



Review of a Situation on Heavy Metals and Plans on Ratification of CLRTAP Protocols in Kazakhstan

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Natural Resources and Industry in Kazakhstan

- Extractive and raw materials processing enterprises dominate in the manufacturing production structure of the country.
- Kazakhstan is ranking *one* in the world in terms of explored reserves of zink, wolframite and baryte, ranking *two* - in terms of silver, **lead** and chromate, ranking *three* – in terms of copper and fluorite, and ranking *four* – in terms of molybdenum explored reserves.
- Among the countries of Eastern Europe, Caucuses and Central Asia (EECCA) Kazakstan amounts to 90 % of chromite, 60 % - of wolframite, 50 % - of **lead**, 40 % - of zink and copper, 30 % - of boxite, 25 % - of phosphate, 15 % - of iron ore, and over 10 % - of coal reserves.
- In the western part of the country significant oil and gas resources are located due to which Kazakstan is considered to be one of the major oil producing countries in the world.

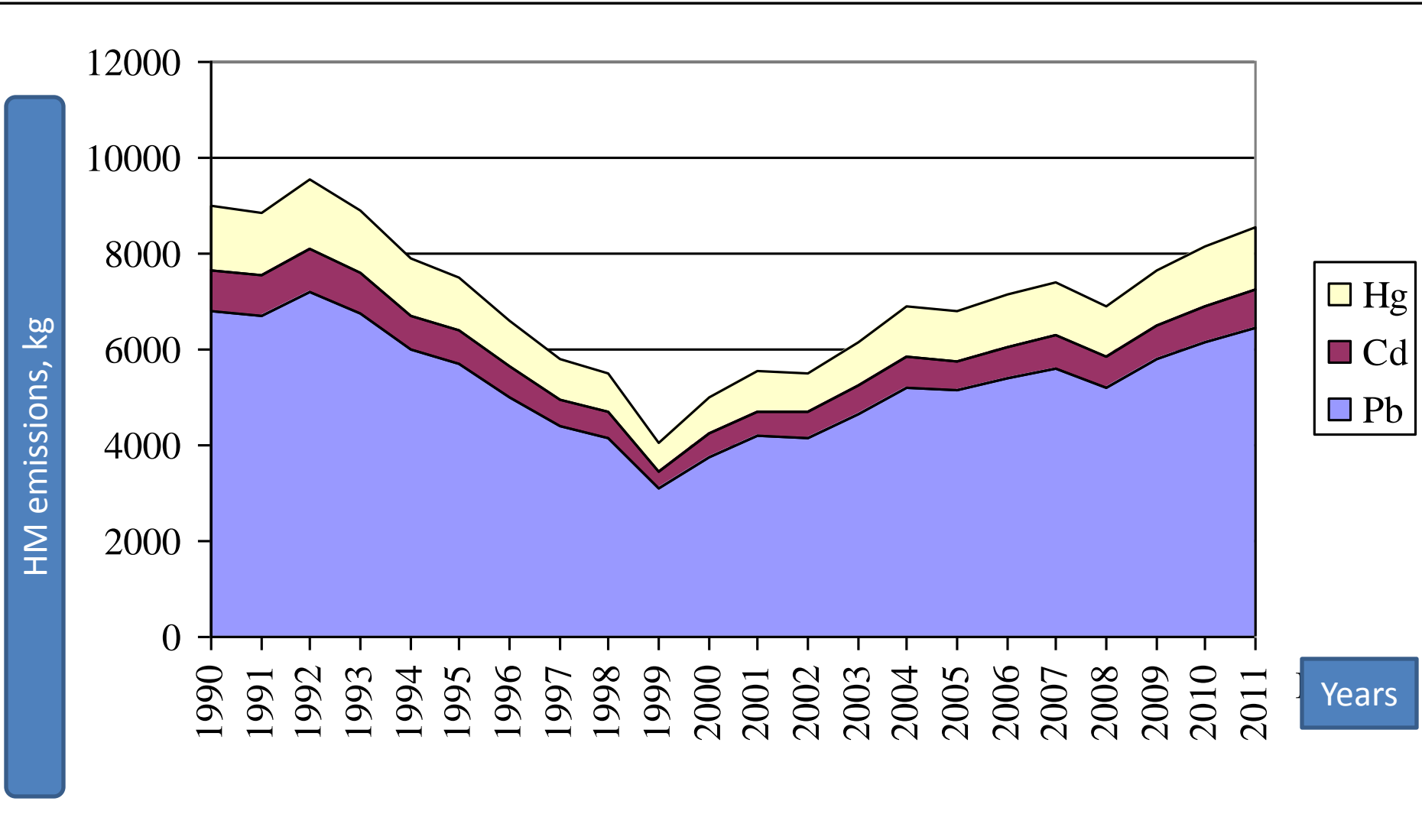
Major Sources of Ambient Air Pollution in Kazakhstan

- Heat-power engineering, ferrous and non-ferrous metallurgy enterprises as well as auto- and rail-way transport act as major ambient air pollutants in Kazakhstan:
 - Among them: Balhashtsvetmet, Kazakhmys Corporation Ltd., ArselorMittal Temirtau, Aluminum of Kazakstan, Ulbinsky metallurgical plant, Ust-Kamennogorsk metallurgical complex – (Kazzink).
- Enterprises of oil-extracting and oil-refinery sector located in Aktyubinks, Zapadno-Kazakstan and Mangistaus regions put additional pressure on the state of ambient air:
 - Among them: TOO Tengizshevroil, AO Agip KKO, TOO Karachaganak Petroleum Operating, Maersk Oil Kazakshstan Gmbh, AO CNPC Aktobemunaigaz, TOO Kazashoil Aktobe etc.

Point Sources

1. Was overview/inventory of all major sources (for example, manufacturing sites) of heavy metals (i.e. mercury, lead, and cadmium) made in Kazakhstan?
 - So far Kazakhstan does not provide a pollutant inventory in a framework of LRTAP UNICE convention.
 - Neither inventory, nor overview of major sources of heavy metals was ever made
 - In the Territory of Kazakhstan there are many enterprises emitting heavy metals to the atmosphere. One of the major sources of lead emissions is AO Kazzink (Ust-Kamennogorsk, East-Kazakhstan area).
 - 73 % of electricity is generated by heat power plants working on coal acting as a source of lead emissions.

HM-emissions dynamics from coal combustion in electricity and common use heat generation for the period from 1990 to 2011



Point sources

- 2 Are all installation types mentioned in Annex II to HM Protocol getting regulated by the national environmental regulation via issue of operational permits with regards to environmental pollution by heavy metals (emission permits)? Are these permits subject to regular renewal? Will they be adjusted to the new either technical or environmental standards?
- The State Program adopted in 2010 on expedite industrial and innovative development where it is planned to enhance the existing capacity and commence into operations new enterprises has caused increase of emissions into the atmosphere. In the strategic plan up to 2014 of the Ministry of environment and water resources it is anticipated that atmospheric emissions will increase by 45% vs 2009-2012 (from 2.31 to 3.35 mln.tonn)
 - Quality of key parameter planning in the area of environment protection is still far from a required level and ongoing activity on issuing emission permits is insufficiently effective, either.
 - At the same time, at certain individual enterprises such as TOO Tengizshevroil, AO Turgai petroleum, AO Aktobemunaigaz, AO Amuminum of Kazakhstan, AO Bukhtarminskaya cement company the reduction of emissions into the environment is observed due to implementation of a nature-conservation measures.
 - All the users of natural resources shall obtain permits to be able to emit pollutants into the environment.

Point Sources

3. Is there any support from the State in place for the retrofit programs on industrial installations mentioned in Annex II to the HM Protocol?
 - The adopted State program on expedite industrial and innovative development supports initiatives of SME businesses in Kazakhstan meant for transfer of state-of-the art technologies as well as attracting foreign investors to create modern import-replacing manufacturing sites with a prospect of converting them into the export-oriented ones.
 - For the purpose of establishing a foundation of a post-industrial economy a development of national innovative infrastructure will continue along with support of scientific and technological initiatives having commercial prospects.

Point sources

4. Is BAT concept applicable in Kazakhstan?

- In Kazakhstan the use of up-to-date technologies in the industry sectors, including heat power industry is regulated by the Resolution N245 of the Republic of Kazakhstan dated as 12.03.2008 “Check-list of the Best Available Techniques”.
- For the purpose of increasing heat power plants performance and reducing emissions the following recommendations are included in the list of best available techniques:
 - Applying a pulverized coal-burning method;
 - Installation of electrostatic and bag filters, as well as emulsifiers with 99,4-99,8% coefficient of performance to reduce ash emissions;
 - Wet, semi-dry and dry Sox emission reduction methods for the new boilers;
 - Step-by-step burning, low-emission burners, SNCR, SCR with 80-95% of nitrogen oxide removal.
- Analysis of the proposed BATs (best available techniques) points to absence of a number of most important energy efficiency technologies to be used in coal eclectic power generation industry in Kazakhstan. Examples of such technologies are: fluodized bed combustion, as well as circulating fluodized bed both under the atmospheric as well as over-pressure. The more so, globally a significant deal of experience was accumulated in the area of such technologies application in commercial installations of big capacity as well as using steam with supercritical parameters.

Point sources

5. Is regulation of PM emissions or dust considered to be an important issue in your country?
 - Regulation of suspended particulate matter is executed. There is a specific PM emission charge stipulated in the Tax Code.

Products

6. Does any national review of products containing heavy metals exist?

- Such activity was never done on purpose. The major attention is drawn to a disposal of mercury containing bulbs.

Products

7. Is content of Heavy metals in the products regulated in Kazakhstan?

- There are no regulatory acts adopted on this matter

- Oil refineries in the republic still fail to manufacture fuel meeting the Euro-3 standard. Requirements regarding the fuel will be introduced only from 1-st of Jan 2014. Currently restructuring is going on across all oil refineries. It will enable to manufacture the fuel meeting Euro-3 standards.

Products

8. Are there any products that stopped to be marketed due to the introduced international/national requirements(for instance, spare car parts or thermometers)?
- Mercury thermometers are not being sold any more through the pharmacies however continued to be used in households.
 - Lead content in petrol is regulated.

Politics and science

9. Does your country plan ratifying one or more of the Protocols (POPs, Heavy Metal, or Geteborg Protocol) in the nearest future (what are the steps taken by the national administration)?
- According to the Resolution of a Final Collegial Meeting at the Ministry of Environment and Water Resources-2013 the Department of International Environmental Agreements jointly with the structural subdivisions and lower organizations shall conduct analysis of a value of accession to International environmental agreements and submit proposals to the Ministry of Foreign Affairs before May 2014 г.
 - It is planned to provide a justification and introduce proposals to accesse Geteborg Protocol.

Politics and Science

9. Are there any measures introduced in the national legislation meant for reduction of atmospheric air pollution?

- Government order N97 dated as 6-th of February 2013 introduced a limitation on import of automobiles that fail meeting EURO-4 standard. This measure will cause reduction of emissions only upon fuel quality improvement. The vehicles fleet will be increased from 2 to 6 mln. by 2030. That is why the major part of vehicle fleet will have to be replaced.

- Concept of Republic of Kazakhstan transition to a green economy was adopted by a presidential decree in May 2013. It contains an important section related to air pollution reduction.

Emissions from coal stations in Kazakhstan vs emissions ceiling values that are set in Europe for existing coal stations with rated capacity over 200 MWt

Mg/m³ of air under normal conditions



Current emissions exceed ELVs for Europe

On PM – by more than by 10 times

On NO_x - by more than by 20%

On SO_x – by more than by 2.5 times

*It is required to adopt standards in line with the current EU norm as a minimum

1 Average on the following power plants: Karaganda TPP-3, TPP-2, Ust-Kamenogorsk TPP, Pavlodar TPP-3, Ekibazbuz GRES and Astana-energiya TPP.

2 Depending on ash- and sulfur content. From Jan 2016 - 200

SOURCE: EBRD, Ministry of Environment of Great Britain: "Directive on large TPP"

Network of Monitoring Stations Over State of Atmospheric Air Pollution in Kazakhstan



Politics and science

10. Is the monitoring&reporting system on atmospheric emissions got improved in the recent time? For instance, are there any new monitoring/measurement stations commenced into operation?

- In 2007 observations over state of atmospheric air pollution was done in 22 population centers via 55 stationary monitoring stations
- In 2011 observations over state of atmospheric air pollution was done across the territory of republic of Kazakhstan was done in 28 population centers via 78 monitoring stations
- In 2013 r. observations over state of atmospheric air pollution was done in 28 population centers via 104 monitoring stations

Politics and Science

- 12 Were any measures taken to improve a situation on air pollution? For instance, emissions inventory, administrative base for inspections and sanctions etc.?
 - To reach a target indicator on pollutants emission in the atmosphere reduction by 5,9% in 2014 vs 2009 the following activities are planned:
 - Development of a complex of measures on transferring to a regulation that is based on BAT for the industrial enterprises acting as major environment polluters;
 - Implementation of effective public transportation and traffic flow management systems in big population centers;
 - Strengthening of a public control over meeting the legislation requirements on emission of pollutants from motor vehicles as well as quality of distributed automobile fuel in the retail network.

Politics and Science

- What kind of challenges have you faced?
 - Lack of understanding in the area of requirements and objectives of LRTAP Convention in the Ministry; complexity of this issue
 - Lack of budget funding for making inventory of pollutants
 - Low level expertise of employees in the area of making inventories
 - Frequent restructurings and replacements of senior management at the Ministry and Environmental Control and Regulation Committee issuing permits for emissions into the environment

Politics and science

- What factors might facilitate ratification of the Protocols?
 - Technical assistance from international experts meant for improving expertise of the national specialists
 - Involvement of NGOs in clarification of requirements contained in the CLRTAP protocols
 - A petition of deputies to the Ministry of Environment and water resources of republic of Kazakhstan regarding atmospheric air pollution and implementation of BAT

Thanks for your attention!