

The 13<sup>th</sup> Northeast Asian  
Conference on  
Environmental Cooperation  
(20-22 December 2004,  
Seoul, Korea)

Mr. Enkhbold ANAR,  
Ministry of Nature and  
Environment of Mongolia

AIR QUALITY  
MANAGEMENT IN  
ULAANBAATAR CITY

## PRIMARY SOURCES OF AIR EMISSIONS

- 3 Thermal Power Plants,
- About 200 small and medium sized boilers,
- About 100.000 household stoves in traditional “ghers” and wooden houses,
- Approximately about 80.000 auto vehicles

## PRESSURE

### *Energy:*

1. In Winter Season three large thermal diesel power plants release into the air:
  - 4.5 million cubic meters of smoke,
  - 4.14 tons of ash,
  - 6.762 kilograms of carbon monoxide every hour

The energy sector accounts for roughly 64 % of Mongolia’s greenhouse gas emissions.

2. More than 250 steam boilers burn over 400,000 tons of coal every year.
3. Mongolia's ghers and wooden houses with manual heating in which 48 % of the city's population lives, use per year over 200, 000 tons of coal and more than 160,000 cubic meters of wood for fuel.

For the cold seasons, the atmospheric content of carbon monoxide exceeds the permissible norm by 2-4 times.

### *Transportation:*

- Transport is a significant source of air pollution.
- The number of motor vehicles has increased dramatically in big cities and settlements in a short period of time.

In 1995, it was estimated that over 60 % of the vehicles emitted pollutants above the maximum allowable level.

### *Industry:*

- According to some computations, approximately one fourth of greenhouse gas emissions comes from industrial activities.

# STATE

Urban air quality is monitored for sulfur dioxide and nitrogen dioxide contents.

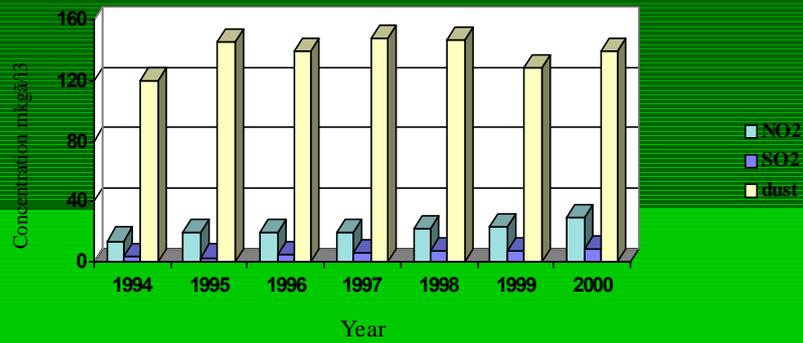


Figure 27. Level of air pollution in Ulaanbaatar

Concentration of nitrogen dioxide (NO<sub>2</sub>) has been increasing year by year depending on vehicles number. Figure 28 shows level of NO<sub>2</sub> in comparison with the increase in vehicle numbers.

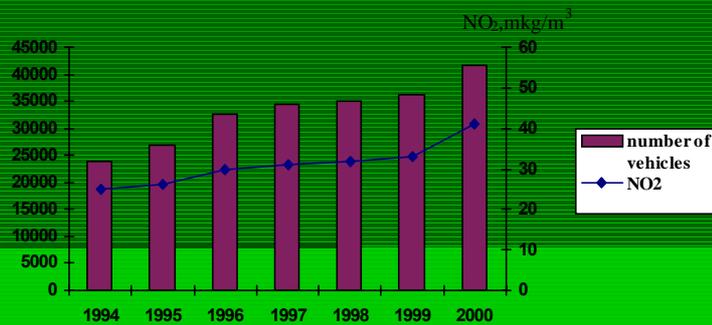


Figure 28. NO<sub>2</sub> concentration and number of vehicles.

Air pollution patterns repeat themselves every year, which are shown on SO<sub>2</sub> and NO<sub>2</sub> of 1998-2000 years in Figures 29 and 30.

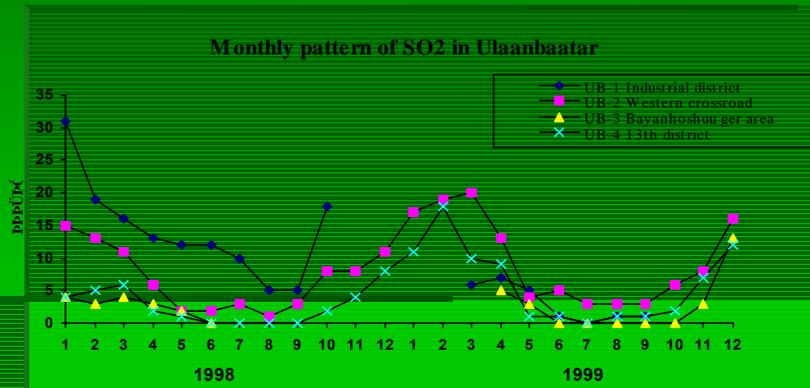
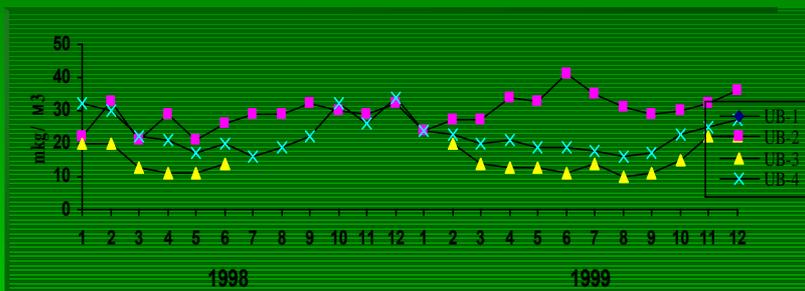


Figure 29. Monthly pattern of SO<sub>2</sub> in Ulaanbaatar

Figure 30. Monthly pattern of NO<sub>2</sub> in Ulaanbaatar



Dust concentration reaches its maximum in April, when strong winds take place /Figure 31/.

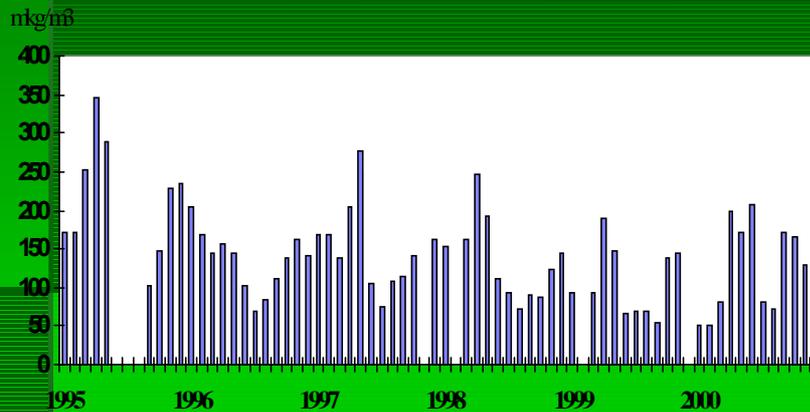


Figure 31. Changes in dust concentration in Ulaanbaatar

## IMPACTS

It is widely known that air pollution in Ulaanbaatar and other cities impacts on human health. It is said that air pollution in Ulaanbaatar during wintertime causes acute respiratory diseases, tuberculosis and other lung diseases. However, no accurate studies have been done so far.

## RESPONSES

Mongolia adopted Law on Air in 1995. Under the Act, the government is mandated to regularly undertake air quality monitoring and provide information to concerned organizations and the public. The provisions in the Act include permit for air pollution discharge and hazardous impacts based on the volume of discharge, restrictions on air pollution discharge and hazardous impacts, and provisions for the actions to reduce Greenhouse Gas discharges and ozone layer protection .

## MEASURES TAKEN BY THE GOVERNMENT

- **Substantial activities are being taken to replace old household stoves with advanced ones under the assistance of GEF/World Bank.**
- **Emissions from all vehicles were measured in 2000 and this activity will continued over the years.**
- **The government has also planned to seek donor assistance for the reduction of air pollution in capital city and other towns through:**

- 1/. local manufacturing and utilization of gas emission filters and catalyzing tools, establishment of special laboratory for control and analysis of transport emissions.
- 2/. Manufacturing, promotion and distribution of cost efficient and low smoke stoves for household living in a gher.
- 3/. Establish local set up for manufacturing pollution control devices.

THANK YOU FOR YOUR  
ATTENTION