

## 8. Kyushu Electric Power Group's Environmental Activity Progress

Kyushu Electric Power Group boasts technologies and expertise accumulated through its operation, and operates in the general energy business, with electricity as its mainstay. It is also engaged in a wide range of businesses such as information and telecommunications, environment and recycling, and lifestyle services.

The area of environment and recycling includes fluorescent tube recycling, power generation using waste heat from waste incineration, and recycling of confidential documents.

The Group Environmental Management Promotion Subcommittee under the Group Management Association, comprising the Kyushu Electric Power Group's 27 member companies, has established an Environment Philosophy and Environment Policies thereby promoting the environmental management efforts of the Group.

In fiscal 2002, the Environmental Committee (tentative name) was established in each of the 27 member companies. The committees take charge in implementing measures to achieve each company's targets set for greenhouse gas reduction and recycling promotion, thereby following the PDCA cycle in environmental activities.

For other potential environmental loads that have not been recorded, methods will be developed in fiscal 2002 and actual management will start in fiscal 2003, based on a unified group target.

### (1) Kyushu Electric Power Group Environment Philosophy and Environment Policies

The Environment Philosophy states the principle of the Group's commitment to environmental activities; and the Environment Policies clarify specific guidelines for implementing such activities.

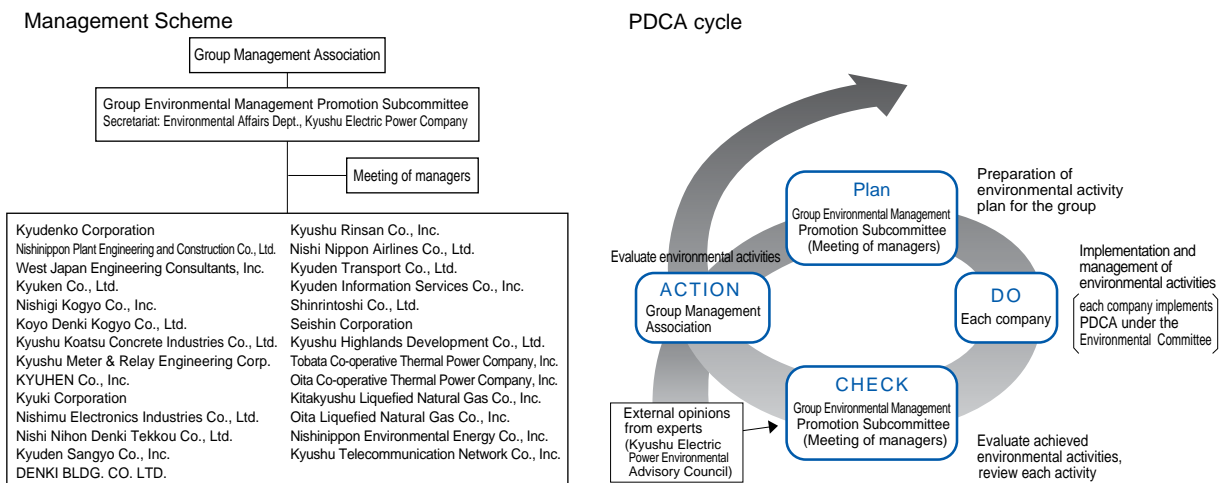
#### Environment Philosophy

The Kyushu Electric Power Group recognizes the importance of an environmental preservation 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 fulfill our responsibility to society by complying with all environmental preservation laws and regulations.
2. For the creation of a recycling-based society, we work to reduce the environmental load through the effective use of energy and resources, as well as 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.

### (2) Environmental Management Promotional Scheme



### (3) Handling and storage of environmentally damaging substances by Kyushu Electric Power Group (FY2001 records)

Starting this year, Kyushu Electric Power Group follows and publishes the amount and handling status of environmentally damaging substances. In regard to substances for which regulations are imposed under the law, the Group continues proper operation and management as required, and examines measures for possible environmental load reduction.

#### PRTR System

PRTR investigation results (FY2001)

(Unit: kg)

Index No.	Chemical substances	Applications	Company	Amount handled	Amount released into the environment			Amount transferred
					Air	Water	Soil	
1	Water-soluble zinc compounds	Hot dip galvanizing	Nishi Nihon Denki Tekkou Co., Ltd.	103,303	70	0	0	103,233
40	Ethyl benzene	Coating	Kyushu Meter & Relay Engineering Corp.	1,297	1,297	0	0	0
43	Ethylene glycol	Coolant	Nishinippon Environmental Energy Co., Inc.	8,207	8,207	0	0	0
63	Xylene	Coating	Kyushu Meter & Relay Engineering Corp.	5,610	5,610	0	0	0
			Kyuhon Co., Inc.	2,550	2,550	0	0	0
145	Dichloromethane	Cleaning	Nishimu Electronics Industries Co., Ltd.	9,000	8,750	0	0	250
227	Toluene	Coating	Kyushu Meter & Relay Engineering Corp.	6,210	6,210	0	0	0
			Kyuhon Co., Inc.	1,123	1,123	0	0	0
230	Lead and its compounds	Hot dip galvanizing	Nishi Nihon Denki Tekkou Co., Ltd.	4,354	0	0	0	4,354
		Soldering	Nishimu Electronics Industries Co., Ltd.	1,100	0	0	0	0

N.B. 1: Substances of which one ton or more were handled annually are listed above.

2: Please refer to p.22 for investigation results of Kyushu Electric Power.

#### PCB

PCB held by the Kyushu Electric Power Group is shown below and kept at special storage areas under strict control.

The group plans to render it harmless by the deadline of the year 2016, according to the Law Concerning Special Measures against PCB Waste, effective July 2001.

PCB storage

Equipment using PCB	Amount	Management status	Companies possessing PCB
Transformer	36 units	6 units in use, 30 units kept in strict security	Kyudenko Corporation, DENKI BLDG. CO. LTD., Tobata Co-operative Thermal Power Company, Inc., Oita Co-operative Thermal Power Company, Inc.
Capacitor	95 units	6 units in use, 89 units kept in strict security	Kyudenko Corporation, Nishinippon Plant Engineering and Construction Co., Ltd., Koyo Denki Kogyo Co., Ltd., Kyushu Koatsu Concrete Industries Co., Ltd., Kyushu Meter & Relay Engineering Corp., Kyuhon Co., Inc., Kyuki Corporation, Nishimu Electronics Industries Co., Ltd., Nishi Nihon Denki Tekkou Co., Ltd., DENKI BLDG. CO. LTD., Kyushu Highlands Development Co., Ltd., Tobata Co-operative Thermal Power Company, Inc., Oita Co-operative Thermal Power Company, Inc.
Stabilizer	112 units 2 drums	All units kept in strict security	Kyudenko Corporation, DENKI BLDG. CO. LTD., Tobata Co-operative Thermal Power Company, Inc., Oita Co-operative Thermal Power Company, Inc.
Others	8 units, 74 l	All units kept in strict security	Kyuden Sangyo Co., Inc., DENKI BLDG. CO. LTD., Tobata Co-operative Thermal Power Company, Inc.

N.B. Please refer to p.22 for investigation results of Kyushu Electric Power.

#### Measures against air pollution

SOx and NOx emissions from power generating facilities

Name of companies and units	Installed capacity (MW)	Fuels used	Records		Agreement with local governments		
			SOx (ppm)	NOx (ppm)	SOx (ppm)	NOx (ppm)	
Tobata Co-operative Thermal Power Company, Inc.	Unit 2	156	Mostly LNG	Not measured because emissions are 10m <sup>3</sup> /h or less	91	18	93
	Unit 3	250	Mostly LNG		72	11	80
	Unit 4	375	Mostly LNG		17	19	19
Oita Co-operative Thermal Power Company, Inc.	Unit 1	253	Mostly residue gas	306	170	326	180
	Unit 2	253	Mostly residue gas	303	169		180

N.B. 1: The records are the maximum values for the year.

2: The Air Pollution Control Law does not require measurement of SOx emissions when its emission is 10m<sup>3</sup>/h or less.

#### Others

The group's aim for the future is to replace specific freons with alternative freons and recover SF<sub>6</sub> gas, thereby reducing environmental load.

#### (4) Promotion of environmental management

Kyushu Electric Power Group plans to address the items below as measures for fiscal 2002 environmental management:

Item	Specific measures
Creation of an environmental management framework	Establish the Environmental Committee (tentative name) in all Group companies to examine specific environmental activities and implement PDCA as an organizational measure All group companies aim for ISO14001 acquisition by a fiscal year to be determined, or examine the specific content towards the development of an ISO14001-based environmental management system
Green procurement	Selectively purchase environmentally friendly office and stationery supplies such as those with an EcoMark when costs are roughly the same as previously used products Expand green procurement to products other than those for office and stationery supplies, as long as it is reasonable for each company's situation
Measures for recycling	Raise rates of paper recycling, recycled paper use, and industrial waste recycling Promote measures for recycling confidential documents and fluorescent tubes
Environmental education	Study meetings on environmental management and activities led by the Environmental Affairs Dept. of Kyushu Electric Power Joint training for the development of an environmental management framework Organization of environment related seminars, etc. Study tour to model companies and offices with advanced environmental activities
Promotion of green power	Measures to boost Green Electric Power System subscription for the promotion of natural energy Seminars organized by Environmental Affairs Dept. of Kyushu Electric Power
Joint environmental preservation activities	Greening activities such as forestation programs Cleaning of local communities

#### (5) Main environmental preservation measures by Kyushu Electric Power Group

##### Environmental measures for transmission line construction by Kyuken Co., Ltd.

Transmission line construction work means building power supply facilities. This work is often conducted near natural or living environments. This fact requires priority to be placed on environmental measures. The problems that construction can cause for the natural environment include deforestation, water pollution (ground and river water) and disposal of construction materials (industrial waste disposal); and for the living environment, noise, vibration, dust and reduction of natural scenery.

Kyuken Co., Ltd. conducts necessary construction work while thinking of techniques to minimize effects on the environment. This photograph shows one example where a soundproof structure and walls with scenic environment considerations are set up as a measure to ease noise during shield

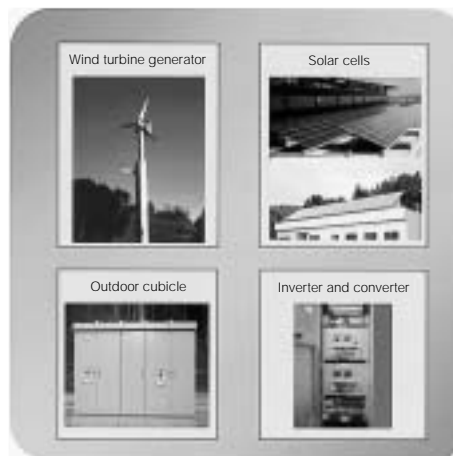
tunneling work to lay underground transmission lines.



Tunneling work, part of the new construction of a Kurume branch-line (start shaft side)

### Development and sale of wind and photovoltaic hybrid power generation systems to take advantage of multiple natural energies by Nishimu Electronics Industries Co., Ltd.

This wind and photovoltaic hybrid power generation method addresses the relation between the two natural elements of wind and sunlight; wind is usually strong when the sunlight is weak, and vice-versa. Nishimu Electronics Industries Co., Ltd. developed and sells a wind and photovoltaic hybrid power generation system that captures multiple energies from nature in such opposite weather conditions (two related patents are pending). This system may be applied in islands or remote areas where no electric power system is in place thanks to the technology that created this system.



### ISO14001 acquisition and activities for environmental preservation by Nishinippon Environmental Energy Co., Inc.

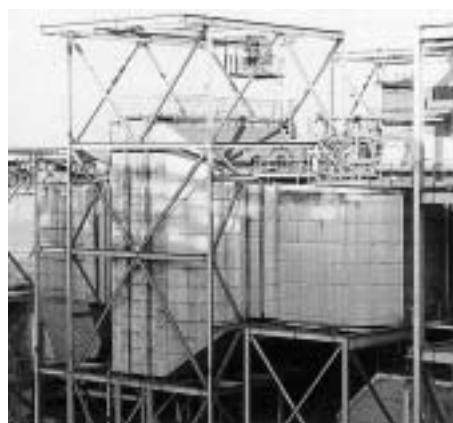
Nishinippon Environmental Energy Co., Inc. is engaged in a district heating and cooling project for the Momochi, Tenjin and Shimokawabata areas of Fukuoka City as well as in environment and energy related projects and consultation.

This company acquired ISO14001 certification on October 6, 2000 for its business activities, and is tackling the task of effective energy use, waste reduction and natural resource conservation through

recycling in order to contribute to global environmental preservation. Additionally, the company launched a consultation business on ISO14001 certificate acquisition in fiscal 2002 based on the standpoint that the knowledge and skills accumulated through its environmental management system should be given back to society for wider utilization.

### Measures against air pollution by Tobata Co-operative Thermal Power Company, Inc.

Tobata Co-operative Thermal Power Company, Inc. uses LNG and residue gas with no impurities such as sulfur for power generation purposes, which in turn ensures that flue gas contains almost no SO<sub>x</sub> or particulates. The company adopted a two-stage combustion method and an exhaust gas re-circulation combustion method to reduce NO<sub>x</sub> emissions from the boiler. The NO<sub>x</sub> problem is also addressed by a low NO<sub>x</sub> burner and a denitrification facility installed in Unit 4. The flue gas is emitted from 200-meter joint high-stack outlets. The height helps to keep the NO<sub>x</sub> level very low at ground level.

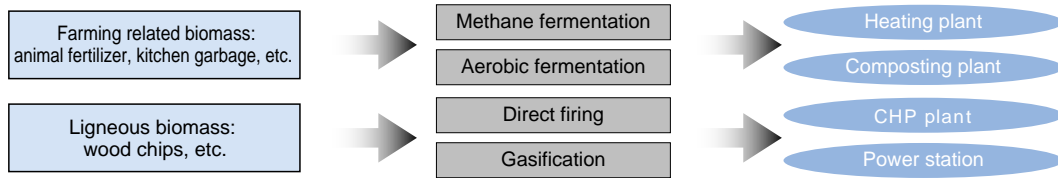


The denitrification facility

### Comprehensive engineering for a biomass energy recovery plant by Nishinippon Plant Engineering and Construction Co., Ltd.

Nishinippon Plant Engineering and Construction Co., Ltd. has been involved with engineering elements of facilities for wind and photovoltaic power generation and dioxin control under the theme of harmony between energy and the global environment. Currently, efforts are being made in the field of biomass energy recovery in consideration of environmental issues and resource recycling. Biomass (wood chips, kitchen garbage,

animal fertilizer, etc.) originates from living organisms, and is drawing attention as a carbon-neutral recyclable energy which does not add to existing CO<sub>2</sub>. The company is devoted to the engineering of biomass energy recovery facilities, such as those for biomass power generation and methane fermentation, by utilizing technologies accumulated from the construction and maintenance of power stations and environment-related fields.



### Industrial waste recycling by Nishi Nihon Denki Tekkou Co., Ltd.

At the factory of Nishi Nihon Denki Tekkou Co., Ltd., hot dip galvanizing is included in the manufacturing process. This process requires a pretreatment of acid cleaning, where concentrated sulfuric acid is used after dilution. The purpose of acid cleaning is to remove rust from steel material, but concentrated sulfuric acid becomes unfit for use over time and becomes a waste product. This waste was once neutralized and disposed of as sludge. However, it is now sent to a special company and

treated for reuse. The treatment company incinerates it in a sulfur burner, transfers the exhaust gas to the sulfur production facility, and recovers the concentrated sulfuric acid that was once used. We purchase this concentrated sulfuric acid and use it for acid cleaning again. The residue from the sulfur burner is also used as material.

### Launching of LNG (liquefied natural gas) sales by Kitakyushu Liquid Natural Gas Co., Inc.

LNG is an environmentally friendly, clean energy source that, when burned, emits no SO<sub>x</sub> or particulates, and less NO<sub>x</sub> and CO<sub>2</sub> compared to coal or oil. Kitakyushu Liquid Natural Gas Co., Inc. began LNG sales in April 2002 through Kitakyushu LNG Lorry. Gas is delivered to gas utilities using a tank truck.



## (6) Business outline of the 27 Kyushu Electric Power Group companies

Company name	Main businesses	Contact number
Kyudenko Corporation	Design and construction of distribution lines, electricity, air conditioning pipes, information and telecommunications, and environmental facilities	81-92-523-6255
Nishinippon Plant Engineering and Construction Co., Ltd.	Construction, repair and operation of various power stations	81-92-533-0011
West Japan Engineering Consultants, Inc.	Comprehensive construction consultation	81-92-781-2831
Kyuken Co., Ltd.	Transmission line construction work	81-92-523-9123
Nishigi Kogyo Co., Inc.	Construction and maintenance of facilities for civil engineering; and manufacturing and installation of steel structures such as floodgate	81-92-711-8811
Koyo Denki Kogyo Co., Ltd.	Manufacture and sale of insulators, flashers, and streetlights for crime prevention	81-96-353-1268
Kyushu Koatsu Concrete Industries Co., Ltd.	Manufacture and sale of concrete poles and piles	81-92-771-3631
Kyushu Meter & Relay Engineering Corp.	Maintenance, adjustment and manufacturing of watt-hour meters	81-92-541-0465
Kyuhon Co., Inc.	Manufacture and sale of transformers, electric water heaters, etc.	81-940-42-1364
Kyuki Corporation	Manufacture and sale of watt-hour meters, current limiters and other supplementary services	81-92-551-1731
Nishimu Electronics Industries Co., Ltd.	Design and creation of information, telecommunications and control systems	81-92-461-0246
Nishi Nihon Denki Tekkou Co., Ltd.	Design, manufacture and sale of transmission towers and steel structures	81-92-771-2761
Kyudenh Sangyo Co., Inc.	Insurance, fuel receiving and management for power stations, and operation of environmental preservation facilities	81-92-781-3061
DENKI BLDG. CO. LTD.	Rental business for rooms, meeting places and parking lots	81-92-781-0681
Kyushu Rinsan Co., Inc.	Landscaping, planting, forestry and marine product industry	81-92-562-3013
Nishinippon Airlines Co., Ltd.	Transmission line patrol and material transport using helicopters	81-92-761-6257
Kyuden Transport Co., Ltd.	Transport of general freight and specific passengers and collection and transport of industrial waste	81-92-761-2523
Kyushu Information Services Co., Inc.	Development, sale and operation of software, and information system-related consultation and temporary personnel service	81-92-781-9671
Shinrintoshi Co., Ltd.	Real estate (sale and purchase, rental and introduction)	81-92-761-4060
Seishin Corporation	Wholesale materials for electrical and construction work	81-92-711-8151
Kyushu Highlands Development Co., Ltd.	Management of hotels and golf courses	81-977-84-3151
Tobata Co-operative Thermal Power Company, Inc.	Electricity wholesale and supply	81-93-871-6931
Oita Co-operative Thermal Power Company, Inc.	Electricity wholesale and supply	81-97-558-4314
Kitakyushu Liquid Natural Gas Co., Inc.	Receiving, storage, gasification, delivery and sale of LNG	81-93-882-8900
Oita Liquefied Natural Gas Co., Inc.	Receiving, storage, gasification, delivery and sale of LNG	81-97-522-1900
Nishinippon Environmental Energy Co., Inc.	District heating and cooling, energy solutions, dispersed power source operation	81-92-526-0601
Kyushu Telecommunication Network Co., Inc.	Telecommunications (private lines, phones, broadband, etc.)	81-92-981-7293

## (7) Other group companies that deploy environment related businesses

### Fluorescent tube recycling business Japan Recycling Light Technology & System

Japan Recycling Light Technology & System undertakes the recycling of fluorescent tubes and production and sale of recycled fluorescent tubes.

- Establishment: May 2000, Start of operations: October 2001
- Contact number: 81-93-752-2386



### Confidential document recycling business Kyushu Environmental Management Corporation

Kyushu Environmental Management Corporation is engaged in recycling confidential documents, production and sale of recycled paper, and document storage.

- Establishment: May 2001, Start of operation: November 2001
- Contact number: 81-92-725-5208

