1. POWER PLANTS AND POWER TRANSMISSION SYSTEM

The number of power plants in Japan as of March 31, 1974, totaled about 2,100 with a power generating capacity totaling 79,800,000 kW (in terms of maximum output). For many years, hydroelectric power generation exceeded thermal power generation in Japan but the situation has reversed since 1963. In 1973, hydroelectric power generation amounted to 21,600,000 kW, thermal power generation (including geothermal power generation) 79,000,000 kW, and nuclear power generation 1,000,000 kW. Thermal power generation now produces 54% of the total output.

Most hydroelectric power plants are located in mountains far apart from consumption areas, and are small in scale. Of about 1,200 hydroelectric power plants, only 28 are equipped to produce the maximum output of more than 100,000 kW. By river systems, the power generating capacity (maximum output) exceeded 2,000,000 kW for the river systems of Ayasawa and Saawa. Japan’s total hydroelectric power is 79,000,000 kW, about 61% of which has already been developed.

Thermal power plants are situated near consumption areas, and many of them are large in scale. There were about 600 thermal power generation plants in Japan, of which 54 were equipped to produce the maximum output of 100,000-900,000 kW and 46 had a maximum output of more than 1,000,000 kW.

There were five nuclear power generation plants. The Hokucho Nuclear Power Plant has a maximum output of 1,000,000 kW, whereas the maximum output of other nuclear power plants is less than 1,000,000 kW.

There are also three geothermal power plants whose maximum output amounted to 20,000 kW.

Of the power transmission lines linking power generation plants to consumption areas, power transmission lines of more than 10,000 kV in voltage measure 16,000 km, of which the power transmission lines with 152,000 kV measure 1,980 km and those with more than 750 kV measure 1,200 km. The total installed capacity of power generation plants is 90,000,000 kW.

The frequency of power supplied is 50 Hz in the areas east to Niigata, Gunma, Saitama, Tokyo and Kanagawa prefectures and also in the area east to the Han River in Saitama Prefecture. The frequency of other areas is 60 Hz.

2. CITY GAS PRODUCTION

Engaged in gas enterprises in 1973 were 317 public enterprises and 171 private enterprises, and the plants totaled 358. The total city gas output was 547,000,000 thousand cubic meters (tcm), of which 71% was produced by gas enterprises at their own plants and the remaining 29% purchased from other plants.

Gas is classified by kind of resource, 32% of the city gas was produced with coal gas, generator gas and other gases of the coal system, 32% with liquefied oil gas and other gases of the oil system, and 35% with natural gas and liquefied natural gas.

The natural gas collected in Aki, Toyama, Niigata and Tottori prefectures is used as city gas. For use in Tokyo and other places, the natural gas produced in Niigata Prefecture is carried by natural gas pipelines laid from Niigata Prefecture to Tokyo Prefecture.

The annual output of city gas, including the purchases, was indicated with circular symbols put on the sites of plants in the map. For the plants producing more than 100,000,000 tcm, the names of the enterprises and plants were shown for reference purposes.

Sources:
2. Data from the Ministry of International Trade and Industry.