



AIR POLLUTION AND COAL FIRED POWER PLANTS

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Air pollution



The country has abundant reserves of coal, which are estimated to be 50 billion tonnes, and depends on coal as the cheap source of energy and heat. The annual coal consumption has been increased rapidly along with industrialization, urbanization and growth of household heating requirement.

Ecosystem of Mongolia is fragile and very sensitive to adverse effects of human activity due to harsh climate. However, industrialization, urbanization and intensive exploration practices of fossil fuels in the country have resulted in negative impacts on the environment.



Air pollution



Urban air pollution has been recognized as one of the major highly concerned environmental problems in Mongolia.

There is urgent need to address such issue

- Major contributors to the poor urban air quality are coal-fired thermal electric power plants, heating boilers, coal-fired cooking & heating household stoves of individual dwellings, automobiles, waste disposal area and soil erosion. The main air pollutants are SO₂, Nox, PM, CO, ozone .
- Meteorological factors - frequent occurrence of a stationary temperature inversion over the urban areas, lasting from late fall to early spring, and accompanied by low winds.

Basic information on CPPs

- Coal fired power plants – 5
- Type of Power Plant: CHP/Condensing Power Plant
- Installation capacity of electricity -796 MWå
- Installation capacity of heat -4.664 Gcal/h
- Yearly produced electricity -3.130 million kWh
- Yearly produced heat - 5.557million Gcal
- Yearly amount of coal usage - ~5 million tones
- Type of fuel – **lignite**
- Type of Ash Collection Systems: Wet Scrubber Systems - others/ Electrostatic Precipitators -1

Fuel Characteristics

Parameter	Unit	Shariin Col Coal	Baganuur Coal
Volatiles	% by wt.	42	42
LHV	kcal/kg	4375	3550
Carbon	% by wt.	49.2	39.3
Hydrogen	% by wt.	2.2	2.5
Oxygen	% by wt.	8.0	9.8
Nitrogen	% by wt.	0.9	0.5
Sulfur	% by wt.	0.5	0.4
Total Moisture	% by wt.	18	33
Mineral Matter	% by wt.	21.5	14.5



Policy documents and legal environment

Policy documents

- **Government policy on ecology, 1997**
- **21 the century sustainable development program of Mongolia, 1998**
- **National Air Protection Program, 1999**
- **National integrated policy based on millennium development goals of Mongolia, 2008**
- **Governmental Action Program, 2008-2012 /Industrialization/**
- **Sustainable Energy Sector Strategy, 2003-2010**

Legislations

- **Law on Environmental Protection, 1995**
- **Law on air, 1995**
- **Law on energy, 2001**
- **Parliamentary resolution #46 on some measures to be implemented for reducing of urban air pollution, 2007**
- **Governmental resolution #218 on measures to be implemented for reducing of urban air pollution, 2007**



Policy documents and legal environment

National standards

- **Air Quality Standard, MNS 4585:1995, 2007**
- **Exhaust gases emitted from vehicles**
 - **Diesel**
 - **Gasoline vehicles**
- **Fuel standards**
 - **Diesel MNS 217:2006**
 - **Gasoline MNS 216:2006**
 - **Coal Briquette MNS 5680:2006**
- **Maximum acceptable levels and measuring methods of exhaust gases for TPP , 2008**



Measures to reduce urban air pollution

- **Improvement and enforcement of legislation**
- **Development of urban infrastructure (civil engineering facilities for centralized piping&heating, road network)**
- **Re-planning of household areas and construction of apartments**
- **Restriction of raw coal burning in households and heating boilers**
- **Development of carbonized coke fuel industry**
- **Cleaner fuel shifting of public transport**
- **Encouraging of coke and gas stove manufacturing**
- **Implementation of projects on improvement of heat isolation/shielding of housings**
- **Strengthening of air quality monitoring and emission control capacity**



Potential fields of regional collaboration

In the field of transboundary air pollution and CPP:

- Collaborate within the NEASPEC, EANET and other regional initiatives
- Assist Mongolia in capacity building on emission control technologies in CPP
- Assist in developing, amending its emission standards for stationary pollution sources
- Assist in developing national emission inventory guideline
- Cleaner technology transfer and implementation of CDM projects in Mongolia



Thank you