

4 Major Steps by Kyushu Electric Power Group* for Environmental Conservation

Nishinippon Environmental Energy Co., Inc.

Commercializing power generation by poultry manure incineration

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

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

Given that, aiming at environmental load reduction and effective use of energy, the company established Miyazaki Biomass* Recycle Co., Inc. in Kawanabe Town, Miyazaki in May 2003 together with local poultry farmers. Facilities for poultry manure incineration power generation are now under construction for the new project. Operations of the new company are scheduled to start at the end of March 2005.

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



Image of facilities for poultry manure incineration power generation

Nishinippon Plant Engineering and Construction Co., Ltd.

Treatment of gas emitted from incineration equipment

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

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

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

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



Incineration unit using a dioxin removal system

West Japan Engineering Consultants, Inc.

Helping with planning the introduction of new energy* and effective use of energy

West Japan Engineering Consultants, Inc. engages in assisting local governments in introducing the use of new energy sources* and promoting energy conservation.

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

It has been crucially required to strengthen countermeasures to prevent global warming* in recent years. The company will assist local governments as a general consultant in the introduction of new energies and energy saving which is perfect for local communities, using its know-how or expertise accumulated in the Electrical Energy Department over years. Also, the company will actively contribute to local-level environmental conservation efforts through presenting various related proposals.



Wind-generated power equipment located in Itsuwa Town, Kumamoto

*New Energy and Industrial Technology Development Organization, Incorporated administrative agency

Nishi Nippon Airlines Co., Ltd.

Eco-conscious flights

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

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



Helicopters equipped with a high-quality and performance gyro camera

Kyushu Rinsan Co., Inc.

First study - tour on forestry

Kyushu Electric Power has an 85-year history of forest ownership. Kyushu Rinsan Co., Inc. is in charge of maintaining about 4,400 hectare of the forests with 6 million trees. Forests play vital roles in a number of ways; providing wood, reserving supply of water and controlling its flow rate, which are essential to hydroelectric power generation, preventing disasters like mudslides, and mitigating climate change by its CO₂ storage function. At the same time, sound forestry management is required to provide trees, for a period of about 60 years from planting to logging, with assorted work from cutting bottom grass, pruning and thinning. Kyushu Rinsan hosts study-tours on forestry as a part of its environmental activities in an effort to provide the opportunity to experience forest

maintenance work and to offer the following information:

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

The first study-tour was held in September 2003 for employees and their families of the Kyushu Electric Power, the Head Office and the Oita Branch Office, who are owners of this forest. A total of 74 participants experienced this program including thinning out the cedar forest around Yamashita Pond in Yuufuin, Oita Prefecture. The company plans to invite the general public and offer such sessions on an ongoing basis.



Participants thinning out the forest bed

Nishimu Electronics Industries Co., Ltd.

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

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

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

as well as in its production and sale.

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

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

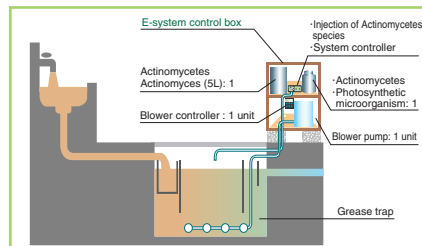


Illustration of Grease Trap Waste Water Purifier with E system

Japan Recycling Light Technology & System

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

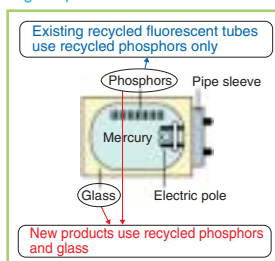
Japan Recycling Light Technology & System ("J-Relights") recycles fluorescent tubes used and collected at companies, schools, local governments and households. The company sorts and crushes used fluorescent tubes, then separates them into glass, phosphors, metals and mercury, and recycles them as reclaimed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

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

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

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

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



Recycled fluorescent tubes with more recycled materials