



# Environmental Activities

Kyushu Electric Power recognizes that its carbon dioxide emissions and other byproducts of its operations inevitably affect the environment. We are accordingly tackling global warming and other issues as a responsible corporate citizen.

## Promotion of Environmental Management



See pages 15 to 18 of the 2007 Kyushu Electric Power Environmental Action Report for details.

### Kyushu Electric Power Environment Charter

#### Towards an Environmentally Friendly Corporate Stance

- 1 The company shall recognize the importance of maintaining awareness of environmental conservation needs in all its corporate activities.
  - Fully realize that dealing with environmental problems is a fundamental precondition for its own existence and business activities.
- 2 The company shall make concerted efforts to contribute to a sound environment in all its corporate activities.
  - Strive to prevent global warming and to conserve nature and environment.
  - Actively implement environmental conservation programs that contribute to the community's well being.
  - Reduce waste output and encourage use of waste as a resource, thus promoting a recycling society.
- 3 The company shall promote the disclosure of environment related information in all its corporate activities.
  - Promote ease of public access to environment related information concerning the company's business activities and provide opportunities for communicating with members of society.

### Environment Action Plan

Every year, we update our Environment Action Plan to guide the conduct of all employees. The plans factor in contemporary social conditions, changing needs, and overall internal and external assessments of activities in the previous term.

Key plans form part of promotion of environmental management initiatives under our CSR Action Plan (see page 21).

### Key FY2007 action plans

#### 1 Promotion of environmental management

- Deploy the systems of all parent and Group company operations to step up environmental management and continue to lower environmental impact

#### 2 Measures for global environmental issues

- Keep reducing CO<sub>2</sub> emissions by safely and reliably operating nuclear power stations and sourcing more electricity from wind power facilities while encouraging customers to conserve energy, notably by using heat-pump water heaters

#### 3 Establishing a recycling society

- Increase recycling rates and eliminate landfill outside our properties by taking advantage of efficient collaborative collections of industrial waste

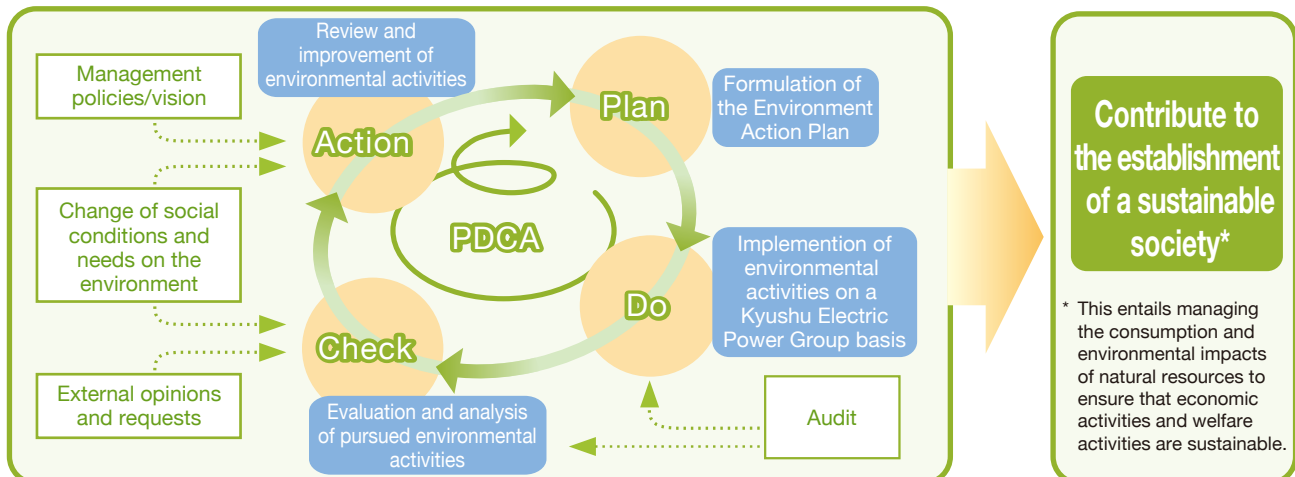
#### 4 Harmoniously coexisting with the local environment

- Neutralize polychlorinated biphenyl wastes and use asbestos-free products

#### 5 Working with society

- Increase customer awareness of our environmental activities through our Environmental Action Report and Eco Mothers Activities
- Safeguard biological diversity through such regional initiatives as the Kyushu Homeland Forestation Program and Environment Month.

#### ▼Environmental PDCA chart



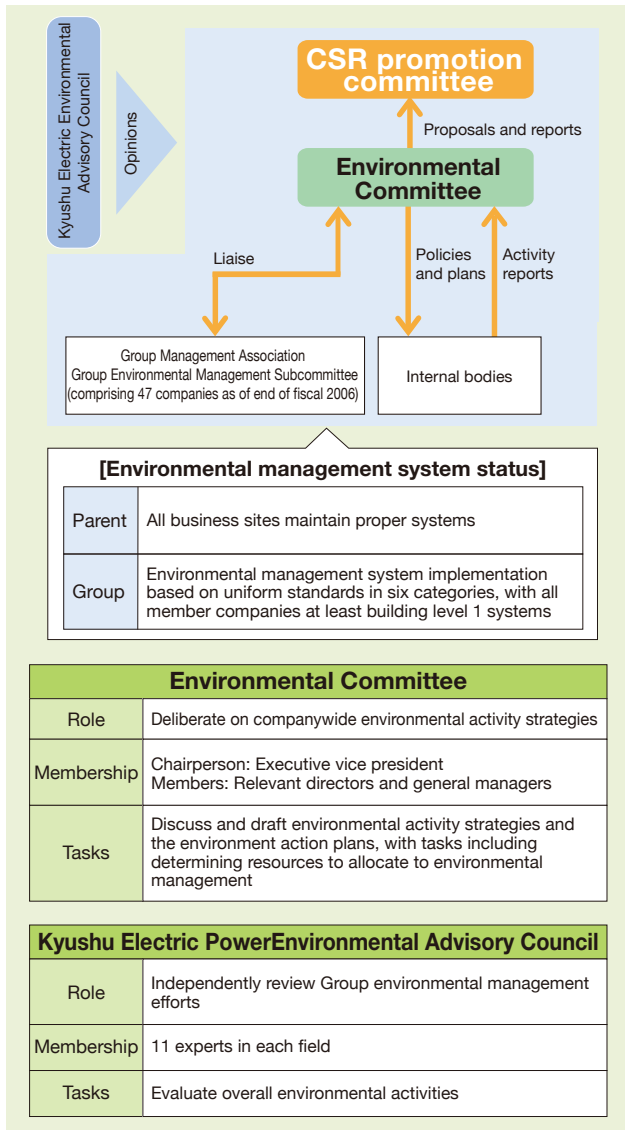
## Promotional Scheme

We have built a companywide environmental management structure (see below).

All our business sites have created and implement environmental management systems to consistently reduce environmental loads.

In FY2006, the Environmental Affairs Department at head office enhanced branch capabilities in these systems by providing support and specialized training. We continued our training program for internal environmental auditors. Officials from the Environmental Affairs Department attended audits at business sites as part of efforts to improve overall in-house auditing.

### ▼Environmental management structure



## Promotion of Group environmental management

Every year, the Group Environmental Management Subcommittee prepares the Kyushu Electric Group Environmental Activity Plan and deploys a PDCA cycle.

In FY2006, Group company Nishimu Electronics Industries Co., Ltd., received ISO 14001 certification for its environmental management systems. Japan Recycling Light Technology & System became the first Group company to obtain Eco Action 21 certification.

We will continue to help all Group companies to improve their environmental activities and environmental management systems.



See pages 49 to 58 of the 2007 Kyushu Electric Power Environmental Action Report for details.

### 「2007 Kyushu Electric Power Environment Action Report」

#### I Promotion of Group environmental management

- 1 Reinforce Group's environmental management
- 2 Comply with laws and ordinances
- 3 Assess environmental data and pursue targets
- 4 Provide environmental education and share environmental information

#### II Measures for global environmental issues

- 1 Cut greenhouse gas emissions
- 2 Reduce regulated freon emissions

#### III Establishing a recycling society

- 1 Recycle
- 2 Use green purchasing

#### IV Working with society

- 1 Amply disclose environmental information

### Key opinions about environmental activities at meeting of Kyushu Electric Advisory Council

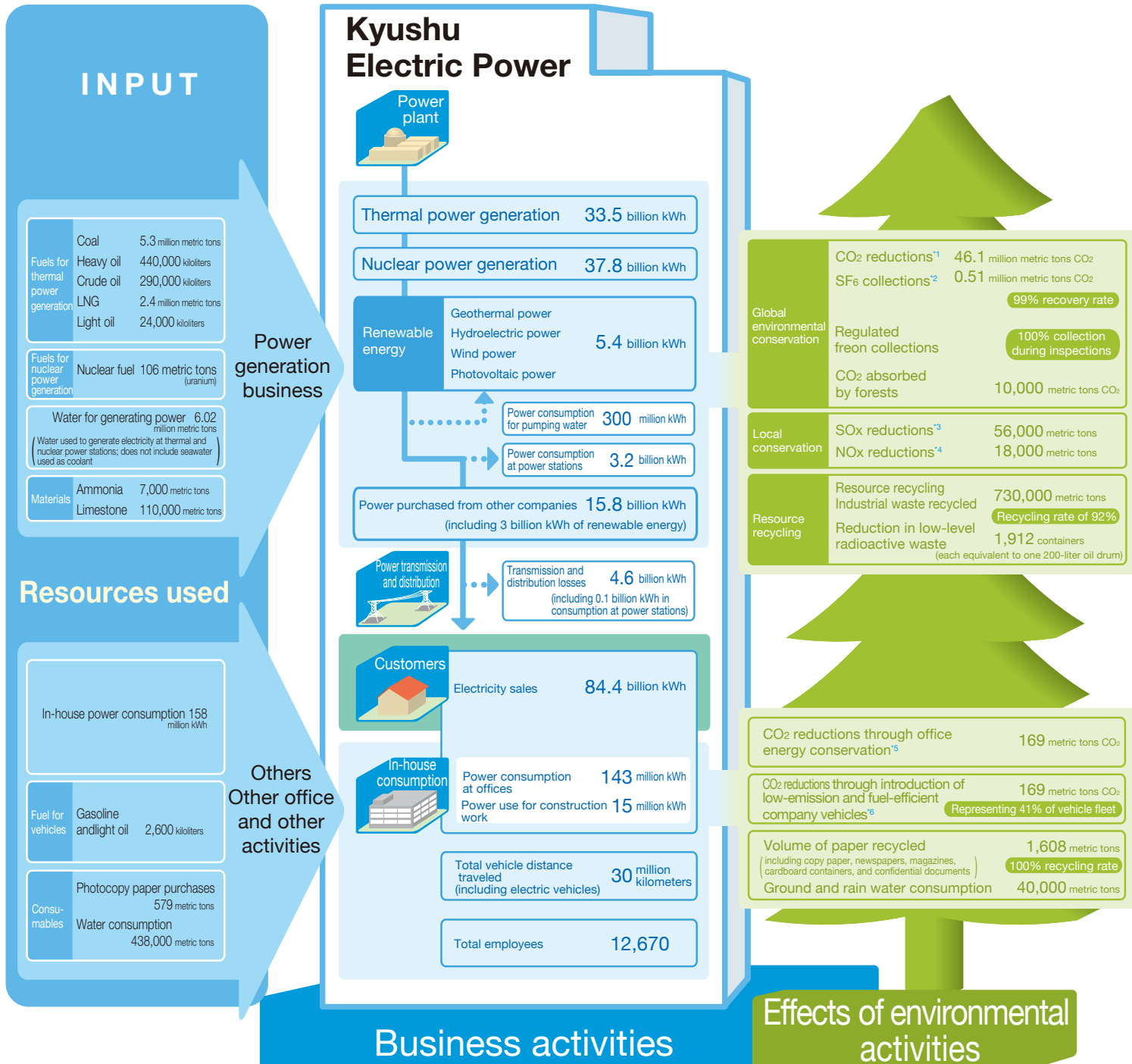
Date: Monday, May 21, 2007, at 2:00 - 4:00 p.m.

- As an electric power company, it is incumbent on you to do something about reducing CO<sub>2</sub> emissions.
- Safe and reliable nuclear power is crucial to reduce CO<sub>2</sub> emissions. You need to improve disclosure given considerable distrust right now in nuclear power.
- Kyushu Electric Power has pledged to contribute to Asia and elsewhere around the world, so I'd like it to lead the way in tackling pollution issues and educating people about environmental issues.
- You have to communicate more about your environmental efforts and encourage more people to read your Environmental Action Report.



See pages 59 to 60 of the 2007 Kyushu Electric Power Environmental Action Report for details.

# Business and Effects of Environmental Activity



## Definitions of baselines for calculating environmental activity contributions

\*1: Where thermal power (except for LNG) generated in kilowatt-hours replaced power generated from nuclear power, hydroelectric power, new energy sources, and LNG. The baselines for facilities efficiency improvements are the thermal efficiency and transmission and distribution loss factors in FY1990.

\*2: Where sulfur hexafluoride was not recovered in equipment checkups or removals.

\*3: Where there was no desulfurization or no use of low-sulfur fuels at power stations.

\*4: Where there was no denitration at power stations.

\*5: Where there were no facility energy conservation measures at business sites.

\*6: Where no clean-energy or fuel-efficient vehicles were used.

\*7: Calculated based on Greenhouse Gas Emissions Calculations, Reporting, and Disclosure System. However, calculations are based on power consumed in-house multiplied by Kyushu Electric estimates of CO<sub>2</sub> emissions intensity for FY2006.

\*8: We used the ozone-depletion potentials of each type of chlorofluorocarbon and converted to the CFC-11 weight equivalent.

\*9: Emission weights for steam and internal combustion engines converted by multiplying total gas exhaust emissions by exhaust gas densities.



See pages 19 to 22 of the 2007 Kyushu Electric Power Environmental Action Report for details.

## OUTPUT

Greenhouse gas emissions<sup>7</sup>  
 CO<sub>2</sub> 31.6 million metric tons CO<sub>2</sub>  
(in-house power consumption was 59,000 metric tons of CO<sub>2</sub>; including power purchased from other companies)  
 N<sub>2</sub>O 47,000 metric tons CO<sub>2</sub>  
 HFC 37,000 metric tons CO<sub>2</sub>  
 SF<sub>6</sub> 700 metric tons CO<sub>2</sub>

Ozone-depleting emissions<sup>8</sup> 0.1 chemical oxygen demand metric ton

Air pollutant emissions<sup>9</sup>  
 SO<sub>x</sub> 16,000 metric tons  
 NO<sub>x</sub> 25,000 metric tons

Waste water<sup>10</sup> 87 metric tons  
 Chemical oxide demand emissions<sup>11</sup> 6 metric tons

Industrial waste disposed 62,000 metric tons

Increase in low-level radioactive waste 1,851 containers  
(each equivalent to one 200-liter oil drum)

## Environmental Load

CO<sub>2</sub> emissions<sup>7</sup> 6,000 metric tons CO<sub>2</sub>

Used paper disposed None

Clean water consumed 398,000 metric tons

## Environmental Activities Achievements in FY2006

We established targets for our main environmental activities, and have continued to lower the environmental loads of our operations.

### ▼Environmental loads and targets

		Result	Target			
		FY2006	FY2006	FY2009		
Measures for global environmental issues	Supply	CO <sub>2</sub> emissions intensity (end use electricity) (kg-CO <sub>2</sub> /kWh)	0.375	0.36 Approx.	We aim to reduce average emissions intensities for FY2008 through 2012 to 20% below FY1990 levels	
		CO <sub>2</sub> emissions (Electricity sales) (10,000 tons-CO <sub>2</sub> [100 million kWh])	3,160 [844]	2,900 Approx. [812]		
		Nuclear power operating factor (%)	82.1	82.1	84.6	
		Efficiency at thermal power stations (sent-out thermal efficiency) (%)	39.3	40 Approx.	39	
		Utilization of power generated from new energy sources (100 million kWh)	5.0 Above	5.0 Above	9.0 Above	
	Consumption	Office energy and resource conservation	CO <sub>2</sub> emissions (10,000 tons- CO <sub>2</sub> )	5.9	5.8 Approx.	5.5 Approx.
			In-house power consumption (million kWh)	158	163 Below	153 Below
		In-house logistics	CO <sub>2</sub> emissions (10,000 tons- CO <sub>2</sub> )	0.6	0.6 Approx.	0.6 Approx.
			Fuel for regular vehicles consumed (km/ℓ)	12.3	12.0 Above	12.3 Above
			Low-emission/fuel-efficient vehicle introduction (%)	41	40 Above	70 Above
Office energy and resource conservation		Paper purchased (tons)	579	600 Below	600 Below	
		Clean water used (m <sup>3</sup> /person)	34	36 Below	36 Below	
		SF <sub>6</sub> recovery at equipment inspections (%)	99	98 Above	98 Above	
		Regulated freons recovery at equipment checkups (%)	100	100	100	
		Establishing a recycling society	Industrial waste recycled (%)	92	90 Above	90 Above
Coal ash recycled (%)	91		90 Above	90 Above		
Other waste recycled (%)	98		98 Above	98 Above		
Industrial waste landfilled outside company (tons)	490		1,000 Below	1,000 Below		
Used paper recycled (%)	100		100	100		
Green procurement (%)	99		100	100		
Harmoniously coexisting with the local environment	SO <sub>x</sub> emissions intensity per thermal power generated kWh (g/kWh)	0.25	0.2 Approx.	0.2 Approx.		
	NO <sub>x</sub> emissions intensity per thermal power generated kWh (g/kWh)	0.21	0.2 Approx.	0.2 Approx.		
	Sievert calculation in radiation measurement on people living near nuclear power stations per year (g/kWh)	0.001 Below	0.001 Below	0.001 Below		

\*10: We used the densities of pollutants in waste water treated at our thermal and nuclear power stations and water drainage volumes to calculate this figure, adding our own weight factor and converting the equivalent chemical oxygen demand.

\*11: The chemical oxygen demand figure covers totals for waste water treated at our thermal and nuclear power stations.

## Measures for Global Environmental Issues



See pages 25 to 30 of the 2007 Kyushu Electric Power Environmental Action Report for details.

### Target for CO<sub>2</sub> emission control

Global warming is a long-term challenge for the world. It is essential for states and businesses to conserve more energy and thereby reduce greenhouse gas emissions.

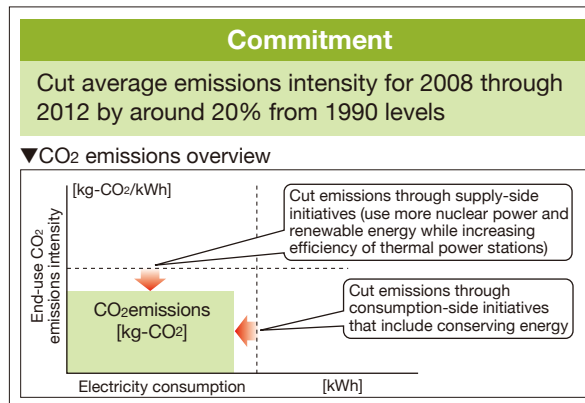
We stepped up efforts to combat global warming by revising our policy. We originally aimed to reduce our CO<sub>2</sub> emissions by fiscal 2010 from a fiscal 1990 baseline. We now seek to cut our average emissions for 2008 through 2012 in keeping with the Kyoto Protocol to the United Nations Framework Convention on Climate Change.

### Working to minimize CO<sub>2</sub> emissions

We can calculate the carbon dioxide emissions intensity, which is the volume of CO<sub>2</sub> emissions multiply by customer electricity consumption. The intensity rises

with electricity consumption of customers.

We are thus improving the supply side while working with customers to optimize their consumption to combat global warming.



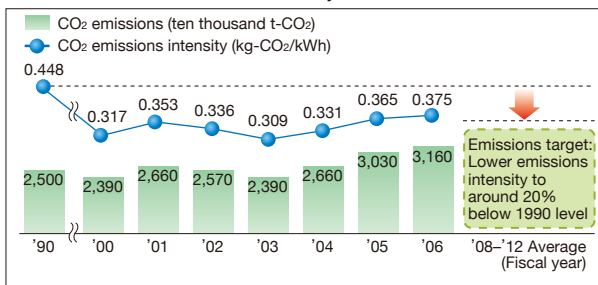
### Cutting supply-side CO<sub>2</sub> emissions

See pages 10 through 12 for details

In FY2006, our CO<sub>2</sub> emissions intensity was 0.375 kg per kilowatt-hour, down 16% from FY1990.

This was because we have suppressed emissions per unit of power produced by optimizing our energy mix. This centers on nuclear power and includes LNG in thermal generation and hydroelectric, geothermal, and other natural energy sources. We increased nuclear power as a proportion of our electricity output and deployed high-efficiency thermal power facilities, thus raising our overall thermal efficiency.

#### ▼End-use CO<sub>2</sub> emissions intensity and emissions



### Reducing CO<sub>2</sub> emissions from electricity consumption

We aim to help customers to reduce their consumption of electricity and thereby lower CO<sub>2</sub> emissions by offering the Eco Cute heat pump-based water heating system and proposing the use of electrical air conditioning through our total solutions services (see pages 16 to 18).

### Looking ahead

We will continue to maintain the safety and reliability of our nuclear power operations while optimizing their efficiency. At the same time, we will develop new nuclear power systems and tap more renewable energy and will operate our thermal generating facilities more efficiently as part of intensive efforts to suppress greenhouse gases.

We will step up our operations in Asia and elsewhere internationally in keeping with our recognition that global warming is a medium- and long-term challenge for everyone. For example, we will build our renewable energy and other businesses in keeping with the mechanisms of the Kyoto Protocol.

### Contributing to the Kyushu Green Power Fund

We and our customers contribute significantly to the Kyushu Green Power Fund, which the Kyushu Industrial Advancement Center runs to help ameliorate global warming. We match donation (one share=¥500 per month) from customers and pass this money to the fund.

#### ▼Kyushu Green Power Fund subsidy allocations for FY2006

	Number of projects	Output in kilowatt-hours	Subsidiaries
Solar power	36	474	¥5,833,000
Wind power	12	40,295	¥5,445,000

Note: Data from Kyushu Industrial Advancement Center announcement.



## Energy and resource conservation in office

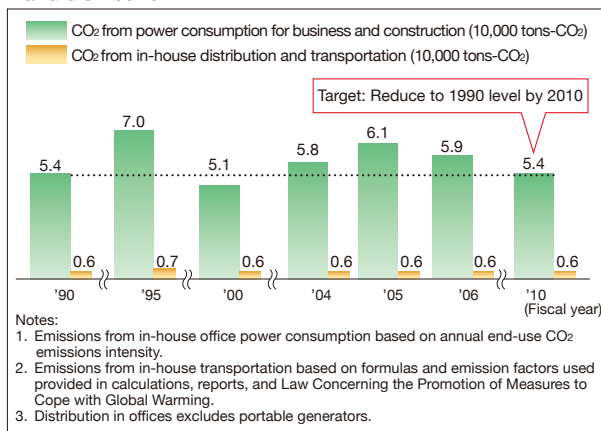
Our offices have stepped up efforts in these areas in line with our targets under the Kyoto Protocol.

Our offices are producing shipping guidelines and manuals to ensure compliance with the revised Energy Conservation Law.

### CO<sub>2</sub> emission targets for in-house power consumption and distribution

Beginning in FY2006, we have set ourselves targets for reducing CO<sub>2</sub> emissions for company head office, branch offices, customer service offices and power system maintenance offices, and electricity used to build power stations and for other construction, as well as by in-house distribution. Naturally, we are working hard towards meeting these goals.

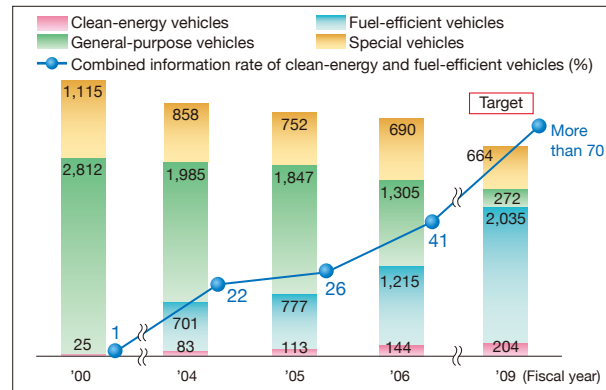
#### CO<sub>2</sub> emissions from in-house power consumption and distribution



### Low-emission vehicle introduction plan

We established targets to raise the proportion of clean energy and fuel-efficient vehicles in our fleet.

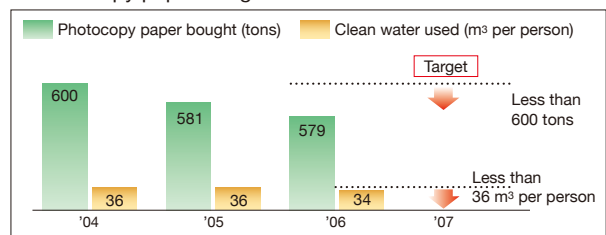
#### Low-emissions vehicle introduction plan



### Reduction of paper purchases and clean water use

Beginning in FY2006, we have set ourselves targets for reducing the volume of photocopier paper purchases and per capita consumption of tap water to below FY2004 levels as part of efforts to lower the environmental loads of our offices.

#### Photocopy paper bought and clean water used



## Kirishima Customer Service Office has received the Excellent Building Mark for Environment and Energy

The office's new premises received this mark from the Institute for Building Environment and Energy Conservation for meeting standards on environmentally friendly interiors. The center was the four of our facilities to receive such recognition from the institute. Kyushu Electric ranks third in Japan in terms of this mark after Mitsui & Co. and Tokyo Electric Power Co., Inc., which have received it for eight and six buildings, respectively.



Exterior of Kirishima customer service office (opened on February 27, 2006)

## Establishing a Recycling Society



See pages 31 to 33 of the 2007 Kyushu Electric Power Environmental Action Report for details.

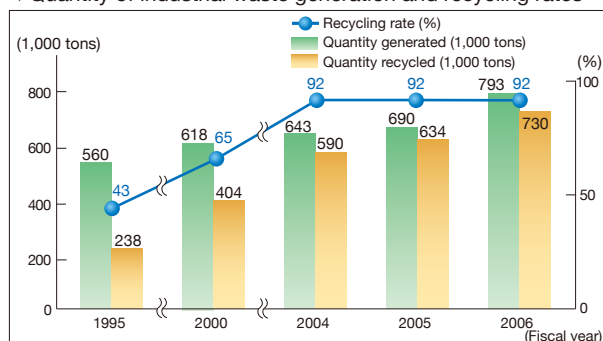
Kyushu Electric practices the 3Rs (Reducing, Reusing, and Recycling) in order to minimize waste from its operations.

### Industrial waste

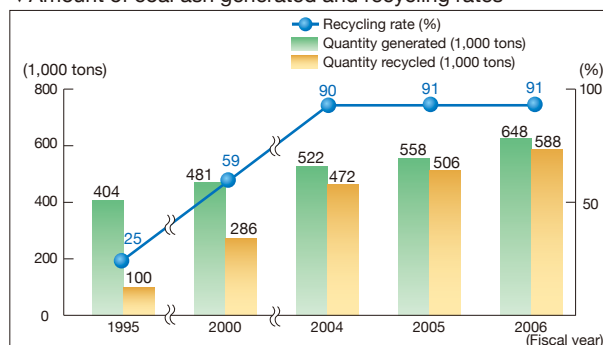
Industrial waste we generate during the course of our business includes coal ash and gypsum from thermal power operations and scrap metal and discarded power poles from construction work.

Accounting for around 80% of our industrial waste is coal ash, whose applications include materials for cement and bitumen. These and other uses enabled us to recycle 92% of our industrial waste in FY2006.

▼Quantity of industrial waste generation and recycling rates

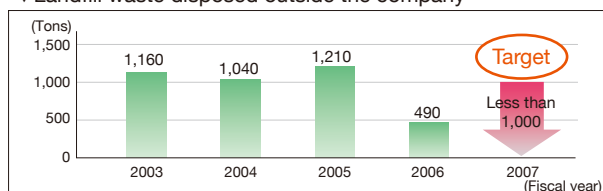


▼Amount of coal ash generated and recycling rates



External landfill with industrial wastes was 490 metric tons in FY2006, which was less than half of our targeted level.

▼Landfill waste disposed outside the company



● Cooperative collection of industrial waste  
We introduced a cooperative collection system for industrial waste in FY2005, under which certain types of the industrial waste generated from electric works under direct management of power stations and customer service offices are collected in dulk by area and delivered to a recycling company.



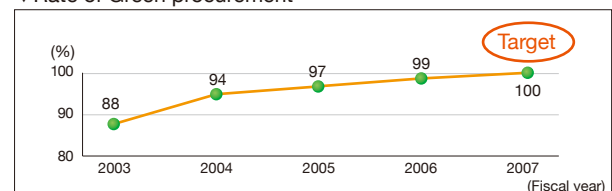
### Promotion of green procurement

The rate of green procurement in FY2006 (the rate of eco-friendly products in commodities purchased) was 99%.

We aim to increase this ratio to 100% in FY2007 by taking advantage of the electronic catalog procurement system that we set up in May 2006.

We comprehensively assess the potential environmental impacts of materials and equipment for our electric power operations before buying them. In FY2006, we have designated six outstanding offerings as Green Products.

▼Rate of Green procurement



## Harmoniously Coexisting with the Local Environment



See pages 34 to 37 of the 2007 Kyushu Electric Power Environmental Action Report for details.

### Environmental assessments

We aim to build new nuclear power facilities in the latter half of the 2010's.

We are accordingly conducting an environmental survey such as environmental assesment, geological survey and meteorological surveys at the Sendai Nuclear Power Station site.

Beginning in June 2006, we launched a

situational survey in keeping with recommendations from the Minister of Economy, Trade and Industry. This effort entails bibliographic research and field surveys based on environmental impact assessment methodologies. We will consider all steps needed to aid conservation by projecting and assessing environmental impact.

### Air pollution measures

We have taken several steps to reduce emissions of sulfur oxides and other pollutants from our thermal power stations.

Measures for reducing sulfur oxides (SOx)	<ul style="list-style-type: none"> <li>○ Use of heavy and crude oil with a low sulfur content</li> <li>○ Promotion of the use of sulfur-free liquefied natural gas (LNG)</li> <li>○ Installation of desulfurization facilities that remove SOx from exhaust gas</li> <li>○ Adoption of the in-furnace desulfurization method, which removes SOx within the boiler.</li> </ul>
Measures for reducing nitrogen oxides (NOx)	<ul style="list-style-type: none"> <li>○ Combustion method improvement for boilers, etc.                             <ul style="list-style-type: none"> <li>• Adoption of the two-stage combustion method</li> <li>• Adoption of the exhaust gas recirculation combustion method</li> <li>• Adoption of low NOx burner and combustors</li> </ul> </li> <li>○ Installation of denitration facilities that remove NOx from exhaust gas</li> </ul>

### Harmony with the Surrounding Environment

When designing facilities, we take into consideration the natural environment and urban landscapes of the surroundings areas, and implement environmental measures such as tree planting.

Since FY1986, we have been promoting the underground power distribution system for the benefit of urban landscape and to ensure safe and pedestrian-friendly pavements. It has been a systematic undertaking with the close cooperation of related road administrators, other local parties involved, and distribution line administrators.

### Managing polychlorinated biphenyl and asbestos

We store 1,478 transformers, capacitors, and other pieces of equipment containing polychlorinated biphenyls at special sites in line with the Waste Disposal and Public Cleaning Law.

In FY2006, the treatment facilities of the government-owned Japan Environmental Safety Corporation began to neutralize equipment containing these substances from our sites in Fukuoka Prefecture.

Some of our buildings and facilities incorporate asbestos, although there is no risk of dispersal in most cases. But dispersal could occur in 16 structures and in four transformer facilities that use sprayed asbestos insulation. We plan to replace with asbestos with alternatives by FY2007.

**Q** Are the electromagnetic fields from your generating facilities safe?

**A** We do not think that electromagnetic fields from our generating facilities harm human health in the surrounding neighborhoods. We base this stance on the environmental health standards of the World Health Organization and the results of research among institutions in Japan and abroad.

We will keep close tabs on relevant revisions to that organization's standards and trends in countering electromagnetic fields at power facilities in Japan.

 [Electromagnetic field website \(in Japanese only\)  
http://www.kyuden.co.jp/life\\_living\\_denji\\_index](http://www.kyuden.co.jp/life_living_denji_index)

### Developing Lithium Ion Batteries and Quick-Charging Stands for Electric Vehicles

We are applying technologies that we accumulated in jointly developing large lithium ion batteries with Mitsubishi Heavy Industries, Ltd., to work on high-performance units for electric vehicles and hybrid cars that users can recharge at their homes.

We are already encouraging the adoption of electric vehicles to cut carbon dioxide emissions and increase demand for our electricity. We are accordingly looking into setting up the infrastructure we would need to deploy a full-fledged electric vehicle fleet for our operations.

We have focused to date on verifying the performance of these batteries while exploring ways to make them affordable. We have also provided

automakers with samples. In March 2007, we began assessing the iMIEV electric model that Mitsubishi Motors Corporation is developing for its suitability as a commercial vehicle. We are working with that company to study the practicality of multipurpose fast-charging stands for electric vehicles. These stands incorporate our communications and other technologies.





## Working with Society



See pages 38 to 42 of the 2007 Kyushu Electric Power Environmental Action Report for details.

We promote environmental activities at local community, and communicate through our

Environmental Action Report, Eco Mothers, and other communication vehicles.

### Environmental Action Report

We have published our Environmental Action Report since FY1996. Beginning in FY2006, we repositioned that report to detail issues

highlighted in the Kyushu Electric CSR Report. Both publications thus form a set.

### Supporting environmental education activities

We support environmental education by working with citizens' groups to harness the Onagohata Recreation Forest, a facility that we own near the dam of our Onagohata Hydroelectric Power Station in Hita, Oita Prefecture. There, we hold nature-watching events, show people how to cut undergrowth to foster tree growth, and conduct tours of the hydroelectric power station.

In FY2006, we launched nature-watching activities at another forest that we own near Yamashitaike in Yufu, Oita Prefecture.



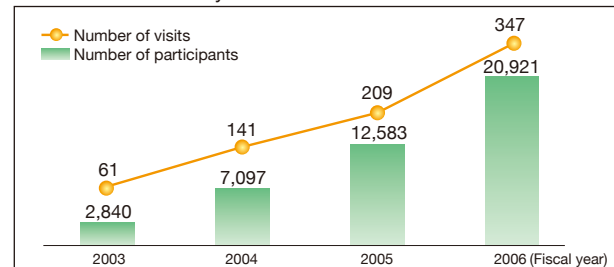
Nature watching at the Onagohata Recreation Forest in Oita Prefecture

### Eco Mothers Activities

This Activity is our key liaison to the community. It educates children about the environment and provides parents with information so they can enlighten their children at home.

Eco Mothers visit local nurseries and kindergartens. They perform and show pictures that raise awareness of environmental issues and provide simple tips on saving energy at home. They also solicit feedback on our environmental activities.

#### ▼Eco Mothers activity achievements



Eco Mothers show at Minai Imaizumi Nursery in Miyazaki Prefecture

### A message from Kumi Kudo of Eco Mothers (Oita staff)

My son is nine year-old and my daughter is five. I have worked for Eco Mothers Oita for three years.

We mainly visit kindergartens, elementary school clubs, and facilities where the very young and their guardians gather. Our prime challenge is to tailor story-telling to age groups. We are doing our best with panel theater shows, novelty picture books, and quizzes.

I think that children have become much more aware of the environment since we started our work. For example, they now initiate discussions about deforestation in Brazil and carbon dioxide emissions from human activities. We are very grateful to the Oita Branch of Kyushu Electric for publicizing our activity because it is now much easier for us to do our work in public places. I would like more people to know about what we do and hope we can expand our coverage to new locations.



For more information about Eco Mothers, please call Kyushu Electric Power's Environment Department (in Japanese only) in +81-92-726-1531.

### Kyushu Homeland Forestation Program

We commemorated our 50th anniversary in FY2001 by launching the Kyushu Homeland Forestation Program. We are working with residents around the region through this initiative to plant one million trees in 10 years and cut underbrush around seedlings to promote growth.

In FY2006, we planted 120,000 trees under the program in 42 locations. That raised the six-year total to about 670,000 trees.



Caption: Planting trees in Fujicho, Saga City

### Supporting Green Helper training

Since FY1998, we have helped an NPO, the Interchange Association for Promoting Forestation to train Green Helpers. These people become leaders in creating eco-friendly communities.

In FY2006, we held seminars in Fukuoka and Oita for a total of 119 participants. By year-end, the aggregate number of participants is 912. Trained Green Helpers lead volunteer forestation teams in their areas and assist with our Kyushu Homeland Forestation Program.

### Environment Month Programs

Environment Month in June highlights the need for protecting nature. During that time, we conduct forestation and cleanup drives and hold environmental and energy seminars. June is designated Environment Month, and we consider June to be a time to recognize a-new the necessity and importance of environmental presentation activities we are productive in this area with activities including seminars, tree planting and cleanup.

## Conserving Our Watershed Forests

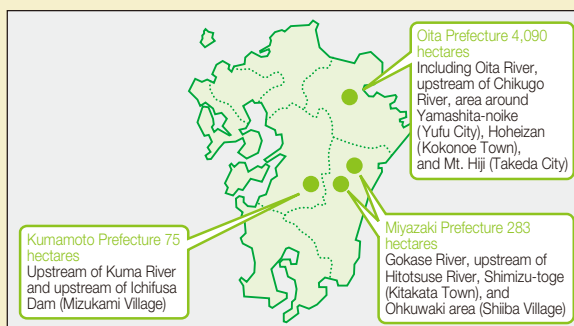
Kyushu Electric owns and manages 4,448 hectares of forests, mainly in Aso Kuju National Park, which provide stable supplies of water for our hydroelectric facilities. The forests conserve the watershed, absorb carbon dioxide, ensure biological diversity, prevent landslides, and also function as recreational areas. Rising concern in environmental issues has raised the profile of forests for their potential roles in reducing global warming.

Subsidiary Kyushu Rinsan Co., Inc., accordingly manages our forests to ensure they serve our business requirements while serving the public interest.

That is why in 1995 the Forestry Agency decided to place our forests around Yamashitaike, which also function as recreational areas, on the list of 100 key water sources in Japan.

In March 2005, we became Japan's first electric power company to obtain forest management certification from the Forest Stewardship Council. Our forests were the second in Kyushu and the 20th in the nation to receive this recognition.

Kyushu Rinsan acquired chain of custody certification from the council, enabling it to sell lumber from selection cutting that consumers can recognize as coming from responsible foreign management. The timber is eventually used in houses and furniture as part of a sustainable forest maintenance and management cycle.



### Forest Stewardship Council certification flow

