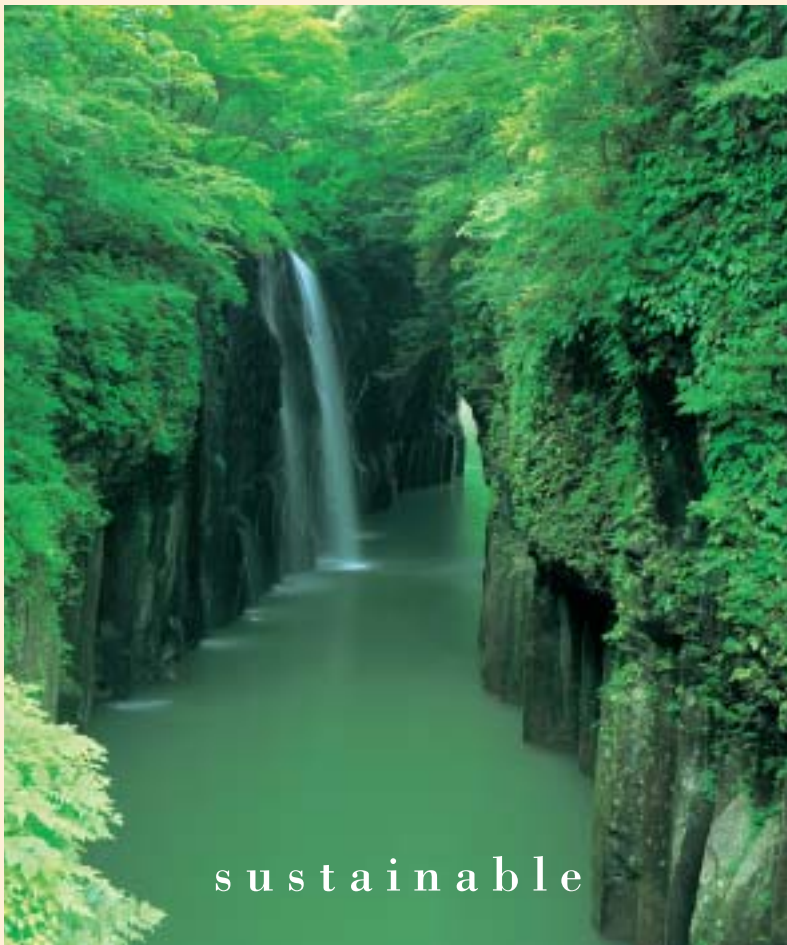


# 2004 Kyushu Electric Power Environment Action Report

## Glossary

Glossary of terms used in the 2004 Kyushu Electric Power Environment Action Report booklet  
and basic terms concerning the environment and related issues



KYUSHU ELECTRIC POWER CO., INC.



## A

### Acid rain

#### Basic term

Defined as rain having a pH of 5.6 or lower. Pollutants from factories such as sulfur oxides or nitrogen oxides form a mist of sulfuric acid or nitric acid in the atmosphere. When the mist comes in contact with rainwater, the rain will be strongly acidic. Acid rain damages the ecosystems of lakes, marshes and forests as well as architectural structures.

### Action Program to Arrest Global Warming

#### Basic term

A program established in 1990 by a cabinet decision which presents the government's policies and the vision of overall actions for the future, proposing the systematic and comprehensive promotion of global warming measures. It sets emission reduction targets for carbon dioxide and establishes a wide range of measures for a 20-year period (1990-2010), such as emission control over carbon dioxide and other greenhouse gases including methane. It also aims to promote scientific study and research, observation, monitoring and R&D as well as environmental awareness and international cooperation.

### Agenda 21

#### Basic term

A specific action plan to achieve sustainable development, adopted at the United Nations Conference on Environment and Development held in Rio de Janeiro, Brazil in 1992.

### Air pollution

#### P14, 27, 34, 45

Atmospheric pollution caused by the combustion of fossil fuel in economic and social activities. Major pollutants are sulfur oxides, nitrogen oxides, carbon monoxide, suspended particulate matter and photochemical oxidants.

### Air Pollution Control Law

#### Basic term

One of its purposes is to protect public health and preserve the living environment with respect to air pollution: by controlling emissions of soot, smoke and particulate from the business activities of factories and business establishments; by controlling emissions of particulate in the demolishing of buildings; by promoting various measures concerning hazardous air pollutants; and, by setting maximum permissible limits for automobile exhaust gas, etc. The law is also focused on helping victims of air pollution-related health damage by defining corporate liability for compensation of such damage.

### Allowances for publicly recognized licenses and qualifications

#### P35

Rewarding system implemented by Kyushu Electric Power. Allowances or rewards are paid to personnel who have acquired a license or qualification related to their jobs or for self-development. It is aimed at motivating employees to educate themselves to deal effectively with diversified operations and tasks.

### Artificial zeolite

Porous mineral consisting mainly of silicon and aluminum and having excellent ion-exchange and absorption properties. Artificial zeolite made of coal ash is superior to natural zeolite in terms of purity and performance and its application is expected to be diversified in agricultural, environmental and industrial fields.

### Asbestos

#### Basic term

An extremely fine, fibrous mineral used widely as an industrial material for its excellent heat and chemical resistance and insulation properties. A large intake can increase the risk of diseases such as lung cancer.

### Award system for employees who devote themselves to the local community

#### P35

Established by Kyushu Electric Power in 1984. Employees who have contributed to enhancing the corporate image or company reputation through long-range activities in local communities are awarded. The objective is to encourage employees to be actively involved in social activities.

## B

### Bag filter

#### P48

A device to collect particulates in exhaust gas by the particle deposit on the surface of a filter cloth. It is also called a filter dust collector.

### Basel Convention

#### Basic term

An international agreement adopted by the United Nations Environment Programme (UNEP) in 1989, officially called the Basel Convention on the Control of Transboundary Movement of Hazardous Wastes and Their Disposal. It imposes strict controls on trans-border transport and disposal of hazardous wastes by stipulating the obligation to get export permission and give advance notice as well as to re-import in the case of improper exports or disposals.

### Basic Environment Law

#### Basic term

Established by the government in 1993 to define a basic policy for environmental issues. The law provides fundamental principles for environmental conservation and also defines the responsibilities of the state, local governments, businesses and citizens, respectively, as well as basic matters to be pursued by local governments, businesses and citizens.

### Basic Environment Plan

#### Basic term

Basic plan established by the government to promote the comprehensive and systematic implementation of environmental conservation-related policies in accordance with the Basic Environment Law.

### Basic Law for Environmental Pollution Control

#### Basic term

A law established in 1967 for pollution control/prevention. It defines environmental

pollution and the responsibility of businesses, national and local governments and citizens with a view to preventing pollution, in particular, types of pollution that have a direct impact on the environment. In years to follow, social and economic activities based on mass-production, consumption and waste aggravated pollution in urban areas, and issues such as global warming and ozone layer depletion emerged. To address these issues, the Basic Environment Law was enacted in 1993 to replace the Basic Law for Environmental Pollution Control.

### Basic Law for Establishing a Recycling-based Society

#### Basic term

A law providing a basic framework for a recycling-oriented society in which few resources are consumed and in which the environmental load is reduced. In order to reduce the volume of waste finally disposed, the following priorities have been determined: (1) controlling (reducing) waste generation, (2) reusing used goods as is, (3) recycling used goods as raw materials, (4) heat recovery (thermal recycling), and (5) proper disposal.

### Beneficial organisms

#### P36

A collective term used for living organisms, such as agricultural produce, fish and yeast, that are useful in the daily life of people.

### Binary-cycle generation

#### P4, 21

A method of power generation in which turbines are rotated with the steam produced by heating and evaporating liquids with a low boiling point. It is called binary-cycle generation since electricity is produced with two heat cycles; the heat source system and the medium system. It is used in geothermal power generation and binary-cycle geothermal generation uses low-temperature steam and hot water, which were not usable in conventional methods, as the heat source by utilizing a medium with a low boiling point.

### Biological diversity

#### Basic term

Diversity in the living organisms on earth and the living environment. Intraspecific, interspecific and ecosystem diversities are included.

### Biochemical Oxygen Demand (BOD)

#### P57

The amount of oxygen consumed by microorganisms during decomposition of pollutants (organic matter) in river water or industrial wastewater. It is a commonly applied parameter for river pollution under environmental standards and the most stringent limit is set as 1mg/liter or less.

### Biomass

#### P37

Organic materials of biological origin used as energy sources which include debris from thinned woods, sawdust from lumbering, pruned plants, construction waste, manure from the livestock industry, organic matter collected in sewage treatment facilities and kitchen garbage.

### Bisphenol A epoxy resin

#### P30

An epoxide polymer used for adhesives, paints and electrical insulant. It has a strong adhesive

ability on bonded surfaces and excellent resistance to chemicals and electrical insulating properties.

## Blue tide

### Basic term

Abnormal discoloration in seawater caused by the rise of hypoxic water mass due to the decomposition of plankton sedimentation in eutrophic coastal waters, a process which consumes a significant amount of oxygen. Dissolved oxygen depletion produces hydrogen sulfide that affects the aquatic ecosystem.

## Boron and boron compounds

### P30

An element occurring naturally only in combination, such as borax, and found in river water, groundwater, seawater and soil, particularly in volcanic zones. Boron and its compounds are used as glass material, solvents for plating, preservatives, pesticides and a neutron absorber for nuclear power plants.



## Cadmium

A heavy metal found in large amounts in zinc ore used in plating and rechargeable batteries. High exposure to cadmium over long periods of time causes chronic poisoning, resulting in kidney disorders, calcium deficiency and osteomalacia.

## Capacity factor

### P18, 19

The ratio of average power generated, for a period of time considered, to the total installed supply capacity of power plants or substations for the same period. It indicates the effectiveness of facility utilization. The efficient use of facilities and improvement of the capacity factor must be pursued through load leveling and rationalization of periodic inspections to ensure efficient power supply.

## Car Sharing

### P5, 32, 33, 58, 60

The systematic shared use of automobiles owned by companies or groups. This new means of individual transportation is drawing attention as an alternative to privately owned cars.

## Carbon dioxide (CO<sub>2</sub>)

### P5,11, 13, 14, 15, 18, 19, 20, 21, 22, 23, 31, 32, 33, 34, 36, 37, 45, 49

A colorless, odorless gas and one of the greenhouse gases that absorb infrared rays. It is a greenhouse gas targeted for reduction under the Kyoto Protocol.

## Carbon monoxide (CO)

### P37

A colorless, odorless toxic gas produced by the incomplete combustion of carbon-based compounds. It combines with hemoglobin in the blood, thereby reducing oxygen delivery capacity.

## Carbon neutral

### P37

Refers to a characteristic of CO<sub>2</sub> equilibrium achieved when plants, which absorb atmospheric carbon dioxide (CO<sub>2</sub>) by photosynthesis, are

burned as a fuel and emit the absorbed CO<sub>2</sub>, thereby offsetting the amount of CO<sub>2</sub> in the environment throughout their lifecycles.

## Carbon tetrachloride

### P23

Toxic and causes digestive or nervous-system disorders when inhaled or absorbed through the skin. It is colorless liquid producing a chloroform-like odor and is not combustible or explosive. Used as a fire-extinguishing agent or solvent and for dry cleaning.

## Cement admixture

### P18

Material mixed with cement in concrete production, enhancing the durability and heat resistance of concrete. Cement to which coal ash (fly ash collected in an electrostatic precipitator) has been added is called fly-ash cement and is categorized into three types (A, B and C) under the Japanese Industrial Standards. The maximum content of fly ash is 30%.

## Cement material

### P18

Coal ash, which may effectively substitute for clay, used in the production of cement with other cement materials, and limestone, clay, silica stone, ferric oxide fuel and gypsum.

## Certification/Registration Organization

An organization that assesses the conformity of businesses to the standards for environmental management systems of the International Organization for Standardization (ISO).

## Chemical oxygen demand (COD)

### P13, 15

The amount of oxygen consumed to oxidize organic matter in water with the oxidizing agent. It is often used as an indicator for water pollution since water with more organic matter requires more oxygen. The unit of COD is mg/liter, and 1mg/liter indicates that 1mg of oxygen is required for 1 liter of water. COD is applied under environmental standards to indicate the pollution level of lakes, marshes and seas. The most stringent limit for lakes and marshes is 1mg/liter or less.

## Clean Development Mechanism (CDM)

One of the Kyoto Mechanisms. A developed country supports a developing country in completing an emissions reduction project and receives an achieved reduction amount. The developed country is allowed to receive part of an achieved emissions reductions as credit to apply to their own reduction requirement.

## Clean energy cars

### P18, 23

Electric vehicles, hybrid cars, natural gas automobiles and methanol cars.

## Closed water area

### Basic term

A body of water in an inland bay or sea, lake or marsh where water exchange rarely occurs for topographical reasons. Pollutants are likely to accumulate making maintenance or improvement of water quality difficult.

## Club of Rome

### Basic term

A private organization comprised of scientists,

economists, educators and businessmen, established in 1970 to search for a way to avoid the crisis for humans caused by the depletion of natural resources, aggregated environmental pollution and population growth. It was named the Club of Rome since its first meeting was held in Rome in 1968 prior to its establishment.

## CO<sub>2</sub> Absorption and Sequestration Method

### P36

The application of photosynthesis function of plants (trees) to absorb, fix and store CO<sub>2</sub> in a solid form.

## CO<sub>2</sub> emissions intensity (end-use electricity)

### P18, 19

The amount of CO<sub>2</sub> emitted in the generation or consumption of 1kWh of electricity. CO<sub>2</sub> emissions intensity for end-use electricity refers to CO<sub>2</sub> emissions from 1kWh of electricity used by Kyushu Electric Power's end-users. Since electricity sold to customers includes electricity purchased from wholesale suppliers, the amount of CO<sub>2</sub> emissions recorded by Kyushu Electric Power will contain emissions from power generation by wholesale suppliers as well.

## Coal ash

### P18, 24, 25, 36, 45, 59

Ash produced from the combustion of coal in coal thermal power plants, due to ash contained in coals at a rate of about 5-30%. There are two types of coal ash: fly ash collected in a precipitator and cracked welded ash, called clinker ash, collected at the bottom of a boiler.

## Combined cycle (combined power generation method)

### P20

A Power generation method that combines gas and steam turbines. Heat from gas turbines is collected in a waste heat boiler, and the steam produced is used to rotate steam turbines.

## Communication promotion campaign

### P31

A campaign organized by Kyushu Electric Power every October. The company hosts community events such as community visits and open office days to listen to customers' opinions and requests and help people understand the business activities of the company. A wide variety of events are held to express appreciation to customers.

## Compliance

### P4, 11, 35, 41

The observation of laws, rules and other arrangements that are reasonably imposed on citizens by regulatory or similar organizations.

## Compliance guidance

### P4

Established for employees by Kyushu Electric Power in December 2002 to guide employees in making decisions about what should or should not be done in daily operations. In order to develop the current corporate culture, the company and its employees are expected to review and correct their performance of duties or operations in line with societal norms and/or public opinion.

## Compost

### Basic term

Fermented or decomposed waste, including kitchen garbage, fallen leaves, etc.

## Conference of Parties to the UN Framework Convention on Climate Change (COP)

### Basic term

Aimed to establish a framework for the prevention of global warming and the related rules. The first session was held in March 1995 in Berlin by the parties to the United Nations Framework Convention on Climate Change, which was made effective in March 1994.



## Confidential document

P24, 25, 26, 41, 45, 47, 51

Prohibited to be disclosed due to the secrecy or confidentiality of contents. The term usually refers to corporate documents such as significant policies or human resources-related documents.

## Constant cycling at rated electric output

In this operation method, the thermal output of nuclear reactors is reduced during winter to maintain a stable electrical output without overproduction (over 100% production) as thermal efficiency increases in winter due to the lower temperature of seawater. This method was once applied in operation.

## Constant cycling at rated thermal output

P18, 19,

In this operation method, nuclear reactors are operated at the rated thermal output as approved by the national government (100%). This increases electrical output to 101-104% in winter due to the lower temperature of seawater.

## Containers and Packaging Recycling Law

### Basic term

A law promulgated in 1995 and officially called the "Law for Promotion of Sorted Collection and Recycling of Containers and Packaging." In order to reduce general waste and promote the utilization of reclaimed material, the law stipulates the roles of various parties with regard to containers and packaging which make up a large portion of household waste: consumers are to separate waste before disposal, municipalities are to collect garbage by type and manufacturers of containers and those responsible for packaging of products are to develop and produce recyclable products.

## Convention on Biological Diversity

### Basic term

Aimed at preserving biological diversity, the sustainable use of its components and fair and equitable sharing of benefits arising from the

utilization of genetic resources. The convention divides the diversities of all living organisms on earth into three elements: ecosystem, species and genes (intra-species).

## Corporate social responsibility (CSR)

P61

Operating style pursuing both social and economic values. Companies should fulfill their social responsibilities, for example, by complying with laws and/or social standards, being considerate of the environment, protecting the shareholders' interest and participating in social activities.



## Denitration facility

P14, 27, 46, 58

A facility to remove nitrogen oxides (NOx) from the flue gas generated by fuel combustion in the boilers at thermal power plants before they are released from chimneys into the atmosphere.

## Deposit-refund system

Basic term

A system in which deposits are collected when goods are sold, in addition to the selling prices, and refunded when the goods or containers are returned.

## Desulfurization facility

P14, 24, 27, 46

A facility to remove sulfur oxides (SOx) from the flue gas generated by fuel combustion in the boilers at thermal power plants before they are released from chimneys to the atmosphere.



## Diatom earth

P36

Fossil of diatom, a phytoplankton mainly used in chinaware.

## Dichloropentafluoropropane

P42

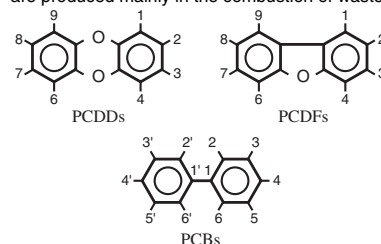
Chlorofluorocarbon-replacing material (HCFC225) and a clear and colorless liquid that produces an ether-like odor and has a boiling point of 54°C. Used as detergent for various parts or components.

## Dioxins

P30, 45, 48

General term for certain organic compounds containing chlorine, including Polychlorinated Dibenzo-Para-Dioxins (PCDD), Polychlorinated

Dibenzofurans (PCDF) and Coplanar Polychlorinated Biphenyls (Coplanar PCB), which are categorized into 224 different types based on the level of toxicity related to the location and number of chlorine molecules. Severe and acute toxicity have been proven through animal testing. Dioxins are said to cause cancer and deformation in humans and are produced mainly in the combustion of waste.



## Dissolved oxygen (DO)

Basic term

The amount of oxygen dissolved in water. It changes according to conditions including water temperature, atmospheric pressure and salt content. The level of DO is higher in clean water than in polluted water where oxygen consumption increases.

## District heating and cooling projects

Basic term

Air conditioning business based on the supply of cold water and steam (or hot water). Cold water and steam are transported by pipes from large-scale heat-generating plants to buildings located within a certain distance from supplying facilities for air conditioning purposes.

## Dose evaluation value

P18

Evaluation value for radiation dose that represents the degree to which people may be exposed to radioactive materials released by a nearby nuclear power plant. The dose evaluation value is controlled to be well below 0.05mSv/year, a target dose established under the guidelines of the Nuclear Safety Commission in Japan.



## Earth Day

Basic term

Earth Day is April 22, and its founding dates back to April 22, 1970 when large-scale demonstrations were organized throughout the United States for the purpose of appealing for the protection of the environment including pollution control and nature conservation. On this day, we celebrate the international collaboration by declaring our commitment to protect the global environment.

## Earth Summit

Basic term

An informal name for the United Nations Conference on Environment and Development held in Rio de Janeiro, Brazil in 1992, aiming for global environment protection and sustainable development. The conference resulted in the adoption of the Rio Declaration on Environment and Development, Agenda 21, and the State-

ment of Forest Principles, setting forth rules for individuals and nations. At the conference, the UN Framework Convention on Climate Change and the Convention on Biological Diversity were opened for signature.

### Eco Ice

Thermal storage air-conditioning systems that utilize less expensive nighttime power for thermal storage to provide daytime air-conditioning. Eco Ice is a general term used for ice storage air-conditioning systems that use ice thermal storage in summer and warm-water thermal storage in winter. The product name was coined by combining the terms, "ecology" (environmental friendliness), "economy" and "ice" (ice thermal storage).

### Eco Mothers

P5, 31, 60, 61

The title of PR representatives who serve as intermediaries between Kyushu Electric Power and its customers regarding environmental issues. Their main task is to visit kindergartens and children's associations in the local community in order to read books about the environment and provide environmental information. They also seek the opinions of parents concerning environmental issues and the company's environmental activities to relay the opinions to the company.

### Eco Mothers' Club

P58

A two-way network between mothers in Kyushu and Kyushu Electric Power for sharing environmental information and energy issues through Eco Mothers activities. It aims to enhance environmental awareness and contribute to environment preservation society-wide.

### Ecocute (CO<sub>2</sub> refrigerant heat pump-type water heater)

P22

Heat pump-type water heaters using a natural refrigerant (CO<sub>2</sub>: carbon dioxide) that store hot water during the night as electric water heaters.

### Eco-friendly products

P26

Products developed to reduce environment load over their lifecycle ranging from production to disposal.

### EcoLeaf environmental labeling

P20

An environmental labeling program, in which the quantitative data (calculated based on the Life Cycle Assessment (LCA) method) of environmental load generated from manufacturing to disposal of products is published, after the data is certified by third-

### EcoMark

P26

An environmental label that helps consumers choose eco-friendly products. EcoMark can be issued to eco-friendly products, or "green products," approved by the Japan Environment Association under the guidance of the Ministry of Environment since 1989.



### Electric vehicle

P12, 18, 23, 33

A vehicle which operates with battery-equipped electric motors. It emits no exhaust gas, so its emission level is low even when exhaust gas from power plants in power generation is taken into account. It also contributes to drastically reducing engine noise.



### Emission Trading (ET)

A solution adopted as one of the Kyoto Mechanisms, where CO<sub>2</sub> emissions are traded between countries or companies in order to achieve their CO<sub>2</sub> emission reduction target.

### Emissions intensity

P18, 27

The amount of substances, such as CO<sub>2</sub>, NO<sub>x</sub> and SO<sub>x</sub>, emitted upon generation or consumption of 1kWh of electricity.

### Endocrine disrupting substances (EDSs: aka. environmental hormones)

Basic term

A collective term used for certain chemicals that act like hormones once they enter the body and have the potential to disturb the endocrine (hormone) system in humans. Dioxins, polychlorinated biphenyls (PCBs) and DDT are suspected substances.

### Energy Conservation Law

Basic term

Formally known as the Law Regarding the Rationalization of Energy Use, promulgated in 1979 to promote rationalization (energy saving) by establishing specific standards for factories, buildings, machines and equipment. The law provides the Top Runners Approach in which standards for automobile fuel economy and energy conservation in electric appliances must be higher than those found in currently available products that have the best energy efficiency. Also, factories above a certain size are required to submit a plan for the rationalization of energy use.

### Environment Action Plan

P8, 9, 10, 11, 58

Kyushu Electric Power places environmental conservation at the top of its tasklist of management and has proactively engaged in tackling environmental issues including global warming. The Action Plan is a company-wide implementation plan updated every year.

### Environment Day

Basic term

June 5th is designated in the Basic Environment Law as Environment Day. The purposes of the day is to promote interest in and understanding of environment conservation among people and motivate participation in environmental activities. June 5th is also World Environment Day, as designated by the United Nations.

### Environment Impact Assessment Law

P27

The law stipulates that environment impact assessment should be conducted on large-scale projects that may have a serious impact on the environment, for example, land development projects for roads, dams, railways, airfields, power plants, land reclamation and land readjustment. The law has been in full force since June 1999.

### Environment Month

P14, 31, 32, 33, 34, 46, 47, 58

June has been designated by the Ministry of Environment as Environment Month in Japan. Various events or programs are launched to raise awareness and promote environmental conservation activities during Environment Month. Kyushu Electric Power also names June "Environment Month" and organizes voluntary activities such as forestation, cleaning and other programs.

### Environment PR

P5, 11, 31

Delivery or disclosure of environmental policies and/or activities through reports, brochures, TV, newspapers and other forms of mass media.

### Environmental accounting

P7, 12, 13, 41, 46, 58, 61

Management accounting enabling companies to understand (measure), analyze and publish in a quantitative manner (expressed in monetary or in material unit) the costs and effects of environmental protection activities of their business operation. It aims to effectively and efficiently promote environmental conservation among the companies in harmony with society in order to achieve sustainable development.

### Environmental impact assessment

P27, 58

A technique used for identifying the environmental impact of a project that may be hazardous to the environment before its implementation. The impact of the project on the environment will be studied, estimated and evaluated in order to find and implement the appropriate precautionary measures. In Japan, it is conducted in compliance with the Environment Impact Assessment Law for target projects undertaken by enterprises engaged in the operation of roads, dams, railways and power plants. The process requires the involvement of local residents, specialists and administrative agencies in charge of environmental matters. It is one of the most important measures for preventing environmental pollution.

### Environmental Action Plan by the Japanese Electric Utility Industry

Basic term

An action plan established in 1996 by 12 participants of the Federation of Electric Power Co. of Japan to state their goals to establish global warming measures, create a recycle-oriented society and manage chemical substances, as well as clarify the activities necessary to achieve these goals. The plan is reviewed annually to ensure transparency and achieve its goals.

## Environmental activity costs

P12, 13, 14, 15, 46

Costs incurred to recover environmental disruption and protect the environment. For example, environmental disruption leads to environmental damages. Various expenses such as compensation for environmental damages or victims or repairs for environmental damages may be incurred. Usually, environmental protection activities require costs for the construction or development of environmental infrastructures and other investments.

## Environmental administrator

P10, 35

Personnel responsible for managing comprehensively environmental activities implemented in each relevant operational unit. In his management, emphasis is placed on the accurate, complete and effective operation of the PDCA cycle. The first Environmental Administrator was appointed in August 2001 for each office and department at the Head Office and operational units of the branch office of Kyushu Electric Power.

## Environmental Affairs Department Compliance Guideline

P11

Standards established by Kyushu Electric Power by stakeholders according to the purpose of the Compliance Directives (established in December 2002). Employees involved in environmental activities should observe the standards in performing environmental activities.

## Environmental audit

P9

Process of evaluation based on objective evidence obtained in order to determine if environmental activities implemented by an entity comply with the related laws or regulations and/or the entity's related standards or environmental conservation manual. Kyushu Electric Power arranges an independent environmental audit to be conducted regularly under the control of the Management Administration Office company-wide in order to evaluate the performance of environmental activities.

## Environmental conservation agreement

P11, 27

Agreement concluded between a local government and a factory or business of a certain size in connection with pollution control.

## Environmental corporate management

P7, 8, 9, 10, 11, 12, 40, 41, 42, 44, 45, 46, 47, 61

Operation pursuing sustainable development of an entity with attention paid to the environment. It is a new operating style or strategy, in which businesses take advantage of friendly involvement in the environment, instead of regarding environmental activities as negative factors due to increased costs. At Kyushu Electric Power, the environmental operation is being pursued in its overall business activities under the Kyushu Electric Power Environment Chapter.

## Environmental education

P5, 14, 31, 32, 41, 45, 46, 47, 58, 60, 61

Intended to define, sustain and improve an ideal human environment. Environmental education was enthusiastically inspired by the World Conservation Union (IUCN), UNESCO and

UNEP which started its activities shortly after World War II.



## Environmental efficiency

P11

Idea or concept of promoting both a reduction in environmental load and economic advantages through energy saving, recycling of waste and production process using less energies.

Environmental efficiency is assessed based on indicators obtained by dividing the quantity of goods produced or services offered by the associated environmental load. Increasing environmental efficiency is considered essential for realizing sustainable societies.

## Environmental labels

P20, 26

Providing environmental information about a product. Categorized into three types; labels (such as EcoMark) certified by a third party based on established standards, labels showing environmental information about a product provided by the manufacturer, and labels displaying quantitative information based on LCA (life cycle assessment).

## Environmental Law Guideline

P11

Summary of key issues in typical environmental laws and regulations compiled by Kyushu Electric Power. The Company often creates a large-scale environmental load in business activities, and therefore, must control their business operations taking into consideration their social responsibility related to environmental conservation.

## Environmental load

P12, 13, 14, 17, 18, 20, 26, 27, 40, 41, 42, 43, 44, 45, 46, 48, 61

Any disturbance in ecological system caused including items required for certain activities (e.g. energies, raw materials and parts), by-products produced or generated from activities (e.g. wastes, effluent, gas emissions and noise) and beneficial or valuable outputs (e.g. products and services).

## Environmental management

P8, 11, 39, 40, 41

Environmentally conscious corporate administration or management pursuing sustainable development. It is a new management style or strategy, in which businesses take advantage of friendly involvement in the environment, instead of regarding environmental activities as negative factors due to increased costs. At Kyushu Electric Power, the environmental management is being pursued in its overall business activities under the Kyushu Electric Power Environment Charter.

## Environmental Management System (EMS)

P4, 10, 14, 15, 35, 44, 45, 46, 47, 51, 61

Method of environmental management imple-

mented in accordance with corporate environmental policies and/or the PDCA Cycle (Plan: planning for environmental policies or schemes, Do: implementation and operation of the Plan, Check: evaluation and analysis, Action: countermeasures) to reduce environmental load voluntarily and continuously.

## Environmental monitoring

P28

Surveillance and recognition of impact on the environment. Air quality, noise, vibration and water quality are inspected while a power plant is being constructed and/or after the operation of a power plant is started in order to measure, evaluate and analyze the impact of smoke, noise, vibration and thermal wastewater produced by power stations on the neighboring environment. Environmental monitoring is often conducted when a new power plant is constructed or an existing power plant facility is expanded.

## Environmental NGOs

P31, 33, 58

Non-profit, non-governmental private groups and organizations that undertake environmental protection endeavors, including the World Wide Fund for Nature (WWF) and Greenpeace.

## Environmental organization(s)

P14, 15, 46, 53, 59

Organization or group of people actively involved in environmental activities in local communities.

## Environmental pollution

Basic term

Defined by the Basic Environment Law as significantly expanded damages from dirty air and water, soil contamination, noise vibration, ground subsidence (excluding excavations from mining) and unpleasant odors. It is caused by business or human activities and results in negative effects on human health and the living environment (including properties, plants and animals closely connected to people's lives and growing environment of these organisms). Degradation of water conditions and bottom sediment is also defined as environmental pollution.

## Environmental radiation

P28

Radiation existing in the living environment of humans and other organisms.

## Environmental standards

Basic term

Referred to as "standards for conditions associated with air pollution, water pollution, soil contamination and noise, for which maintenance is desirable to protect human health and the living environment" in the Basic Environment Law.

## Ethylbenzene

P30, 42

A colorless liquid found often in paint and varnish having a boiling point of 136.2°C and a melting point of -94°C.

## Ethylene glycol

P42

A colorless viscous liquid, producing very little odor, having a boiling point of 197.6°C and a melting point of -13°C. It is used as a synthetic

material in dyes and perfumes or in air-conditioning refrigerants (anti-freeze).

### **Eutrophication (adj. eutrophied, eutrophicated)**

P37

The increase in the level of nutrient salts (nitrogen, phosphorus etc.) in certain areas of seas, lakes and marshes, likely caused by an inflow of wastewater from factories and households. It may cause red tides and the consequent death of marine life in seas, or water blooms in lakes and marshes, which result in odorous water.

### **Exhaust gas recirculation combustion method**

P27

A method that enables combustion at a low temperature and low oxygen level to reduce NOx emissions. A portion of the exhaust gas is either mixed into the combustion air or supplied into the combustion zone.

### **Extended producer responsibility (EPR)**

Basic term

An approach in which manufacturers are held liable for the disposal, treatment and recycling of their products in addition to their production and distribution. It is anticipated that the approach will promote the development of products that are easy to recycle or have low environmental load upon disposal.



### **Factory Location Law**

Basic term

Enacted in 1973 to regulate site selection for and construction of factories above a certain size (in the manufacturing and power supply industries) from an environmental protection standpoint. Construction of a new factory and additions to an existing factory must be reported to authorities. The ratio of production facility area to the area of the whole site and the ratio of environmental facility space, such as greenery areas, to the area of the whole site are regulated by the Law.

### **Fast breeder reactor (FBR)**

Nuclear power reactor, using high-speed neutrons (fast neutrons), able to produce more nuclear fuel than power generation consumes. This is a feature of the reactor likened to "breeding" (i.e. uranium-238 is changed to plutonium-239).

### **Federation of Economic Organizations' Charter for a Global Environment**

Basic term

Declaration announced by the Federation of Economic Organizations (Keidanren) in 1991. The charter states that the tackling of environmental issues is essential to member companies for their existence and in their business activities and declares its commitment to implementing environmental activities voluntarily and proactively for environmental protection.

### **Federation of Economic Organizations' Voluntary Action Plan on the Environment**

Basic term

A long-term scheme established by the Federation of Economic Organizations (Keidanren) in 1997 to pursue environmental activities effectively and continuously in all business segments of Japan. Targets are set and performance is assessed yearly, which enhances accountability. Participating companies are expected to voluntarily make the maximum effort in regarding the Plan as an incentive for social promise.

### **Final disposal sites**

Basic term

Disposal sites for general and industrial waste approved under the Waste Management and Public Cleansing Law. There are three types of sites: non-leachate controlled landfills for stable industrial waste, leachate-controlled landfills for domestic and industrial waste and isolated landfills for hazardous industrial waste.

### **Flue gas**

P14, 15

A mixture of gases or smoke emitted from factory and power plant chimneys.

### **Forest Management Certification**

P33

A system to certify the proper management of forests from environmental, social and economic perspectives, the labeling of corporate standards aimed at ensuring the use of products originating solely from certified forests through the entire process from production to processing to distribution, and the validity of such standards.

### **Forestry's contribution to the environment**

P49

Forestry contributes to the environment by providing recyclable resources (wood) and maintaining functions (headwater conservation in forests; fallen leaves rot and turn to humus over the years; humus-rich soils store and purify rainwater) for the benefit of the public.

### **Freons / Fluorocarbons**

P14, 15, 23, 43, 46

A group of chemical compounds containing carbon and fluorine. Some Freons, such as chlorofluorocarbon (CFC) and hydrochlorofluorocarbon (HCFC), have been found to cause ozone layer depletion. Their production and use have been regulated since the adoption of the Montreal Protocol in 1987.

### **Fuel cells**

P20

A device that utilizes the electrochemical reaction of hydrogen and oxygen that is a reverse reaction of water electrolysis, to produce water and electricity. This method of power generation theoretically has a high efficiency since fuel is directly converted into electricity through a chemical reaction and is characterized by low air pollutant emissions.

### **Fuel-efficient vehicles**

P15, 18, 23

Low-emission vehicles and motor vehicles that meet the fuel economy standards as set in the Law Concerning the Rational Use of Energy (FY2010 fuel economy standard: to improve

automotive fuel economy by 21.4% from the 1995 average of gasoline-fueled automobiles).



### **General waste (municipal solid waste)**

P14, 24, 25, 46, 51, 58

"Waste other than industrial waste" as defined in the Waste Management and Public Cleansing Law. Specifically, this includes kitchen garbage and wastepaper from households, restaurants, stores and offices.

### **Glass cullet**

P36

Crushed pieces of used glass, including bottles for recycling materials.

### **Global environment issues**

P11, 17, 18, 19, 32, 41, 45, 48, 60, 62

Environmental issues that go beyond national borders such as ozone layer depletion, acid rain and global warming, and the issues faced by developing countries including loss of tropical forests and endangered species of wild animals which require international efforts led by developed countries. These problems must be addressed from a global point of view.

### **Global warming**

P8, 13, 14, 15, 31, 32, 34, 36, 46, 48, 60, 61, 62

Rising of the surface temperature of the earth due to greenhouse gas emissions. Concentrations of greenhouse gases (such as carbon dioxide, methane and nitrous oxide) in the atmosphere increase due to economic or social activities, and in turn the greenhouse effect is intensified.

### **Global Warming Potential (GWP)**

P15, 23

An index used to calculate the level of greenhouse effect. It uses a relative scale based on the greenhouse effect of the reference gas, carbon dioxide, which has a GWP of exactly one. This potential is stipulated in the enforcement ordinance to promote global warming measures.

### **Global Warming Prevention Headquarters**

Basic term

An organization established by a cabinet decision following the adoption of the Kyoto Protocol to comprehensively promote measures both effective and specific to prevent global warming in line with the steady implementation of the Kyoto Protocol. It is headed by the Prime Minister.

### **Green consumers**

Individuals with high environmental awareness who do not hesitate to purchase low environmental load products at a higher price.

### **Green Electric Power System**

P21, 59

A system established by a power company in cooperation with their customers and independent power generators with an aim of expanding the use of natural energies nationwide.

## Green helper

P32, 62

The title granted to individuals who completed forestation-related training classes offered by the Interchange Association for Promoting Forestation (NPO) to foster leadership for the "Forestation of Communities" program among local people.

## Green mark

Basic term

The mark established by the Paper Recycling Promotion Center in 1981 and printed on products manufactured from used paper. The purpose of the mark is to help consumers easily recognize the use of used paper and encourage used paper collection and use.



## Green Power Certificate

Political incentive measure launched by the government to promote the use of renewable energies. It is awarded according to the amount of electricity generated using renewable energies and the green power may be sold to other companies.

## Green procurement

P11, 13, 14, 15, 18, 24, 26, 41, 44, 45, 46, 47, 58, 61

Priority purchasing or procurement of low environmental load products or services.

## Green Procurement Guideline

Kyushu Electric Power's guidelines, in which its concept of or directions for the procurement of eco-friendly products are stated. It sets a framework that encourages suppliers as well as Kyushu Electric Power to actively participate in environmental activities

## Green products

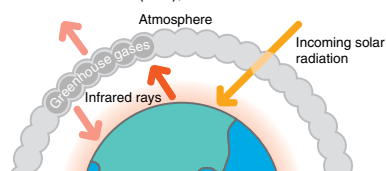
P45, 46

Products such as plastic containers easily degraded by microorganisms developed to lessen impact on the environment while manufactured or used.

## Greenhouse gas(es)

P11, 19, 23, 37, 45, 58, 60, 61

Any of the atmospheric gases that absorb infrared rays and contribute to the greenhouse effect. The surface temperature of the earth is determined by the balance between the energy from solar radiation and the heat emitted from earth to space. Most incoming solar radiation is visible and absorbed by the earth's surface after passing through the atmosphere. The surface heated by solar radiation emits infrared heat, which is retained by the "greenhouse gases." Some retained thermal radiation is reflected onto the ground, while some is radiated to the upper atmosphere. Together the incoming solar radiation and the downward thermal radiation from the atmosphere raise the temperature of the earth's surface. This mechanism is called the greenhouse effect. The Kyoto Protocol designated six greenhouse gases, including carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), hydrofluorocarbons (HFC), perfluorocarbons (PFC), and sulfur hexafluoride (SF<sub>6</sub>), to be reduced.



## Gross thermal efficiency

P18, 20

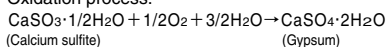
A ratio of gross output obtained by assuming that all electricity generated in the power plant becomes electric power effectively.

## Gypsum

P24, 25, 45

Mineral composed of calcium sulfate. In order to remove sulfur oxides, limestone (calcium carbonate) and exhaust gas are contacted in the desulfurization equipment of a thermal power plant to create gypsum. Reaction formula (Wet limestone - Gypsum method)  
Absorption process:  
$$\text{SO}_2 + \text{CaCO}_3 + 1/2\text{H}_2\text{O} \rightarrow \text{CaSO}_3 \cdot 1/2\text{H}_2\text{O} + \text{CO}_2$$
  
(Sulfur dioxide gas) (Limestone slurry) (Calcium sulfite) (Carbon dioxide gas)

Oxidation process:



## Halons

P14, 43, 45, 46

A group of FKW-containing compounds such as bromine-containing bromodifluoromethane and bromotrifluoromethane. Halons are widely used in fire extinguishers because they are non-flammable and non-explosive, and have an excellent ability to extinguish fire. They are also safe from electrical fires and less hazardous than asphyxiating gases such as carbon dioxide and nitrogen gas.

## Heat pump water heater

P22

A water heater that utilizes surrounding air to heat the refrigerant. The refrigerant is compressed, thereby raising their temperatures and the heat is transferred to cold water to supply hot water. It reduces power consumption to about 1/3 of that of electric heaters, making it an economical choice for hot water supply.

## Heat storage system

P22, 58

A system that stores energy in the form of cold or warm water produced at night in a heat storage tank for daytime use.

## High magnetic property

P37

Quality of producing high magnetic force.

## High-level radioactive waste

P29

Waste, including wastewater or highly radioactive vitrified-form wastewater, that cannot be reused as fuel at reprocessing plants where uranium and plutonium are collected from spent nuclear fuel.

## High-pressure vacuum forming

P36

A method of forming thermoplastic resin such as plastic. Forming is completed in a vacuum state that is created by removing the air between sheet-typed materials softened by heat and a mould.

## Hot dip galvanization

P42

An anti-corrosion method to protect steel products. The products are dipped in melted metallic zinc to form a steel and zinc alloy layer

and a zinc layer 70-100 μ m thick.

## Household eco-account book

P58, 60

An account book designed for family use. An environmental account of their everyday life shows their impact on the environment. Primary items listed in the book include consumption of energy (electricity and gas) and water, trash and living, shopping and transportation.

## Hybrid car

P18, 23

A car that runs on a combination of different power sources, such as an internal combustion engine and batteries or an electric motor.

## Hydrazine

P30

A colorless fuming unctuous liquid having an ammonia-like odor. It emits smoke in the air and reacts vigorously to metal, metallic oxides and porous substances that may cause a fire or explosion. It is used as a feed water treatment agent to remove dissolved oxygen from the boiler during power generation.

## Hydrocarbons

Basic term

General term for organic compounds consisting of carbon and hydrogen. Organic compounds containing oxygen and nitrogen together with hydrocarbons are generally called hydrocarbon substances. Major hydrocarbon substances, alcohols, aldehydes and esters, are believed to cause photochemical smog along with nitrogen oxides.

## Hydrochlorofluoro carbon(Alternative Freons)

P23, 43

Manufactured by adding hydrogen partially or entirely, instead of the chlorine usually contained in specific Freons. HCFC (hydrochlorofluorocarbon) and HFC (hydrofluorocarbons) are alternative Freons that contribute less to ozone layer depletion than specific Freons (ozone depletion potential of HCFC is 1/20 - 1/60 of that of CFC while that of HFC is zero). However, they still pose a threat in terms of global warming.



## "Idling stop" (Engine idling control)

Basic term

This refers to avoiding unnecessary engine idling of automobiles while stopped and parked. This measure can help reduce the emission of global warming substances and air pollutants.

## Industrial waste

P4, 13, 14, 18, 24, 25, 41, 43, 45, 46, 49, 58, 61

Waste produced from business activities and categorized into 19 kinds of waste such as cinders, sludge, oil, acid, alkali, plastic, etc. It is usually produced in large quantities and requires the use of special technologies in treatment. Treatment is controlled by the Waste Management and Public Cleansing Law.



## Industrial Waste Final Disposal Site Engineering Controller

P35

Personnel appointed for industrial waste disposal facilities based on Article 21 of the Waste Management and Public Cleansing Law. Disposal sites covered by Article 7 of the Enforcement Ordinance must designate a Controller.

## Industrial Waste Intermediate Treatment Facility Engineering Controller

P35

Personnel appointed for industrial waste treatment facilities based on Article 21 of the Waste Management and Public Cleansing Law. The Controller is responsible for technologies related to the maintenance and control of facilities.

## In-furnace desulfurization

P27

A technology using a desulfurizing agent to absorb and remove SO<sub>x</sub> produced in fuel combustion from exhaust gas in the combustion equipment. Inexpensive limestone is often used as the desulfurizing agent.

## In-house power consumption

P12, 43

Power consumed in the operation of power plants using equipment such as pumps, fans and lighting appliances.

## Intergovernmental Panel on Climate Change (IPCC)

Basic term

Established by the United Nations Environment Program (UNEP) and the World Meteorological Organization (WMO) in 1988 to serve as a place for government discussions. Global warming issues as well as global warming-related scientific findings and socioeconomic effects are discussed or assessed by governments from a scientific viewpoint. Countermeasures for global warming are now being discussed at IPCC.

## Internal environmental audit (auditors)

P35

A regular audit of the environmental management system to determine whether the system meets the ISO14001 standard and is operated and maintained properly. Internal environmental auditors are those who implement such audits.

## International Organization for Standardization (ISO)

Basic term

A non-governmental international organization located in Geneva, Switzerland which consists of standardization institutes from approximately 100 countries, and establishes world-wide standards for networks and industrial matters. ISO is not technically an abbreviation; however, it is used because “*isos*,” which means “equal” in Greek, well represents the organization. The Japanese Industrial Standards Committee (JISC) has been a member since 1952.

## ISO14001

P10, 14, 15, 44, 45, 46, 47

An international standard for environmental management. An external certification authority evaluates whether a system provides systematic management to determine, evaluate and improve environmental impacts resulting from the activities

of a corporate organization, such as production, sales and recycling. The registration is issued to the organization that is judged to meet the standard.

## ISO-based system

P10, 14, 44, 45, 46, 61

An environmental management system that meets the requirements of ISO14001 though the system is not officially registered.

## ISO9001

P45

An international standard for quality control. An external certification authority evaluates a system that systematically controls the quality of products and services that an organization offers. The registration is issued to the organization that is judged to meet the standard.



## Japan Nuclear Fuel Limited

P29

A company located in Rokkasho-mura Village in Aomori Prefecture that engages in four undertakings: uranium enrichment; low-level radioactive waste disposal; intermediate storage of high-level radioactive waste; and the reprocessing of nuclear fuel.

## Joint Implementation (JI)

One of the Kyoto Mechanisms. If a country invests in a project related to reducing carbon dioxide in the host country, the investing country is granted credits for emission reduction units in return.



## Kenaf

Basic term

An annual plant in the Malvaceae family, Hibiscus genus (*Hibiscus cannabinus*). Considered to be an alternative material for making paper as a wood replacement from a forest protection viewpoint. Also thought to be beneficial for preventing global warming due to its high absorption of carbon dioxide.

## Kyoto Mechanism (Flexible Mechanism)

P23, 34, 36

Scheme launched for the Kyoto Protocol and aiming to achieve emissions reduction targets set forth in the Kyoto Protocol through international cooperation. It consists of the following:

- 1) Emissions trading: governments are allowed to trade allocated allowances between developed countries.
- 2) Joint Implementation (JI): developed countries collaborate to complete an emissions reduction project and receive emissions reductions in proportion to the amount of contribution.
- 3) Clean Development Mechanism (CDM): a developed country supports a developing country in completing an emissions reduction project and receives an achieved reduction amount.

## Kyoto Protocol

Adopted in the Third Conference of Parties to the UN Framework Convention on Climate Change (COP<sub>3</sub>) held in Kyoto in December 1997. Six kinds of gases, carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), hydrofluorocarbons (HFC), perfluorocarbons (PFC), and sulfur hexafluoride (SF<sub>6</sub>), are regulated under the Kyoto Protocol. It declared that developed countries including Russia and Eastern Europe are required to reduce total emissions by at least 5% on average from 1990 average emissions records in the five-year period starting 2008 (as for HFC, PFC and SF<sub>6</sub>, 1995 average level may be used as a base). Japan needs to reduce by 6%, the U.S. by 7%, the EU by 8%, and certain countries may increase by 10%.

## Kyushu Electric Power Group

P4, 8, 9, 10, 11, 24, 26, 34, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 50, 61

Companies whose decision-making units are controlled by Kyushu Electric Power or which are substantially affected by Kyushu Electric Power in financial, operating and other matters. As of April 1 2004, 59 companies belong to the Group.

## Kyushu Industrial Advancement Center (KIAC)

P21

Foundation committed to stimulating industries in Kyushu. The center is involved in the study and research of grand designs, the development or exploit of projects and related feasibility studies and the provision of support for projects.



## Law Concerning Special Measures against Dioxins

Basic term

Designed to prevent and eliminate dioxin-related environmental pollution. It regulates exhaust gas, wastewater and waste disposal, provides measures on soil contamination, determines the allowable daily intake of dioxins and establishes environmental criteria.

## Law Concerning Special Measure against PCB

P30

The law establishes a framework of obligations and responsibilities that national and local governments, businesses and citizens should jointly assume and fulfill in tackling global warming in response to the adoption of the Kyoto Protocol. It prescribes an action plan for the achievement of the Kyoto Protocol commitments and encourages citizen efforts by proposing the establishment of local councils, etc.

## Law Concerning the Promotion of the Measures to Cope with Global Warming

Basic term

The law establishes a framework of obligations and responsibilities that national and local governments, businesses and citizens should jointly assume and fulfill in tackling global warming in response to the adoption of the Kyoto Protocol. It prescribes an action plan for the achievement of the Kyoto Protocol commitments and encourages citizen efforts by proposing the establishment of local councils, etc.

## Law Concerning the Recovery and Destruction of Fluorocarbon (Fluorocarbons Recovery and Destruction Law)

### Basic term

A law officially called the Law for Ensuring the Implementation of Recovery and Destruction of Fluorocarbons Concerning Specified Products. The law stipulates measures for recovery and destruction of Freons in specific products (e.g. commercial air conditioners, refrigerating equipment and automobile air conditioners) in order to reduce Freons emissions in the atmosphere.

## Law for the Promotion of Nature Restoration

### Basic term

A law designed to protect, restore and create a natural environment and to minimize environmental damage. Such efforts will be pursued by various groups, including state and local governmental agencies, local residents, NPOs and intellectuals.

## Law on Promoting Green Purchasing

The Law Concerning the Promotion of Procurement of Eco-friendly Goods and Services by the State and Other Facilities established by the Japanese government on May 24 2000 and enacted on April 1 2001. State government and agencies are required to procure goods with lower environmental load. The Law aims to widen the range of green purchasing to local governments and private organizations and to promote the use of eco-friendly products nationwide to protect the global environment.

## Lead and its compounds

### P42

An odorless tasteless bluish gray metal often used in batteries, pigments, plating and soldering.

## Life cycle assessment (LCA)

### P20

A method of environmental impact evaluation which addresses, in a quantified and objective manner, the whole process from collection of resources, production and use through disposal or recycling.

## Limits to Growth

### Basic term

Research report published in 1972 by the Club of Rome. It warns that if current trends in population growth and environmental degradation continue, economic growth on earth will reach a limit within 100 years. In order to avoid global collapse, the report emphasizes the necessity of shifting priorities from growth to worldwide balance.

## Liquefied natural gas (LNG)

### P12, 15, 19, 27, 42, 45, 62

Natural gas converted to liquid form by cooling methane (CH<sub>4</sub>)- and ethane (C<sub>2</sub>H<sub>6</sub>)-based natural gas to minus 162°C. It is transported on special tankers called LNG carriers and is regasified to use as fuel for power generation.

## Liquefied petroleum gas (LPG)

### P12

Liquefied mixture of gases, chiefly propane and butane, generated in crude oil drilling or petroleum refinery.

## London Convention

### Basic term

An international convention officially called the "Convention on the Prevention of Marine Pollution by Dumping Wastes and Other Matter." It regulates the deliberate disposal at sea from vessels, aircraft or platforms or by incineration.

## Low NOx burner

### P27

A burner that incorporates a NOx reduction method or a combination of such, such as lowering the level of oxygen supply in combustion zones or lowering the maximum flame temperature, or shortening gas retention times in high temperature ranges.

## Low-emission vehicles

### P18

Vehicles certified as meeting the emission standards under the "Low Emission Vehicle Certification Procedure (Ministry of Environment)," certified in three levels of 25, 50 or 75%-reductions from the latest regulation level).

## Low-level radioactive waste

### P13, 15, 29

Waste from nuclear power plants containing a low level of radioactive material, such as used work clothes, gloves and replaced equipment.

## Low-level Radioactive Waste Disposal Center

### P29

A facility where low-level radioactive waste generated in the course of nuclear power plant operation is disposed. The waste is stored until the level of radioactivity attenuates to a level at which it poses no safety threat. The center started its operation in Rokkasho-mura Village, Aomori Prefecture, in December 1992.

## Low-pollution vehicles

### P14, 18, 23, 33, 46

As defined by Kyushu Electric Power, this refers to fuel-efficient vehicles and clean energy vehicles, though the definition is not universally endorsed.



## Magnetic separation

### P37

One of separating methods using magnetism (magnetic force) including those using filtration, distillation and centrifugal separation.

## Manganese and its compounds

### P42

A system set forth in the Waste Disposal and Public Cleansing Law aiming to prevent environmental pollution resulting from illegal dumping and inappropriate disposal of industrial waste. The system requires the producer of industrial waste to track the waste disposal process using a manifest sheet from the origin of the waste to its final destination when such disposal is consigned to a waste service company.

## Manifest system

### Basic term

This is a system set forth in the Waste Disposal Law. The system prevents environmental pollution resulting from unlawful dumping and

inappropriate disposal of industrial waste. The system requires the producer of industrial waste to check the disposal process of the waste from collection and transportation to final disposal if such disposal is entrusted to other entities.

## Material safety data sheet (MSDS)

### Basic term

A printed form containing data regarding the properties and handling of a certain chemical substance which is provided prior to or at the time of trading such substance between companies.

## Melia azedarah tree

### P28

Deciduous tree of the Meliaceae family known for its excellent CO<sub>2</sub> absorption and found throughout East Asia and Japan.

## Mecenat activities

### Basic term

A company's cultural activities. Mecenat is a French word derived from the name of a politician, Maecenas, who supported art and literature during the reign of Emperor Augustus in Ancient Rome. At present, the term represents cultural support without expecting any return. It is different from sponsorship (advertisement and publicity) in that the purpose of Mecenat is for social contribution.

## Methane

The greenhouse gas second to carbon dioxide in its greenhouse effect. It is produced through decomposition of organic matters by microorganisms under anaerobic conditions, such as those found in marshes, rice paddies and soil or during enteric fermentation of herbivores, as well as excavation for natural gas or coal.

## Milli-sievert

### P18, 28

One milli-sievert is 1/1000 sievert (Milli- means 1/1000). The sievert (Sv) is an SI derived unit to measure the biological effect of radiation on a human body.

## More stringent prefectural standard

### Basic term

A more stringent standard, in addition to the Japanese national government's uniform standard for emission of particulates or discharge of waste-water, provided through a prefectural ordinance, in order to more fully achieve protection of human health or the living environment in the region.

## Mixed oxide (MOX) fuel

A mixed fuel consisting of the plutonium and uranium oxides recovered in the reprocessing of spent fuel.

## "My cup" campaign ("Bring your own cup" campaign)

### P45

The company's campaign to promote the usage of reusable cups (ceramic, metal, plastic etc.) among employees instead of using disposable paper cups.

## N

### National Environmental Policy Act (NEPA)

#### Basic term

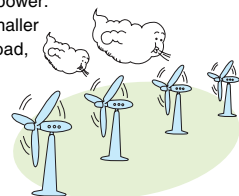
A law established in the United States to urge administrative organizations to consider the environment in the decision-making process. This law, which is the first law in the world legislating environmental impact assessment, encouraged other countries to introduce their own environmental assessment system.

### Natural energy

#### P19, 21, 58

Energy generated from natural phenomena, such as solar, geothermal, hydro and wind energy and tidal power.

Because of its smaller environmental load, it is regarded as clean energy when compared with fossil fuel and nuclear energy.



### Natural parks

#### Basic term

Park designated by the Natural Parks Law, which is focused on protecting and preserving beautiful natural scenery for outdoor activities and education. National Parks and Quasi-National Parks designated by the national government and prefectural Nature Parks designated by local governments are included.

### Net thermal efficiency

#### P18, 20

A ratio of net output to the electricity actually generated in the power plant obtained by subtracting the electric energy that is consumed by facilities necessary for power plant operation (in-house power consumption for pumps, fans and lighting, etc.).

### New energy

#### P14, 15, 18, 19, 20, 21, 46, 48, 58, 61

Clean energy having a low environmental load that originates from less controlled or restricted resources. It includes natural energies, including solar and wind, recycled energy from waste incineration and sewage heat; and highly-efficient energy from co-generation (system in which the excessive steam or hot water produced in fuel combustion for power generation is used for air conditioning).

### Nitrogen dioxide (NO<sub>2</sub>)

#### Basic term

A reddish brown irritant gas produced through the reaction of nitrogen monoxide and oxygen. It is hazardous when inhaled since it does not easily dissolve in water and can reach the deep part of the lungs without causing severe discomfort.

### Nitrogen oxides (NO<sub>x</sub>)

#### P13, 15, 18, 20, 27, 42

Any of several oxides of nitrogen such as nitrogen monoxide (NO) and nitrogen dioxide (NO<sub>2</sub>). Nitrogen oxides are generated when fuel containing nitrogen is burned or when nitrogen in the air is oxidized during combustion. They are subject to regulation under the Air Pollution Control Law as hazardous substances.

### Nuclear fuel

#### P12

Uranium fuel consisting of approx. 4% fissile uranium-235 and approx. 96% non-fissile uranium-238. MOX fuel used in plutonium-thermal projects is a type of nuclear fuel.

### Nuclear Waste Management Organization of Japan

#### Basic term

An organization established under the Specified Radioactive Waste Final Disposal Act (promulgated in June 2000). Based on the Act, the final disposal of high-level radioactive waste will commence in the second half of the 2030s. The selection of a site for and the construction of disposing facilities will be pursued in the near future.

## O

### Optimal combination of power sources

#### P19, 58

This refers to a well-balanced combination of power sources, such as hydro, thermal, nuclear and geothermal power, determined by comprehensive analysis of the reliability of the supply and the economical and environmental impact of each power source.

### Outline for Promotion of Efforts to Prevent Global Warming

#### Basic term

A package of over 100 measures and policies to promote the achievement of commitments under the Kyushu Protocol (reduction in greenhouse gas emissions during 2008-2012 by 6% from the 1990 level).

### Ozone hole

#### Basic term

An area of the ozone layer located at the heights of about 20-25km depleted of ozone. An ozone hole formation over Antarctica has been identified.

### Ozone layer

#### P11, 14, 15, 23, 36, 46, 60

An atmospheric layer about 20km thick existing at heights of approximately 20-25km from the earth's surface containing relatively high ozone concentration. The ozone layer absorbs most harmful ultraviolet rays in sunlight.

### Ozone Layer Protection Law

#### Basic term

It refers to the Law concerning the Protection of the Ozone Layer through the Control of Specified Substances and Other Measures issued in 1988. The purpose of this Law is to ensure the smooth implementation of the Vienna Convention for the Protection of the Ozone Layer and the Montreal Protocol on Substances that Deplete the Ozone Layer, which work together to contribute to the protection of the ozone layer on an international level. It stipulates measures for the production and emission of specified substances such as Freons as well as rationalization of their consumptions.

## P

### Park & Ride

#### Basic term

A system designed to reduce the number of privately-owned cars in congested downtown areas in which suburban commuters are prompted to drive to the nearest station, park at outlying parking lots and take public transportation to their final destinations. The system contributes to the reduction of exhaust gas emission and the conservation of energy sources.

### Particulate

#### P14, 15, 27

A generic term for soot and solid particles (e.g. ash) produced by combustion. Once emitted from chimneys, they are mixed with aerosols, which are also called particulates, or settled dust or suspended dust.

### PDCA Cycle

#### P9, 40, 44

A management method that uses the following process: 1) Plan (preparation of policies and schemes); 2) Do (implementation and operation); 3) Check (inspection and correction; and 4) Action (review by the management). The cycle aims for the betterment of a system so that higher goals and targets are reached through the repetition of the cycle.

### Periodic inspection

#### P18, 19

Inspections carried out systematically at nuclear power stations in compliance with the Electric Utilities Industry Law in order to maintain the safety of facilities, prevent problems, and ensure safe operation of the plants.

### Photochemical oxidant

#### Basic term

Substances having a strong acidity such as ozone (O<sub>3</sub>) and PAN (peroxyacetyl nitrate). Photochemical oxidants are produced when nitrogen oxides and hydrocarbons emitted from factories or cars react to the sun's ultraviolet rays.

### Photochemical smog

#### Basic term

Photochemical oxidants concentrated in one location. Caused by the combination of unusual meteorological factors such as strong sunlight, high temperatures, and lack of wind. Responsible for direct damage to our health such as eye and throat irritation.

### Plutonium

An artificial atom with the atomic number 94, which does not exist in nature. Its pure form is metal, and its specific gravity changes depending on crystal structures, ranging from about 16 to 20. It was discovered by G. T. Seaborg in 1942.

### Plutonium-thermal project (Plutonium use in light water reactors)

#### P59

Utilization of MOX (mixed oxide) fuel in nuclear power plants. MOX is a mixed oxide of plutonium and uranium, which are obtained by reprocessing the spent nuclear fuel from nuclear power plants.

## Polluter-Pays Principle (PPP)

Basic term

A principle stating that those discharging pollutants should bear the cost for the prevention of environment pollution they caused. It was proposed by the Organization for Economic Cooperation and Development (OECD) in 1972.

## Pollution Control Manager

P18, 35

Qualified personnel appointed under the Law Concerning the Improvement of Pollution Prevention Systems in Specific Factories. Factories of a certain size are required to retain a Pollution Control Manager responsible for the technical duties of controlling pollution caused by smoke, wastewater, vibration and noise from factories.

## Pollution load levy

P14, 15, 46

Compulsory annual levy collected from applicable smoke and soot emitting facilities as set forth in the Air Pollution Control Law. It covers the damages related to impairments to health caused by significant air pollution attributable to business operations as prescribed by the Law Concerning Pollution-Related Health Damage Compensation and Other Measures.

## Pollution Session of the Diet

Basic term

Extraordinary session of the Diet held at the end of November 1970 (64th session), where fourteen bills were approved in areas including waste disposal, water pollution prevention and partial amendments to laws on noise regulation, air pollution prevention and nature parks. This implementation was prompted by requests from the public for countermeasures and the concern of pollution in society.

## Pollution-related Health Damage Compensation Law

P14, 46

A law stipulating the payment of medical costs and compensation for officially recognized victims designated by a responsible party. The Law covers areas with a high incidence of asthma due to air pollution and areas with a high incidence of specific diseases such as Minamata disease, itai-itai disease and arseniasis due to environmental pollution.

## Polychlorinated biphenyl (PCB)

P30, 42, 46

Any organic chlorine compounds consisting of carbon, hydrogen and chlorine, with chlorine (Cl) replacing hydrogen (H) in two joined hexagonal benzene rings. PCB was first introduced in industrial products in 1929 and widely used for insulating oil and impact papers for its superior heat resistance and insulation property. However, PCB was found to be difficult to break down in the environment and could accumulate in living organisms and have chronic toxicity. The production and import of PCB has been prohibited in principle since its 1974 designation as a specified chemical substance under the Law Concerning the Examination and Regulation of Manufacture etc. of Chemical Substances (presently designated as a Type 1 Monitoring Chemical Substance), after being subject to an administrative directive for the suspension of its production and use.

## Precipitator

P27, 48

It is equipment that collects particulates in combustion gases. The collection method is either mechanical or electrical.

## Potential of Hydrogen (pH)

Basic term

Concentration of solutions indicating the level of acidity and alkalinity. A pH of 7 indicates neutrality, while a pH above 7 indicates alkalinity, and below 7, acidity.

## Pressurized Fluidized Bed Combustions (PFBCs) plants

P36

A combined power generation method using steam turbines rotated by high-temperature, high-pressure steam from a PFBC boiler and gas turbines rotated by exhaust gas from the boiler. It is highly efficient and achieves the downsizing of facilities by using a gas turbine air compressor and reduces in-house power consumption while increasing the sent-out (net) thermal efficiency, by about 2%, as compared to conventional pulverized coal fired thermal power generation. The pressurized combustion of fuel allows downsizing of boilers.

Infurnace desulfurization also contributes to facility downsizing as fuel gas desulfurization equipment is not required.



## Precipitator

P27, 48

Equipment for collecting particulates in combustion gas. There are two types of collection: mechanical and electrical.

## Pretreated water

P37

Water that has been pretreated for purification. In magnetic separation, water impurities are magnetized in advance so that they may be collected by magnetic force.

## PRTR system

P14, 30, 42

A governmental system to calculate and publish the amounts of toxic chemical substances that are released into the environment (atmosphere, water or soils) and transported in waste based on reports from businesses and their estimates. PRTR stands for Pollutant Release and Transfer Register.

## PRTR Law

P30, 46

A law promulgated in July 1999 and officially called the "Law Concerning Reporting, etc. of Releases to the Environment of Specific Chemical Substances and Promoting Improvements in Their Management," which mandates notifications for the emission of environmental pollutants. It requires users of toxic substances to exercise voluntary management for such substances that were conventionally subject to control based on the regulatory standards.

## Pumping

P19

Pumping is to raise water to a higher location. In pumped-storage hydropower generation, reservoirs are built at the upper and lower parts of the power plant. Water is pumped up at night utilizing surplus power and is released to produce electricity during the daytime peak or in case of an emergency such as the failure of other power plants. The system utilizes its ability to store energy in the form of water since electricity cannot be stored easily.

## Purified water

P37

Water that is cleaned to remove impurities. For water purification by magnetic separation, purified water is obtained by removing magnetized impurities attracted to a magnet, and then filtering.



## Qualified Person for Energy Management of Type1 Designated Factory

P18, 35

A licensed energy manager in designated plants of a certain size or larger and whose consumption of electricity reaches the amount determined by a government ordinance, appointed in compliance with the Law concerning the Rational Use of Energy. These managers are responsible for improving and supervising facility maintenance and energy usage.



## Radioactive waste

P14, 29, 58

Waste containing radioactive materials generated in various nuclear power facilities. Such waste is divided into two types according to the level of radioactivity. One is low-level radioactive waste that includes used work clothing from nuclear power plants and the water used to wash them. The other type is high-level radioactive waste that is produced after extracting unburned uranium and plutonium from spent fuel at the reprocessing plants.

## Ramsar Convention

Basic term

An international treaty officially called the "Convention on Wetlands of International Importance, Especially as Waterfowl Habitat."

It aims to protect wetlands of international importance and the fauna and flora inhabiting those areas, as well as promote sustainable utilization of wetlands.



## Ratio of recycled paper utilization

P43, 44

The ratio of recycled paper usage to total paper usage. Recycled paper is generally referred to paper partially or completely made of used paper. To acquire the EcoMark, various requirements, such as containing 70% or more recycled paper or having a whiteness level of 70% or less, have to be met.

## Raw water

P37

Water from lakes, marshes or dams, which has not been processed, treated or purified in any way.

## Reactor thermal power

Thermal energy produced from fission in nuclear reactors.

## Reclaimed material

P49

Recyclable materials such as used (or non-used) goods abandoned or collected and byproducts from factories (secondary goods from production, processing or repair of goods).

## Recycling Law

Basic term

A law promulgated in 1991 as the "Law for the Promotion of Utilization of Recycled Resources," and revised in 2000 as the "Law for Promotion of Effective Utilization of Recyclable Resources." The law enforces recycling to create a recycle-oriented society, which

include: reinforced recycling measures such as product collection and recycling by business entities; reduction measures to decrease waste generation by conserving resources and prolonging the service life of products; reuse measures to utilize parts from collected products; and industrial waste reduction measures to reduce or recycle the byproducts of industrial waste.

### Recycling rate

P4, 18, 24, 25, 41, 43, 44, 45, 58

The rate of recycling calculated by dividing the amount of recycled waste by the amount of total waste generated. "Recycling" refers to collecting waste that otherwise would have been subject to final disposal and then utilizing such waste as a material for useful products.

### Refuse derived fuel (RDF)

Basic term

A fuel produced by compressing and molding combustible waste, such as kitchen garbage, waste plastic and used paper after crushing and sorting it.

### Recycling-oriented society

P8, 11, 17, 18, 24, 26, 36, 40, 41, 45, 47, 49, 56

A society having a low environmental load thanks to the minimization of waste. Such a society can be achieved by reflecting on the state of an economic society based on mass-production and mass-consumption with an eye towards maintaining, recycling and reusing our limited resources as long as possible. In fiscal 2000, the Basic Law for Establishing a Recycling-Based Society, which provides a basic framework for a recycling-oriented society, and other individual recycling laws were established.

### Red Data Book

Basic term

A collection of the available information related to endangered species which explains their ecology, distribution and level of threat of extinction.

### Red tide

P28

Reddish or dark brown discoloration of seawater surface caused by the presence of an excessive growth of plankton. A high concentration of plankton consumes a large amount of oxygen in the water and causes marine life to die from oxygen deficiency. One possible cause is the progress of eutrophication due to nutritive salts, such as nitrogen and phosphorus, flowing into the water. Discoloration in lakes, marshes, dams and reservoirs caused by an increase in freshwater plankton is called fresh-water red tide.

### Regulated freons

P18, 44

Prohibited to manufacture and use due to their ozone layer depletion properties. The Montreal Protocol on Substances that Deplete the Ozone Layer was adopted in 1987 on a global level, and the Law Concerning the Protection of the Ozone Layer through the Control of Specified Substances and Other Measures was established in Japan in 1988.

### Regulation of total emission

Basic term

Restriction of the total sum of all emissions or discharges from factories to a certain level of concentration in a specified area devised in addition to the conventional emissions control of air pollutants and waste water in terms of concentration.

### Regulatory control

Basic term

Establishes a limit for wastewater, substances and noises emitted or discharged from factories. The impact on human health and agricultural products is considered for establishing the limits. Limits are provided in the Air Pollution Control Law, the Water Pollution Control Law and other laws or regulations.

### Renewable energy

P11, 12, 19, 20, 37, 58

Repeatedly usable energy including solar, photovoltaic, hydro, wind, geothermal and biomass energies. This energy is not at risk of depletion unlike fossil or uranium fuels.

### Renewable Portfolio Standard (RPS)

P20, 21

The law officially called the "Law on Special Measures Concerning New Energy Use by Electric Utilities." It aims to protect the environment through the promotion of new energy utilization by requiring power companies to generate or purchase a certain percent or more of electricity from new energy sources depending on their electricity sales.

### Reprocessing

P14

Safe processing of fission products separated from spent nuclear fuel from which uranium and plutonium have been extracted in advance using chemical products.

### Return on Assets (ROA)

P54

An indicator of profitability determined by dividing a company's income after tax (profit for the current term) by the total amount of assets. It indicates how efficiently assets or managerial resources are utilized to produce profit.

### Return on Equity (ROE)

P54

Ratio of net income for the current term to the shareholders' equity, expressed in percentage. It is the indicator most often used to comprehensively measure the company's profitability and efficiency by examining the amount of profit achieved with equity.

### Risk management

Basic term

A technique of determining and analyzing potential risks so as to prevent or minimize the damage caused by such risks.

### Rocky-shore denudation

P36

Destruction of seaweed community such as kelp and *Undaria pinnatifida*, which bleaches shoreline rocks with lime.



### Seedlings obtained by tissue culture

P36

Seedlings grown under the method of tissue culture.

### Selection of superior family lines

P36

Family and line selection for seeds in which individual organisms are selected to create a superior variety, such as those having an excellent growth rate.

### Selective water intake

P28

A method of selectively removing the surface or bottom

layer of water of dams as needed to prevent flooded turbid water from staying in dams too long or keeping the temperature of water from dropping for irrigation purposes.

### Sludge

P24, 25, 36

An organic or inorganic muddy deposit or sediment produced in the treatment of industrial wastewater and sewage as well as in various manufacturing processes.

### Smoke

P27

The Air Pollution Control Law defines smoke as follows and sets forth its emission standards:

- (1) sulfur oxides generated through the combustion of fuel and other materials;
- (2) dust generated through the combustion of fuel and other materials, or the use of electricity as a heat source; and of the substances generated by the combustion,
- (3) synthesis, decomposition or processing (other than mechanical ones) of materials, including cadmium and chlorine, those that might be hazardous to human health or the living environment and are designated as such by the law or ordinances.

### Soil Contamination Countermeasures Law

Basic term

A law that enforces soil contamination measures to protect health by setting measures to monitor the state of soil contamination for specific pollutants to prevent health threats caused by such contamination.

### Space radiation

P28

Radiation existing in the atmosphere such as gamma rays and cosmic rays emitted from space and the earth.

### Specific chemical substances

P30

Chemical substances designated by the PRTR Law (or the Law Concerning Reporting, etc. of Releases to the Environment of Specific Chemical Substances and Promoting Improvements in Their Management) that are hazardous to human health and the ecosystem. There are 354 Class 1 Chemical Substances and 81 Class 2 Chemical Substances.

### Specified Chlorofluorocarbon(Freons)

P23, 43

Freon is a term used for any chemical compounds containing hydrocarbons such as methane and ethane combined with fluorine and chlorine. Specified Chlorofluorocarbon refers to the five Freons, CFC11, CFC12, CFC113, CFC114 and CFC115, which have high ozone layer depletion properties among about 20 Freons.

### specified nonprofit activity corporation (NPO corporation)

P31, 32

NPO (Non-Profit Organization or Not-for-Profit Organization) refers to non-profit, private organizations in various fields, such as health care, welfare, environment, culture, art, sports, community development, international cooperation, human exchange, human rights, peace, education and other support activities. NPO corporations are those certified under the Law to Promote Specified Nonprofit Activities(NPO Law) and are an active part of NPOs.

### Spent fuel storage

P15

Temporary storage of spent fuel removed from nuclear reactors. The spent fuel is stored in water to protect it from decay heat and provide a shield for radiation.

## Stakeholders

### Basic term

All individuals and entities related to or involved in the operations of a company, such as customers, shareholders, investors, local communities, business partners (customers or affiliates) and employees.

## Sulfur hexafluoride (SF<sub>6</sub>)

P14, 15, 18, 23, 44, 46

This is a compound of fluorine and sulfur. It does not exist in nature and is industrially produced. It is chemically stable and has an excellent insulating ability, and is used for insulating gas for circuit breakers and other purposes. Sulfur hexafluoride is said to have a greenhouse effect 23,900 times larger than that of CO<sub>2</sub>.

## Sulfur dioxide (SO<sub>2</sub>)

### Basic term

Sulfur dioxide is a pungent-smelling, colorless gas produced when fuel containing sulfur is combusted. It irritates the mucus membranes of the respiratory organs and may cause coughing, asthma and bronchitis.

## Sulfur oxides (SO<sub>x</sub>)

P13, 15, 18, 20, 27, 42

Any oxide of sulfurs, such as sulfur dioxide (SO<sub>2</sub>) and sulfur trioxide (SO<sub>3</sub>). They are formed primarily from fossil fuel combustion in which the sulfur content in fuel is oxidized. They are subject to regulation under the Air Pollution Control Law as they are hazardous to human health and the living environment.

## Superconducting magnetic energy storage system (SMES)

P37

A system where electrical energy is stored by taking advantage of superconducting properties (zero electric resistance). Unlike batteries, electric energy can be stored directly, therefore a large current may be utilized instantly.

## Superconductors

P37

Objects made of materials with superconductivity, for which electric resistance becomes zero at an extremely low temperature.

## Surplus power

P20, 21

This refers to excess power from non-utility generators of electricity in private power generation facilities such as those utilizing new energy sources (e.g. photovoltaic or wind power) or heat exhausted from waste incineration facilities. General electric utilities (power companies) purchase surplus power to effectively utilize such private generation facilities and to promote the diffusion of new energy sources.

## Suspended particulate matter (SPM)

### Basic term

SPM refers to particulate matters that are suspended in the air, such as fine particles and dust, and that have the particle diameter of 10µm or less. SPM can build up in various parts of respiratory organs thereby affecting health.

## Suspended solid (SS)

### Basic term

SS refers to the amount of material suspended in

water. Such material causes turbidity of water and is used as one of the indicators for water quality.

## Sustainable society (development)

P11

A society in which the consumption of natural resources and environmental pollution are properly managed and in which economic activities and social welfare will be sustainable into the future.



## Thermal discharge

P14

Nuclear power plant thermal discharge. Seawater is used to cool the steam driving turbine-generators, so its temperature is higher when it returns to the ocean. The rise in temperature is about 7°C in Japan.

## Thermal efficiency

P14, 15, 18, 19, 20, 22, 46

A ratio of power output to the original input produced by the combustion of fuel in thermal power plants.

## Thermal recycling

### Basic term

Recovery and utilization of thermal energy from waste.

## Tissue culture

P36

Technology to clone in a culture a portion of a plant in a sterile test tube or under other conditions.

## Tolerable daily intake (TDI)

### Basic term

Daily maximum intake, per 1kg of body weight, which is considered to have little significant effect on health when a person consumes a certain substance throughout their lifespan.

## Toluene

P30, 42

A colorless flammable liquid used in explosives, perfume and synthetic resin.

## Total life cycle

A series of stages for products from the collection of resources, production, distribution and use through the disposal of products.

## Total solution service

P.4

Services offered by Kyushu Electric Power and its group companies. It applies their experience and expertise to provide solutions in response to the customers' requests. Such services include suggestions concerning energy cost reductions, advice on energy conservation and environmental measures, the maintenance and management of facilities and technical support.

## Toxicity Equivalency Quantity (TEQ)

P30

An index to express a level of dioxins (toxicity level). Since dioxins have different toxicity levels by type, the amount of dioxin is converted into the most toxic 2,3,7,8-Tetrachlorodibenzo-p-dioxins (2,3,7,8-TCDD).

## Transmission/distribution loss factor

P14, 15, 18, 22, 58

The rate of power lost based on an initial quantity of power transmitted from a power plant. The loss occurs in the course of transmission or distribution.

## Tris phosphate (dimethylphenyl)

P30

A pale yellow transparent liquid consisting of hydrogen, carbon, oxygen and phosphorus. It is not defined as a combustible; however, it burns and degrades in flame, emitting toxins. When the flame source is removed, tris phosphate ceases to burn on its own. It is often used as control oil for turbines in power plants.

## Two-stage combustion method

P27

A combustion method which controls NO<sub>x</sub> emissions by adjusting combustion air supply in two stages. First, combustion air is controlled to a level below theoretical air. Then additional air is supplied to supplement the shortage for complete combustion through the whole process.

## Type 1 Monitoring Chemical Substances

P30

354 substances covered by the Law Concerning Reporting, etc. of Releases to the Environment of Specific Chemical Substances and Promoting Improvements in Their Management. The 354 substances are specified in ordinances based on the opinion of governmental organizations such as the Ministry of Health, Labor and Welfare, the Ministry of Economy, Trade and Industry and the Ministry of Environment regarding toxicity to human health, fauna and flora.



## United Nations Conference on the Human Environment

### Basic term

The first UN conference held in Stockholm, Sweden in 1972 to discuss general environmental issues under the slogan "Only One Earth." Developed countries were urged to shift their priorities from economic growth to environmental protection while economic development and assistance were emphasized for developing countries. The Declaration of the United Nations Conference of the Human Environment was announced and the International Action Plan for the Environment was adopted to promote protection of the irreplaceable earth.

## United Nations Environment Programme (UNEP)

### Basic term

An organization aimed at implementing the Declaration of the United Nations Conference on the Human Environment and the International Action Plan for the Environment adopted at the United Nations Conference on the Human Environment in Stockholm, Sweden in 1972. It is responsible for comprehensively coordinating the activities of various existing UN organizations and addressing environmental issues that have not been attended to through international cooperation.

## United Nations Framework Convention on Climate Change

### Basic term

Aimed to achieve the stabilization of greenhouse gas concentrations in the atmosphere, which should be maintained at a level that would prevent dangerous anthropogenic interference with the climate system. Through inter-governmental discussions started in February 1991, the convention was adopted at the INC (Intergovernmental Negotiating Committee) on May 9 1992, and was put into force in March 1994.

## Uranium

### P12

A metallic element [symbol U, atomic number 92] also found in the natural environment. Among uranium isotopes, the readily fissionable uranium-235 is a major resource of nuclear power generation. Most of the naturally occurring radioisotopes are non-fission uranium-238 and natural uranium contains only about 0.7% of uranium-235.

## Urban heat island phenomenon

### Basic term

A phenomenon in which a metropolitan area becomes significantly warmer than its suburbs. Major reasons are anthropogenic heat emissions from industrial activities and loss of greenery due to artificial environments, which reduce temperature drop by evapotranspiration.

## Used paper

### P13, 15, 18, 24, 25, 41, 43, 44, 45, 47, 58

Paper used once that may be used again as a material for paper instead of trees. Old or used newspapers, magazines, corrugated cardboard and copy paper are included.



## Vacuuuming

### P36

Creation of a high vacuum state by removing gases from a certain place using a vacuum pump.

## Valdez Principle

### Basic term

A set of ten guiding principles of corporate responsibility established as a measure to solve environmental problems. Its establishment was triggered by the crude oil leaked from the oil tanker Exxon Valdez off the coast of Alaska. The principles were announced by CERES, an American group promoting environmental conservation.

## Vienna Convention for the Protection of the Ozone Layer and the Montreal Protocol on Substances that Deplete the Ozone Layer

### Basic term

They provide the framework for international measures for ozone layer protection. The Vienna Convention was adopted in 1985, and the Montreal Protocol in 1987. To facilitate their accurate and smooth implementation in Japan, the Law concerning the Protection of the Ozone Layer through the Control of Specified Substances and Other Measures was established in 1988 to control the manufacturing of Freons and other substances.

## Voluntary Plan for the Environment

### Basic term

Abbreviation of the action plan of companies to voluntarily address global environmental issues. Kyushu Electric Power established the Environment Voluntary Plan in 1992 and changed its title to the Environment Action Plan in 1998.

## Volunteer leave system

### P35

The name of a special leave system which Kyushu Electric Power offers to support employees' participation in activities that contribute to society, such as social welfare activities organized by local governments.



## Washington Convention

### Basic term

An international treaty officially called the "Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)," which seeks to ensure, with the efforts of both exporting and importing countries, that international trade does not threaten the survival of any endangered species of wild animal or plant.

## Water pollution

### P14

Polluted state of water in seas, rivers, lakes and marshes due to human influence. Caused by mixing of harmful substances into water having a harmful affect on living organisms. Organic materials attributable to daily human activities such as BOD, COD and oil are examples of harmful substances.

## Water-soluble zinc compound

### P42

A shiny blue-tinged silvery white metal used for metal finishing such as galvanization.

## Wildlife Protection Area

### Basic term

Areas designated by the Minister of Environment of Japan, governors of prefectures or other administrative divisions where hunting is prohibited under the Wildlife Protection and Hunting Law for the protection and propagation of wildlife. Areas that require special attention for these purposes are reserved as special wildlife protection areas and any activities that might have a negative impact on the wildlife are controlled.

## World Bank

General term for the International Bank for Reconstruction and Development (IBRD) (established in 1946, 183 member countries), the International Finance Corporation (IFC) (established in 1956, 174 member countries) and the International Development Association (IDA) (established in 1960, 161 member countries), all of which fund governments and private enterprises in developing countries.

## World Bank's Prototype Carbon Fund (PCF)

### P14, 15, 23

Established by the World Bank in January 2000 to invest funds from investors (countries or

companies) in the greenhouse gas reduction-related projects of the developing or former East European countries and allocate greenhouse gas reduction outcome to investors.

## World Summit on Sustainable Development

### Basic term

Summit hosted by the United Nations to discuss matters concerning further implementation of Agenda 21 and new issues, ten years after Agenda 21 was adopted by the United Nations Conference on Environment and Development. High-level discussions resulted in a comprehensive and specific plan for implementing Agenda 21 and the Johannesburg Declaration, which lists the political intentions of world leaders towards sustainable development.



## Xylene

### P30, 42

Transparent and colorless liquid with a boiling temperature of approx. 140°C. It is fragrant and is contained in paints, paint and varnish.



## Yokkaichi pollution case

### Basic term

The suit filed in 1967 by the residents of Yokkaichi City in Mie Prefecture against the companies operating within the Yokkaichi Industrial Complex concerning the air pollution that occurred in the 1960s. In 1972, the case concluded in favor of the plaintiff.



## Zero emissions

### P11, 24, 47, 58, 60, 61

A goal of producing no waste. Aimed at creating a production system using waste generated from the production process in other industries as reclaimed material in order to realize a no waste society. It was proposed by the United Nations University in response to the adoption of "sustainable development" at the Earth Summit. The United Nations University dispatches qualified personnel to companies desiring the realization of zero emissions. The Ministry of Economy, Trade and Industry is actively involved in widespread/prevalent efforts and introduced the Eco-Town Concept based on the idea of zero emissions. An increasing number of companies want to introduce the zero emissions concept in production activities.

## 3R

### P24

The 3Rs refer to "Reduce" "Reuse" and "Recycle" of waste in this order and the order expresses the priority in waste disposal endeavors.



This booklet is made from recycled paper consumed  
and collected by the Kyushu Electric Group.



1-82, Watanabedori 2-chome, Chuo-ku, Fukuoka 810-8720 Japan  
Phone: 81-92-761-3031

June 2004

This glossary is accessible on the Kyushu Electric Power website: <http://www.kyuden.co.jp/>

