopted by the model sites, was completed at 124 sites during fiscal 2002 and 2003.
- As for the Head Office, an ISO-based system<sup>\*</sup> was established by the Environmental Affairs Dept. in April 2003 and

was implemented at six sites in fiscal 2003, including the departments and offices of the Head Office, the Education & Training Center and the Research Laboratory.



Audit of ISO certification renewal at Hitoyoshi Power System Maintenance Office

#### Status of ISO certification at selected model sites

Sites	Certificate	Operational status in FY2003		
Siles	acquisition	Regular audit	Renewal audit	
Matsuura Thermal Power Station	Jul. 1997		0	
Sendai Nuclear Power Station	Mar. 1999	0		
Hitoyoshi Power System Maintenance Office	Mar. 2001		0	
Omarugawa Hydro Power Station Construction Office	Aug. 2001	0		
Saga Customer Service Office	Jun. 2002	0		
Nagasaki Branch Office	Jul. 2002	0		

#### V O I C E (1)



Successful completion of EMS implementation

Kyushu Electric Power has adopted the EMS at all of its operational establishments by fiscal 2003. On implementing the EMS at the Head Office, which started in December 2003, we were faced with many difficulties partly due to the size of the office having about 1,800 staff members. Now that the system has been fully implemented company-wide, it is vital to raise the awareness of each staff member as well as pursue more efficient and effective business management. I believe that ongoing reviews of the EMS will improve Kyushu Electric Power's environmental activities to which I would like to contribute by own effort.

#### Conformity to Environmental Regulations

Kyushu Electric Power focuses on "compliance\* management" to engage in fair business activities based on its corporate ethics as well as conformity with ordinances. In addition, the company strictly abides by environmental laws and ordinances and agreements on environmental conservation\* with related local governments.

- Guidelines for environmental activities<sup>\*</sup> and environmental regulations<sup>\*</sup> have been established.
- The company has committed no breaches of environmental laws, and no accidents/failures have occurred in the last five years. Currently, no legal actions regarding environmental issues have been filed against Kyushu Electric Power.

#### Handling inquiries and complaints

Kyushu Electric Power properly deals with inquiries and complaints from outside the company.

- In fiscal 2003, a total of 56 environment-related inquiries were received at the Customers' Q&A on our company website, including enquiries concerning the contents of the Environment Action Report and requests for copies.
- The Rainbow System has been established to receive, record, share and promptly react to external opinions and requests received during day-to-day operations. In fiscal 2003, responses to 45 opinions and inquiries (e.g. regarding the Green Electric Power System and forestation project) were registered on the system. There was a record of one complaint

#### 3 FY2004 Environment Action Plan<sup>\*</sup>

#### Concept of Environmental Management\*

Building a sustainable society\* through cooperation with the local community is the fundamental aspect of environmental management\*. Accordingly, Kyushu Electric Power pursues environmental activities that satisfy society's needs, as well as active disclosure of information.

#### Four Focal Points for FY2004 Environment Action Plan Establishment

- 1 Promote solid establishment of environmental activities through the unified efforts of Kyushu Electric Power Group companies
- 2 Steadily take on measures that contribute to CO<sub>2</sub> emissions reduction
- 3 Promote both recycling and cost reduction through efficient and effective business activities
- 4 Implement Environment PR activities that anticipate customers needs

received about an affiliate company employee who was littering with a cigarette butt, an incident that provided the company with the opportunity to enhance the staff awareness on compliance<sup>\*</sup> through conducting employee education at both Kyushu Electric and its group companies.

#### **Emergency measures**

Damage to the Kyushu Electric's facilities resulting from accidents and natural disasters can affect the surrounding environment. In preparation for such emergencies, we have installed and upgraded facilities for disaster prevention, implementing adequate education and training for our staff, and preparing manuals that help responsible staff to better deal with their duties.

- Power stations are under agreement to remain in close contact with their local governments.
- Both the Genkai and Sendai Nuclear Power Stations have a nuclear power training center on their premises. At both training centers, simulating equipment enables trainees to learn from a wide variety of potential dangers by replicating crises that have actually occurred, even outside Japan.
- Each year, the company participates in nuclear power disaster drills held by the local governments of Kagoshima and Saga Prefectures based on the local Disaster Preparedness Plan.



Nuclear power disaster drill at Saga Pref. Offsite Center

#### Establishment of FY2004 Environment Action Plan\*

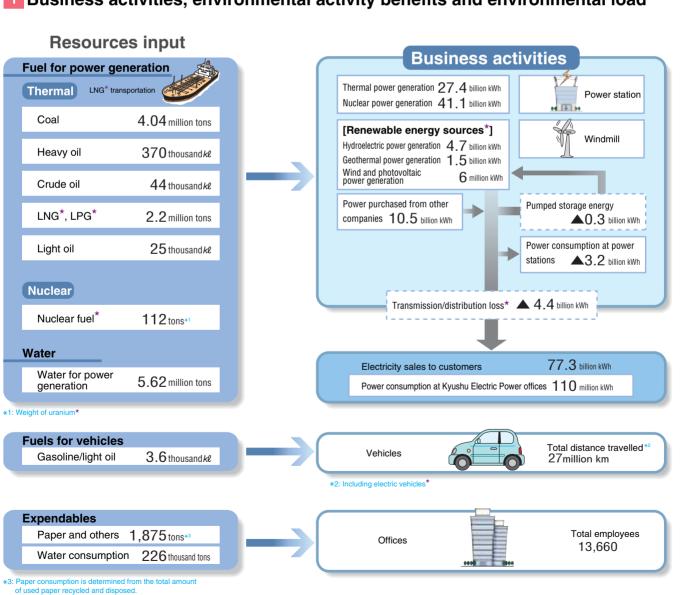
The FY2004 Environment Action Plan was established in March 2004 based on the concept of environmental management<sup>\*</sup> and the external and internal evaluations on the activities carried out under the FY 2003 Environment Action Plan<sup>\*</sup>. The FY2004 Action Plan<sup>\*</sup> focuses on the following four points.

Promoting environmental management	Maintaining harmony with the local environment
Environmental management framework establishment     Environmental efficiency improvement	<ul> <li>Environmental preservation for power plants and substations</li> <li>Harmony with the surrounding environment</li> </ul>
Measures for global environmental issues	Promotion of environmental and recycling activities
<ul> <li>Greenhouse gas reduction</li> <li>Promotion of renewable energy sources</li> <li>Measures for energy conservation</li> <li>Ozone layer protection</li> </ul>	Working with society Communication
Establishing a recycling-oriented society	<ul><li>Community activities</li><li>International cooperation</li></ul>
<ul><li>Challenges towards zero emissions</li><li>Promotion of green procurement</li></ul>	Employee awareness enhancement

## 2Environmental Accounting<sup>\*</sup>

Kyushu Electric Power introduced environmental accounting in fiscal 2000. The costs and benefits of environmental activities are taken into account in decision making about the implementation of environmental activities and are disclosed to the public.

For efficient, effective implementation of environmental activities, the environmental accounting\* system must evolve as a tool for promoting environmental management\*. It must enable quantitative understanding of the environmental load\* caused by business activities, the costs and benefits of the environmental activities\*, as well as a thorough analysis that includes consideration of their relation to business activities.

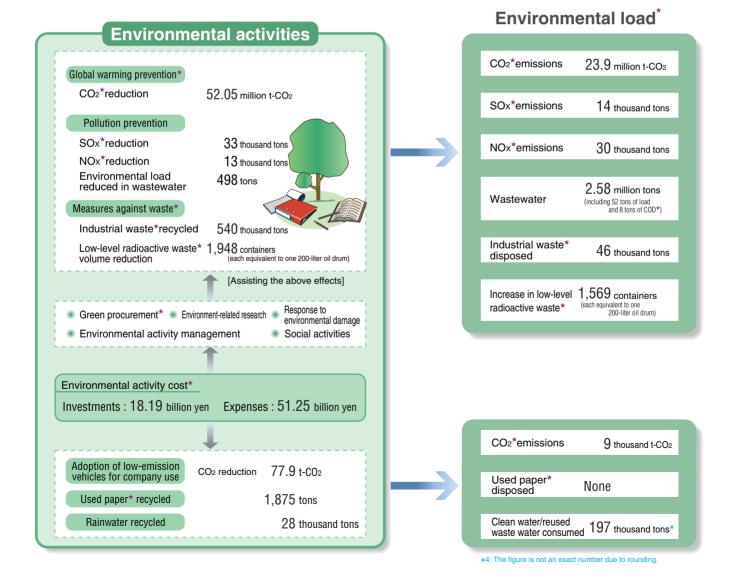


#### Business activities, environmental activity benefits and environmental load

COLUMN NO.1

Environmental activities management by utilizing IT in environmental accounting

The company has been expanding the use of information technology (IT) in the field of environmental accounting at its operational sites such as offices and power stations. In fiscal 2004, environmental load and environmental activity costs were calculated, and the related database was constructed by each site. As the use of IT is promoted in environmental activity management, we have been endeavoring to establish a comprehensive online system connected to the existing internal systems with the expectation that management indexes experimentally introduced can help the offices and power stations closely manage and control its own environmental load. We will actively promote the further use of IT as a management tool for environmental accounting.



#### **2** Change in environmental activity costs<sup>\*</sup> (FY2002 and 2003 records)

			Unit: 100 millio		for those specia FY20	
Environ	mental activity category	Main activities	Investment	Cost	Investment	Cost
Global environment preservation	Global warming prevention*	Installation of power sources with low CO2* emissions, thermal efficiency* improvement at thermal power stations, introduction and support for new energy* equipment, contribution to World Bank Prototype Carbon Fund*, energy saving (including low-pollution vehicles*) and SF6*emission control		49.3	0.6	70.2
	Ozone layer* protection	Measures for Freon* and Halon* recovery	0.0	0.1	0.8	0.3
Local natural environment	Air pollution * prevention	Flue gas* treatment (desulfurization*, denitration*, particulate* reduction equipment) and use of fuel with low sulfur content	68.4	82.7	57.4	156.0
preservation	Water pollution* prevention	Waste water treatment and measures against oil leaks and warm wastewater* at power plants Noise and vibration measures at power plants,	11.6	28.6	16.4	28.9
	Noise and vibration prevention	Noise and vibration measures at power plants, substations and transmission facilities	15.4	0.7	7.4	1.4
	Industrial waste*	Reduction and recycling of industrial waste*	11.6	33.7	14.7	48.1
		Disposal of industrial waste* and PCB* storage	14.7	4.1	10.7	10.6
Resource	General waste*	Reduction and recycling of general waste*	1.6	2.8	0.5	5.9
recycling	Radioactive waste* and spent nuclear fuel*1	Disposal of general waste* Disposal and other treatment of radioactive waste*	0.0	6.8 71.1	0.1	1.2 60.6
Green procurement*		Purchase of office and stationery supplies as a rule (Additional costs incurred from green procurement*)	_	0		0
	Environmental activity organization	Costs from environment-related license acquisition, education* and training, and for personnel	0.0	1.7	0.0	3.2
Environmental activity management	EMS* application and maintenance	EMS* (ISO 14001* and ISO-based system*) acquisition, application and maintenance	0.0	2.6	0.0	3.6
	Environmental load * measurement and monitoring	Environmental impact assessment, monitoring and measurement of environmentally burdening substances, and PRTR* measurements	2.9	16.9	1.3	13.9
Environment-	Environmental conservation	Prevention of global warming, improvement of air and water quality and effective use of waste	3.0	6.1	0.0	1.7
related research	Environmental load control during transmission and distribution	Improvement in thermal efficiency and transmission/distribution loss * factor	0.0	0.1	0.0	0.0
	Greening of sites	Greening, maintenance and management of Kyushu Electric power station sites	4.4	13.5	8.5	11.9
Social	Maintaining quality townscapes and surroundings	Measures to create harmony with surroundings such as tending to buildings with scenic care and installing underground transmission and distribution lines	65.5	85.6	62.9	86.2
activities	Environment Month*	Environment Month* and Kyushu Homeland Forestation Program	0.1	0.8	0.0	0.2
	Supporting local environmental activities	Support for local environmental activities and environmental organizations $\!$	0.0	0.7	0.0	0.2
	Environmental information disclosure	Environment Action Report, pamphlet and website preparation	0.0	0.4	0.0	0.5
Response to e	environmental impairment	Pollution load levy $\star$ under the Pollution-related Health Damage Compensation Law $\star$	0.0	8.5	0.0	7.8
	То	tal	205.7	417.1	181.9	512.5
		Kyushu Electric Power total investments and costs	9%	3%	9%	4%
	Reference	Total investments		416	2,0	)69
		Total costs	12,7		12,1	35

\*Listed are Kyushu Electric Power's costs for environmental activities in FY2002 and 2003 and benefits from environmental activities in FY2003. Figures are rounded, and may not add up to the total. \*1: The figure does not include allowance for spent nuclear fuel reprocessing\*. (See the reference table below.)

[Reference]			002	FY2003		
	Main activities	Investment	Accrued	Investment	Accrued	
	Allowance for used nuclear fuel reprocessing $^{\ast 2}$	0.0	497.6	0.0	270.4	

\*2: With respect to the used nuclear fuel which is stored at year-end, the costs required to reprocess\* such used nuclear fuel in the future are partially accrued at year-end in accordance with the applicable regulations.

#### 3 Environmental activity benefits (FY2003 records)

•	Environmental activity benefits							
	Items	Extent of benefits, etc.						
	Nuclear power generation	33.33 million t-CO <sub>2</sub> / yr						
	LNG* power generation	5.59 million t-CO <sub>2</sub> / yr						
	Hydro, geothermal power generation	6.66 million t-CO <sub>2</sub> / yr						
	New energy * power generation and purchase	0.5 million t-CO₂ ∕ yr						
CO2 <sup>*</sup>	Thermal efficiency* improvement, transmission/distribution loss* reduction	5.57 million t-CO <sub>2</sub> / yr						
	World Bank PCF*	4,512 t-CO₂∕yr						
	Energy saving activities	217 t-CO <sub>2</sub> / yr						
	SF6*emission reduction*1	0.4 million t-CO <sub>2</sub> / yr						
Freo	n* emissions*2	0.2 ODP ton ∕ yr						
SOv7	* reduction	33,270 tons ∕ yr						
	* reduction	13,473 tons ∕ yr						
	culate* reduction	97,567 tons / yr						
	nmental load reduced in wastewater							
-		498 tons ∕ yr						
Mana	aged properly in conformity wit	th laws and ordinances						
	unt recycled	543 thousand tons / yr						
	er final disposal amount	46 thousand tons / yr						
	l paper* recycled	1,875 tons ∕ yr						
Usec	I paper* properly disposed	0 ton∕yr						
Volume	e reduction in low-level radioactive waste $\star$	1,948 containers / yr (each equivalent to one 200-liter oil drum)						
Amou	unt of used nuclear fuel stored*	2,914 assemblies						
	en procurement * is applied for stationery supplies as a rule.	the purchase of office						
Particip	pants in training and lectures (in-company)	17,820 people / yr (accumulative)						
Persor	nnel with environment-related licenses	1,669 people						
Sites t	hat acquired ISO14001 * certification	6 sites						
Sites	that introduced EMS*	139 sites						
No. of monitoring	Continuous monitoring and measurement items*3	194 items						
and measurement points	Other monitoring and measurement points	27,641 points						
	earch cases in ical-use phase	0 case						
Tota	green area	47.05 million m						
No. c	of buildings with scenic care	182 buildings						
No. of	steel towers with environmental care	82 units						
Lengt	h of underground distribution lines	3,073 km						
No. of pa	articipants at lectures, etc. (outside the company)	1,337 people / yr (accumulative)						
No. c	of trees and saplings planted	164,101∕yr						
No. of	environment organizations $\star$ supported	43 organizations						
No. c	of reports published	34,300 copies ∕ yr						
Webs	ite access (environment-related)	266,229 hits ∕ yr						

\*1: SF<sub>6</sub> emission reduction is converted to the weight of CO<sub>2</sub> using the global warming potential for SF<sub>6</sub> (23,900)\*. The amount of reduction includes that attained by equipment overhaul and dismantlement.

- \*2: The emissions reduction for Freons is converted into a relative value taking ozone depletion potential (ODP) per unit weight of CFC-11 as 1.
- \*3: Environmental load reduced in wastewater is converted by measuring each pollutant contained in the wastewater into the weight of COD\* standards in accordance with the environmental quality standards\*.

#### FY2003 calculation results

The environmental activity investments and costs<sup>\*</sup> for fiscal 2003 were 18.19 billion yen and 51.25 billion yen, respectively. Compared to fiscal 2002, the environmental activity investments decreased by 2.38 billion yen, while the costs increased by 9.54 billion yen, mainly due to the following:

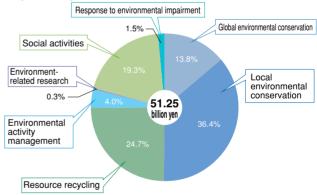
#### ♦Investments

Capital investment was reduced compared to fiscal 2002 because of the completion of major capital investments in facilities including the flue gas\* treatment facilities at Unit 2 of the Reihoku Thermal Power Station, which started commercial operation in fiscal 2003.

#### **⊘Costs**

Costs soared in fiscal 2002 due to the recording of depreciation related to fixed assets resulting from the start of commercial operation of the Reihoku Thermal Power Station Unit 2. Also, electric costs increased due to the dissemination and promotion of the use of new energy powers\*.

#### Environmental activity cost\* component ratio (FY2003)

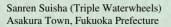


#### 4 Economic effects from environmental activities

Among the environmental activities, the real economic effects that lead to savings and income are shown below:

	(Unit: 100 million						
Environi activity of		Main activities	Quality of benefits				
Global environmental preservation	Global warming prevention	Fuel cost savings from improvement of thermal efficiency and the transmission/distribution loss* factor; and introduction of energy-saving, low-pollution vehicles	212.1				
Resource	Waste measures	Income from sale of unneeded supplies	1.7				
recycling	Waste reduction	Final disposal cost savings from recycling	37.4				
Savings statutory		Pollution load levy savings from SOx emissions reduction	15.5				
		Total	266.6				

\*Figures are rounded and may not add up to the total.



Asakura Town, Fukuoka Prefecture These Sanren Suisha, or triple waterwheels, were built about 210 years ago using the state-of-the-art technology of those days. They were utilized to channel water from the Chikugo River to farmlands in the Asakura district to save the area from the plight of draughts. The waterwheels are still in use to this day and are well-known as "the steam locomotive in rice paddies" for the tumbling sounds they make as they turn in unison, giving nostalgic feelings to the hearts of people. The triple waterwheels remind us of the importance of living in harmony with nature. 1

1.5

2004 Kyushu Electric Power Environment Action Report



## Our Commitment to Environmental Activities



1. Records and Targets of Environmental Load	18
2. Measures for Global Environmental Issues	19
3. Establishing a Recycling-oriented Society	24
4. Maintaining Harmony with the Local Environment	27
5. Working with Society	31
6. Environment-related Research and Development	- 36

## **Our Commitment to Environmental Activities**

## 1Records and Targets of Environmental Load\*

Kyushu Electric Power sets specific target values for their main environmental activities and endeavors to reduce environmental load.

	Item	Unit		Rec	cord		Evalu-	Interim	Target	Page	
	nem		FY2001	FY2002	FY2003	Interim Target <sup>*</sup>	ation	FY2004	FY2005	FY2006	i age
es*	CO <sub>2</sub> *emissions	10,000 t-CO2	2,660	2,570	2,390	Approx. 2,400	0	Approx.2,600*3	Approx.2,600**3	Approx.2,700*3	P19
issu	CO2emissions intensity*(End use electricity*)	kg-CO <sub>2</sub> /kWh	0.353	0.336	0.309*4	Approx. 0.32	0	Approx.0.34*3	Approx.0.34*3	Approx.0.34*3	P19
ental	Nuclear power operating factor*	%	79.7	85.9	88.9	86.2	0	84.4 <sup>*3</sup>	83.8 <sup>*3</sup>	Approx.85 <sup>*3</sup>	P19
Measures for global environmental issues $\overset{\star}{}$	Generated thermal efficiency at thermal power plants**5 (sent out thermal efficiency)*	%	[40.5]	[40.5]	39.2[40.8]	[Approx.40]	0	Approx.39*3 [Approx.40]	Approx.39*3 [Approx.40]	Approx.39 *3 [Approx.40]	P20
envin	Utilization of power generated from new energy sources*	million kWh	—	-	391 or more	391 or more	0	425 *or more	445 or more	472 or more	P20
bal e	Transmission/distribution loss factor*	%	5.2	5.5	5.4	5.5	0	5.5 <sup>*3</sup>	5.5*	5.5 <sup>*3</sup>	P22
r glo	Office power consumption	million kWh	108	108	106	104 or less	×	103 or less	102 or less	101 or less	P22
es fo	Low-emission*/fuel-efficient vehicle* introduction *7	%	3.5	5.0	11.8	10 or more	0	20 or more	25 or more	40 or more	P23
asure	SF6*recovery at equipment checkups	%	98	98	98	98 or more	0	98 or more	98 or more	98 or more	P23
Me	Regulated Freon* collection at equipment checkups	%	-	-	99	100	$\triangle$	100	100	100	P23
-bu	Industrial waste recycling rate*	%	75	74	92	90 or more	0	90 or more <sup>**</sup>	90 or more <sup>**</sup>	90 or more**	P24
ecyc	Coal ash* recycling rate*	%	68	68	90	90 or more	0	90 or more**	90 or more**	90 or more**	P24
ng a i d soc	Other waste* recycling rate*	%	96	97	99	98 or more	0	98 or more	98 or more	98 or more	P24
Establishing a recycling- based society *	Used paper* collection and recycling rate*	%	Approx. 50	100	100	100	0	100	100	100	P25
Esta	Green procurement**10	%	-	83	88	100	$\triangle$	100	100	100	P26
ony with nment	SOx*emissions intensity* per thermal power generated kWh	g/kWh	0.27	0.27	0.16	Approx.0.2	0	Approx.0.2	Approx. 0.2	Approx. 0.2	P27
Maintaining harmony with the local environment	NOx*emissions per unit output per thermal power generated kWh	g/kWh	0.22	0.22	0.18	Approx.0.2	0	Approx.0.2	Approx. 0.2	Approx. 0.2	P27
Maintair the loo	Sievert calculation in radiation measurement* on people living near nuclear power stations (per year)	mSv*	Less than 0.001	Less than 0.001	Less than 0.001	Less than 0.001	0	Less than 0.001	Less than 0.001	Less than 0.001	P28
Employee awareness enhancement	Number of qualified Persons for Energy Management of Type1 Designated Factory*	persons	682	783	870	500 or more	0	500 or more	500 or more	500 or more	P35
Employee enhan	Number of Pollution Control Managers*	persons	500	486	490	500 or more	$\bigtriangleup$	500 or more	500 or more	500 or more	P35

¥ 1 : The FY2003 achievement status of the interim target set for FY2003 is evaluated on a 3-level system: 🔿: fully achieved, 🛆: almost achieved (more than 80%) and X: yet to be achieved (less than 80%). ★2 : Target values set to evaluate the degree of achievement per year at interim points up to FY2006

\*2: Larget Values set to evaluate the degree of achievement per year at interim points up to FY2006
\*3: Prospects based on FY2004 power supply plans
\*4: CO2 emissions intensity was calculated separately for daytime and nighttime for the first time in FY2003. (See the table below.)
\*5: Subject of targets were changed from generated thermal efficiency to sent-out thermal efficiency to control power consumption including the reduction of internal electricity use for power generation at power stations (ratio of energy from the fuel used in the station). Figures of generation end efficiency are also given in brackets.
\*6: Target is revised according to the stating of the standard utilization value for FY2004 based on the Law on Special Measures Concerning New Energy Use by Electric Utilities (RPS Law).
\*7: The percentage of clean-energy vehicles (electric and hybrid cars<sup>4</sup>) and fuel-efficient vehicles<sup>4</sup> (vehicles that are in conformity with FY2010 fuel economy standards and that are low-

Targets are revised by taking into account both the status of those receiving coal ashes for utilization and the systematic landfill of the company's existing ash dump yard installed at <del>\*</del>8 the thermal power stations.

Estimation based on the records of some operational sites \*10 : Green procurement includes office and stationery supplies that are in conformity with socially-recognized standards

End use CO<sub>2</sub> emissions intensity<sup>\*</sup> in the davtime and nighttime (Unit: kg-CO<sub>2</sub>/kWh)

All-day	Daytime (8:00-22:00)	Nighttime (22:00-8:00)
0.309	0.333	0.267

#### Comparison of FY2003 achievements to those of past years

#### $\bigcirc$ Primary factors for the CO<sub>2</sub>\* emission decrease (by 1.8) million t-CO<sub>2</sub>) and emissions intensity\* (0.027kg-CO<sub>2</sub>/kWh)

Due to the implementation of constant cycling at rated thermal output as well as short shutdown periods for periodic inspection\*, the nuclear power capacity factor increased from 85.9% to 88.9%, resulting in an increased share of nuclear power generation from 45% to 47% in total generated electricity.

#### **⊘Primary factors for industrial waste\* recycling rate\* improvement** (18 points)

The recycling rate<sup>\*</sup> of coal ash, which accounts for 80%

of the industrial waste\*, increased from 68% to 90% in fiscal 2002, owing to the utilization of coal ash as cement material\* and cement admixtures\*.

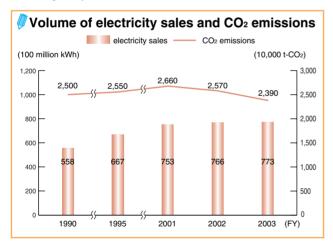
	FY2003 records				
	Comparison to previous year	Comparison to FY1990			
CO <sub>2</sub> emissions	1.8 million t-CO2 decrease	4% down			
CO2 emissions intensity	0.027kg-CO2/kWh decrease	31% down			
Industrial waste recycling rate	18-point increase	_			

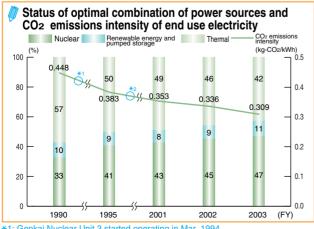
## <sup>2</sup> Measures for Global Environmental Issues\*

#### Measures taken on the power supply side for greenhouse gas\* reduction

 $CO_2^*$  comprises approximately 90% of the greenhouse gases<sup>\*</sup> emitted in Japan and approximately 25% of  $CO_2^*$  is attributable to the electric power industry.

- Kyushu Electric Power's CO2\* emissions in fiscal 2003 amounted to 23.9 million t-CO2\* or approximately 2% of the total amount of CO2\* generated in Japan.
- During the 13 years since fiscal 1990, Kyushu Electric Power's electricity sales increased by 40%, while CO<sub>2</sub>\* emissions have remained at 96%.
- This was due mainly to the balanced development of energy sources using nuclear power as the core resources, combined with LNG\* thermal, hydroelectric, geothermal and other natural energy sources\*. This was also due to the mitigation of CO<sub>2</sub>\* emissions per kWh through efforts to enhance the nuclear power capacity factor\* and overall thermal efficiency\* by applying highly-efficient thermal power facilities. Above all, the development of two nuclear power stations (2.36 million kW) greatly contributed to the reduction.





<sup>\*1:</sup> Genkai Nuclear Unit 3 started operating in Mar. 1994 \*2: Genkai Nuclear Unit 4 started operating in Jul. 1997

• Through these efforts, CO<sub>2</sub>\* emissions per kWh consumed by customers, i.e. CO<sub>2</sub>\* emissions intensity\* (end use electricity), decreased by 31% compared to fiscal 1990. This shows that the CO<sub>2</sub>\* emitted from general households was reduced by approximately 470kg-CO<sub>2</sub>\* per year compared to fiscal 1990.

Note: The above figures are estimated on the assumption that Kyushu's average power consumption of 280 kWh/month (fiscal 2003 records) under lighting contracts (Residential Lighting A and B) equals the electric consumption of general households.

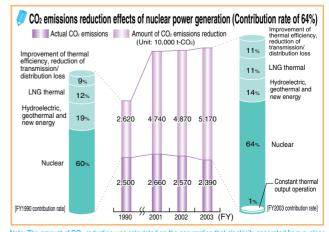
## Promotion of optimal combination of power sources focusing on nuclear power\*

Kyushu Electric Power is committed to CO<sub>2</sub>\* emission reduction through the optimal combination of power sources\* by promoting a balanced development of nuclear power, as the core, and other sources, placing the utmost emphasis on stability, economy and environmental conservation\* in power supply. In addition, the company works to develop and introduce new energy\* sources.

Nuclear power generation, which accounts for 47% of the total power generated, is a  $CO_2^*$  emission-free generation system and contributes greatly to the reduction of  $CO_2^*$  emissions. Improving the nuclear power capacity factor\* therefore leads to a reduction in the overall volume of  $CO_2^*$  emitted from the power supply.

The nuclear power capacity factor\* for fiscal 2003 was improved by 3.0 percentage points from the previous year, which resulted in a reduction of 1.8 million tons of CO<sub>2</sub>\* emissions. This is due mainly to constant cycling at rated thermal output\* (improved by 0.7 percentage point) and reduced shutdown periods for periodic inspections\* (improved by 2.3 percentage points) during the year.

However, we assume that CO<sub>2</sub>\* emissions will increase in the future since power demand grows slowly but constantly. Future nuclear power development is vital to achieve both CO<sub>2</sub>\*emissions reduction and a stable power supply.



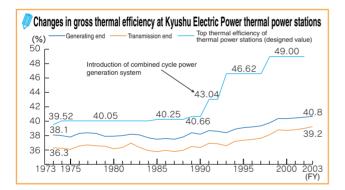
Note: The amount of CO<sub>2</sub> reduction was calculated on the assumption that electricity generated from nucl hydroelectric, new energy and LNG was produced only with thermal power generation excluding LNG.

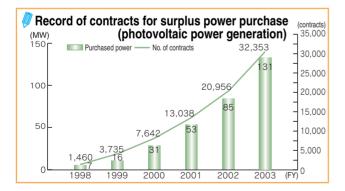
19

#### Improvement of power generation facility efficiency

Kyushu Electric Power strives to improve the thermal efficiency\* of its thermal power stations to use energy resources effectively.

- The thermal efficiency\* improvement of thermal power stations will decrease fuel consumption, resulting in a reduction of CO<sub>2</sub>\*, SO<sub>x</sub>\* and NO<sub>x</sub>\* emissions.
- The total thermal efficiency\* of thermal power stations in fiscal 2003 reached the highest level. This is attributed to the operational start-up of the new and the highly-efficient Reihoku Thermal Power Station Unit 2 and the greater use of power stations with high thermal efficiency including the Shin-Oita Power Station, which features the combined cycle power generation system\*.
- If the total thermal efficiency\* at Kyushu Electric Power's thermal power stations improves by one point, the company's annual emissions can be reduced by about 400 thousand tons of CO<sub>2</sub>\*.





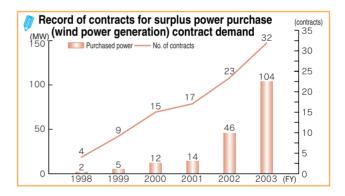
#### 2 Promotion of use of renewable energy sources<sup>\*</sup>

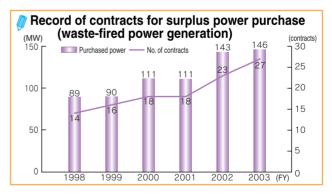
#### Promotion of wind and photovoltaic power generation

New energy\* sources such as wind and photovoltaic power are clean and inexhaustible energy, although there are still hurdles to be cleared. Obstacles include their high weather dependency, low energy density and high generation costs.

- Kyushu Electric Power has systematically installed wind and photovoltaic power plants and conducted experimental studies while implementing fuel cells development. The company also purchases electricity from suppliers and offers monetary support to suppliers who will install new energy\* facilities.
- Through the above efforts, the company's power generation utilizing new energy\* sources achieved 390 million kWh in fiscal 2003, the year's target value set out under the RPS\* (fully implemented in April 2003).

\*Renewable Portfolio Standard (Law on Special Measures Concerning New Energy Use by Electric Utilities)\*





NO.2) Efforts towards the acquisition of the EcoLeaf\* (environmental labeling) certification

Kyushu Electric Power is striving to acquire the EcoLeaf\* certification for the power supply provided for our customers. The EcoLeaf\* program is promoted by the Japan Environmental Management Association for Industry under the Ministry of Economy, Trade and Industry (METI). In the program, quantitative product information on environmental load, including CO<sub>2</sub> emissions, will be calculated by the LCA\* (life cycle assessment) method and will be released to the public after approval by independent verifiers appointed. Acquisition of EcoLeaf\* certification will help Kyushu Electric Power to promote the eco-friendliness of our electricity supply.

COLUMN

#### **⊘In-house installation of wind and photovoltaic** power generation facilities

Kyushu Electric Power has installed power generation facilities utilizing wind and solar power on its premises. The total capacity of all facilities reached 3,575 kW by the end of fiscal 2003.

		Installed capacity (kW)	Power generated (thousand kWh)	Capacity factor (%)
Wind	FY2002	$3,250$ $\langle 11 \text{ units} \rangle$	6,148*	21.6*
power	FY2003	$3,250$ $\langle 11 \text{ units} \rangle$	5,681	19.9
Photovoltaic	FY2002	$325$ $\langle$ 21 facilities $\rangle$	229	8.2
power	FY2003	$325$ $\langle$ 21 facilities $\rangle$	193	6.9

#### Wind and photovoltaic power generation

\*The sum includes 1,500kW generated from the trial run of five 300kW units, whose commercial operation started on March 20, 2003.

#### **OPurchase of electricity from customers**

Kyushu Electric Power purchases surplus electricity generated at customers' power generation facilities utilizing new energy\* sources, considering its environmental value in addition to its value as electricity.

- Conditions for purchasing surplus power<sup>\*</sup> generated by new energy\* sources were reviewed in April 2003 on the full enforcement of the Renewable Portfolio Standard\*. ee the company website for details: ww.kyuden.co.jp/company/kigyo/elec\_buy/index.html)
- Contract demand as of the end of fiscal 2003 consisted of 104 MW for wind generation (32 contracts), 131 MW for photovoltaic methods (32,353 contracts) and 146 MW for waste-fired power generation (27 contracts).

#### Promotion of geothermal and hydroelectric power generation

Both geothermal and hydroelectric power are valuable energy sources available in Japan. Power generation from these sources is  $CO_2^{\star}$  emission-free, eco-friendly technology.

- Kyushu Electric Power pursues the effective use of geothermal and hydroelectric power generation as use of such power sources inherently requires the alteration of the natural environment, while paying due attention to the conservation of natural landscapes and surrounding environments.
- Kyushu Electric Power's geothermal generation facilities consist of 38% of the national installed capacity, taking advantage of Kyushu's rich geothermal energy. Binary cycle power generation\* facilities, which can generate power with steam or hot water at lower temperatures than conventional systems, were installed at the Hatchobaru Power Station, which began operating for demonstration tests in February 2004.

#### $\bigcirc$ Support and subsidy for wind and photovoltaic power generation (Green Electric Power System<sup>\*</sup>)

Kyushu Electric Power actively promotes natural energy sources\* through contributions to the Kyushu Green Power Fund (founded in October 2000, managed by the Kyushu Industrial Advancement Center  $(KIAC)^*$ , which provides support to solar and wind power generation facilities.

• The Green Electric Power System attracted 12,126 shares as of the end of March 2004, which accounts for a participation ratio\* of 0.193%. This ratio is relatively high, which shows the Kyushu region is blessed with more sunshine and favorable wind conditions compared to the other regions in Japan. ted by dividing the number of shares

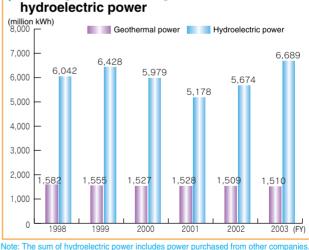
The participation ratio is calculated by dividir purchased by the number of electric light co

- Kyushu Electric Power decided to subsidize a total of approximately 154 million yen for a three-year period ending fiscal 2003.
- The company donates an amount equal to customer contributions (one share: 500 yen/month) in addition to promoting the system, receiving applications and withdrawing contributions from customers' bank accounts on behalf of the KIAC.



Kushizaki Wind Power Station in ( (1,980 kW, subsidized in FY2003)

Power generated with geothermal and



#### VOICE(2)



Tsuyoshi Takafuji

Our Group is engaged in conducting experimental studies on the binary cycle power generation facilities at the Hatchobaru Power Station (Kokonoe Town, Kusu, Oita Pref.) aiming for the practical use of the facilities. In binary cycle power generation, electricity can be generated with the use of steam or hot water at lower temperatures than those used in conventional systems. Israel provided most of the components for the facilities as well as specialists to assist in our installation. The facility installation

Commencing test operation of binary cycle power generation facilities for experimental studies



was implemented from August 2003 to February 2004, sometimes under the severe condition of Binary cycle power q freezing temperatures, and the operation for experimental studies finally began after the test run. Geothermal power can be fully obtained in Japan and is an eco-friendly source of power generation. We will make continuous efforts to make extensive use of geothermal energy

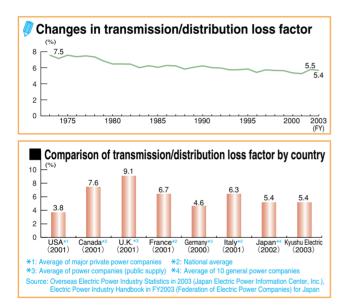
#### 3 Measures for energy conservation

Kyushu Electric Power believes that energy conservation is not simply a matter of making choices about energy reduction but of using energy efficiently and without waste.

#### Reduction of transmission/distribution loss\*

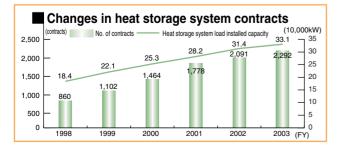
Kyushu Electric Power strives to conserve energy by reducing transmission/distribution loss\*, or the energy lost between power stations and customer premises.

• The transmission/distribution loss\* for fiscal 2003 improved by 0.1 percentage point from fiscal 2002.



## Encouraging the use of heat storage systems\* and heat-pump water heaters\*

Kyushu Electric Power encourages the use of heat storage systems<sup>\*</sup> and heat-pump water heaters<sup>\*</sup> to make energy use as efficient as possible. Increased use of the equipment, which utilizes nighttime electricity with lower CO<sub>2</sub><sup>\*</sup> emissions, contributes to a reduction in CO<sub>2</sub><sup>\*</sup> emissions. In addition, it helps to minimize the difference in power demand between daytime and nighttime (load equalization), resulting in the improved operational efficiency of power stations as well as a reduction in distribution and transmission loss<sup>\*</sup>. The company also provides useful information to our customers, including consultation on the efficient use of energy to promote energy conservation.



#### **⊘Heat storage system**★

• Through heat storage systems\*, the cold and thermal energy necessary for air conditioning in buildings and factories is stored in a heat storage tank in the form of ice or warm water by using cost-effective nighttime electricity and is used during the daytime. The number of contracts for such heat storage systems\* at the end of fiscal 2003 was 2,292, with a total load installed capacity of 331,000 kW.

#### ◇Heat-pump water heater\*

• "Eco-Cute\*" is a heat-pump type electric water heater\* using CO2\* found in the environment as refrigerants. It is three times as efficient as conventional water heaters and achieves high economical benefits by utilizing nighttime electricity. This is a water heater of the 21st century that realizes energy conservation and coexistence with the natural environment.

#### Conserving energy in everyday business operations

All employees at Kyushu Electric Power practice energy saving in their everyday work practices.

#### **Reducing power consumption in offices**

Energy conservation activities are conducted both in terms of electricity usage (e.g. switching off unnecessary lights) and facility improvement (e.g. modifying office equipment).

- We have set energy-saving targets by fiscal 2006 (with an annual reduction of 1%) and are working towards achieving these targets.
- Office energy consumption in fiscal 2003 was 106 million kWh, a 2.6% decrease from the previous year.
- We strive to implement measures to reduce energy consumption wherever possible. Such measures include the use of highly-efficient lighting, modification of air-conditioning equipment and more energy-conscious use of air-conditioning.

#### ◇Power consumption reduction achieved by offices and power stations (33 sites)

Power consumption reduced (FY2003)							
Power consumption reduced (kWh)	Reduction rate (%)						
450,078	1.2						
Note: Reduction rate is calculated by t power consumption in the offices							
Outline of measures							
Air-conditioning	Lighting						
1) Flow rate adjustment of 8H system cool/hot water pumps	1) Replacing induction lighting						
<ol> <li>Change of water temperature sent to refrigerating machines</li> </ol>	2) Partial replacement of lighting systems						
<ol> <li>Control of 24H system hot water pumps with inverters</li> </ol>	3) Replacement to downlight luminaries at customer service counters						
<ol> <li>Cutoff of discharged air while operating at pre-cooling/heating mode</li> </ol>	4) Attachment of motion sensors to restrooms						
5) Control of volume of CO2 in discharged air	_						
Note: Measures considered effective are	implemented specifically at each site.						

We implemented such measures at nine operational sites of the Kumamoto Branch Office in fiscal 2002 and at another 24 sites throughout the company in fiscal 2003.

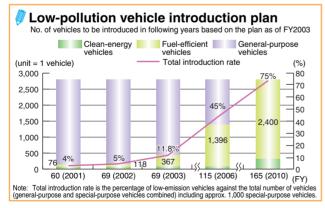
#### **◇Introduction of low-pollution vehicles**\*

Kyushu Electric Power has introduced clean-energy and fuelefficient vehicles\*.

- We plan to increase the total rate of clean-energy and fuel-efficient vehicles<sup>\*</sup> in the company fleet and reach 20% by fiscal 2004 and 40% by fiscal 2006.
- We also aim to achieve an introduction rate of 5% for clean-energy vehicles in the company fleet by fiscal 2010.
- By fiscal 2003, we have introduced in the company 367 low-emission vehicles\* and 69 clean-energy vehicles\* (electric cars\* / hybrid cars\*), accounting for 9.9% and 1.9% in the fleet respectively, resulting in the combined introduction rate of 11.8%.



Clean-energy vehicle (an electric car)



#### 4 Reduction of SF6\*(sulfur hexafluoride) gas emissions

Kyushu Electric Power uses the greenhouse gas\* SF6\* for insulation in some of its electrical equipment and takes cautions not to release this gas into the atmosphere when the equipment is overhauled.

• The use of SF6<sup>\*</sup>, which provides excellent insulation, is indispensable because there are no other effective insulating gases.

- Due to the introduction of gas recovery equipment, the SF6\* gas recovery rate (reutilization rate) during overhauls improved from 40% in fiscal 1997 to 98% in fiscal 2001 and onwards. In fiscal 2003, 358,000 t-CO2 of SF6\* was recovered.
- The SF6\* gas recovery rate on the equipment dismantlement recorded 99% for fiscal 2003, and 38,000 t-CO<sub>2</sub> of SF6\* was recovered.

#### SF6 gas recovery during overhauls in FY2003

	Figures in pa	arentheses shows CO2 converte	ed volume.
	SF6 gas used	SF6 gas recovered	Recovery rate
At equipment introduction	15.24 tons (364,000 t-CO2)	15.00 tons (358,000 t-CO <sub>2</sub> )	98%
At equipment introduction 15.24 to	1.61 tons (38,500 t-CO <sub>2</sub> )	1.60 tons (38,300 t-CO2)	99%

\*Figures are obtained by converting the volume of SF6 gas to the volume of CO2 by applying the global warming potential\* for SF6 (23,900).

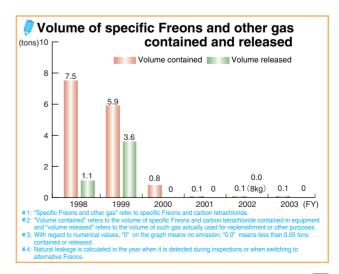
#### 5 Towards Kyoto Mechanism\* utilization

The Kyoto Mechanism<sup>\*</sup> is expected to complement domestic measures to reduce greenhouse gas<sup>\*</sup>. Kyushu Electric Power has joined the World Bank's Prototype Carbon Fund (PCF)<sup>\*</sup>, aiming to obtain expertise in the use of the Kyoto Mechanism<sup>\*</sup> in advance.

#### Ozone layer\* protection

Kyushu Electric Power takes measures to stop depletion of the ozone layer\* through reducing emissions of specific Freons and other gas\*.

- Kyushu Electric Power's emissions of specific Freons\* and carbon tetrachloride\* have been zero since fiscal 2000, except for a minute amount of natural leakage. These achievements were made possible by preventive measures, such as washing work clothes in a washing machine instead of dry cleaning and changing generator refrigerants to alternative Freons.
- Future tasks include ensuring the collection of regulated Freons\* upon equipment inspections and removals and installing regulated Freon\*-free equipment upon replacing or introducing new equipment.



## 3 Establishing a Recycling-Oriented Society\* – Challenges towards "Zero Emissions\*"

Kyushu Electric Power endeavors to achieve zero emissions\* by enhancing awareness company-wide.

- The company is practicing the "Three R's\*" (Reduce,
- Reuse and Recycle) for general\* and industrial waste\*.
   Kyushu Electric Power's group companies\* also take measures to establish a recycling-oriented society\*. They actively promote waste recycling such as used paper\*.

confidential documents and used fluorescent tubes, as

See P41

#### 1 Enhancing employee awareness

well as the green procurement system<sup>\*</sup>.

Kyushu Electric Power endeavors to achieve zero emissions\* by enhancing awareness company-wide.

- The "Environment Handbooks" providing easy-tounderstand explanations for achieving zero emissions were distributed to all employees in March 2002.
- Four variations of zero emissions\* promotion posters have been printed for the offices (Head/Branch Offices), customer service offices and power stations to raise employee awareness. Posters designed for customers have also been made and displayed in the reception areas of each customer service office.
- Employees are invited to create slogans, which are displayed on promotional posters to enhance awareness on zero emissions\*. (1,212 slogans were collected and 2,406 employees voted electronically for the best slogans.)



#### Zero emissions slogans

Grand Prize	Don't throw it out! Your soul goes out with your garbage.
First Prize	Rethink about our precious resources and our planet's future.
	Good endeavor for all: separate garbage, cut waste, and keep the planet clean.
Excellence	Properly separated garbage becomes a precious resource.
1 1120	Let's recycle! Let's separate garbage! Let's cut waste! Keep it up!

#### 2 Industrial waste\*

Industrial waste\* generated by Kyushu Electric Power's operations includes coal ash\*, gypsum\* from desulfurization facilities\*, sludge\* from wastewater treatment, scrap metal and discarded concrete poles.

#### **Measures for "Reduce"**

At thermal and nuclear power stations, the intervals between equipment inspections are extended to reduce the number of parts (seals, bearings and gaskets) to be replaced. Intervals for changing equipment lubricating oil are also extended to reduce the amount of waste oil.

#### Measures for "Reuse"

For the materials and equipment removed during power distribution works or other engineering works, decisions are made as to whether they have sufficient capability and quality to be reused based on the company's criteria. We promote the reuse of reusable materials both as they are and after being repaired.

#### Measures for "Recycling"

The overall industrial waste\* generated in fiscal 2003 was approximately 590,000 tons, maintaining the same level since fiscal 2000. We recycled 540,000 tons of industrial waste in fiscal 2003, which are equivalent to 1% of the amount of annual waste for final disposal in Japan.

(White Paper on the Environment for Fiscal 2004 shows that the volume of annual waste for final disposal in Japan totaled 42 million tons.)

• The overall recycling rate\* was recorded at 92%, improved by 18 percentage points from fiscal 2002. This was mainly because the recycling rate\* of coal ash\* which accounts for 80% of industrial waste increased from 68% in fiscal 2002 to 90% due to effective reuse in cement materials (clay substitute), cement admixtures and ameliorant (sand substitute).

#### COLUMN (NO.3) No collection for Unseparated combustible waste bins!

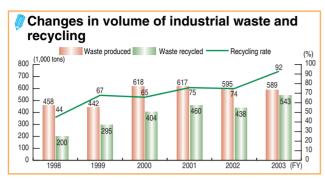
Zero emissions

promotion poste

Kyushu Electric Power utilizes special warning cards to promote strict control over separate collection of used paper\*, cans, bottles and plastic bottles. When separate collection of waste began, reusable waste, which should be disposed of in the designated collection boxes for recycling, was often disposed of in combustible waste bins. In every day collection of combustible waste, no collection should be permitted for the bins containing recyclable waste, and the bins were left uncollected with the warning cards attached for reminder to enhance awareness of separate collection. Only after such waste is properly separated for recycling, are the bins emptied on the following day. Although the cards were frequently used at the introduction of this measure, the use of cards is rare.



Warning card to promote separate collection



Industrial waste by category at Kyushu Electric Power (FY2003)

		Waste produced (tons)	Amount recycled (tons)	Recycling rate
	Coal ash	460,028	415,366	90%
	Heavy and crude oil ash	121	112	93%
	Gypsum*	99,969	99,969	100%
ste	Sludge <sup>*</sup>	5,521	5,423	98%
waste	Waste oil	1,998	1,946	97%
	Waste plastic	288	159	55%
ustr	Scrap metal	9,533	9,133	96%
industrial	Discarded concrete poles	10,651	10,651	100%
Other	Waste glass and ceramics	668	240	36%
ð	Industrial waste subject to special control	6	2	33%
	Other waste	61	23	38%
	Subtotal	128,815	127,658	99%
	Industrial waste total	588,843	543,023	92%

\*Figures are rounded and may not add up to the total.

#### 3 General waste\*

The general waste\* resulting from Kyushu Electric Power's operations includes used paper\*, empty cans and bottles, plastic bottles and kitchen garbage.

#### Measures for "Reduce"

The amount of used paper<sup>\*</sup> generated is minimized through double-sided photocopying, avoiding miscopying and utilization of electrical documents, as well as by reducing the use of paper cups.

#### **Measures for "Reuse"**

The blank-side of used paper\* and used stationery including document files are utilized.

#### Measures for "Recycling"

#### **⊘Used paper\***

In April 2002, Kyushu Electric Power began to make companywide efforts to achieve the used paper\* recycling rate\* of 100% by ensuring the recycling routes.

 A total of 1,875 tons of used paper\* was generated, collected and fully recycled during fiscal 2003.

#### Collection of used paper at Kyushu Electric Power (FY2003)

Type of used paper	Amount collected (tons)
Newspapers*1	350
Magazines	44
Cardboard	61
Confidential documents	515
Others*2	904
Total	1,875

\*The grand total contains round off error. \*1: May include the volume of magazines and cardboard collected.

\*2: Others include used photocopy paper and envelopes

- Through the efforts, the used paper\* recycling rate\* improved from approximately 50% in fiscal 2001 to 100% in fiscal 2003.
- A portion of the collected used paper\* is recycled by Kyushu Environmental Management Corporation to produce photocopy paper, paper string and toilet rolls with Kyushu Electric Power's corporate logo.



Products made from collected used paper

#### **⊘Other general waste\***

Recycling of other general waste<sup>\*</sup> is actively encouraged.

- Bottles, cans and plastic bottles are collected separately.
- Shells collected at power stations and driftwood collected at dams are efficiently utilized, and the volume of kitchen
- garbage discharged from cafeterias is reduced or composted.
- Old and worn work clothes are collected for recycling.



Garbage disposer installed at Nagasaki Branch Office

25

#### Organizing recycling as a business

With the cooperation of its group companies, Kyushu Electric Power actively promotes waste recycling businesses.

#### Fluorescent tube recycling business

#### Japan Recycling Light Technology & System

- Japan Recycling Light Technology & System collects used fluorescent tubes from companies, schools, local governments and households, and recycles them after separating, crushing, and dissolving into raw materials including glass, metals and fluorescent phosphorous. The reclaimed materials are made into fluorescent tubes, glass products, roadbed, aluminum, steel and cement materials and refined mercury.
- Group companies\* of Kyushu Electric Power also participate in the recycling of used fluorescent tubes and sent 95,000 fluorescent tubes to Japan Recycling Light Technology & System for recycling in fiscal 2003.



#### 5 Promotion of green procurement\*

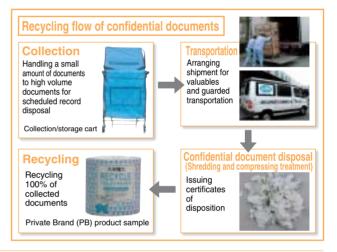
Kyushu Electric Power introduced the green procurement\* system in fiscal 2001 as a measure to promote the establishment of a recycling-oriented society\*. Under the system, the company gives greater priority to purchase environment friendly goods in procurement of office and stationery supplies and electricity related materials and equipment.

- Environmental aspects are emphasized when purchasing goods, in addition to economic considerations such as quality, price and delivery time of the goods. Kyushu Electric Power encourages the use of eco-friendly goods by cooperating with suppliers to promote environmental activities.
- As a rule, the company selectively purchases commodities such as office and stationery supplies with EcoMark\* or other socially recognized environmental labels\* under the purchase guidelines prescribed for each of the eight

#### **Confidential document recycling business**

#### Kyushu Environmental Management Corporation

- Under strict security, Kyushu Environmental Management Corporation recycles confidential documents and deals with collecting, transporting, shreding and compressing such documents. The company also provides storage services for confidential documents under a thorough on-line security system.
- Kyushu Electric Power group companies\* also promote recycling of used confidential documents and sent approximately 1,520 tons of such documents to Kyushu Environmental Management Corporation for recycling in fiscal 2003.



categories: miscellaneous goods, fixtures and furniture, electric appliances, stationery other expendables, printing, office equipment and clothing The rate of green procurement\* in fiscal 2003 reached 88%.



- In order to further commit ourselves to green procurement\*, we issued and distributed the "Green Catalog" in April 2004 to provide information company-wide on eco-friendly products in April 2004.
- Criteria was established to help reduce the environmental load\* of electricity related materials and equipment. The materials and equipment that are in conformity with the criteria are listed as "green products" and given priority in purchasing. Two items were listed as "green products" in fiscal 2003.

#### **VOICE** (3)



Purchase Planning and International Procurement Group, Materials and Fuels Dept. Akinobu Fukumaru

#### Publication of the "Green Catalog," an eco-friendly goods brochure

We have been making every effort to reach 100% achievement of green procurement in purchasing office and stationery supplies. However, various questions were raised concerning the purchase of supplies (e.g. types and availability of eco-friendly goods). Thus, we issued and distributed the "Green Catalog" in order to meet such needs and to help promote green procurement by providing information on eco-friendly products. While upgrading the catalog contents, we will work towards publishing an electronic catalog in the future.

## Maintaining Harmony with the Local Environment

Kyushu Electric Power actively takes measures to protect the environment of local communities. Initiatives such as environmental impact assessments\* prior to the construction of its power stations, environmental conservation during power facility operation and proper management are taken, as well as measures for maintaining harmony with the local environment.

#### Environmental (impact) assessment\*

In accordance with the Environmental Impact Assessment Law<sup>\*</sup>, Kyushu Electric Power conducts a survey on the natural (sea, land and air) and social environment prior to the construction of power stations. The environmental impact likely to be caused by such construction is then estimated and evaluated in advance, and appropriate measures are taken to protect the environment in the vicinity of power stations.

- Kyushu Electric Power started environmental assessments\*
  - and geological and meteorological research and observations in October 2003 in order to consider the planned expansion of the Sendai Nuclear Power Station based on the results.



search on insects and small animals

#### 2 Prevention of air, water and noise pollution

In operating its power stations and other facilities, Kyushu Electric Power conforms not only to laws and regulations, but also to environmental conservation agreements\*, concluded with related local governments with regard to air, water and noise pollution as well as vibration.

#### Measures against air pollution\*

Using the best technology in the world, Kyushu Electric Power takes measures to address smoke\* emission from its thermal power stations.

• Kyushu Electric Power's fiscal 2003 emissions intensity\* (emissions per kWh thermal electric power production) was 0.16 g/kWh for sulfur oxide\* (SOx\*) and 0.18 g/kWh for nitrogen oxide (NOx\*), which represent a substantial decrease from fiscal 2002 in both SOx\* and NOx\*. This is mainly due to the fact that old-type coal-fired thermal power stations with high emissions intensity\* generated less amount of electricity.

#### **◇SOx\*** reduction measures

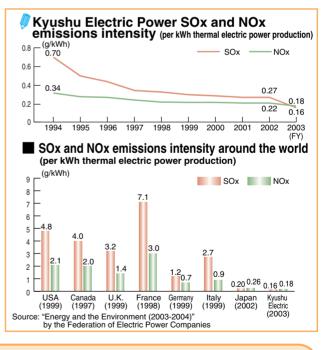
- Use of heavy and crude oil with a low sulfur content Promotion of the use of liquefied natural gas<sup>\*</sup> (LNG<sup>\*</sup>) that does not contain sulfur
- Installation of desulfurization facilities\* that remove SOx\* from exhaust gas
- Adoption of the in-furnace desulfurization method, which removes SOx\* within the boiler\*

#### **NOx\*** reduction measures

- Combustion method improvement including boilers Adoption of the two-stage combustion method\*
- Adoption of the exhaust gas recirculation combustion method\*
- Adoption of low NOx<sup>\*</sup> burners
- Installation of denitration facilities<sup>\*</sup> that remove NOx<sup>\*</sup> from exhaust gas

#### **Operational Production Measures**

- Promotion of LNG<sup>\*</sup> use that does not generate particulate<sup>\*</sup>
- Installation of high efficiency precipitators\* that remove particulate\* from exhaust gas



#### COLUMN (NO.4) Tsukabaru Dam registered as a Tangible Cultural Property

In March 2004, Tsukabaru Dam (Saigo Village and Morotsuka Village, Miyazaki Prefecture) was added to the list of Japan's Registered Tangible Cultural Properties (Buildings). The system for Japan's Registered Tangible Cultural Properties (Buildings) was established in 1997 to protect cultural properties (buildings) which are not designated as national or municipal cultural properties but would require special attention to preserve and utilize them for their values. The system encourages property owners to apply voluntary care and protection to their cultural properties designated as a Registered Tangible Cultural Property. Tsukabaru Dam, 87 meters high, was the highest gravity type dam in Japan when it was built in 1938, and also the first dam constructed using mechanical technology. Patterned bridge railing situated at the top of the dam and turrets at both ends bring up the image of the Great Wall of China and a medieval castle in Europe,



Tsukabaru Dam

respectively; and therefore, the dam has received high acclaim and recognition in terms of its design. In 2001, the dam was nominated for Early-Modern Civil Engineering Heritage in Japan by the Japan Society of Civil Engineering. We, Kyushu Electric Power will maintain Tsukabaru Dam as a tourism resource and educational tool in cooperation with local governments.

#### Water quality control

- Wastewater from premises including equipment and facilities is processed using special wastewater treatment systems at all of the company's thermal and nuclear power stations. The treated wastewater is discharged after confirming its quality.
- Quality analysis is conducted regularly for water in reservoirs at hydroelectric power stations. The water quality is maintained by measures such as the treatment of freshwater red tide\* with ultraviolet rays, selective water intake\* when water is turbid, and ensuring the health of neighboring forests.

#### Measures against noise and vibration

 Kyushu Electric Power addresses noise and vibration problems by adopting low-noise, low-vibration equipment, installing mufflers and soundproofing walls, and by installing noiseproducing equipment indoors.

#### 3 Environmental protection management

Kyushu Electric Power's power stations are strictly managed to ensure environmental protection by means of environmental monitoring and chemical substance control.

#### Environmental monitoring\*

- Continuous monitoring using environment supervisory instruments
- Video camera monitoring
- Patrol monitoring
- Regular measurement and analysis
- Reporting environmental data to the authorities
- The company strictly manages the environment surrounding its power stations in cooperation with relevant municipalities and neighboring businesses.

#### Environmental monitoring for radioactivity\* surrounding nuclear power stations

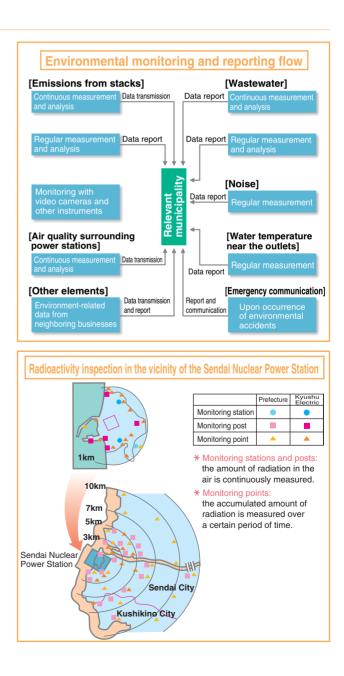
The amount of radiation<sup>\*</sup> in the air near power stations and samples of seawater and agricultural and marine products is measured. Similar measurements are also performed in the prefectures where nuclear power stations are located.

- Kyushu Electric Power reports the measurement results to the related prefectural authorities. The authorities in turn review and evaluate the reports under the guidance and advice of academic experts and publicize the findings in PR magazines.
- The radiation dosage for people living near power stations is less than 0.001 mSv\* per year. This is much lower than the statutory dosage limit of 1 mSv\* per year and also lower than the annual 0.05 mSv\* target set by the Nuclear Safety Commission.

#### Measures against land pollution

• Kyushu Electric Power strictly abides by the laws and regulations on land pollution to avoid discharge and leakage of toxic substances into the ground. The company conducts voluntary surveys on soil contamination for sites sold or purchased by the company, to avoid the risks of land pollution.

Based on survey results released by the government, Kyushu Electric Power conducted a groundwater contamination survey in possibly contaminated areas in the vicinity of the companyowned land. The findings revealed that the groundwater was free from contamination attributable to Kyushu Electric Power.



#### Radioactive waste\* management

Radioactive waste\* includes low-level radioactive waste\* generated from nuclear power stations and high-level radioactive waste\* resulting from spent fuel reprocessing. Both require different management and disposal methods.

#### **⊘Management of low-level radioactive waste\***

• Radioactive waste in gas or liquefied form is discharged into the air or sea after being treated, measured for radioactivity, and confirmed as safe. The influence of such discharge on our power stations' surrounding environment is within the range of natural radiation.

#### Discharge status of radioactive gaseous and liquid waste

Discharge status of radioactive gaseous and liquid waste (Unit: Bq)										
			Targeted value	FY1998	FY1999	FY2000	FY2001	FY2002	FY2003	
	Noble	Genkai NPS	2.2×10 <sup>15</sup>	3.1×10 <sup>11</sup>	2.9×1010	1.1×10 <sup>10</sup>	8.8×10 <sup>9</sup>	1.2×10 <sup>10</sup>	9.9×10 <sup>9</sup>	
Gaseous	gases	Sendai NPS	1.6×10 <sup>15</sup>	3.7×10 <sup>10</sup>	6.7×10 <sup>10</sup>	3.1×10 <sup>10</sup>	1.5×10 <sup>10</sup>	1.6×10 <sup>10</sup>	3.1×10 <sup>10</sup>	
waste	Iodine	Genkai NPS	5.9×10 <sup>10</sup>	3.9×10 <sup>6</sup>	N.D.	N.D.	N.D.	N.D.	N.D.	
	Iouine	Sendai NPS	6.2×10 <sup>10</sup>	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	
Liguid waste (e		Genkai NPS	1.4×10 <sup>11</sup>	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	
Liquiù waste (e.		Sendai NPS	7.4×10 <sup>10</sup>	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	

\*NPS: Nuclear Power Station

\*1: Bq (becquerel) shows the concentration of radioactivity.

\*2: N.D. stands for the values less than detectable critical concentration.

• Concentrated treated wastewater is solidified with asphalt and sealed inside metal drums.

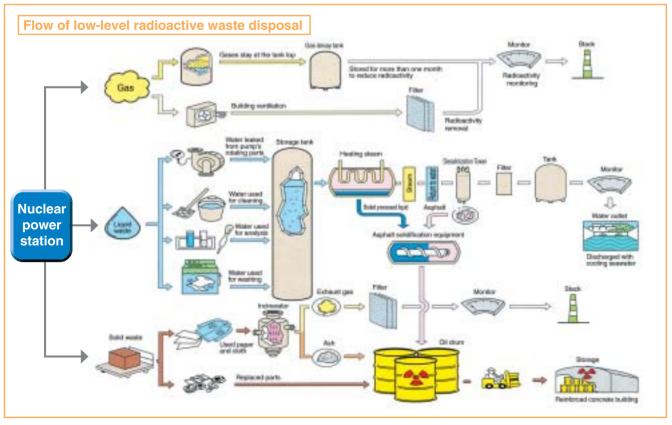
• Solid waste is first bulk-reduced by incineration and/or compression and sealed inside drums. These drums are first stored stringently in the solid waste storage located within the power station site. The drums are then transferred to the Lowlevel Radioactive Waste Disposal Center\* of Japan Nuclear Fuel Limited\* in Rokkasho-mura Village, Aomori Prefecture. They are buried and kept there until the waste ceases to have

an effect on the living environment.

#### Solid radioactive waste storage status

		(Unit: a 200-liter drum)
	Waste stored in power station sites	Waste transferred <sup>*</sup>
Genkai NPS	20,480(19,934)	6,536 (6,536)
Sendai NPS	11,173(10,150)	_
Total	31,653(30,084)	6,536 (6,536)

\*NPS: Nuclear Power Station \*Figures are the cumulative totals as of the end of FY2003, and figures in Parentheses are totals as of the end of FY2002. \*Amount transferred to the Low-level Radioactive Waste Disposal Center\*



#### Chemical substance control

Most chemical substances handled by Kyushu Electric Power are for use at thermal or nuclear power stations and are properly managed at each site in full accordance with related laws and regulations.

#### PRTR\* investigation results (FY2003)\*

#### **OPRTR**\*(Pollutant Release and Transfer Register) system Kyushu Electric Power has taken the initiative in investigating, collecting and disclosing data on specific chemical substances' emissions and amounts transferred.

V												
Index		<b>A</b> 11 11		Amount	Amount released into environment				*2 Amount	FY2002 records (reference)		
No	Chemical substance	Applications	Unit	handled	Air	Water	Soil	Landfill	transferred	Amount handled	Amount released	Amount transferred
30	Bisphenol A type epoxy resin $\star$	Coating material for equipment	kg	1,100	22	0	0	0	0	_	—	—
40	Ethylbenzene*	Coating material for equipment	kg	3,800	3,800	0	0	0	0	_	—	—
63	Xylene*	Coating material for equipment	kg	16,000	16,000	0	0	0	0	5,600	5,600	0
179	Dioxins*	Waste incinerator	mg-TEQ <sup>*3</sup>		49	0	0	0	2.1	—	54	34
227	Toluene*	Coating material for equipment	kg	2,800	2,800	0	0	0	0	—	—	—
253	Hydrazine*	Feed water processing agent	kg	29,000	1.5	0	0	0	0	30,000	1.5	0
304	Boron and boron compounds $\star$	Reactivity control in nuclear reactors	kg	3,200	0	0	0	0	0	2,200	0	0
353	Tris phosphate (dimethyl phenyl) $\star$	Turbine control	kg	7,600	0	0	0	0	7,600	7,100	0	7,800

\*1: Calculated for one ton or more of Type I Monitoring Chemical Subsutances\*, or 0.5 tons or more of Type I Monitoring/Designated Chemical Subsutances\* handled by operational sites annually (Effective digit: 2). All dioxins are calculated regardless of the amount.
 \*2: Amount transferred as waste \*3: Since the toxicity of dioxins differs according to types, values are expressed in toxicity equivalent quantity (TEQ)\* in 2, 3, 7, 8-T4CDD.

N.B. 1: Since FY2002, under the Law Concerning Reporting, etc. of Releases to the Environment of Specific Chemical Substances<sup>+</sup> and Promoting Improvements in Their Management (full enforcement in Apr. 2001), enterprises are required to report to the government the quantity and management of specific Chemical Substances<sup>+</sup> and Promoting Improvements in Their Management (full enforcement in Apr. 2001), enterprises are required to report to the government the quantity and management of specific Chemical Substances that are emitted and transferred for the record and management.
N.B. 2: Under the PRTR (Pollutant Release and Transfer Register) system, operators keep track of the amount of each chemical substance subject to PRTR that is released during operational activities and of the amount transferred as waste. These results are then reported. This system serves to promote voluntary management efforts by operators together with society as a whole, fostering countermeasures against the environmental risks imposed by such chemical substances.

#### ◇Dioxins\*⁄⁄⁄

Kyushu Electric Power is reducing the use of waste incinerators, which are believed to contribute to dioxins<sup> $\star$ </sup> emission. As for the boilers installed at thermal power stations, only small amount of dioxins\* are emitted because fuel contains little chlorine, and high combustion temperatures are secured by an appropriate management system to help process them effectively.

- The company discontinued the use of 39 incinerators in fiscal 2002, and one waste incinerator in fiscal 2003, leaving seven waste incinerators in operation as of the end of fiscal 2003.
- Currently, six of the above seven incinerators are not being used. The remaining incinerator's emission levels meet all standards stipulated by the Law Concerning Special Measures against Dioxins, enforced in January 2000.

#### Harmony with the surrounding environment

When designing facilities, Kyushu Electric Power places a high priority on the natural environment and urban landscapes of its surrounding areas and implements environmentally friendly measures such as tree planting in addition to environment protection activities.

• Kyushu Electric Power has been promoting the underground power distribution system that enables safe and pedestrian-friendly pavement, the revitalizing of local communities and urban landscape protection. The company has been implementing systematic installation of such a distribution system, based on the "Underground Distribution System Installation Plan" (FY1986 -1998) and the "New Underground Distribution System Installation Plan" (FY1999 - 2003) with the cooperation of road administrators, related local authorities and distribution line administrators since fiscal 1986. Through these efforts, underground distribution lines having a total length of 497 km have been installed mostly along main roads in urban areas of the company's service area.

#### **OPCB** (polychlorinated biphenyl)\*

- Equipment utilizing PCB<sup>\*</sup> (1,512 high-voltage transformers, capacitors and others) is kept in special storage areas at Kyushu Electric Power under strict surveillance.
- Kyushu Electric Power plans to treat the equipment and render it harmless by 2016, the deadline set by the Law Concerning Special Measures against PCB\* Waste, effective as of July 2001.
- The national investigation committee has been discussing the causes for and the basic policies for countermeasures concerning a minute amount of PCB\* that enters equipment (equipment with a trace of PCB<sup>\*</sup>). Since the causes and the equipment with a trace of PCB<sup>\*</sup> have not been specified yet, the company conducts PCB examinations as a preventative measure to detect the presence of PCB\* when handling insulation oil such as equipment dismantlement. The dismantled equipment detected with a trace of PCB\* is kept in designated storage areas under strict control.

In the future, Kyushu Electric Power will continue its efforts to expand the underground distribution system to other roads based on the "Pole-free Power Distribution Promotion Plan" (FY2004 -2008) to harmonize with the surrounding environment.

#### Underground distribution system installation status

	Underground Dis	stribution System	Installation Plan	New Underground Distribution System Installation Plan	
	1st period (1986-1990)	4th period (1999-2003)	Total		
Underground distribution line installed (km)	97	73	117	210	497

Landscape before/after the system installation (Fukuoka City)





## **5**Working with Society

Kyushu Electric Power cooperates with local communities through environmental activities such as the promotion of environment PR<sup>\*</sup>, environmental businesses in alliance with NGOs<sup>\*</sup>, as well as global-scale environmental activities including providing technical cooperation to developing countries.

#### Communication

Kyushu Electric Power makes a concerted effort to disclose environmental information to the public through its Environment Action Reports, study tours and lectures, as well as through the media. The company also maintains communication with the public by listening to their opinions.

#### Lectures

Every year lecturers and talks about the environment and energy issues are held for the general public during Environment Month\* (June), and the communication promotion campaign\* (October).

- During Environment Month<sup>\*</sup>, lectures were held at two operational sites for the general public with a total attendance of 502 people.
- Kyushu Electric Power also sent lecturers on five separate occasions to give lessons on the environment and energy at elementary and junior high schools or to local municipality symposiums. These activities attracted about 380 people in total.

#### ♦ Let's think about forest conservation (held at the Buzen Power Station)

The Buzen Power Station hosted a lecture on forest conservation at

which an external specialist provided insights on the importance of forest protection and on the status of forestation activities. 102 participants attended.



Lecture at Buzen Power Station

#### Study tours

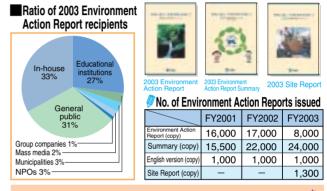
Kyushu Electric Power organizes for the general public study tours of our facilities, including power stations and the Genkai Energy Park to introduce the company's commitment to dealing with environmental issues, as well as to enhance public understanding of the development and effective use of nuclear power as a means of addressing global warming<sup>\*</sup>.

 In fiscal 2003, a total of about 120,000 people participated in the study tours of our facilities, including the Genkai Nuclear Power Station and the Sendai Nuclear Power Station.

## Promoting communication on environmental issues through the Environment Action Report

Kyushu Electric Power has issued the Environment Action Report since 1996 to make the company's environmental efforts open to the public. The Report is distributed to municipalities and educational institutions in Kyushu.

• In fiscal 2003, the Matsuura Power Station launched a new effort to publish the first edition of the Site Report aiming to build close communication with the local community.



Promoting communication on environmental issues by the "Eco Mothers\*"

Kyushu Electric Power aims to promote communication with mothers sensitive to environmental issues and responsible for environmental education in the home. In fiscal 2003, the company launched a new environment PR\* system by means of the "Eco Mothers\*," who assume responsibilities as intermediaries on environment and energy issues between the Company and the general public.

- Seventeen Eco Mothers\* (approximately two persons per prefectural capital and Kitakyushu City) visit places where children and parents gather. This program is designed to provide information on environmental issues to raise awareness, to help support environmental conservation in the local community, and also to listen to opinions and requests about the company's environmental activities with the assistance of the Eco Mothers.
- In fiscal 2003, Eco Mothers\* took part in environmental education at 45 locations including kindergartens, nursery schools and children's gatherings, hosting a total of 61 environmental talks and picture-card shows and attracting 2,840 children and parents.
- From parents and teachers who participated in the Eco Mothers' activities we received feedback expressing that they felt a sense of closeness since the Eco Mothers share their perspective, and that the Eco Mothers contributed greatly to making the first step in the environmental education\* of children.

See P60 for opinions on Eco Mothers' activities Picture-card sh

#### VOICE(4)



Miyoko Baba

#### Joining Eco Mothers activities

I joined the Eco Mother's Club because I became interested in environmental issues when my children started to learn about such issues at elementary school. When reading to children, I try to be creative to use various tones of voice and a special hand-made "apron theater" to attract their attention and stimulate interest. Their teachers are often surprised to hear the children speak words like CO<sub>2</sub> so naturally after the reading. At present, children are the main participants of our activities, but we will also offer opportunities for their parents to join in the future. It is my pleasure to encourage more and more children to be interested in environmental issues through our activities.

#### 2 Community activities

Kyushu Electric Power is dedicated to promoting environmental activities through the Kyushu Homeland Forestation Program and Car Sharing\* Project. At the same time, the company organizes Environment Month\* to support environmental activities through participation and support in various community programs.

## Planting one million trees under the Kyushu Homeland Forestation Program

To commemorate its 50th anniversary, Kyushu Electric Power began the Kyushu Homeland Forestation Program in fiscal 2001 to plant one million trees at sites throughout Kyushu in 10 years. Approximately 330,000 trees have been planted in the last three years.

• As public interest on global warming\* and other

environmental issues\* increase, the potential storage capacity of carbon by forests attracts attention. Other functions of forests are being rediscovered; forests can be fully utilized for land conservation (water source cultivation, sediment discharge prevention), species of wild fauna and flora conservation, and as a place for nature-based experiences.

nature-based experiences.

Under the circumstances, Kyushu Electric Power actively supports the Kyushu Homeland Forestation Program as a company-wide program, aiming to help the greening of the local environment as well as to enhance awareness of environmental issues. Under the program, 100,000 trees will be planted each year with the cooperation of local communities to plant a total of one million trees in 10 years

• years.

The program is supported by the participation of Green Helpers\*, volunteers who have basic knowledge and

#### Environmental education\* support

Following the intensive interest in environmental issues, there is an increasing need for environmental education\*, which is organized by cooperating educational institutes, local communities, and business entities. To satisfy such needs through supporting environmental education\* in community and school activities, Kyushu Electric Power hosts naturerelated classes and programs in the forest surrounding Onagohata Dam (Amagase, Oita Pref.).



olunteers participating in Forestation of Onagohata

COLUMN NO.5 Participation in the Green Helper Training

Kyushu Electric Power has been supporting the Green Helper Training since fiscal 1998 to provide the basic knowledge and skills on greening and forestation to volunteers, in cooperation with an NPO<sup>\*</sup>, the Interchange Association for Promoting Forestation.

- 11 seminars were held in seven areas (Kumamoto, Fukuoka, Saga, Oita, Miyazaki, Kagoshima, and Nagasaki) by fiscal 2003, in which a total of 550 people participated. Those who completed the training program have formed the Green Helpers' Clubs in their areas, are engaged in the local forest conservation activities, as well as supporting the Kyushu Homeland Forestation Program.
- Training sessions will be held in the Kitakyushu and Miyazaki areas in fiscal 2004.
- The company also supports the Forestation Program for 100 Years, a citizen's activity to restore forests in urban areas, promoted by the Interchange Association for Promoting Forestation.



rowing saplings by Green Helpe

#### V O I C E (5)



Forestation of Onagohata participants

Mayumi Kayoda and her children Wakana, Sakura and Kurumi

precious experience to plant and water saplings sincerely wishing their steady growth!

We decided to join the tree planting held in Onagohata, wondering what would happen in the program. When arriving, we were amazed by the number of people gathered at the site and realized that so many people seriously think about the environment. We learned how to hold saplings, where to plant them and how many years they take to grow into trees. Through these lessons, we could not help admiring the forests that had formed over many years surviving typhoons and severe weather. Planting saplings was harder than we had imagined. Soaked with sweat and covered with mud, we were absorbed in tree planting, hoping for their steady growth. Our children seemed to feel a sense of affection for the saplings they planted and said that it is easy to disrupt nature in a moment but it takes years and years to build it. A picnic after the hard work while listening to the sounds of nature was extremely refreshing and sheer enjoyment for us. I am very much looking forward to both the growth of the forest and our children who wish to come back to Onagohata again to see the trees they first planted.

#### **Environment Month\* in FY2003**

Kyushu Electric Power is actively promoting voluntary activities including tree planting and cleaning the community.

#### **♦**Tree planting

As part of the greening activities, 4,718 saplings were planted at 20 operational sites.

• A total of 48 participants comprised of staff members of the Nagasaki Branch Office and family members planted 1,000 azaleas (Rhododendron sp.) at Inasayama Park.

#### **◇Voluntary activities**

Kyushu Electric Power was involved in various voluntary activities such as cleaning local communities, stocking rivers with fry young fish, and opening community farms on the power station premises to the public.





Tree planting at Inasayama Park (Nagasaki City, Nagasaki Pref.)

Cleanup of Nakagawa Shrine surroundings (Takeda City, Oita Pref.)

# • Members of 84 operational sites cleaned roads, rivers and coasts around their premises, and 43 sites joined cleanups led by local governments. The Takeda Customer Service Office of the Oita Branch Office conducted cleaning of the surrounding area of Nakagawa Shrine in Takeda City in cooperation with the local residents' association.

- Four sites organized fry releases. Together with pupils of 16 Ishikawagawa Elementary School (Kijyo Town), members of Omarugawa Power Station Construction Office stocked the Omarugawa River 600 eels and 1,500 crabs.
- Community farms and greenhouses on the company premises at three sites were opened to the public. The Karita Power Station invited 80 children from Aoitori Nursery School and 50 children from Sumire Kindergarten to pick potatoes grown on the company farm.





Fry releasing in Omarugawa strea (Kijyo Town, Miyazaki Pref.)

Potato picking at Karita Power Station

Supporting Car Sharing\* Project

In October 2002, Kyushu Electric Power started a car sharing\* project in Fukuoka City using electric and low-pollution vehicles\* in collaboration with Fukuoka City and environmental NGOs\*.

Under the car sharing\* scheme, people become a member of the organization that takes charge of the management and operation of cars to share a car instead of possessing their own cars. The scheme can help to reduce emissions and traffic jams. Kyushu Electric Power supports the scheme by covering the cost of introducing 14 vehicles and by developing an unattended hiring out system, as well as by analyzing the status of vehicle use and supporting promotional activities including test drives.



Test run at Shiobaru Statior

#### COLUMN (NO.6

#### Striving towards acquisition of the FSC Certificates\*

Kyushu Electric Power strives to acquire certificates issued by the Forest Stewardship Council (FSC), an environmental NGO\* based in Mexico, for the appropriate management of company-owned forests that contribute to CO<sub>2</sub> sequestration. The FSC certification system was established in 1993 as a measure to halt the diminishment and deterioration of the world forests by promoting sustainable forest management. Of the FSC Certificates, the Forest Management (FM) Certificates\* are issued, to enterprises that meet the FSC approved standards of forest management while the Chain of Custody (COC) Certificates\* are issued to label timbers and wood products originating from woodlands that are authorized to be managed in an environmentally appropriate manner. We hope that acquisition of the FSC Certificates will enhance employees' awareness about environmental conservation through appropriate forest management.



Company-owned forest at Lake Yamashita (Yufuin Town, Oita Pref.)

#### International cooperation

Kyushu Electric Power actively promotes information exchange with overseas electric suppliers and international business in the field of electric generation, while sending specialists and receiving trainees through JICA and other organizations. To tackle environmental problems, the company has been conducting research and transfer of technologies that contribute to the reduction of CO<sub>2</sub> emissions.

- The 7th International Electricity Chief Executives Summit was held in Los Angeles in March 2004. The Summit is designed to gather the executives of the Edison Electric Institute (EEI) of the United States, the International Union of Producers and Distributors of Electrical Energy (UNIPEDE), and the Federation of Electric Power Companies of Japan and provide an opportunity for them to discuss the business environment and other topics of mutual interest to electricity suppliers. At the 7th Summit, "Climate Change and Sustainable Development" was posed as the environment-related theme. Shingo Matsuo, President of Kyushu Electric Power, delivered a talk on the status of and issues to be solved regarding the country's efforts to halt global warming\*. He also gave a presentation on the importance of establishing a common framework that enables developed and developing countries to actively participate, utilizing the Kyoto Mechanism\* and the need for innovative technological development such as carbonfree hydrogen energy systems in the long-range perspective. The electric companies in Japan, the U.S. and Europe that have been promoting international businesses individually confirmed the importance of pursuing further advancement and transfer of technologies through joint development.
- Kyushu Electric Power strives to expand its business overseas while prioritizing environmental conservation, such as building high-efficient thermal power stations to reduce CO<sub>2</sub> emissions.
- The company conducts research abroad on CO<sub>2</sub> sequestration by trees.

See P64 for research on CO2 sequestration by trees.

#### 4 Employee awareness enhancement

Kyushu Electric Power trains employees and provides varied information on environmental activities to enhance the environmental awareness of each employee.

#### **Training and lectures**

In-house training programs are held for employees. The programs feature lectures or talks on environmental issues by lecturers invited from within and outside the company.

- In fiscal 2003, a total of 347 employees joined seven environmental training programs tailored to different needs in each department and career.
- A total of 105 employees joined lectures that were given by the Environmental Affairs Dept. held at three operational sites.
- During Environment Month\*, special lectures were given by in-house and external instructors at 18 operational sites to which 514 employees attended.
- At the Shinkokura Power Station, 45 employees attended a lecture on air pollution\* delivered by a staff member of the Kitakyushu City government.
- At the Head Office, an outside expert gave a lecture on the theme "Environmental activities enhance the company's brand value," which 154 employees attended.



Lecture at Head Office

#### **Environmental activity logotype**

To symbolize the company's environmental activities in April 2004, Kyushu Electric Power introduced a logotype, which is widely used on the company's brochures and information materials.

- Employees were invited to create logotypes from the point of enhancing employee awareness and 40 logotypes were voted for.
- The four-leaf clover stands for Kyushu Electric Power Group\*'s four fields of business: integrated energy supply, information and telecommunication, environment-related and recycling businesses, and services to enhance the quality of living. The stem is designed

in the shape of an "e," which represents energy and ecology.

The logotype symbolizes the company's determination to promote environmental activities through concerted efforts of Kyushu Electric and its group companies.



#### Fostering specialists for environmental measures

The company helps employees to obtain qualifications such as "qualified person for energy management of Type 1 designated factories\*" by establishing systems to assist with correspondence education fees or by providing allowances to employees who obtain publicly-recognized licenses and qualifications\*.

- A total of 870 employees were qualified as a qualified person for energy management of Type 1 designated factories\* as of the end of fiscal 2003, an increase of 87 managers than the previous year.
- The company encourages its employees to obtain the internal qualification of environmental auditor, a position to monitor whether the environmental management system\* at each operational site is appropriately administered and maintained, and report to management the results and the asks for improvement. In fiscal 2003, 286 employees obtained the internal qualification of environmental auditor by participating in seven training programs. These training programs were offered by lecturers dispatched from Kyushu ISO Certification-/Registration Organization\*, which is a group company serving as an organization certifying/registering ISO 14001\* (environmental management system.\*)

🦉 No. of qualified employees (cumulative total)							
	FY2002	FY2003					
Qualified Person for Energy Management of Type1 Designated Factory*	783	870					
Pollution Control Manager*	486	490					
Industrial Waste Intermediate Treatment Facility Engineering Controller $\star$	131	137					
Industrial Waste Final Disposal Site Engineering Controller*	52	52					
Internal Environmental Auditor*	210	496					

#### Providing information

Kyushu Electric Power regularly provides employees with environment-related information by broadcasting domestic and international environmental news through company televisions, in newsletters, and by making full use of the intranet.

#### **◇"Environment Digest" newsletter**

Contents of the monthly newsletter are as follows:

- Social trends and news on environmental issues
- Information on measures newly introduced by the company

## V O I C E (6)

#### Designing the environmental activity logotype



Ryuta Samukawa

In designing the logotype, I chose a four-leaf clover to symbolize the four fields of business which Kyushu Electric Power Group engages in. I also hoped to illustrate the company's environmental activities to be a measure that brings good luck, as people cherish a four-leaf clover as a good luck charm. All Kyushu Electric Power employees should be aware of environmental issues in each field of work under the company's comprehensive system for environmental activity promotion. I hope my logotype will further raise the awareness of each staff member. At first, I created it just to entertain myself, but the adoption of my design as the environmental activity logotype has offered me a great opportunity to get involved in the company's environmental activities.

- Information on special environmental events held by the copany and other organizers
- Essays from people engaged in environmental activities



#### **Characteristic Sector**

The website is utilized as a communication tool with employees to enhance personnel's awareness on environmental issues and to promote environmental activities, as well as to support management and guidance of environmental managers<sup>\*</sup>.

- Information on compliance\*
- Environmental
- activities conducted Enquiry
- Liquity
- Information on environmental issues



#### Award system

Kyushu Electric Power has established an award system\* to motivate employees to devote themselves to the local community. The system aims to encourage employees' active commitment to local communities and communication with them.

• In fiscal 2003, 22 employees received awards. The award-winning contributions included patrolling the community at night to help sound development of the youth, coaching *kendo* (Japanese fencing) to boost its popularity, as well as organizing activities to foster the youth.

#### Support social contribution

Kyushu Electric Power encourages employees' social contribution by setting up a volunteer leave system<sup>\*</sup>.

#### Use of volunteer leave (FY2003)

	Social services	Community services	Sports and cultural activities	Donation (bone marrow donor registry)	Total
No. of people	133	19	37	1	190
No. of days	177.5	31.0	74.5	0.5	283.5

## **6** Environment-related Research and Development

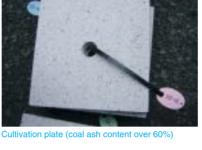
## Research on CO<sub>2</sub>\* sequestration and water purification by algae community

It is generally known that algae forms a community and functions to purify water, adjust CO2\* levels and foster the growth of marine animals. However, due to various reasons including global warming\*, rocky-shore denudation, which is a sudden decrease in algae communities, has become a grave issue. Kyushu is one of the areas where severe damage from this problem has been observed. Kyushu Electric Power is conducting research on sea grass cultivation technology as a possible solution to this problem. The technology utilizes a cultivation plate made of coal ash\* from coal-fired thermal power plants and aims for the rehabilitation of the natural environment through reparation and creation of an algae bed.

## Research on CO<sub>2</sub> sequestration by trees

The CO<sub>2</sub>\* Absorption and Sequestration Method<sup>\*</sup> using the photosynthesis of plants (trees) is a protective measure against global warming\*. Research to date on melia azedarah\*, one of the tree species having an excellent CO2\* absorption ability in warm regions. involved the selection of superior family lines<sup>\*</sup>, the development of technology for mass propagation by tissue culture\*, and trial planting of seedlings obtained by tissue culture<sup>\*</sup> on the company land. Based on their growth, their CO2\* absorption ability was confirmed (average tree growth in height in three years was approximately 2 m/year/tree).

In fiscal 2003, Kyushu Electric Power started to build on these research results and establish technology for





Cultivation progress

environmental forestation at home and abroad that would bring about CO2\* sequestration contributing to the implementation of the Kyoto Mechanism\*. As part of such endeavors, Kyushu Electric Power worked on the development of forestation technologies, aiming to participate in overseas forestation projects, particularly forestation in Loess Plateau in Shanxi Province, China, located in a similar range of latitude to Japan.



Loess Plateau where no forests are seen (Shanxi province, China)

#### V O I C E (7)



Research Group Manager Agricultural Product Cultivation Group, Bioresources Research Center, Research Laboratory

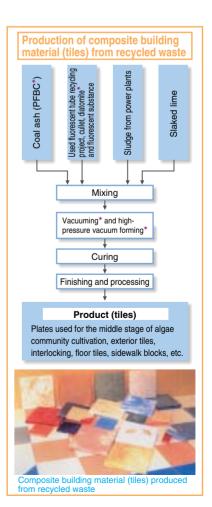
Kenji Kamiwaki

#### I'm dreaming of a green China!

We, the Bioresources Research Center, mainly focus on research related to living creatures and the environment. The main part of our research is to examine how creatures would react to unusual conditions when environmental elements such as the amount of water or sunlight are intentionally changed, and to try to make use of the outcome in growing crops or beneficial organisms<sup>\*</sup>. The research makes me realize there are close and inseparable relations between living creatures and the environment. We will continue to tackle global environmental conservation by applying our accumulated melia *azedarah*-related forestation technologies particularly, to the expected forestation in China and Indonesia.

#### **Research on eco-materials**

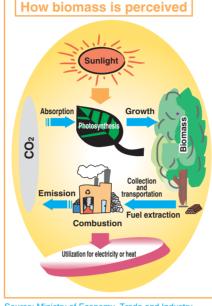
With raised awareness towards environmental issues such as air pollution, ozone layer\* depletion, global warming and increasing waste over recent years, the Basic Law for Establishing a Recycling Based Society\* came into complete effect in January 2001. In this context, Kyushu Electric Power is proceeding with the construction of a production system based on complete recycling, by which waste from the production process is recycled and used as a material for another production. Kyushu Electric Power has developed technology for the production of environmentally friendly, composite building material (tiles) from recycled waste, and is conducting research towards its commercialization. The waste utilized includes coal ash\* from coal-fired thermal plants, sludge\* from wastewater treatment facilities and cullet\* from used fluorescent tubes.



#### **Research on biomass\*** power generation

Biomass\* refers to "organic substances which are of plant or animal origin that may be utilized as an energy source, except for fossil fuels." This ranges from agricultural resources and waste such as debris from thinning and rice husks, to food waste, construction waste, sludge from sewer systems and animal fertilizer.

Utilizing biomass\* as an energy source helps reduce CO2 and makes the most of the waste. Kyushu Electric Power engages in research on how and in what areas the biomass\* utilization technology could be used effectively.



Source: Ministry of Economy, Trade and Industry

#### What is biomass?

Organic substances that are of plant or animal origin and may be utilized as an energy source, except for fossil resources

#### Significance as energy

- 1) Biomass is a carbon-neutral\*, renewable energy\*,and can contribute to greenhouse gas reduction by replacing fossil fuels
- 2) By newly utilizing an untouched biomass, the diversification of energy sources may be achieved.

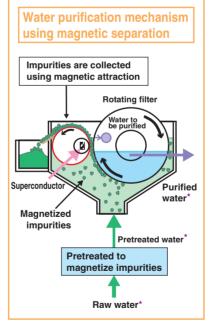
#### Challenges

- 1) Biomass is distributed sparsely in wide areas and has a low energy density per volume; thus, the collection and transportation of the resources may become a burden.
- 2) It is likely to be a small-scale dispersed power generation facility and to achieve high efficiency and low-cost systems will be difficult without scale merit.

#### Research on water purification with magnetic separation\* technology

When phytoplankton has overgrown in lakes, dams and reservoirs containing highly eutrophied\* water, and the water environment may be adversely affected by such a phenomenon. Under these circumstances, development of water purification technologies is greatly expected in order to purify such eutrophied water by quickly and effectively removing causative agents from the eutriphied water.

Aiming for the establishment of a water resource cycle, Kyushu Electric Power engages in research on magnetic separation technologies to get rid of substances from unpurified water by applying high magnetic property\* of superconductors\*.





Water purification equipment (prototype)



Water before and after purification process

#### VOICE (8)



Takashi Nagafuchi

#### Water purification technology promises the restoration of the beautiful nature in Kyushu island!

We have mainly worked on the development of the superconducting magnetic energy storage system (SMES)\* that will contribute to a reduction in power transmission costs. In recent years, owing to advancements or improvements in superconducting materials and the downsizing of cooling systems, more accessible application of superconducting magnetic technology is expected. As a matter of fact, the magnetic separator system introduced in this page, is still in the experimental phase. We, the Power Storage Engineering Group, will work hard to enhance and complete the related technologies through ongoing research activities, and hope that the magnetic separator system will be able to help protect the water environment in and outside Japan in the near future.

#### Water Supply from Tsujunkyou Bridge Yabe Town, Kumamoto Prefecture

Table Town, Kumamoto Prefecture Tsujunkyou Bridge, a stone aqueduct bridge, was built in 1854 to supply water to the Shiraito Plateau suffering from a water shortage. This bridge uses water from upstream of the Sasahara River about 6 km away to irrigate rice paddies in this volcanic ash highland. The water-discharge is designed to help prevent the aqueduct from clogging and can be observed year round except during the rice planting season. This bridge is a masterpiece of the Edo period craftsmanship that we cannot help admiring. This is a "bridge of life" that we need to preserve for future generations, together with water, our vital resource. 2004 Kyushu Electric Power Environment Action Report



## Kyushu Electric Power Group's Environmental Activity Progress



- 1. Environmental Management Framework ---- 40
- 2. Outline of Fiscal 2004 Environmental Activity Plan
- 3. Fiscal 2003 Environmental Activity Records 42

41

- 4. Major Steps by Kyushu Electric Power Group\* for Environmental Conservation 48
- 5. Business Outline of the 40 Kyushu Electric Power Group Companies 50

# Kyushu Electric Power Group's Environmental Activity Progress

The Kyushu Electric Power Group\* engages in the general energy business as its mainstay utilizing its technologies and expertise. The Group also pursues a wide range of businesses including information and telecommunications, environment and recycling, and lifestyle services. Recognizing environmental conservation as its social responsibility, the Kyushu Electric Power Group\* works together on environmental activities in all of these business areas.

## Environmental Management\* Framework

#### Environment Philosophy and Environment Policies

The Kyushu Electric Power Group\* has established an "Environment Philosophy" stating the principle of the Group's commitment to environmental activities, and "Environment Policies" that clarify specific guidelines to implement such activities.

#### **Environment Philosophy**

The Kyushu Electric Power Group recognizes the importance of environmental conservation consciousness in every aspect of energy supply and other businesses, and works towards the realization of an affluent society and better global environment.

#### **Environment Policies**

- 1 We fulfil our social responsibility by complying with all environmental conservation laws and regulations.
- 2 For the creation of a recycling-oriented society, we work to reduce the environmental load\* through the effective use of energy and resources as well as the recycling of waste.
- **3** We tackle all environmental issues aggressively and contribute to society through continuous environmental activities.
- **4** We disclose environment-related information and work for improved communication with society.

May 2002

#### 2 Environmental management<sup>\*</sup> promotional scheme

The Group Management Association and the Group Environmental Management Promotion Subcommittee, which hold 40 member group companies, actively promote environmental management\* in the Kyushu Electric Power Group.\* In concrete, they plan and approve the Group\*'s Environmental Activity Plan to give each company guidance to carry out environmental activities, to analyze and evaluate the activities of each company annually, and to develop the plan for the next fiscal year based on the results. The method of the PDCA Cycle<sup>\*</sup> is applied to facilitate the Group's effort to enhance its environmental management.

Of the 40 group companies, 14 group companies that newly joined the Subcommittee in fiscal 2003 have been developing an environmental management framework and establishing effective measures to acquire knowledge of environmental load\* substances to subsequently participate in the Group's Environmental Activity Plan. The number of Kyushu Electric Power Group\* companies has decreased from 41 to 40 because two of the group companies have merged into one company.







Group Environmental Management Promotion Subcommittee (held on March 16, 2004)

## **2** Outline of Fiscal 2004 Environmental Activity Plan

Before March 2004, the Kyushu Electric Power Group\* issued its Environmental Activity Plan for fiscal 2004 after deliberation and upon approval of the Group Environmental Management Promotion Subcommittee and the Group Management Association.

The fiscal 2004 Kyushu Electric Power Group<sup>\*</sup> Environmental Activity Plan includes specific activities featuring four major activities based on the following Environment Policies:

1) to reinforce environmental management in consideration of global environmental issues<sup>\*</sup>, 2) to pursue a recycling-oriented society<sup>\*</sup>, 3) to work with the local community in environmental activities and 4) to promote pro-active disclosure of environment-related information.

In fiscal 2004, we will pursue the enhancement of our environmental activities while making continued efforts to follow-up on fiscal 2003 activities.

#### Outline of Fiscal 2004 Kyushu Electric Power Group Environmental Activity Plan

# Reinforcement of environmental management in consideration of global environmental issues

Conformity with laws and regulations	<ul> <li>To properly operate and manage environmental load<sup>*</sup> substances based on relevant laws and regulations</li> <li>To enforce strict observance of laws and regulations in order to consolidate compliance management</li> </ul>
Better management of environmental targets	<ul> <li>To standardize solid and accurate understanding of data on environmental load</li> <li>To increase the number of companies setting their own targets</li> <li>To determine measures to achieve the Group's unified targets by checking the status of each group's target achievements</li> </ul>
Formation of environmental management framework	<ul> <li>To maintain and strengthen environmental management of each group company</li> <li>To develop environmental activities using guidelines set for various environmental activities</li> <li>To further promote environmental accounting</li> </ul>

### Establishment of a recycling-oriented society

Encouraging recycling	<ul> <li>To encourage recycling of confidential documents and fluorescent tubes</li> <li>To raise rates of paper recycling, recycled paper use and industrial waste recycling</li> </ul>	
Promoting green procurement	<ul> <li>To control purchases of commodities with green products at prices equivalent to those of previous supplies</li> <li>To expand the scope of green procurement to supplies other than commodities within the means of each group company</li> </ul>	

# Implementation of environmental activities in cooperation with the local community

Participation in a planting activity of the "Kyushu Homeland Forestation Program"

Offering environmental education	<ul> <li>To offer joint training for environmental management and environmental activities</li> <li>To hold environment-related seminars</li> </ul>
	• To organize study tours to model corporations with advanced environmental activities

## Proactive disclosure of environment-related information

Regular sharing of environment- related information among group companies	• To consolidate and stimulate environmental activities by sharing environment-related information by maximizing the Kyushu Electric Group's information network	
Enforcing disclosure of information on environmental activities by group companies	• To introduce more Group achievements in the Environment Action Report	

## 3 Fiscal 2003 Environmental Activity Records

#### Promotion of environmental management<sup>\*</sup> in the Kyushu Electric Power Group<sup>\*</sup>

#### Conformity with laws and regulations

The Kyushu Electric Power Group\* seeks to ensure appropriate operation and management of controlled environmental load\* substances\* in compliance with the relevant laws and regulations.

#### >PRTR Svstem⁺

The Kyushu Electric Power Group\* conducts investigation and data collection of released and transferred amounts of specific chemical substances and voluntarily discloses the results.

PRTR investigation results (FY2003) (Unit: kg												
Index	Chemical	Major		Amount	Amount	released in	to the env	ironment	Amount	FY2002	records (re	ference)
No.	substances	application	Company	handled	Air	Water	Soil	Landfill	transferred	Amount handled	Amount released	Amount transferred
1	Water-soluble zinc compounds*	Hot dip galvanizing	Nishi Nihon Denki Tekkou Co., Ltd.	1,405	72	0	0	0	73,003	1,280	72	88,995
40	Ethyl benzene*	Coating	Kyushu Meter & Relay Engineering Corp.	1,087	1,087	0	0	0	0	1,453	1,453	0
43	Ethylene glycol*	Coolant	Nishinippon Environmental Energy Co., Inc.	4,992	4,992	0	0	0	0	6,263	6,263	0
63		ene* Coating	Kyushu Meter & Relay Engineering Corp.	5,171	5,171	0	0	0	0	5,413	5,413	0
03	Aylerie^		Coaling	KYUHEN Co., Inc.	1,700	1,700	0	0	0	0	2,300	2,300
144	Dichloropentafluoropropane*	Parts cleaning	Kyushu Meter & Relay Engineering Corp.	2,475	2,475	0	0	0	0	-	-	-
227	Toluene*	Coating	Kyushu Meter & Relay Engineering Corp.	4,289	4,289	0	0	0	0	5,698	5,698	0
230	Lead and its	Hot dip galvanizing	Nishi Nihon Denki Tekkou Co., Ltd.	3,942	0	0	0	0	88	4,480	46	27
compounds*	Soldering	Nishimu Electronics Industries Co., Ltd.	-	_	_	_	-	-	1,600	0	1,600	
311	Manganese and its compounds*	Welding	KYUHEN Co., Inc.	1,000	0	0	0	0	60	-	-	-

#### PRTR investigation results (FY2003)

#### \*The above data was provided by 26 initial members of the Group Environmental Management Promotion Subcommittee. \*Substances handled weighing one ton or more annually are listed above

**PCB\* (polychlorinated biphenyl)** PCB\* stored in Kyushu Electric Power Group\* are kept at special storehouses under strict control. The Group plans to render it harmless by the 2016 deadline, according to the Law concerning Special Measures against PCB\* Waste (effective from July 2001).

#### PCB storage status (FY2003)

Equipment using PCB	Amount	Management status	Companies possessing PCB	Amount in FY2002 (reference)
Transformer	57 units	11 units in use; 46 units stored under strict control	Kyudenko Co., Inc.; TOBATA CO-OPERATIVE THERMAL POWER COMPANY, INC.; Oita Co-operative Thermal Power Company, Inc.; DENKI BLDG. CO., LTD.	46 units
Capacitor	94 units	2 units in use; 92 units stored under strict control	Nishinippon Plant Engineering and Construction Co., Ltd.; Kyuden Sangyo Co., Ltd.; Kyushu Rinsan Co., Inc.; Kyudenko Co., Inc; KYUKI CORPORATION; Kyushu Meter & Relay Engineering Corp; Koyo Denki Kogyo Co., Ltd.; KyUHEN Co., Inc.; Kyushu Koatsu Concrete Industries Co., Ltd.; Nishi Nihon Denki Tekkou Co., Ltd.; TOBATA CO-OPERATIVE THERMAL POWER COMPANY, INC.; Oita Co-operative Thermal Power Company, Inc.; Nishimu Electronics Industries Co., Ltd.; DENKI BLDG. CO., LTD. Kyushu Highlands Development Co., Ltd.;	93 units
Stabilizer	531 units	All units stored under strict control	Nishinippon Plant Engineering and Construction Co., Ltd.; Kyuden Sangyo Co., Ltd.; Kyudenko Co., Inc.; TOBATA CO-OPERATIVE THERMAL POWER COMPANY, INC.; Oita Co-operative Thermal Power Company, Inc.; DENKI BLDG. CO., LTD.	493 units
Others	1 unit, 369ℓ, 27 kg	1 unit in use; 369ℓ, 27kg stored under strict control	Kyuden Sangyo Co., Ltd.; Kyudenko Co., Inc.; Oita Co-operative Thermal Power Company, Inc.; DENKI BLDG. CO., LTD.	1 unit, 369ℓ, 27kg

\*The above data was provided by 26 initial members of the Group Environmental Management Promotion Subcommittee.

#### $\bigcirc$ SOx<sup>\*</sup> and NOx<sup>\*</sup>

The Kyushu Electric Power Group signed the environment conservation agreements with local governments and works to comply with the agreement accordingly.

#### SOx and NOx emissions from power generating facilities (FY2003)

Name of companies		Installed		Records				Agreement with local governments		FY2002 records (reference)	
and u	canacity		Fuel used	SOx(	ppm)	NOx(	(ppm)	SOx (ppm)	NOx (ppm)	SOx (ppm)	NOx (ppm)
		[MW]		Max.	Mean	Max.	Mean	SOX (ppm)	NOX (ppin)	Ma	ax.
Tobata Co- operative Thermal Power Company, Inc.	Unit 2	156	Mostly coal	22	10	36	15	25	40	Not measured	89
	Unit 3	250	Mostly LNG	Not measured because emissions were 10m <sup>3</sup> /h or less		76	57	34	80	because emissions were 10m³/h or less	73
	Unit 4	375	Mostly LNG			18	14	38	19		17
Oita Co- operative	Unit 1	253	Mostly byproduct gas	292	47	179	42	326	180	299	163
Thermal Power Company, Inc.	Unit 2	253	Mostly byproduct gas	300	49	179	41	326	180	301	172

\*The records are the maximum (Max.) and mean values for the year. \*The Air Pollution Control Law\* does not require measurement of SOx emissions of 10m<sup>3</sup>/h or less \*The Unit Two of TOBATA CO-OPERATIVE THERMAL POWER CO., INC. implemented the fuel conversion in fiscal 2003.

#### 

The Kyushu Electric Power Group\* ensures the recovery of Freons and Halons during repairs and inspections of equipment that uses them, thus minimizing their emissions into the air.

#### Freons and Halons emissions (FY2003)

Type Main use		Amount contained	Consumption	Companies handling them		(reference)		
		containeu			Amount contained	Consumption		
Specific Freons*	Air conditioning, refrigeration	8.1	0.0	Nishinippon Environmental Energy Co., Inc.; DENKI BLDG. CO., LTD.	4.3	0		
Alternative Freons*	Air conditioning, refrigeration, parts cleansing	46.0	4.1	Nishinippon Plant Engineering and Construction Co., Ltd.; Kyuden Sangyo Co., Ltd.; Kyushu Rinsan Co., Inc.; Kyudenko Co., Inc.; Kyuken Co., Ltd.; Nishigi Kogyo Co., Inc.; KYUKI CORPORATION; NISHI NIPPON AIRLINES CO., LtD; Kyushu Meter & Relay Engineering Corp.; Koyo Denki Kogyo Co., Ltd.; KYUHEN Co., Inc.; Kyushu Koatsu Concrete Industries Co., Ltd.; SEISHIN Corporation; Nishi Nihon Denki Tekkou Co., Ltd.; TOBATA CO- OPERATIVE THERMAL POWER COMPANY, INC.; Oita Co-operative Thermal Power Company, Inc.; Oita Liquefied Natural Gas Co., Inc.; Nishinippon Environmental Energy Co., Inc.; KITAKYUSHU LUGLEFIED NATURAL GAS CO., INC.; Nishimu Electronics Industries Co., Ltd.; DENKI BLDG. CO., LTD; Shinrintoshi Co., Ltd.	41.1	4.3		
Halons	Fire fighting	5.2	0	Kyudenko Co., Inc. TOBATA CO-OPERATIVE THERMAL POWER COMPANY, INC.; Oita Co-operative Thermal Power Company, Inc.; Oita Liquefied Natural Gas Co., Inc.; Nishinippon Environmental Energy Co., Inc.; DENKI BLDG. CO., LTD.	5.1	0		

ve data was provided by 26 initial men rs of the Group Enviro e. Data of some com s is not inc rocarbon (Alternative Freons): HCFC22, HCFC123, HCFC225 \*Halons: Halon 1211, Halon1301 \*Specific Chlorofluorocarbon (Freons): CFC11 \*Hydrochlorofluo

#### Better management of environmental targets

The Kyushu Electric Power Group\* continues to set targets regularly to reduce environmental load\*.

#### Output Achievement in reduction of environmental load\*

In addition to compliance with laws and regulations, the Kyushu Electric Power Group\* tracks and controls the records of environmental load\*, including the volume of electricity reduction at offices and the recycling rate\* of used paper\*. Since fiscal 2002, the company has been establishing environmental data collection methods by category, setting targets selectively for attainable target categories in each group company, and promoting the reduction of environmental load\*.

#### Kyushu Electric Power Group's environmental load (FY2003)

Items		FY20	03 records	FY2002 records (reference)		
		No. of companies that provided the data	Actual amount	No. of companies that provided the data	Actual amount	
Power consumption	at offices	31	31,502,474 kWh ( 31,131,447 kWh )	20	30,610,750	
Power consumption	at plants	21	140,430,611 kWh ( 114,558,699 kWh )	14	115,976,028	
In-house power con	sumption at power stations	3	338,078,534 kWh ( 332,409,734 kWh )	2	337,586,176	
Water consumption	at offices	15	186,600 m³	15	186,258	
Industrial water cons	Industrial water consumption		644,174 m³ ( 543,175 m³ )	11	515,829	
Fuel consumption fo	Fuel consumption for heating		375 kl ( 53 kl )	7	64	
Fuel consumption for	Fuel consumption for vehicles		2,587 kl ( 2,501 kl )	19	2,476	
Used paper	Amount used	25	807 tons ( 758 tons )	- 19	675	
Used paper	Recycling rate	23	56 % ( 55 % )	19	48	
Copy paper	Amount used	26	91,197,606 sheets	26	84,247,017	
	Rate of recycled paper use	20	72 %	20	60	
Toilet tissue	Amount used	18	137,928 rolls ( 135,928 rolls )	16	134,968	
	Rate of recycled paper use	10	93 % (92 % )	10	86	
Industrial waste	Amount	23	38,202 tons ( 38,083 tons )	21	40,203	
Industrial waste	Recycling rate	23	77 % ( 77 % )	21	73	

\* The above data was provided by 40 group companies which are the members of the Group Environmental Management Promotion Subcommittee (from 26 initial members for FY2002 data). Data of some companies is not included.
 \* Records in parentheses were provided by those companies that submitted the information for the FY2002 records only.
 \* As for the power consumption at offices and junction plants and in-house power consumption, the figures for FY2002 have been converted by the new calculation method applied in FY2003.
 \* As for the water consumption at offices and industrial water consumption, the figures for FY2002 have been converted by the new calculation method applied in FY2003.

(Unit: ton)

43

#### Kyushu Electric Power Group\*'s unified targets

Since fiscal 2003, the Kyushu Electric Power Group\* has been endeavoring to reduce environmental load\* by setting unified targets for the Group.

In fiscal 2003, the group companies that were capable or qualified to participate in this project attempted to fulfil the Group's unified targets.

Unified targets for fiscal 2004 are basically almost the same as the ones defined for fiscal 2003.

#### Kyushu Electric Power Group's unified targets for fiscal 2003

Item [Target]	Specific measures	Performance
Emissions of regulated Freons <sup>**1</sup> [Zero Emission]	To use alternative equipment that does not use Freons subject to regulations when renewed     To ensure the recovery of Freons during inspections and repairs	Emitted amount 4.1 tons
SF6* gas collection rate [97% or more]	To ensure the use of a SF <sub>6</sub> gas collector during equipment inspection	Collection rate 98%
Power consumption at offices [1% year-by-year reduction]	<ul> <li>Annual reduction of 1% from the figure achieved in fiscal 2002 as the base rate</li> <li>.3% reduction from the base rate by fiscal 2005</li> </ul>	1.7% increase from the previous year*1
Used paper* recycling rate* [100%]	To sort and collect used paper to recycle all of it	Recycling rate 56%
Rate of recycled copy paper use* [Rate of recycled paper use 100%]	To achieve 100% recycled paper use through green procurement*	Rate of recycled copy paper use 72%
Rate of recycled toilet tissue use* [Rate of recycled toilet tissue use 100%]	To achieve 100% recycled paper use through green procurement*	Rate of recycled paper use 93%

\*1: The item (unified target) for fiscal 2004 will be the complete collection of all regulated Freons leaked at the inspection of machines and equipment. The other items for fiscal 2004 will be the same as fiscal 2003.

\*2: In fiscal 2003, a data calculation method for the item was changed, so the same data for fiscal 2002 was recalculated using the method for fiscal 2003 for comparison purposes.

#### Environmental target management plan for fiscal 2004

In fiscal 2004, the Kyushu Electric Power Group<sup>\*</sup> will expand the introduction of the Group unified targets to more group companies and launch measures to enhance an achievement rate related to the Group's unified targets.

The Group will also encourage each group company to grasp their actual and accurate environmental load\*.

#### Establishing environmental management framework

The Kyushu Electric Power Group<sup>\*</sup> is taking steady steps to build an environmental management framework by implementing EMS<sup>\*</sup> (Environmental Management System) at each group company, formulating guidelines for environmental activities and introducing environmental accounting.

#### Implementation of environmental management system at each group company

In order to promote an environmental management<sup>\*</sup> companywide, the Kyushu Electric Power Group<sup>\*</sup> prepared unified standards for the Environmental Management System (EMS<sup>\*</sup>) called the Kyushu Electric Power Group<sup>\*</sup> Standards for the Implementation of EMS<sup>\*</sup> in April 2003. These Standards deal with several implementing stages of EMS so that each group company can introduce EMS on a stage-by-stage basis.

(For details, please visit Kyushu Electric Power Company's Website: http://www.kyuden.co.jp/company/kigyo/kankyo/ems/index.html)

In fiscal 2003, all 26 group companies which had been involved in the Group's unified targets from the beginning completed the introduction of the first stage of Kyushu Electric Power Group's Standards for the Implementation of EMS<sup>\*</sup>, intending to get ready for the implementation of the PDCA Cycle<sup>\*</sup> for environmental

activities. Moreover, 6 group companies acquired ISO14001\* certification and a group company completed the implementation of an ISO-based system\* at their initiative in fiscal 2003.

In fiscal 2004, each group company will aim to constantly pursue environmental activities through the effective use of the EMS\* implemented. Also, in line with their actual circumstances, group companies will be urged to consider the introduction of the second or higher stage of the Standards for the Implementation of EMS\* and/or design and execute the related actual plans in order to strengthen the environmental activities within the Group.

#### Acquisition of ISO14001 certification and implementation of ISO-based system

	Company	Date	Level Certified/ Implemented
ISO14001 certification acquired	Kyudenko Corporation	Dec. 1999	Head Office only
	Nishinippon Environmental Energy Co., Inc.	Oct. 2000	Company- wide
	Kyuden Sangyo Co., Inc.	Dec. 2002	Environment Dept. only
	Kyuki Corporation	Mar. 2003	Company- wide
	Kyushu Environmental Management Corporation	Sep. 2003	Company- wide
	Seishin Corporation	Jan. 2004	Head Office only
ISO-based system implemented	Oita Liquefied Natural Gas Co., Inc.	Dec. 2003	Company- wide

#### Environmental activities by companies with ISO14001\* certification and an ISO-based system\*

#### Kyuden Sangyo Co., Inc.

Responding to social trust through pursuing environmental activities Kyuden Sangyo Co., Inc. supports Kyushu Electric Power in various areas including the operation of power stations' environment-related equipment and facilities, the sale of coal ash\* and gypsum\* produced at thermal power stations and a variety of insurance policies such as equipment insurance policies and the operation of Kyushu Electric Power's PR facilities. Its management style puts focus on being conscious of the environment in many ways. As part of their involvement in the environment, the Environment Department acquired an ISO14001\* certification at an early stage, and also, the company's thermal power offices support Kyushu Electric Power's power stations in operating EMS\*. With respect to company-wide activities, the company formed the Environmental Committee in June 2002. The company launched their own environmental philosophy and policy in February 2004. The introduction of the first stage of the Kyushu Electric Power Group\*'s EMS\* was completed on a company-wide basis. With respect to environmental education\* of its employees, the company held an environment seminar for chiefs and managers from all offices and power stations who gathered for a meeting in April 2004. As such, the company has been devoted to educating its employees by providing the chance of learning about environment conservation.

#### Major environmental activities

☆Reduction in power consumption at offices [1% year-by-year reduction]	$rac{}{\sim}$ Encouraging the green procurement* for office supplies
☆Reduction in copy paper use	Active involvement in forestation
$\not \approx \mbox{Digitalization}$ of documents including internal documents and rules/policies	AProvision of environment-related education and seminars
☆Recycling of used paper* [targeted recycling rate*:100%]	

#### Kyushu Environmental Management Corp

Promoting environmental conservation by building a recycling-oriented society\*

In the so-called "century of environment," environmental load\* related to wastes is recognized as a serious social problem. In particular, waste incineration causes CO2 and dioxin\* emissions.

The company engages in used paper recycling business. Under their recycling system,

Major environmental activities

used paper including confidential documents that used to be burnt in the past is now collected, shredded, compressed and dissolved (by contractors) in order to produce recycled paper for sale.

Attempting to expand the collection of waste and sales/distribution of recycled products through environmental activities, the company was sincerely devoted to preventing air pollution\*, exhaustion of resources and excessive loggings, and successfully acquired ISO14001\* certification in all segments of operations in September 2003.

\*Prevention of incineration of used paper by collecting and recycling more amount of used paper including confidential office documents\*

m APrevention of excessive loggings through the sale of recycled paper products (copy paper and toilet tissue)

A Reduction in waste by sorting used paper\* by quality and/or texture (Waste, if not sorted and resources, if sorted.)

#### Seishin Corporation

Acquisition of ISO14001\* certification by the headquarters Seishin Corporation recognizes that managing the adverse effect on the environment is a crucial management issue for a business entity. Under this corporate policy, the company introduced an environmental management system\* aiming to obtain greater social trust and reliability and in the end, enhance its corporate value. In January 2004, ISO14001\* certification was successfully acquired. Following that, the company compiled an operating manual by combining the quality management manual for ISO9001\* standards, which had been acquired in the past, and an environment management manual for ISO14001\* standards. The operating manual has enabled employees to pay more attention to improving the quality of products and the working environment on a daily basis.

In addition, an environment management policy was established in September 2003 in accordance with ISO standards, and unified targets were designated for all group companies. Based on the environment management policy, all group companies and operating offices have attempted to reduce industrial wastes\*, copy paper use and electricity consumption at offices and improve company cars' fuel economy and sales of eco-friendly and recycled products. By doing so, the company has succeeded in upgrading the environmental activities with an aim to realizing the construction of a recycling -based society\*.

Targets for FY2005 based on the performance achieved in FY2002.	<ul> <li>☆Reduction of industrial waste* [3% reduction from FY2002]</li> <li>☆Improvement of company cars' fuel economy [5% increase from FY2002]</li> <li>☆Reduction in electricity consumption [5% reduction from FY2002]</li> <li>☆Reduction of paper purchase [5% reduction from FY2002]</li> </ul>
Targets for FY2004	characteristic large states and the second states the second states and the second states are second states are second states and the second states are

#### Oita Liquefied Natural Gas Co., Inc.

Aspiring to make the society and the global

environment even more comfortable

Uniformed environmental targets

Oita Liquefied Natural Gas Co., Inc. desires to maintain a stable supply of natural gas as clean energy and also contribute to the development of local communities and make the society and the global environment even more comfortable through promoting environmental conservation and recycling of waste.

The company decided to implement an environment management system in accordance with ISO14001\* standards with the aim of pursuing continuous and efficient environmental conservation

Goals for the current year

activities, and organized a committee responsible for the introduction of the system

In December 2003, the operation of the environment management system started. Employees' motivation and awareness gradually increased during the course of the introduction of the system. As a result, consumption of electricity and water decreased at the offices, copied paper was recycled at a 100% recycle rate\* and My Cup\*

campaign was successfully accepted at workplaces. The company will continue to sell LNG\* (liquefied natural gas\*) to their customers emphasizing the nature or characteristics of LNG, an eco-friendly product, and will work hard to save energy and resources.



☆Reduction of power consumption at factories [1% reduction in unit energy consumption from the previous fiscal year]	$\dot{\approx}$ Recognition of the actual status of waste recycling and establishment of measures to promote the recycling of wastes
${\rm \AA Reduction}$ of power consumption at offices [1% reduction from the previous fiscal year]	$\stackrel{\scriptscriptstyle A}{\asymp}$ Reduction of greenhouse gas emitted during the time of equipment maintenance
${\displaystyle \precsim} \mbox{Reduction of copy paper use [1% reduction from the previous fiscal year]}$	$\not \approx$ Planning for reducing the number of Halons* fire extinguishers held by the company

# C Establishment of Guidelines for Environmental Activities

The Kyushu Electric Power Group<sup>\*</sup> formulated Guidelines for Environmental Activities in fiscal 2003 to strengthen environment management<sup>\*</sup> within the Group. These guidelines summarize environmental activities and directives, based on which group companies are required to expedite their environmental activities. Summary of the Guidelines is given in the chart below.

Description of Guideline	Summary of Guideline	Date of Formulation
Guideline for wastes management	Directives for wastes management and activities for the proper disposal and recycling of wastes	November 2003
Guideline for PRTR Law*	Directives for handling and control of substances regulated by PRTR Law*	December 2003
Guideline for green procurement*	Green procurement* policy intended to accelerate the purchase of green products, and directives for the purchase and selection of green products	December 2003
Guideline for countermeasures against soil pollution	Directives for countermeasures against soil pollution related to company- owned land and land for sale/purchase	February 2004

#### Guidelines for Environmental Activities

In order to comply with applicable laws or regulations on a companywide basis and accelerate environment activities, all of the group companies covered by the Guidelines are scheduled to establish their own policy based on the Guidelines. Environmental activities will be enthusiastically pursued in accordance with such new policy during fiscal 2004.

#### Introduction of environmental accounting\*

Kyushu Electric Power introduced environmental accounting<sup>\*</sup> in fiscal 2000. Since then, the company has disclosed environmental results and performance in the Environment Action Report every year. The Kyushu Electric Power Group<sup>\*</sup> formulated Environmental Accounting Standards for the Kyushu Electric Power Group<sup>\*</sup> in November 2003 based on Kyushu Electric Power's Calculation Standards for Environmental Activity Costs<sup>\*</sup>. Based on the Environmental Accounting Standards for the Kyushu Electric Power Group<sup>\*</sup>, environmental activity costs<sup>\*</sup> incurred by 40 group companies in fiscal 2003 were collected and accounted for.

In fiscal 2004, each group company will be required to gain a deeper understanding of environmental accounting and upgrade the completeness of environmental activity costs<sup>\*</sup>.

		oup's environmental activity costs (FY2003)			· · · ·	nit: million yer
Activit	y areas	Main activities	Environmental		FY2002 records	
			Investments	Expenses	Investments	Expenses
Global environmental conservation	Global warming* prevention	Thermal efficiency* improvement, introduction and support for new energy* facilities, energy conservation (including low-pollution vehicles*) and $\rm SF_6^*$ emission control	8.7	24.3	255.5	6.8
	Ozone layer* protection	Measures for Freons* and Halons* recovery	1.2	9.8	0.1	10.5
Local	Air pollution prevention	Flue gas* treatment (desulfurization*, denitration*, particulate reduction equipment*) and use of fuel with low sulphur content	1,146.6	118.0	0.9	80.0
environment conservation	Water pollution prevention	Wastewater treatment, measures against oil leaks	245.1	61.6	2.9	91.8
	Noise and vibration prevention	Measures against noise and vibration at facilities	0	4.3	0	0.9
	Industrial waste*	Reduction and recycling of industrial waste*	0	29.1	0	36.3
	industrial waste	Disposal of industrial waste* and PCB* storage	33.0	247.2	22.0	91.3
Resource recycling	Conorol wests*	Reduction and recycling of general waste*	0.2	17.7	0	13.9
General waste*		Disposal of general waste*	0	76.0	0	63.9
Green procurement <sup>*</sup>	k	Additional cost incurred by green procurement*	0	0.7	0	0.2
	Planning for environmental activities	Expenses of environment-related license acquisition, education and training, and for personnel	0	43.3	0	47.5
	Introduction and maintenance of EMS*	Formulation, implementation and maintenance of EMS (ISO14001*, ISO-based system*)	0	31.4	0	32.1
-	Environment load* measurement and monitoring	Monitoring and measurement of substances having environmental load $\!\!\!\!\!^\star$	0	38.5	0	10.6
Environment- related research	Environmental conservation	Effective use of waste	1.2	6.8	0	40.5
	Greening of sites	Greening of company owned land and facilities, and its maintenance and management	8.4	67.1	0	70.5
	Maintaining quality townscapes and surroundings	Measures to keep buildings in harmony with the landscape of their surrounding environment	0	0	0	0
Social activities	Environment Month* and others	Environment Month*, planting activities	0	0.5	0	0.1
	Supporting local environmental activities	Support for local environmental activities and environmental organizations $\!$	0	0.4	0	0.7
	Environmental information disclosure	Creation of websites related to the environment	0	0.2	0	0.1
Penalty for environm	nental damages	Pollution load levy* set by Law concerning Pollution-related Health Damage Compensation and Other Measures*	0	198.4	0	235.8
		Total	1,444.4	975.3	281.4	833.5

#### Kyushu Electric Power Group's environmental activity costs (FY2003)

\*Costs available for trial calculation only are collected. \*Data for FY2002 was collected from 26 group companies that had been initially involved in the deliberation of the Group's unified targets as members of the Group Environmental Managemen Promotion Subcommittee. Data for FY2003 was collected from 40 group companies including 14 new members.

#### 2 Establishing recycling-based society

#### **Encouraging recycling**

Kyushu Electric Power is active in recycling used paper\* including confidential documents\* and used fluorescent tubes in cooperation with Kyushu Environmental Management Corporation and Japan Recycling Light Technology & System.

In fiscal 2003, members from the Group Environmental Management Promotion Subcommittee were given a chance to learn about the recycling operations of the Kyushu Environmental Management Corporation and Japan Recycling Light Technology & System. Also, the members visited Japan Recycling Light Technology & System's factories to see how the recycling of used paper including confidential documents\* and used fluorescent tubes was completed and apply the acquired knowledge to their own environmental activities.



Study tour to Japan Recycling Light Technology & System's factory (November 27th, 2003)

#### Promoting green procurement\*

With respect to office supplies or other items used in workplaces, almost all the 26 initial group companies, which have been involved in the unified target program from the beginning, practice to purchase green consumer goods if the costs are almost the same as regular ones. About half of the 14 group companies which joined the program started practicing the principle in fiscal 2003.

With respect to items not covered by the principle, the 40 group companies are encouraged to expand the green procurement\* to such items in consideration of their needs or requirements. In December 2003, Guidelines for Green Procurement\* were compiled based on Kyushu Electric Power's Green Procurement\* Plan in order to give group companies directions.

In fiscal 2004, each group company is expected to prepare their own detailed directives for green procurement<sup>\*</sup>, and the Kyushu Electric Power Group<sup>\*</sup> will strive to pursue the green procurement<sup>\*</sup> actively with the collective and concerted efforts of group companies.

## Environmental activities in cooperation with local communities

#### Participation in Kyushu Homeland Forestation Program

In fiscal 2003, 866 people from 26 group companies participated in the Kyushu Homeland Forestation Program supported by Kyushu Electric Power to plant trees together with people from local communities.

#### Environmental education

In fiscal 2003, company-wide programs such as joint seminars, lectures and study tours to environmentally advanced model entities were introduced as part of Kyushu Electric Power Group\*'s environmental education, which is expected to increase the environmental activity level of the Kyushu Electric Power Group\*. The same programs will be launched in following years.

#### $\bigcirc$ Joint seminars

Taking into consideration the introduction of EMS\* by group companies in fiscal 2003, joint seminars were planned for the members of the Group Environmental Management Promotion Subcommittee. They studied the details of ISO14001\* including the summary of ISO1400\* standards, the background of the establishment of ISO14001\* standards and requirements for ISO14001\* standards.

#### $\bigcirc$ Lectures

Kyushu Electric Power held a lecture in June during Environment Month<sup>\*</sup> with 54 attendants from 28 group companies. Also, four group companies independently held a lecture with the topics: "Efforts for Environmental Management<sup>\*</sup> at the Kyushu Electric

Power Group<sup>\*\*\*</sup> and "Introduction of EMS<sup>\*\*\*</sup> inviting speakers from the Environmental Affairs Department of Kyushu Electric Power. Approximately 190 people attended the lectures.



Lecture held by Tobata Co-operative Thermal Power Co., Inc on October 24, 2003

#### Study tour to an environmentally advanced model entity

36 members (from 34 group companies) from the Group Environmental Management Promotion Subcommittee visited Ricoh Keiki Co., Ltd. in Saga Prefecture and learned about efforts and measures taken by the company to succeed in the awarding of ISO14001\* certification and zero emissions\*, focusing on their actual practices and experiences.

#### 4 Active disclosure of environmental information

#### Sharing environmental information among group companies

A survey was conducted at each group company to research employees' needs for environmental information based on the conception that environmental information should be shared within the Kyushu Electric Power Group. In line with the survey results, environmental information was disclosed on the Group's homepage in February 2004 using the Kyushu Electric Power Group\* information network. Now, all employees from group companies can access environmental information.

In fiscal 2004, the Kyushu Electric Power Group<sup> $\star$ </sup> will discuss the optimized use of environmental information to stimulate environmental activities using the environmental information.

## **4** Major Steps by Kyushu Electric Power Group<sup>\*</sup> for Environmental Conservation

#### Nishinippon Environmental Energy Co., Inc.

## Commercializing power generation by poultry manure incineration

Poultry manure discarded from poultry farms was either used in rice or vegetable fields as natural fertilizer or processed into fermented fertilizer products, causing environmental problems such as stench in some areas.

Effective November 2004, the related laws and regulations were strengthened, and poultry farm owners were required to take drastic measures for the appropriate disposal of produced poultry manure.

Given that, aiming at environmental load reduction and effective use of energy, the company established Miyazaki Biomass\* Recycle Co., Inc. in Kawanan Town, Miyazaki in May 2003 together with local poultry farmers. Facilities for poultry manure incineration power generation are now under construction for the new project. Operations of the new

company are scheduled to start at the end of March 2005.

The new company is intended to generate power by burning poultry manure for sale and also sell produced ash as ingredients for fertilizer.



incineration power generation

#### West Japan Engineering Consultants, Inc.

Helping with planning the introduction of new energy<sup>\*</sup> and effective use of energy West Japan Engineering Consultants, Inc. engages in assisting local governments in introducing the use of new energy sources<sup>\*</sup> and promoting energy conservation.

Local governments have launched the Project for Establishing New Energy Visions at the Local Level and the Project for Establishing Energy Conservation Visions, subsidized by NEDO\* towards local communities. As part of their involvement in global environmental issues\*, the company helps local governments with these projects by proposing schemes for expediting new energy use and energy saving specifically designed according to each local characteristics and strengths. At the implementation stage, the company offers comprehensive services ranging from the design of wind, photovoltaic and small-scale hydropower generation facilities to construction management.

It has been crucially required to strengthen countermeasures to prevent global warming<sup>\*</sup> in recent years. The company will assist local governments as a general consultant in the introduction of new energies and energy saving which is perfect for local

communities, using its know-how or expertise accumulated in the Electrical Energy Department over years. Also, the company will actively contribute to local-level environmental conservation efforts through presenting various related proposals.



\*New Energy and Industrial Technology Development Organization, Incorporated administrative agence

#### Nishinippon Plant Engineering and Construction Co., Ltd.

#### Treatment of gas emitted from incineration equipment

Gas emitted from incineration equipment is strictly controlled by dioxin\*-related laws and regulations. The company offers dioxin\* removal systems perfectly fit to any size of incineration equipment ranging from large- and small-scale ones, the latter of which were subject to the dioxin-related laws and regulations in December 2002.

The system collects high-temperature gas containing toxic particulars produced from the burning of wastes and changes such gas to clean air.

The system can remove almost all of toxic substances (99.5%) from any waste including medical and macromolecular-form wastes, using bug filters\* equipped with dust precipitators\*.

A cooling device fixed in the dioxin\* removal system adopts an indirect cooling system of not spraying water directly. Therefore, it is very rare for the equipment and/or other devices to become eroded, and also, it is unnecessary to dispose of water used for cooling. Thanks to the system of not spraying water directly, the whole system is smaller in size and costs less.



Incineration unit using a dioxir removal system

#### Nishi Nippon Airlines Co., Ltd. Eco-conscious flights

Helicopters used by Nishi Nippon Airlines Co., Ltd. for news reporting are equipped with a gyro camera (gyro stabilized camera), which provides almost the same quality and performance as the ones used at TV broadcasting stations. The gyro camera quickly responds to any field angle and always provides highquality images. A gyro camera is not affected by vibrations or shaking occurring from the flight. Also, a high power zoom lens (maximum power of 72) fixed in the camera enables the camera to take pictures from high altitudes. This provides nearby residents with safer and comfortable conditions, as less noise is produced by helicopters. As such, the company endeavors to reduce environmental load\* in addition to improving customer services.

In the case of transportation of various machines and equipment and transmission line patrols, helicopters usually fly routes, which have been determined with the aim of producing less poise in order to



noise in order to and performance gyro camera

#### Kyushu Rinsan Co., Inc.

#### First study - tour on forestry

Kyushu Electric Power has an 85-year history of forest ownership. Kyushu Rinsan Co., Inc. is in charge of maintaining about 4,400 hectare of the forests with 6 million trees. Forests play vital roles in a number of ways; providing wood, reserving supply of water and controlling its flow rate, which are essential to hydroelectric power generation, preventing disasters like mudslides, and mitigating climate change by its CO<sub>2</sub> storage function. At the same time, sound forestry management is required to provide trees, for a period of about 60 years from planting to logging, with assorted work from cutting bottom grass, pruning and thinning. Kyushu Rinsan hosts study-tours on forestry as a part of its environmental activities in an effort to provide the opportunity to experience forest maintenance work and to offer the following information:

- Outline of Kyushu Electric Power's forests (e.g. size, tree types)
- Forest management and maintenance
- Contribution of forestry to the environment\*

The first study-tour was held in September 2003 for employees and their families of the Kyushu Electric Power, the Head Office and the Oita Branch Office, who are owners of this forest. A total of 74 participants experienced this program including thinning

out the cedar forest around Yamashita Pond in Yufuin. Oita Prefecture. The company plans to invite the general public and offer such sessions on an ongoing basis.



nts thinning out the forest bed

#### Nishimu Electronics Industries Co., Ltd.

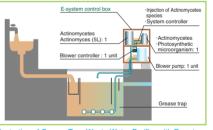
#### Production and sales of "Grease Trap Wastewater Purifier with E system"

Discharge of wastewater arising from operations of hotels and restaurants is prohibited by the Building Standard Law which stipulates that wastewater must be collected in grease traps (oil separator) first to separate sludge mixtures (oil and microorganisms) before passing to sewers. Normally, the separated sludge is regularly collected with vacuum devices as industrial waste\*. However, this process imposes an enormous burden on the food services business since it is costly and the sludge produces offensive odour and an unhealthy environment with pest infestation.

Since several years ago, Ringer Hut Co., Ltd., a Japanese restaurant chain, has been working with the Kyushu University and others to develop the "Grease Trap Wastewater Purifier with E system," a grease trap that does not produce industrial waste. Nishimu Electronics Industries Co., Ltd. participates in this joint development as well as in its production and sale.

The system features a sludge treatment method, in which sludge mixtures separated from wastewater are treated by adding a combination of bacterium called Actinomycetes which have a high bacterial degradation capability (developed and patented by Dr. of Agriculture Yonemi Tanaka). This grease trap decomposes oil, starch, protein and even pest eggs, and the treated water can be drained in sewers.

With this system, a total of 454 Ringer Hut restaurants have successfully reduced the amount of sludge waste from an annual disposal of 3,500 tons to almost zero.



ation of Gre e Trap Waste Water Purifier with E syste

#### Japan Recycling Light Technology & System

#### Distributing recycled fluorescent tubes with a higher percentage of recycled materials\*

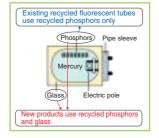
Japan Recycling Light Technology & System ("J-Relights") recycles fluorescent tubes used and collected at companies, schools, local governments and households. The company sorts and crushes used fluorescent tubes, then separates them into glass, phosphors, metals and mercury, and recycles them as reclaimed materials\*. In November 2002, J-Relights became the first company to produce (outsourcing) and distribute recycled fluorescent tubes using reclaimed materials\*.

In July 2004, J-Relights will start distributing recycled fluorescent tubes using a higher percentage of recycled materials\* than the existing products while maintaining the same quality and functions.

Existing products use only phosphors\*1 as reclaimed materials\* made from used fluorescent tubes, but the new recycled fluorescent tubes\*2 use recycled glass as well as phosphors.

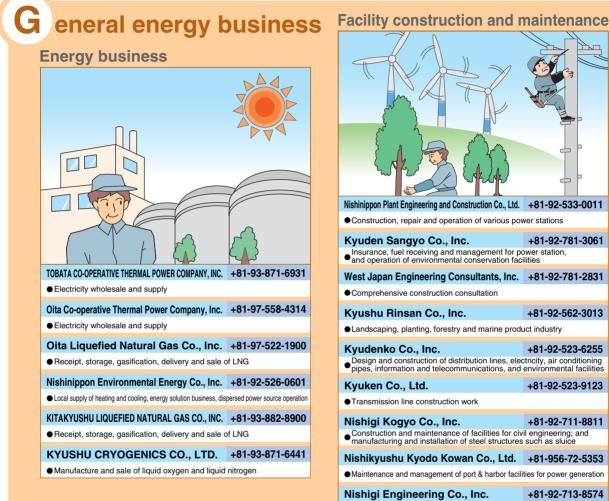
J-Relights will make further efforts to improve the recycle rate of used fluorescent tubes collected from companies, schools and local governments, and to promote R&D on recycled fluorescent tubes using more reclaimed materials\* so as to contribute to building a resource recycling-oriented society\*.

- \*1 White luminescent substance sprayed on a fluorescent tube's inner surface;
- recycled Tri-phosphor tubes
   \*2 Recycled glass comprises 1% of the material for a recycled fluorescent tube's glass parts



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## 5 Business Outline of the 40 Kyushu Electric Power Group Companies



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# Materials and equipment procurement

West Japan Engineering Consultants, Inc.	+81-92-781-2831
Comprehensive construction consultation	
Kyushu Rinsan Co., Inc.	+81-92-562-3013
Landscaping, planting, forestry and marine produced	uct industry
Kyudenko Co., Inc.	+81-92-523-6255
<ul> <li>Design and construction of distribution lines, electropipes, information and telecommunications, and</li> </ul>	
Kyuken Co., Ltd.	+81-92-523-9123
Transmission line construction work	
Nishigi Kogyo Co., Inc. • Construction and maintenance of facilities for civi- manufacturing and installation of steel structures	
Nishikyushu Kyodo Kowan Co., Ltd.	+81-956-72-5353
<ul> <li>Maintenance and management of port &amp; harbor facili</li> </ul>	ties for power generation
Nishigi Engineering Co., Inc.	+81-92-713-8574
	cal facilities
Examination and design of electric and mechanic	cariaciintes
• Examination and design of electric and mechanic Nishigi Surveying and Design Company, Inc.	
	+81-92-712-1441
Nishigi Surveying and Design Company, Inc.	+81-92-712-1441
Nishigi Surveying and Design Company, Inc. • Examination and design of civil engineering and	+81-92-712-1441
Nishigi Surveying and Design Company, Inc. • Examination and design of civil engineering and Koyo Denki Kogyo Co., Ltd.	+81-92-712-1441 construction work +81-96-353-1268
Nishigi Surveying and Design Company, Inc. • Examination and design of civil engineering and Koyo Denki Kogyo Co., Ltd. Manufacture and sale of insulators, flashers, and streeting	+81-92-712-1441 construction work +81-96-353-1268
Nishigi Surveying and Design Company, Inc. • Examination and design of civil engineering and Koyo Denki Kogyo Co., Ltd. Manufacture and sale of insulators, flashers, and streeting KYUHEN Co., Inc.	+81-92-712-1441 construction work +81-96-353-1268 ghts for crime prevention +81-940-42-1364
Nishigi Surveying and Design Company, Inc. • Examination and design of civil engineering and Koyo Denki Kogyo Co., Ltd. Manufacture and sale of insulators, flashers, and streeting KYUHEN Co., Inc. Manufacture and sale of transformers, electric water	+81-92-712-1441 construction work +81-96-353-1268 ghts for crime prevention +81-940-42-1364 r heaters, etc.
Nishigi Surveying and Design Company, Inc.	+81-92-712-1441 construction work +81-96-353-1268 ghts for crime prevention +81-940-42-1364 r heaters, etc.
Nishigi Surveying and Design Company, Inc. • Examination and design of civil engineering and Koyo Denki Kogyo Co., Ltd. Manufacture and sale of insulators, flashers, and streeting KYUHEN Co., Inc. Manufacture and sale of transformers, electric water Kyushu Koatsu Concrete Industries Co., Ltd. Manufacture and sale of concrete poles and piles	+81-92-712-1441 construction work +81-96-353-1268 ghts for crime prevention +81-940-42-1364 r heaters, etc.
Nishigi Surveying and Design Company, Inc. • Examination and design of civil engineering and Koyo Denki Kogyo Co., Ltd. Manufacture and sale of insulators, flashers, and streetlig KYUHEN Co., Inc. Manufacture and sale of transformers, electric water Kyushu Koatsu Concrete Industries Co., Ltd. Manufacture and sale of concrete poles and piles SEISHIN Corporation	+81-92-712-1441 construction work +81-96-353-1268 ghts for crime prevention +81-940-42-1364 r heaters, etc. +81-92-771-3631 +81-92-711-8151
Nishigi Surveying and Design Company, Inc. • Examination and design of civil engineering and Koyo Denki Kogyo Co., Ltd. Manufacture and sale of insulators, flashers, and streetlig KYUHEN Co., Inc. Manufacture and sale of transformers, electric water Kyushu Koatsu Concrete Industries Co., Ltd.	+81-92-712-1441 construction work +81-96-353-1268 ghts for crime prevention +81-940-42-1364 r heaters, etc. +81-92-771-3631 +81-92-711-8151



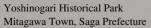
# nvironment and recycling business

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51



The Yoshinogari Ruins are one of the largest moat-encircled villages found in Japan that thrived for approximately 600 years throughout the Yayoi period. A national park project is being undertaken to preserve and introduce this exceptional cultural legacy in Yoshinogari Historical Park. In the park, visitors can find re-created ancient rice paddies that are symbolic of the moated villages and fledgling rice cultivations, where you can experience the lifestyle of the Yayoi people who enjoyed the blessings of the earth and the sun.

- Children

#### 2004 Kyushu Electric Power Environment Action Report



## **Company Profile**



1. Financial Information	54
2. Main Offices and Facilities	55

53

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# Company Profile

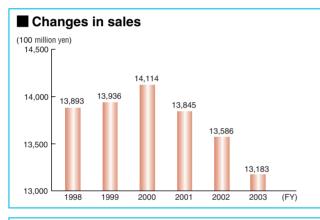
- · Date of establishment: May 1, 1951
- Head Office: 1-82, Watanabe-dori 2-chome, Chuo-ku, Fukuoka Japan
- · Capital: 237.3 billion yen (as of the end of March 2004)
- Main business: Electric utility

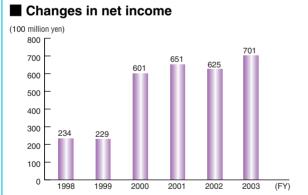
- Service area: Fukuoka, Saga, Nagasaki, Oita, Kumamoto, Miyazaki and Kagoshima Prefectures
   Major organizational changes:
  - Two of the aging thermal power stations with low efficiency are no longer being used due to the development of more advanced thermal power;
    - Omura Power Station (156 thousand kW output, coal-fired) closed on March 31, 2004
    - Minato Power Station (156 thousand kW output, coal-fired) closed on April 1, 2004
  - Sendai Survey Office was established on August 1, 2003 to prepare for environmental research.

## Financial Information (from April 2003 to March 2004)

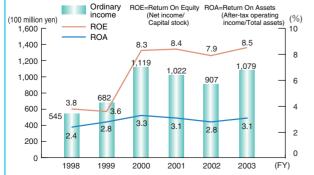
	Unconsolidated	Consolidated for financial accounting* (reference)		Unconsolidated	Consolidated for financial accounting* (reference)
Sales (100 million yen)	13,183	13,916	Net income per share (yen)	147.65	153.05
Electricity sales (100 million kWh)	773	-	Free Cash Flow (FCF) (100 million yen)	1,622	1,750
Ordinary income (100 million yen)	1,079	1,144	Return On Assets* (ROA*) (%)	3.1	3.1
Net income (100 million yen)	701	727	Return On Equity* (ROE*) (%)	8.5	8.3
Net assets (100 million yen)	8,619	9,108	Capital expenditures (100 million yen)	2,069	2,179
Total assets (100 million yen)	38,590	41,144	Number of employees (persons)	13,660	19,606
Net assets per share (yen)	1818.35	1,922.54			-

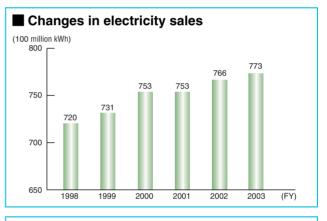
\*Scope of consolidation: 43 associated companies (Breakdown: 19 consolidated subsidiaries and 24 associated companies accounted for using equity method)



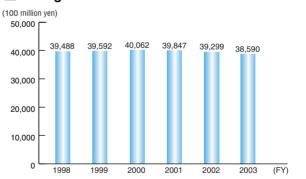


#### Changes in ordinary income, ROA and ROE

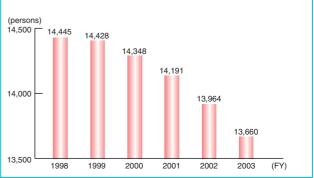




#### Changes in total assets



#### Changes in number of employees

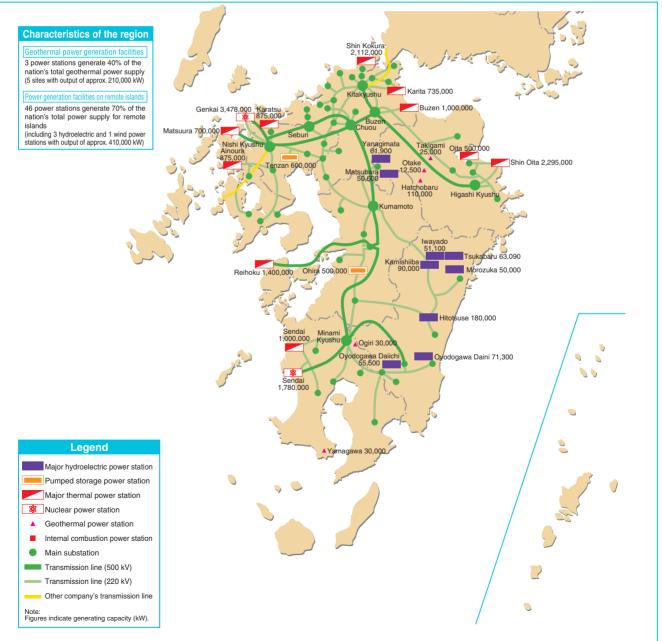


# **2** Main Offices and Facilities

#### Main offices

Kitakyushu Branch Office	3-1, Kome-machi 2-chome, Kokurakita-ku, Kitakyushu 802-8521	+81-93-531-1180
Fukuoka Branch Office	1-82, Watanabe-dori 2-chome, Chuo-ku, Fukuoka 810-0004	+81-92-761-6381
Saga Branch Office	3-6, Kouno-higashi 2-chome, Saga 840-0804	+81-952-33-1123
Nagasaki Branch Office	3-19, Shiroyama-cho, Nagasaki 852-8509	+81-95-864-1810
Oita Branch Office	3-4, Kanaike-machi 2-chome, Oita 870-8606	+81-97-536-4130
Kumamoto Branch Office	6-36, Kami-suizenji 1-chome, Kumamoto 862-0951	+81-96-386-2200
Miyazaki Branch Office	2-23, Tachibana-dori Nishi 4-chome, Miyazaki 880-8544	+81-985-24-2140
Kagoshima Branch Office	6-16 Yojiro 2-chome, Kagoshima 890-8558	+81-99-253-1120
Tokyo Branch Office	7-1, Yurakucho 1-chome, Chiyoda-ku, Tokyo 100-0006	+81-3-3281-4931

#### Main facilities (as of April 12, 2004)



#### Norihibi

Kiire Town, Kagoshima Prefectu

Adjacent to southern Kagoshima City lies Kiire Town, Ibusukigun. The town boasts 16 km of coastline fringing calm shallow beaches, symbolizing the peacefulness of this town. The town has grown thanks to the blessings of the sea and the *norihibi* or laver cultivation net for producing green laver, a local specialty. This sight brings to mind bounties from the sea surrounding the Japanese islands.

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2004 Kyushu Electric Power **Environment Action Report**  th



## **Opinions from Outside the Company**



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1. Results of the Questionnaire from the Previous Report	
2. Principal Opinions of the Kyushu Electric Power Environmental Advisory Council	59
3. Awareness and Actions of Mothers on Environmental Issues	60
4. Results of the "7th Environmental Management Surv	ev"
Conducted by the Nihon Keizai Shimbun, Inc.	
5. Main Opinions from Customer Surveys	62
6. Items Reflecting Opinions	63

6. Items Reflecting Opinions

Review of the Environment Action Report by a Third Party 64

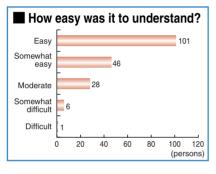


## Results of the Questionnaire from the Previous Report

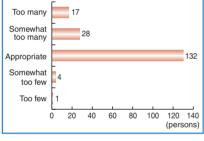
We received invaluable opinions regarding the implementation of Kyushu Electric Power's environmental activities through the questionnaire in the "Fiscal 2003 Kyushu Electric Power Environment Action Report" (including the Digest) published in September 2003. As of April 21, 2004, we received 183 responses from local governments, environmental NGOs, people in the education field and the general public.

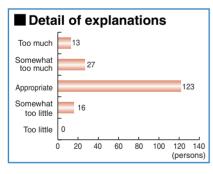
#### **Q1**

What was your impression of the Fiscal 2003 Environment Action Report? (Choose one)



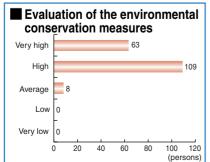
#### Amount of photographs and charts





#### **Q2**

What is your evaluation of Kyushu Electric Power's environmental conservation measures?



#### Q3

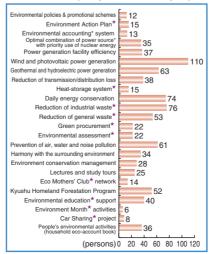
Which of the Kyushu Electric Power's environmental activities impressed you the most and why?

Activities chosen by a large number of respondents; the number of votes and main reasons

- Establishment of a recycling-oriented society\* (related to waste)
   29 persons
  - I saw considerable achievement has been made since the challenge towards zero emissions\* began, for example, a 26% increase in the recycled amount.
  - I was surprised at the amount of collected used paper\* and its recycling rate\*. I hope that the company will further promote separation of waste including plastic bottles, as well as the recycling of fluorescent tubes.
- Promotion of renewable energy sources\* 25 persons
- Although it is susceptible to weather, I want to see more emphasis on the development of new energy sources\*.
- The times require the use of natural energy sources\*.
   Environmental accounting\*
   14 persons
- I have a good impression that the invisible status and costs of activities are quantified in figures and disclosed in a way that is easy to understand.
- Reduction of greenhouse gases\* 12 persons I was impressed by the company's consideration for a balanced combination of nuclear energy and fossil fuels. However, nuclear safety issues remain (e.g. radioactive waste\* management and aging of power plants).
- Household eco-account book\* 10 persons
   We can recognize our achievements by keeping the book.
- It helps us to think about the environment in our daily life.
   "Kyushu Homeland Forestation Project"
  - 8 persons • Planting trees not only protects the natural environment but teaches children its importance.
- Communication on environmental issues by the Eco Mothers' Club\* 7 persons
  - I can see the positive corporate attitude that values the local community. I think it is a very unique initiative.

#### **Q4**

Choose five activities that Kyushu Electric Power should focus on. (Multiple answers accepted)



#### **Q5**

List opinions or requests regarding Kyushu Electric Power's environmental activities or the content of the Environment Action Report.

#### **Opinions and requests**

#### Style and contents of the Report

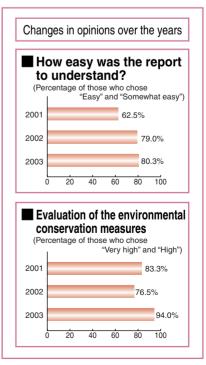
- There are too many uses of difficult terms and Chinese characters.
- It would be helpful to publish the glossary as a separate booklet.
- Pictures on the cover and title pages are appropriate, calming and heartwarming.
- Providing columns and the explanation of terms reflect consideration given to the general public for better understanding.

#### Report content

- Why is there no report on headwater protection forests which the company owns?
- $\cdot$  Cases of problems should be disclosed, if any.
- $\cdot$  The report should include voices from employees.

#### Environmental activities

- I think planting one million trees under the "Kyushu Homeland Forestation Project" will lead to the development of the local community. Further development should be encouraged.
- As a citizen of Miyazaki Prefecture, I am interested in the company's plan to construct transmission lines in the Laurel Forest of Aya in Miyazaki. It is undeniable that Kyushu Electric Power's PR effort is not sufficient. The company should provide detailed information to explain the reasons. Without in-depth explanations, people cannot make sound judgment on this controversial matter. Otherwise, there is a risk of emotionally-charged arguments.



## **2** Principal Opinions of the Kyushu Electric Power Environmental Advisory Council

The 4th Kyushu Electric Power Environmental Advisory Council was held on June 7, 2004. The council members discussed and presented various views on the Kyushu Electric Power and Kyushu Electric Power Group's measures for environmental issues and the "Fiscal 2004 Kyushu Electric Power Environment Action Report." The following are some of the principal opinions of the Council.

#### Environmental management\* promotion

#### Environmental management\* policies

• Since the title says "Towards an Environmentally Friendly Corporate Stance," I request that the specific philosophy and ideas should be stated.

#### Compliance\*

 As for the efforts made toward "compliance\* promotion" in the Kyushu Electric Power Group\* Environment Activity Plan, the report should state the progress of compliance implementation in addition to its compliance with laws and regulations.

#### EMS (Environmental Management System)\*

- Kyushu Electric Power deserves credit for its steady progress in establishing EMS\* framework in a short term, improving recycling rates\* and enhancing R&D.
- I suggest that the Kyushu Electric Power Group involve Eco Mothers\* and those who are interested in environmental issues in the activities and welcome their opinions to enhance the objectivity of internal environmental audit at offices and operational sites that established the ISO-based system\*.

#### Green electric power system

 The subscription rate of the green electric power system per power consumer is very high in the Kyushu region. This fact should be publicized to further encourage the use of the system.

#### Zero emissions\*

 Although the recycling rate\* of coal ash\* is improving, it is a problem if the recycled product becomes dead stock. Expecting more competition and newcomers in the recycling business, the company should pay more attention to profit projection.

#### Environmental education<sup>\*</sup>

- Electric power companies have significant amounts of information on environment and energy. In order to facilitate civic education, such information should be actively provided for environmental and energy education, which becomes increasingly important in schools.
- I suggest establishing a system to award schools actively engaged in environmental activities.

#### **Environment PR**

Environment PR\* should include more examples of specific activities.

- In order to encourage energy conservation activities and the use of efficient devices such as heat pumps, the company should promote PR targeting women who are highly aware of environmental issues.
- Initiatives described in the Environment Action Report are not introduced at the Kyushu Energy Science Center, which attracts a large number of visitors. The company should utilize the Center to promote the activities.

#### 2 Environment Action Report

#### **Environment Action Report**

- Kyushu Electric Power is working on environmental activities under severe conditions such as power supply to numerous remote islands and low demand density, which should be mentioned in the report.
- The layout requires a little more space. Brief explanations of technical terms in the text would be helpful.
- In the Highlights, features of fiscal 2003 should be described in a way to show comparison to the previous year.
- Opinions from the Environmental Advisory Council members and people outside the company could be incorporated at an earlier stage of compiling the report.
- Consumer complaints should be included, if any.
- Reduction in peak power consumption greatly contributes to reducing emissions and emissions intensity, which should be widely publicized.
- The necessity of the plutonium-thermal project\* should be explained more specifically by providing some overseas examples.

#### **Environment Action Report Digest**

- It should provide information useful for the readers, such as "green electric power system" and "contact addresses for tree planting."
- It should use simple terms so that parents can read it to their children.

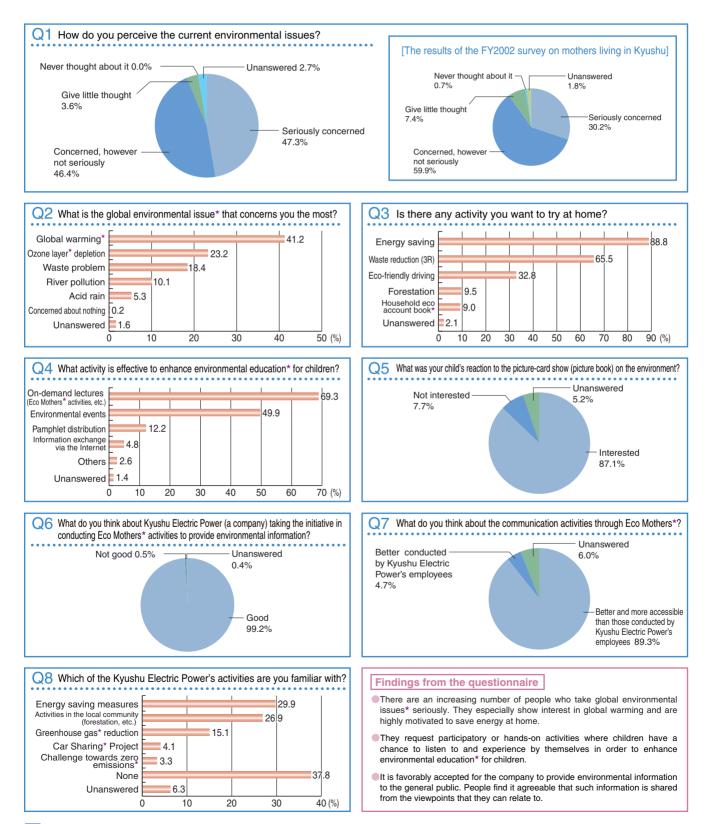
Members of the Kyushu Electric Power Environmental Advisory Council		
Ei Akagi	Writer	
Naohito Asano	Professor, Faculty of Law, Fukuoka University; member of the Central Environment Council	
Nahomi Ishikubo	Lifestyle journalist and member of Kagoshima Prefectural Environmental Council	
Mami Oku Associate Professor, Faculty of Environmental Studies, Nagasaki University; member of Nagasaki Prefectural Environmental Counci		
Takao Sawada	Deputy Managing editor, Yomiuri Shimbun Western Head Office	
Yasuhiko Tsutsui	Essayist	
Satoshi Tsuruta	atoshi Tsuruta Executive director, Japan Environmental Measurement & Chemical Analysis Association	
Akira Fukuizumi	Fukuizumi Teacher, Fukuoka Prefectural Shuyukan High School	
Fuminori Marumoto	minori Marumoto President, Kenmin Dept. Store Co., Ltd. Kumamoto Hanshin	
Kan Yoshida	an Yoshida Copywriter	
Junko Yoshida	Inko Yoshida Representative director, NPO Moshimoshi Tikyu	

59

## 3 Awareness and actions of mothers on environmental issues

Kyushu Electric Power conducted a survey on participants in Eco Mothers\* activities (or guardians when such activities were held for children), and received valuable opinions.

We distributed 2,655 questionnaires and received 854 responses (response rate of 32.2%).



## 4 The Result of the "7th Nikkei Environmental Management Survey" conducted by Nihon Keizai Shimbun, Inc. – First place in the electricity and gas sector –

Kyushu Electric Power was ranked the first among 17 companies in the electricity and gas sector of the "7th Nikkei Environmental Management Survey" conducted in September 2003.

#### Outline of the survey

The purpose of this survey is to evaluate and rank companies based on their commitment to environmental management<sup>\*</sup>. It has been conducted every year since 1997 and this year marks the seventh. This time, 1,023 companies in 7 industries, including electricity and gas as well as construction, in both manufacturing and non-manufacturing sectors participated in and responded to the survey, which shows that the survey is widely recognized by society.

#### Outline of the Environmental Management Survey

Period From early Sept		From early September to late October 2003
Survey method		Questionnaire by mail: Questionnaires were mailed to listed companies and others including 1,772 manufacturers and 2,154 non-manufacturers (including energy and construction companies) and 1,023 were answered. The valid collection rates were 33.8% for manufacturers and 19.7% for non-manufacturers.
Evaluation method		The score set by each question (78 questions including sub-questions) was added up in one of the following 6 categories to measure environmental awareness in company management. Their environmental management was evaluated by ranking those companies responded according to the total score they obtained. (The ranking covers 7 industries including manufacturing, non- manufacturing, electricity and gas, construction, finance and trading sectors.)
items for evaluation	Management structure, information disclosure, environmental education*, social contribution	Development of the environmental management system (introduction of EMS* and establishment of an integrated organization); environmental education* involving business partners; implementation of measures to raise environmental awareness and activities that contribute to the society
	Vision	Development of medium- and long-term management vision towards the reduction of environmental load $\!\!\!\!\!^\star$
	Pollution risk	Control of chemical substances and industrial waste*, progress on measures to reduce environmental pollution in the future
	Recycling	Resource input status; in-company use of recycled materials; implementation of green procurement $\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!$
	Eco-friendly products	Effort to manufacture eco-friendly products
9	Measures against global warming and distribution process problems	Introduction of new energy sources*; reduction of greenhouse gases*; implementation of measures to reduce environmental load in the distribution process

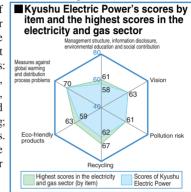
#### 2 Environmental management\* trend and evaluation of Kyushu Electric Power

In order to respond to strict environmental regulations in Europe, leading companies are redoubling their efforts on an industrial group level. Environmental management\* has become more important in terms of Corporate Social Responsibility (CSR)\*.

In this survey, Kyushu Electric Power was highly recognized for its groupwide efforts for the establishment of the ISO-based system<sup>\*</sup>, formulation of the Kyushu Electric Power Group<sup>\*</sup> Environment Philosophy, Environment Policies and Environment Activity Plan, as well as the reduction of CO2<sup>\*</sup> emissions. (From Nikkei Sangyo Shimbun, December 11, 2003)

# 3 Kyushu Electric Power's weaknesses identified by the survey results

The overall evaluation of Kyushu Electric Power ranked the first in the electricity and gas sector but not in three evaluation items: 1) management structure, information disclosure, environmental education\* and social contribution; 2) recycling; and 3) eco-friendly products. Analysis of factors in these areas has revealed our weakness.



#### Kyushu Electric Power's Weakness

Management structure, information disclosure, environmental education* and social contribution	<ul> <li>No educational program is provided for business partners of the Kyushu Electric Power Group*.</li> <li>No disclosure is made for data showing changes in various types of environmental load* of group companies.</li> <li>The company fails to issue the report within 3 months from the end of the fiscal term.</li> <li>Environmental accounting* is not utilized practically in the company, which failed to compile or manage environmental accounting information on a monthly or quarterly base; and does not release cost and effect projections or outlook in advance.</li> </ul>
Recycling	<ul> <li>More operational sites need to achieve zero emissions* within both the Kyushu Electric Power Group* and Kyushu Electric Power.</li> <li>Measures to prevent illegal dumping are not sufficient (e.g. absence of check on waste disposal by the person in charge of waste management and no regular inspection of changes in the total volume received for final disposal to verify its consistency).</li> </ul>
Eco-friendly products	<ul> <li>No group-level green procurement* standard is set in the Kyushu Electric Power Group*.</li> <li>No implementation is made on 1) on-site audit or inspection of the use of hazardous substances, 2) mandatory submittal of data or report on such substances on a regular basis, nor 3) mandatory submittal of a nonuse certificate of banned substances, as measures to enhance the effectiveness of green procurement* standard.</li> </ul>

# 4 How to reflect the results in future environmental activities

Above-mentioned weaknesses were identified as of September 2003 when the survey was conducted. The company has already started to deal with some of them. For instance, the "Kyushu Electric Power Group\* Green Procurement\* Guidelines" were stipulated and presented to the group companies so each of them could set its own green procurement\* standard. Kyushu Electric Power is determined to work on environmental activities to further enhance its environmental management\* reflecting the analysis and evaluation of the survey results.

## COLUMN NO.7 The 4th meeting of Kyushu Electric Power Eco Mothers' Club

The company held a meeting with Eco Mothers assigned by regions on April 17th to provide an opportunity for Eco Mothers to exchange opinions and to build skills by sharing further knowledge of environmental issues. Eco Mothers made presentations to report their efforts and give personal comments on their activities. They also attended a lecture on energy conservation, which was given by an energy conservation diffusion instructor invited from the Energy Conservation Center. Followings are the voices from Eco Mothers:

#### <Efforts made in their activities>

- •When reading to children, I always keep in mind to read slowly and clearly, while looking carefully at their expressions.
- In order to attract the children's attention, I use handmade tools such as story panels to explain what we can do to save energy.



#### <Comments on Eco Mothers' activities>

- It helps me and my family to be environmentally conscious, in fact, we're saving energy at home and collecting environment-related information.
- I am very pleased that I had opportunities to experience things I'd never had, such as leaving the house to speak in front of an audience.

## **5** Main Opinions from Customer Surveys

Kyushu Electric Power conducts a customer survey annually to listen to the opinions of its customers and incorporate them into its corporate management. The opinions below are those concerning Kyushu Electric Power's environmental activities from the fiscal 2003 survey.

#### 1 Outline of the survey Survey area

Service area of Kyushu Electric Power (excluding remote islands)

#### Survey population

Men and women (Ages 20 – 64): 3,500 Valid responses: 3,100 (collection rate of 88.6%)

Survey locations: 310

#### Survey method

Combination of the interviews and questionnaires by surveyors under exclusive contract and the self-administered and mail questionnaires handed to the subjects after the interview and collected by mail after being completed at home

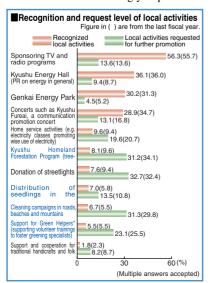
#### Survey period

#### From July to August 2003

\* Sampling method: Stratified two-stage random sampling based on population (ratios of daytime and nighttime populations to the total population) and industrial ratios (ratios of employees in three major industrial categories.) In this method, first, municipalities in the surveyed area were grouped according to the above two basis, and then survey locations (section and block) were randomly selected followed by individual residents.

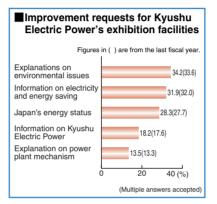
#### 2 Opinions concerning environmental activities Evaluation of local activities

Although the environmental activities are relatively unrecognized compared to other local activities that Kyushu Electric Power is involved in, further enhancement of these activities is strongly requested.



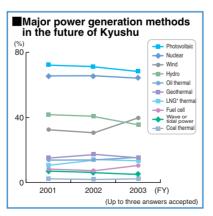
#### **Evaluation of exhibition facilities**

The most requested improvements for Kyushu Electric Power's exhibition facilities are explanations on environmental issues, followed by information on electricity and energy saving and Japan's energy status.

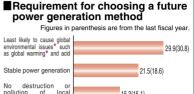


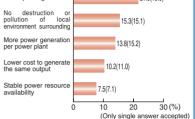
## Recognition of the major power generation methods

More than half of the survey population (52.4% with only single answer accepted) was aware that the main power generation method in Kyushu is nuclear power, and those who expect photovoltaic power generation to become the major source of power over nuclear power in 10 years lead the charts as they did last year and the year before.



Reasons for choosing a major power generation method in the future were "least likely to cause global environmental issues\*," followed by "stable power generation." This shows a tendency to value "measures against environmental problems" along with "stable power supply."

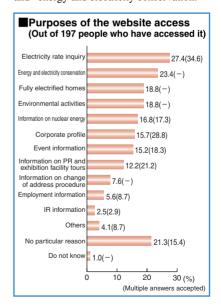




#### Access to the company website

Those respondents who have seen or thought they may have seen the website of Kyushu Electric Power account for 9.3% and 8.8% respectively. The combined result is 18.1%, a 6.1 points increase from the previous year.

As for the purpose of accessing the website, finding "environmental activities" was the third highest reason, along with wanting to know about "fully electrified homes," following "electricity rate inquiry" and "energy and electricity conservation."



#### 3 General comments

The customers' interests in environmental activities are generally high. The survey suggests great demand for information on environmental issues and energy saving as well as for further promotion of existing environmental activities, such as forestation and cleaning campaigns.

# **6** Items Reflecting Opinions

The opinions and requests from customers and the Kyushu Electric Power Environmental Advisory Council in regard to Kyushu Electric Power's environmental activities and the Environment Action Report will be reflected in the content of the future Environment Action Report and environmental activities:

$\searrow$	Summary of opinion	Items reflecting the opinions
Environment Action Report	<ul> <li>[Opinion from outside the company]</li> <li>To incorporate opinions from outside the company at an earlier stage in compiling the report</li> </ul>	•Opinions from the Environmental Advisory Council members will be heard after the issuance of this fiscal year's report to reflect in the next report.
	[For easier reading] •To reduce the use of difficult technical terms and Chinese characters, and create a glossary as a separate booklet	•Technical terms have reference marks for the glossary inquiry, and Chinese characters that are not taught at elementary school have reading printed in kana characters. Also, a glossary was made as a separable booklet for easy use.
	[Negative feedback] ●To provide information on received complaints	Item entitled "Handling inquiries and complaints" was added.      See P11
	[Employees's voices] ●To introduce voices from employees	•The "Voice" columns were inserted to introduce voices from employees.
	<ul><li>[Highlight]</li><li>To describe features in a way to show differences from the previous year</li></ul>	•More focus was placed on providing the comparison with the previous year.
	[Plutonium-thermal <sup>*</sup> projects] ●To explain its necessity including overseas examples	<ul> <li>There is more information such as overseas plutonium-thermal* projects and merits of plutonium-thermal* use.</li> </ul>
	<ul> <li>[Transmission line construction in the Laurel Forest of Aya]</li> <li>To provide detailed information to explain needs and reasons</li> </ul>	<ul> <li>Additional information was included in the attached CD-ROM. (Not available in English.)</li> </ul>
Environmental activities	[Environmental management* policies] •To clarify philosophy and ideas towards "environmentally friendly business activities"	•The Kyushu Electric Power's direction is clarified in the greetings section.
	[Compliance <sup>*</sup> ] ●To clarify activities under the Kyushu Electric Power Group <sup>*</sup> Environmental Activity Plan	•The plan of the next fiscal year will carry the description on the Group's ongoing "activities that emphasize the compliance with corporate ethics not limited to laws and regulations."
	[Zero emissions <sup>*</sup> ] ●To pay more attention to profit projections in recycling coal ash <sup>*</sup>	•Related activities will be further pursued while giving consideration to market trends associated with expanding use of the recycled product.
	<ul> <li>[Environmental PR*]</li> <li>To target women who are highly aware of environmental issues in PR activities and provide information from reader's viewpoint</li> </ul>	•Various existing media including TV commercials and the Environment Action Report will be well used to continue PR activities for women. Also in response to the survey results, we will provide more environmental information which is practical and handy.
	[Environmental education*] •Actively disseminate energy and environment-related information in collaboration with educational institutions	•We will reflect opinions raised in educational institutes where our employees held seminars and Eco Mothers <sup>*,</sup> activities to improve our environmental education. Also in collaboration with educational institutes, we will make further efforts will to raise environmental awareness on the community level.

## Review of the Environment Action Report by Third Party

Since fiscal 2002, Environment Action Report ("Action Report") of Kyushu Electric Power Co., Inc. ("the company") has been reviewed by a third party, Tohmatsu Environmental Research Institute Ltd., in order to improve the reliability of the Action Report.



Examining the information included in this repo based on source materials (Environmental Affairs Dept., Head Office)



Meeting with a deputy manager responsible for safety and environmental matters at a construction site 'Omarugawa Power Station Construction Office)

#### **1. Report on Review Results**

#### **Review of 2004 Kyushu Electric Power Environment Action Report**

Tohmatsu Environmental Research Institute Ltd. implemented a third-party review on the reliability of environmental activity records, environmental accounting and other related information described in the "2004 Kyushu Electric Power Environment Action Report" by Kyushu Electric Power Co., Inc.

Findings identified in our review process are described below, aside from those on the Third Party Opinions about the Environment Action Report. The numbers in parentheses included in the descriptions below represent page numbers in the 2004 Kyushu Electric Power Environment Action Report.

#### 1. Matters evaluated

(1) Increase in reliability of the Action Report

This fiscal year, at the Company's request, a review was conducted in accordance with the Standards for Environment Report Compilation (Proposal) issued by the Ministry of Environment since the Company adopted the standards on their own initiative. The review is recommendable to improve the reliability of the Action Report.

(2) Effective provision of environmental information

This fiscal year, more emphasis was placed on the convenience of stakeholders in using the Action Report. A glossary section was added to help users read and understand the Action Report.

(3) Scope and policy of compilation of the Action Report

The Company adopted the Standards for Environment Report Compilation (Proposal) on their own initiative for the compilation of the Action Report. We believe that the scope and the policy of compilation of the Action Report have been defined more precisely.

#### 2. Matters to be addressed

(1) Environmental accounting

Environmental costs for this fiscal year are shown in comparison with those for the prior fiscal year in the Action Report (pages 14 and 15). The effect of the related/corresponding environmental activities actually implemented should be compared to those for the prior fiscal year.

(2) Process of information collection

With respect to the environmental accounting and environmental load, the related information was provided directly to the responsible department this fiscal year. However, an online connection between each power station and the Company has not been completed, and manual work is still being performed. To improve the accuracy of information in the Action Report in following years, it will be crucial to introduce an integrated system in the Group soon.

## 2. Third-Party Opinions about the Environment Action Report



#### **Independent Review Report on the Environment Action Report**

Mr. Shingo Matsuo Representative Director & President Kyushu Electric Power Co., Inc.

#### Scope of our Review

We have reviewed the "2004 Kyushu Electric Power Environment Action Report" (a booklet and a CD-ROM and glossary attached to the Action Report)" (hereinafter referred to as Action Report) for the fiscal year ending March 31, 2004 pursuant to Standards for Environment Report Compilation (Proposal) (2003 Environment Report Standards Committee's Report issued by the Ministry of Environment in March 2004). The purpose of our review is to provide an opinion from an independent standpoint regarding the accuracy or completeness of key and major environment a information marked "reviewed," and included in the Action Report I accordance with the Standards for Environment Report Compilation (Proposal) (2003 Environment Report Standards Committee's Report issued by the Ministry of Environment in March 2004). With respect to other environmental information included in the Action Report, we performed review greed upon with the Company's management.

The Action Report is the responsibility of the Company's management. Our responsibility is to provide an opinion on the Action Report from an independent standpoint.

With respect to fiscal 2001 and 2002, we reviewed key and major environmental information for the years in accordance with procedures agreed upon with the Company's management. An environmental review was not performed for prior fiscal years including fiscal 2000.

#### **Summary of Review Procedures**

We have performed review procedures in accordance with a review plan to obtain reasonable assurance necessary to issue our conclusions. Summary of the review procedures is described below:

(1) With respect to key and major environmental information marked "reviewed"

- Examination of completeness of the descriptive information included in the Action Report in accordance with the Standards for Environment Report Compilation (Proposal).
- Evaluation of the implementation and operation of the Company's environmental internal controls through interviews
  of in-charge employees regarding methods of measurement and calculation and the collection of information, and
  test-basis examination of related materials.
- Review of corporate policies and efforts related to environmental activities and consistency of the environmental activities described in the Action Report with corporate plans for environmental activities intended to be taken in the course of the Company's business operations.
- Test-basis confirmation based on original vouchers and/or various related records serving as a basis for calculation
- Comparative analysis by power station and year and questions to in-charge employees and examinations of the related materials regarding significant or unusual changes identified from the analysis.
- Interviews of employees and examination of the related documents with respect to legal compliance and the existence
  of major lawsuits.
- (2) Review procedures for other environmental information
  - Interviews of employees and test-basis confirmation based on the related documents serving as a basis for calculation with respect to measurement, method of calculation and process of information collection. In-charge employees were questioned about measuring and calculation methods as well as information collection.
- Comparative analysis by power station and year and questions to in-charge employees and examinations of the related materials regarding significant or unusual changes identified from the results of analysis.

#### **Our Conclusions**

Based on our review, the key and major information marked "reviewed" in the Action Report was accurately measured, calculated and complete in accordance with the Standards for Environment Report Compilation (Proposal). The other information in the Action Report is based on information properly collected from Kyushu Electric Power and the Kyushu Electric Power Group companies and consistent with internal materials or information available to us.

#### **Financial Interest**

Our firm and the engagement partners do not have any financial interest in the Company for which disclosure is required under the provisions of the Standards for Environment Report Compilation (Proposal).

Tolmaton Environmental Research Institute

Tohmatsu Environmental Research Institute Ltd. June 22, 2004



This booklet uses recycled paper which was made from waste paper consumed and collected in Kyushu Electric Group.



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