

This study made an estimate of energy use and a trend of the resultant emissions of SO_x, NO_x, and CO₂ in the whole Asian region east of Afghanistan and Pakistan in 2000 and 2010.

We estimated energy consumption in Asian countries in 2000 and 2010 using FUGI Global Model. In our estimate, we assumed two cases for the use of energy; "business as usual case" and "progress of energy conservation through technological advance case." Emissions of SO_x, NO_x, and CO₂ for each case were estimated by setting up emission factors, i.e. emissions per unit of energy consumption by energy sources and by sectors of energy use, for each of the following three cases classified by environmental measures to be taken; "the status quo case," "respective environmental measures taken in each country within its limit case," and "environmental measures taken as in Japan case."

Our estimated results show that primary energy consumption in the Asian region in 2000 will become 1.7 times more than that of 1987 and 2.4 times in 2010, and that the emissions of SO_x, NO_x, and CO₂ in the "status quo case" in 2000 will become 1.5–1.7 times more than those of 1987 and 2.1–2.4 times in 2010 respectively.

In the technological advance case assuming improvements in the efficiency of energy use, the primary energy consumption will increase only to 1.5 times in 2000 and 1.8 times in 2010 respectively from the 1987 level thanks to the progress of energy conservation, and it is confirmed that the sustainable economic development will be attainable, and that the effect of improvement in the efficiency of energy use will be greater than that of the environmental measures in the reduction of SO_x and NO_x emission, thus, from the viewpoint of environmental preservation, energy conservation through technological progress of energy use seems to be effective.

This study was conducted under guidance and in cooperation with the "Research Group on Energy Consumption in Asia and the Global Environment (Chairman, Dr. Jumpei Ando, Professor, Chuo University, and 10 members)" and "Sub-Committee for Estimation of Emissions of Atmospheric Environment

Pollutants Resulting from Energy Consumption in Asia (Chairman, Dr. Ando, and 10 members)” which were established for this purpose and consist of experts from various fields.