5. Policies and Plans for Optimal Combination of Power Sources

Kyushu Electric Power promotes well-balanced, optimal power source combination by placing nuclear power at its core, and by taking into account the reliability of power supply, economy and global environmental issues in a comprehensive manner.

(1) Development plan for respective power sources

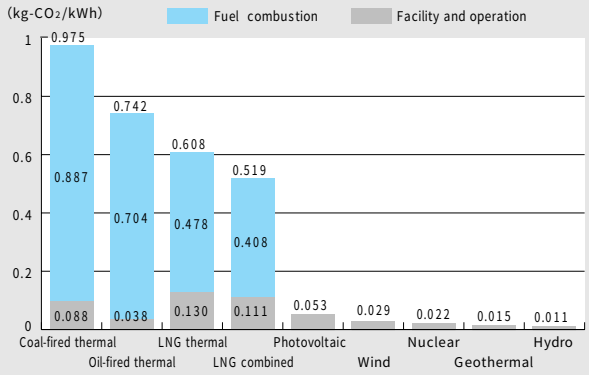
Nuclear power

Nuclear power generation is excellent for supply reliability and economy, and produces less environmental loads such as CO_2 emissions. The development of nuclear power generation will be promoted as a base-load power source, while holding safety in the utmost importance.

◇ CO_2 emissions intensity per each power source during its lifecycle

CO_2 is emitted not only during fuel combustion for power generation, but also during other energy-consuming work such as constructing power stations, mining, transporting and refining fuel, as well as waste treatment. The chart shows the figures that are obtained by dividing the CO_2 emitted during the lifecycles of the plants including combustion and construction, by the amount of power production. Nuclear power generation is noted for its advantages in addressing global warming since its comprehensive CO_2 emission is significantly lower even when such indirect CO_2 emissions are taken into account.

● CO_2 emissions intensity per power source



N.B. CO_2 emissions were calculated inclusive of all energy consumed for mining materials, constructing generation facilities, transporting and refining fuel, and operation and maintenance, in addition to burning fuels for generation. The figures for nuclear power were calculated to include current plans for domestic reprocessing of spent fuel, plutonium use in thermal reactors (assuming there is only one recycling process) and the disposal of high-level radioactive waste. CO_2 emissions from uranium enrichment were calculated based on the ratio of enrichment performed domestically and abroad. Meanwhile, if it is assumed that all enrichment were completed domestically, the figure 0.010 would be obtained for nuclear power CO_2 emissions. (Prepared based on a report by the Central Research Institute of Electric Power Industry)

Thermal power generation

Kyushu Electric Power will develop coal-fired thermal power generation to promote fuel diversification, while further pursuing improved energy efficiency and effective energy use.

Pumped storage power generation

Kyushu Electric Power will promote the development of pumped storage power generation as a power source to address peak demands and emergencies as the output can be easily adjusted depending on fluctuating power demand. Additionally less time is required for startup and shutdown with this method.

Hydro and geothermal power generation

In consideration of the environmental aspects of site selection and the economy, Kyushu Electric Power will further systematically promote R&D on hydro and geothermal power generation. These methods constitute renewable, domestic energy sources.

New energy sources

A new energy source will be pursued through technological development for practical use since this energy source boasts excellent environmental characteristics. The company will increase the installed capacity to 365kW, 3,250kW and 50kW respectively for photovoltaic, wind power generation and fuel cells by fiscal 2006, while exploring their economic aspects and characteristics. The promotion of new energy will be pushed through the introduction of the Green Electric Power System and other means.

(2) Plan for diversification of power sources

Kyushu Electric Power aims for the development of well-balanced power sources or an optimal combination of diverse power sources under the targeted power source composition set by taking into consideration the properties of each power source.

●Target for power source composition (optimal combination of power sources)

		Composition of power source facilities		Composition of electric power production	
			FY2001 record		FY2001 record
Nuclear		Approx. 30%	24%	45～50%	43%
Geothermal		Approx. 10%	1%	Approx. 10%	2%
Hydro			13%		6%
Pumped storage		Approx. 10%			
Thermal	Coal	Share the remaining 50 % equally	16%	Share depending on fuel situation	22%
	L N G		22%		20%
	Oil		24%		7%