

Chinese atmospheric environment and research strategy

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Chinese Atmospheric Environment and Research Strategy

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Abstract

China is a huge developing country with a population of 1.3 billion and a land area of 9.6 million square kilometers.

China has achieved a fast and stable economic growth for the last decade, with an average GDP growth rate of 9.2% from 1995 to 2005. The extensive pattern of economic growth has resulted in wasteful resource consumption and deteriorating ecological environment. Nowadays, China is in full swing of establishing resource-saving and environment-friendly society by following the concept of scientific development.

Similar to other countries in the world, China has environmental problems in different fields including air, water, solid waste, noise, radiation and so on. The main problems in air pollution can be summarized as (i) the human health effects of serious urban air pollution (ii) the regional ecological effects of acid rain (including dry and wet acid deposition); and (iii) the long-range transboundary transportation of air pollutants.

Coal is the dominant primary energy in China, widely used in industrial activities, power stations, domestic cooking and heating in winter. Accordingly, the primary source of Chinese air pollution is coal-burning, which resulted in high concentration of PM and SO₂ in ambient air and regional acid rain pollution. As the urbanization and increase of incomes, there is a significant potential threat of photochemical smog caused by large amount of NO_x and VOCs emitted from rapid increasing vehicles in some Mega-cities.

In 2005, China consumed 2.14 billion tons of coal, emitted 25.5 million tons of SO₂, 11.8 million tons of smoke dust and 9.1 million tons of industrial dust. The amounts of auto, motorcycle, and agricultural vehicles have exceeded 43 million, 94 million, and 30 million respectively. The total consumption of vehicular fuels was about 100 million tons.

In order to control air pollution and improve air quality, the China has made great efforts in enacting laws, promulgating standards, and adopting various measures regarding air quality monitoring, atmospheric environment researches, international cooperation, etc.

The atmospheric environment status and the major problems, development and progress on the atmospheric environment science are introduced in detailed in this presentation.

And, some relevant information of research organizations, publications, websites are also introduced briefly.