



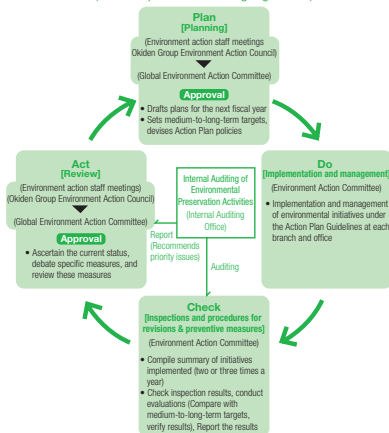
## Environmental measures

The OEPC Group carries out a range of activities to enable us to leave the heritage of a beautiful, unspoiled natural environment to future generations. We work to create an effective system of environmental management, and always place the highest priority on minimizing the environmental burden of our business operations. To help realize the sustainable development of our society, every one of our employees is working proactively to contribute to our environmental aims in the full understanding of their overriding importance.



OEPC has been publishing a report on its environmental activities annually since 1996

### The PDCA Cycle in Our Environmental Preservation Activities (For the implementation of ongoing reforms)



## Improving our environmental management

The Company has established the OEPC Group Environmental Policy under our Global Environment Action Committee, chaired by the President, and is engaged in environmental activities across the entire OEPC Group. Continuous improvement activities are being carried out, utilizing the PDCA ("Plan-Do-Check-Act") problem-solving process.

In March 2005, the Power Generation Dept. of OEPC's Electric Power Engineering Division obtained the 1996 version of the ISO14001 certification of conformity with international standards for environmental management systems. Building on this success, we will ensure that our environmental management systems under the blanket certification work more effectively, and will endeavor to reduce the environmental burden of our operations still further in the future.



Ishigaki No. 2 Power Plant (diesel turbine plant surrounded by 90,000 native trees planted by the Company)



Environmental protection facilities at a power plant

As part of an overall policy of removing harmful chemicals from smoke emitted by our power plants, they are equipped with desulphurization and denitrification equipment.

## Environmental improvement initiatives

To ensure that the islands of Okinawa retain their beautiful natural environment for the enjoyment of generations yet unborn, we give consideration to biodiversity and make a special effort to protect the countryside and seaside in the vicinity of our power plants.

At existing power plants, we are undertaking a range of environment protection measures, targeting atmospheric pollution, water pollution, warm wastewater pollution, and noise and vibration issues, to ensure that our activities do not impact the surrounding environment. We also make reports to relevant local authorities based on environment protection agreements, after carrying out source measurements such as smoke and noise measurements and environmental monitoring studies into the air and water quality around our power plants.

We have conducted environmental assessments in accordance with laws and ordinances in preparation for the start of operations at our planned Yoshinoura Thermal Power Station in 2012. We are canvassing the views of local residents as well as the local government, and are aiming to create a new power plant that will harmonize smoothly with the natural surroundings cherished by the community.

In addition, we are taking the following measures to improve the local environment: rigorous management of chemical substances such as PCB and dioxin; greening power plant sites to achieve more harmony with the natural environment and areas of scenic beauty in the area; and trialing the "greening of the sea" (by planting coral and seaweed) around our power generation facilities.

## Taking action for the global environment

The carbon dioxide released into the atmosphere by the burning of fossil fuels is said to be the principal cause of global warming, and this is a major issue which the electric power utilities have to address. Up to now, countermeasures have included the efficient operation of power stations, the introduction of new energy sources such as wind power and solar power, and a variety of energy conservation initiatives. By these means, the utilities have attempted to reduce their volume of combustion of fossil fuels and thus their emissions of carbon dioxide. As a secure and efficient measure against global warming, we have commenced construction of a new power station at Yoshinoura, which will burn LNG instead of coal or oil, as this fuel generates lower carbon dioxide emission levels. As supplementary measures, we are also making contributions to the World Bank's Community Development Carbon Fund, among other such projects, which takes advantage of the mechanisms provided under the Kyoto Protocol to assist in the reduction of greenhouse gas emissions on a global scale.

The Company is raising the awareness of global warming issues through participation in the Team Minus 6% national campaign for prevention of global warming (for achievement of a 6% reduction in emissions of greenhouse gases in Japan, in line with the Kyoto Protocol). We are also aggressively promoting energy-saving measures already in place.



Office employees wearing Kariyushi shirts



みんなで止めよう温暖化  
「沖縄電力」 チーム・マイナス6%



Artificial gravel

Road surfaced with OEPC's Pozotech



Damaged ceramic insulators are recycled into material for tiles.

## Creation of sustainable resource-oriented society

OEPC is promoting the use of a three-pronged system for handling the waste products generated by its operations. The three-point system incorporates the concepts of "reduce, reuse, and recycle" as a way of optimally utilizing the Earth's limited natural resources, and is aimed ultimately at realizing "zero emissions," i.e. reducing final waste disposal at landfill sites to as close to zero as possible. For example, we turn the coal ash and gypsum created by the combustion process at our coal-fired power plants into raw materials for cement and an alternative to the earth and sand used mainly in the production of synthetic stone materials. Artificial gravel and Pozotech made from recycled coal ash are used in construction work in Okinawa Prefecture.

## Promoting environmental communications

June is "environment month" at OEPC. We raise employee environmental awareness at our head office, power stations, branch offices and other business facilities, and undertake a range of activities such as participating in beach and highway cleaning activities in the local region and tree-planting organized by local governments.

To promote greening activities as part of our afforestation and global-warming prevention measures, since 2004, in cooperation with Okinawa Prefecture and Yomitan we have been turning the former US military shooting range Cape Zampa Park, Yomitan village, into a recreational forest under the name of Zampa Shiosai no Mori. Under this project, we planted approximately 65,000 tree saplings or seeds by the end of 2008. (This project was awarded the Minister of the Environment's FY2008 Commendation for Global Warming Prevention Activity.)



A beach cleanup by OEPC staff



A tree-planting event at "Zampa Shiosai no Mori"



## Green energy

The management environment surrounding the electric power industry is becoming increasingly severe due to a variety of laws and measures against global warming and the increased use of new energy. Not only do we have to comply with commitments to reduce carbon dioxide emissions under the Kyoto Protocol, the Act on Special Measures concerning New Energy Usage by Electric Utilities obligates us to develop new energy sources. The research staff of OEPC are conducting a variety of studies aimed at finding effective solutions to these urgent issues that face the Company's management. These research initiatives are described below.

## Measures to reduce greenhouse gas emissions

### Biomass energy

OEPC is conducting research into the development and use of biomass as fuel with the aims of raising the carbon-neutral ratio of the Company's operations and conforming to the requirements of Japanese legislation (which stipulates that power utilities' total fuel portfolios must include a certain proportion of renewable energy sources, called the "renewables portfolio standard").

After considerable theoretical discussion and the test combustion of mixed fuel for the No. 1 Plant at the Gushikawa Thermal Power Station in 2007, we have confirmed the technical feasibility of a mixed fuel consisting of coal with up to 3% (in weight) of biomass (mostly wood chips).

In addition to the requirements of reducing carbon dioxide emissions and meeting the legally mandated renewables portfolio standard, we are also faced with urgent problems in the disposal of waste, particularly waste construction materials, in Okinawa Prefecture. With the steep rise in fuel prices in the last few years, the use of biomass fuels has become more feasible from the viewpoint of costs. It was this consideration that prompted us to conduct the biomass combustion tests at the Gushikawa Thermal Power Station.

We are currently planning systems and facilities for the procurement and storage of biomass fuel ahead of the scheduled start of use of the mixed fuel by the end of March 2011.



Wind power generators at Ie



Wind power generators at Tonaki



Pilot-model CO<sub>2</sub> chemical solidification plant

## Utilizing renewable energy sources

Renewable energy sources found in nature, such as solar power and wind power, are easily affected by changes in the weather. They are thus described as “low-density” energy sources, and have the disadvantage of high generation costs. On the other hand, they are “clean” forms of energy that do not contribute to global warming through the release of CO<sub>2</sub>, and are thus coming under growing scrutiny as answers to society’s energy needs.

In April 2003, the Renewables Portfolio Standard Law came into force in Japan. This law stipulates that the energy sources used to generate the power supplied by the utility companies must come from a certain percentage of renewable sources.

The OEPC Group is putting efforts into the development and adoption of renewable forms of energy such as solar power and wind power. As of the end of March 2008, the Company was operating renewable energy facilities (including test operations) generating a total of 14,478kW. These were located not only on the Prefecture’s remote islands, but also in certain locations on the main island.

### Electricity from solar energy

Solar power generation is a clean electricity generation system that uses photovoltaic panels to capture the energy of sunlight. OEPC has installed solar power generation systems both on Okinawa Island (the prefecture’s main island) and the prefecture’s remote islands to evaluate the effectiveness of this form of generation in providing power to households as an ancillary to the normal power supply grid. Research is being carried out to perfect the technology involved, and the economic feasibility of solar power is being extensively examined.

### Electricity from wind power

Wind power is another “clean” source of energy for the generation of electricity. OEPC has already installed a number of wind-powered generation systems on the remote islands of Okinawa Prefecture. These systems are divided broadly into two types: hybrid systems that use storage batteries as a means of ensuring the same level of power output at all times by evening-out fluctuations in electricity generated, and direct output-control systems, which do not utilize storage batteries. We are currently conducting research to determine the effectiveness of these two systems in offsetting the uneven nature of wind-powered electricity generation.

The OEPC Group’s wind power operations are handled principally by Okinawa New Energy Development, Incorporated.

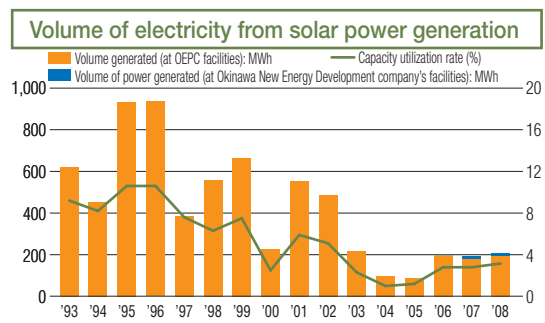
### Receipt of order from NEDO for testing and development work in Laos

OEPC has received an order from NEDO (New Energy and Industrial Technology Development Organization) for field tests in Laos on a solar-power electricity generation method.

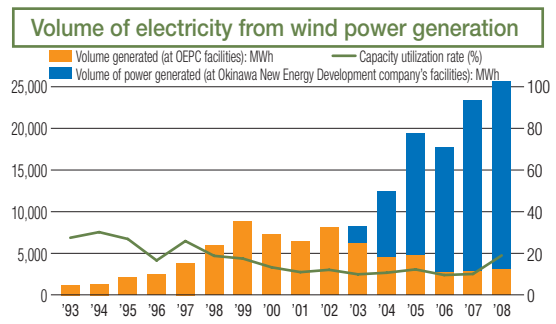
The project consists of the construction and testing of a system for controlling the electricity generation output of a solar power system in the district of Mai in the province of Phongsali, Laos, with the aim of realizing an acceptably stable supply of power at all times.

The most promising power generation system for Phongsali Province would appear to be a hybrid system employing solar power in combination with small-scale hydroelectric generators. This would offset the shortfalls both of solar power, which is adversely affected by the cloudy weather during the rainy season, and of hydroelectric power, which is impacted by a drop in river levels during the dry season.

The main research target of the project consists of finding a bilayer capacitor (temporary power storage device) capable of instant charging and discharging. This would overcome the problem that plagues solar power systems — the variability of power output in parallel with variations in the amount of solar radiation. If such a system could be perfected, it would allow a steadier supply of power by using it in harness with a small-scale hydroelectric power supply system. Through this project, OEPC hopes to make significant progress toward the development of new technologies for the practical use of solar power.



Field tests on an industrial solar power system are being carried out at a facility on Kita-Daito Island.



Test facilities for the introduction of large-scale solar power generation systems on Miyakojima Island

