

The 7th Annual Asia-Pacific Mercury
Monitoring Network Partners Meeting
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Air pollution and Mercury monitoring
activities in Mongolia

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OUTLINE

1. The priority areas for implementation of the Minamata Convention in Mongolia
2. Air quality monitoring
2. Acid deposition monitoring
4. Future concern of Mercury monitoring activities in Mongolia

THE PRIORITY AREAS FOR IMPLEMENTATION OF THE MINAMATA CONVENTION IN MONGOLIA

Project “Ratification and early implementation of the Minamata Convention on Mercury in Mongolia”
/UNITAR 2015/

The priority areas for implementation of the Minamata Convention in Mongolia have been identified follows:

1. Establish monitoring system for mercury releases to environment, training and awareness raising;
2. Reduction of mercury emissions from primary anthropogenic sources;
3. Reduction of usage of mercury containing products;
4. Reduction of mercury emission from artisanal and small scale gold mining;

**National Agency for Meteorology and
Environmental Monitoring /NAMEM/**

**Central Laboratory of
Environment and Metrology /CLEM/**

**Surface water
quality monitoring
stations - 137**

**Waste water
control
points - 18**

**Acid deposition
monitoring
sites - 2**

**Ambient air
quality
monitoring
stations - 40**

**Radioactivity
monitoring sites - 35
Fall out sampling
sites - 22**

**Soil
monitoring
points - 390**

CURRENT SITUATION OF AMBIENT AIR POLLUTION IN ULAANBAATAR

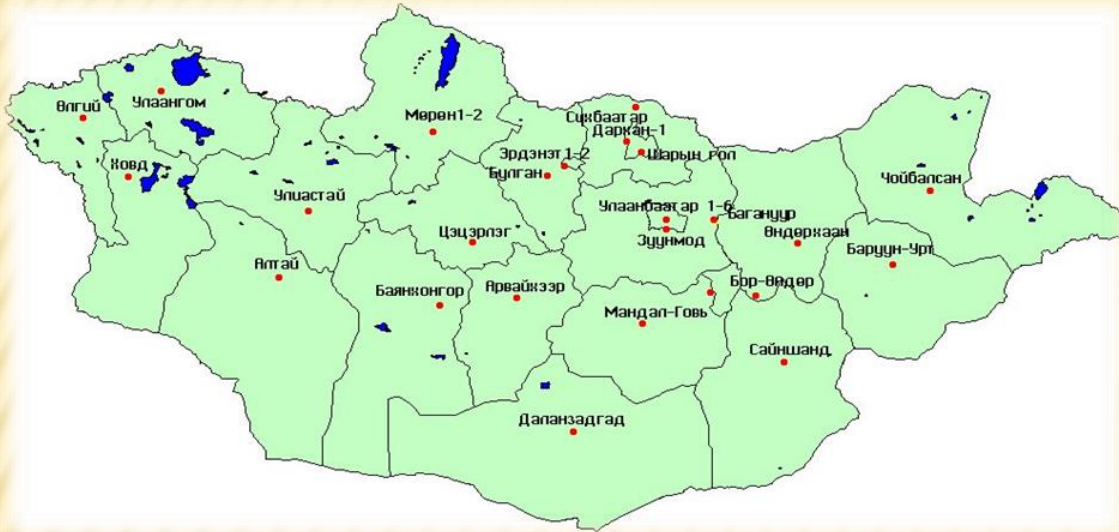
Air pollution has been increasing intensively during last decade in Mongolia especially in Ulaanbaatar due to:

- urbanization,
- poor urban plan,
- raise of number of motovehicles,
- mainly coal for heating and cooking,
- other air pollution sources;

As result of this phenomena population health has been worsening.

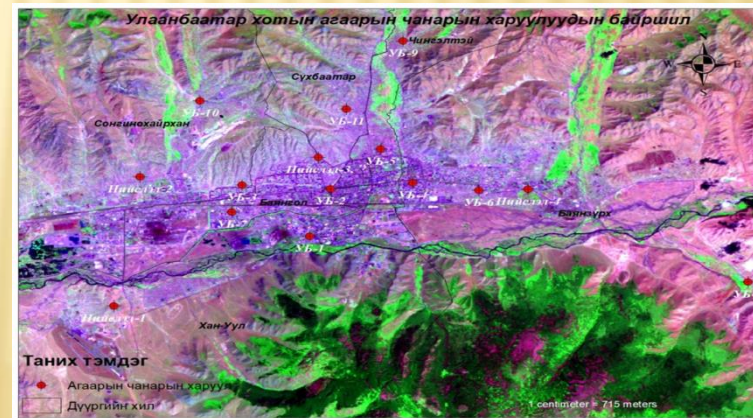


AIR QUALITY MONITORING: 40 St.



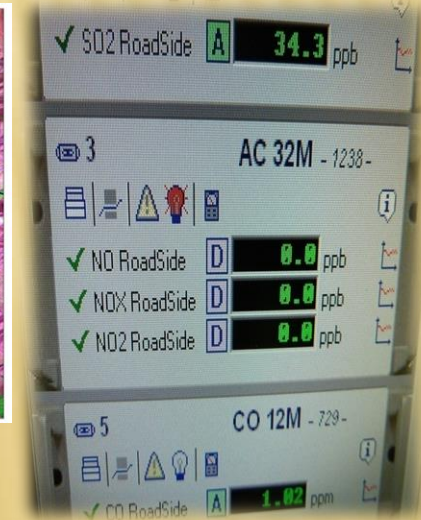
Location of AQ monitoring stations in Mongolia

- In Ulaanbaatar city there is a 15 station are running. 3 of them is manually operating stations, 12 is continuous automatic stations.
- The continuous automatic stations are running 24 hours online during every days.
- The chemical analyze using stations are taking short term sample twice a day.

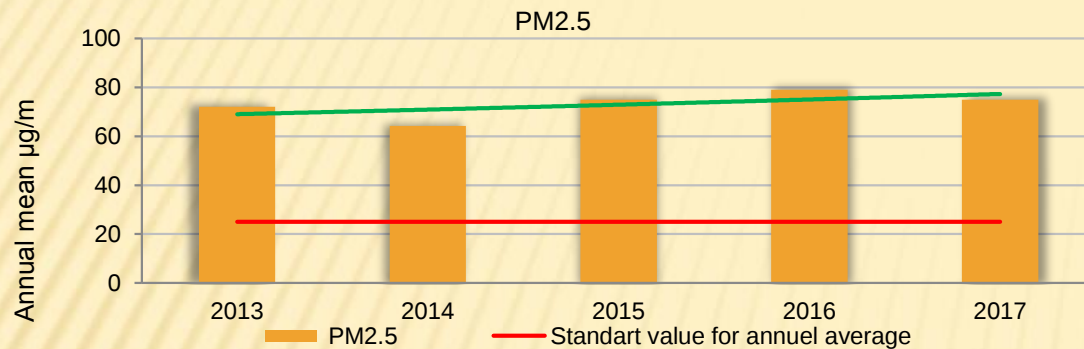


Location of AQ monitoring stations in Ulaanbaatar

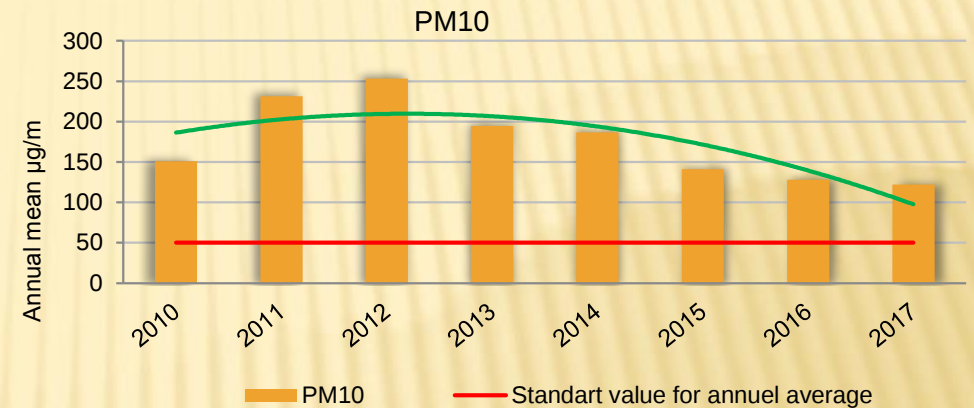
Air pollutants	Air quality monitoring stations
Sulphur dioxide SO2	All monitoring stations
Nitrogen dioxide NO2	All monitoring stations
PM10	6 stations in UB, 8 province centers
PM2.5	4 monitoring stations in UB
Carbon monoxide CO	5 stations in UB, 3 province centers
Ozone, O3	4 stations in UB,



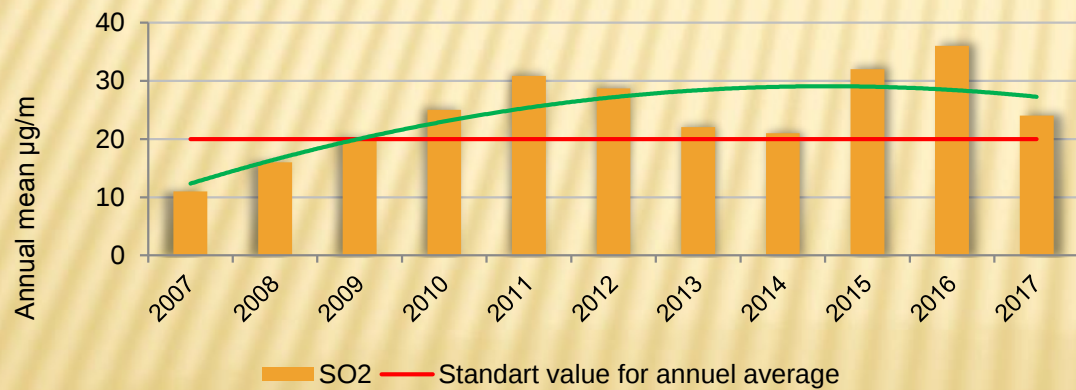
ANNUAL TRENDS OF AIR POLLUTANTS IN ULAANBAATAR CITY



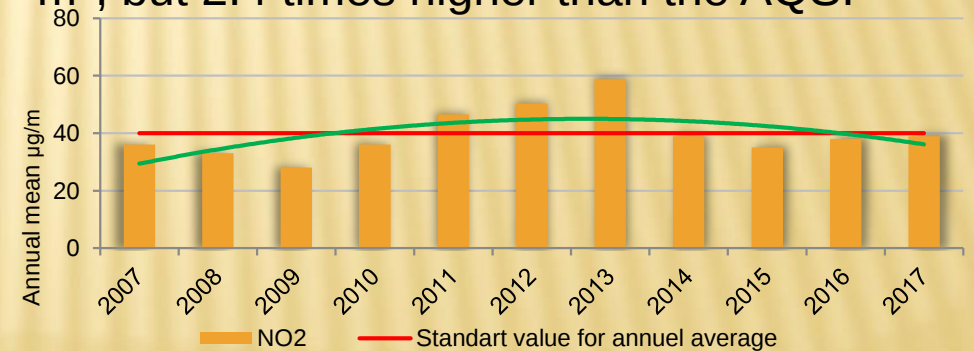
According to the 2017 annual mean PM2.5 concentrations reached $75 \mu\text{g}/\text{m}^3$ and were 3 times higher than the AQS.



The PM10 concentration has decreasing trends since year 2012. In 2017 the annual PM10 concentrations decreased to $122 \mu\text{g} / \text{m}^3$, but 2.4 times higher than the AQS.



In 2017 the annual average concentration of sulfur dioxide was $24 \mu\text{g}/\text{m}^3$



According to the 2017 annual average nitrogen dioxide content reached $39 \mu\text{g}/\text{m}^3$ but does not exceed in AQS during last 4 years.

ACID DEPOSITION MONITORING SITES IN MONGOLIA

Sites	Characteristics	Latitude	Longitude	Altitude
Ulaanbaatar (wet & dry)	Urban	47°55'13"N	106°54'43"E	1275 m asl
Terelj (wet & dry)	Remote	47°59'00"N	107°27'04"E	1550 m asl



Ulaanbaatar site



Terelj site, Winter season



Terelj site, Summer season

SAMPLING INSTRUMENTATION

Wet sampler

Automatic rain sampler,
model US320, wet only
(Ogasawara Keiki Co.,
Ltd)



Dry sampler

Four staged filter pack,
model MB-01T (Tokyo
Dylec Co., Ltd)



FUTURE CONCERN ON MERCURY MONITORING IN MONGOLIA

- ✗ Mongolia has great interest to establish mercury monitoring site
- ✗ Cooperation procedure with APMMN
- ✗ Site selection:
 - + Option 1. CLEM site in Ulaanbaatar
 - + Option 2. Acid deposition monitoring site at Terelj (National protected area, 70 km from Ulaanbaatar)
- ✗ Mercury monitoring program
- ✗ Methodology for sampling and analyzing process
- ✗ Reach to consensus on data dissemination and sharing

THANK YOU FOR YOUR ATTENTION