



**UNITED NATIONS ECONOMIC COMMISSION FOR EUROPE**  
***UN ECE Working Group on Environmental Monitoring***

***in cooperation with KAZHYDROMET***



***under the financial support of European Community***



**MINUTES**  
***of National Workshops on Air Emissions Inventory***  
***and on***  
***Atmospheric Air Pollution Monitoring and Modeling***

***Almaty, 26-28 May 2003<sup>1</sup>***

On 26-28 May 2003 in the Conference-hall of Kazhydromet in Almaty the UNECE Working Group on Environmental Monitoring in cooperation with KAZHYDROMET and with the financial support of European Community (TACIS Program) held two National Workshops on air emissions inventory and atmospheric air pollution monitoring and modeling.

The workshops were conducted in the framework of the joint project of UNECE and the European Environment Agency «Support of the activity of the UNECE Working Group on Environmental Monitoring». One of the major tasks within this project is assessment of needs and development of recommendations to improve air pollution monitoring in Kazakhstan as well as countries of Eastern Europe, Caucasus, and Central Asia. Also. It is aimed also at improvement of data collection system and emissions reporting to meet obligations under the Convention on Long-range Transboundary Air Pollution.

45 participants took part in the Workshops. They were representatives from the Ministry of Environmental Protection, Kazhydromet, Almaty city Department of Environment Protection, National Agency for Statistics, Space Research Institute, Kazakh National University, Climate Change Coordination Center, Kazakhstan Association of Nature Users, as well as international experts.

Mr. Yeleushev, the Ministry of Environmental Protection of the Republic of Kazakhstan, Mr. Kudekov, Kazhydromet, and Mr. Bulych, UNECE, presented their welcoming speeches to the participants.

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<sup>1</sup> Annexes to this report are in Russian only and are attached to the Russian version of the report.

**The National workshop on the air emissions inventory** was held on 26-27 May 2003.

Participants discussed the following issues:

1. Analysis of the present system of air pollution emission control and inventory in Kazakhstan;
2. Legislative and regulatory basis for air pollutants control;
3. Collection and provisions of statistical data on air emissions;
4. Forms of statistical reporting (2-tp-air).

International experts presented information on the experience of emissions inventory, applied approaches, and the inventory results in Belarus (Sergey Kakareka, EMEP) as well as practice of emissions inventory in Europe including estimates and reporting procedures (Joseph Pachina, EMEP Coordination Chemical Center, Norway Institute of Air Research). Also Sergey Dutchak, EMEP Meteorological Synthesizing Center-East, presented the EMEP/CORINAIR Inventory Guidebook translated into Russian.

As the result national experts will prepare the first part of national report on the air pollution in Kazakhstan. It will content the analysis of air pollutant emissions inventory and needs of Kazakhstan to meet the requirements of the Convention. During the last day of the workshop participants discussed the structure and content of the report as well as recommendations for Kazakhstan and countries of Eastern Europe, Caucasus, and Central Asia. National and international experts allocated the tasks and responsibilities in preparation of the first part of report. Participants emphasized that all countries should prepare and report their pollutant emissions in accordance with the EMEP Emissions Reporting Guidance.

During the discussions the following difficulties and barriers were revealed related to the emissions inventory and reporting in Kazakhstan:

1. There is a gap between the EMEP requirements and national possibilities in emissions inventory;
2. The list of pollutants which emissions are monitored and reported in Kazakhstan does not include several substances from the range required for submitting to the UN ECE (for instance, emissions of POPs and HM);
3. There are not local methodologies to estimate emissions of POPs and HM;
4. The existing practice of emissions inventorying is a "Bottom-up" approach based on the sectoral principle;
5. There are problems related to incomplete and not-transparent inventory report submitted by Kazakhstan;
6. It is necessary to conduct quality assurance, quality control and uncertainty assessment as well as to develop baseline emission scenarios and emissions projections in accordance with requirement of the EMEP/CORINAIR Guidebook.

Recommendations for improvement of emissions inventory and control system in Kazakhstan were the following:

- to develop a "top-down" inventory approach prescribed by the EMEP guidelines along with improvement of the national sectoral "bottom-up" approach;
- to review the EMEP/CORINAIR Inventory Guidebook to apply the common methodology for pollutants emissions inventory, as well as to estimate POPs and HM emissions that are not reported by;
- to develop the country specific emission factors to carry out a "top-down" inventory;
- to establish a Special Working Group in Kazakhstan that will prepare and report national emission inventories as EMEP requires;
- to establish contact between Special Working Group and similar groups in other countries to participate in training and to share experience;
- to translate into Russian the revised EMEP Inventory Guidebook and reporting software.

On 27-28 May 2003, the **National workshop on air pollution monitoring and modeling** was held in Almaty. Participants presented the following issues:

1. Air pollution monitoring and modeling in Kazakhstan (observation network, monitoring and measurement program) (Murtazin E.Zh., Center for Environmental Pollution Monitoring of Kazhydromet). The speaker introduced the environment monitoring system of the national meteorological service, described observation network, monitoring and measurement program of air and precipitation composition in the settlements and at the “Borovoe” background station.

2. Air pollution modeling through the remote sensing and GIS programs (Zakarin E.A., GIS Center of the Space Research Institute). Mr. Zakarin presented the result of the dust storms modeling in the Aral Sea area and the result of modeling of air pollution from road transport in Almaty city.

3. EMEP measurement program (Joseph Pachina, EMEP Coordination Chemical Center, Norway Institute of Air Research). Presentation included goals, tasks, and the strategy of the program, levels of observation sites, their monitoring and measurement system and requirements, as well as functions and the role of the EMEP Coordination Chemical Center.

4. Modeling of long-range HM (mercury) and POPs' emissions transfer and validation of modeling results on the basis of monitoring data (Sergey Dutchak, the EMEP Meteorological Synthesizing Center-East). Speaker presented transboundary air pollution by heavy metals (HM) and persistent organic pollutants (POPs), introduced applied models and results of the modeling for Europe and Kazakhstan. He noted that one of the monitoring tasks was data provision for models' verification and validation. Also speaker presented requirements for HM and POPs' monitoring for modeling of transboundary pollution and recommendations.

5. Database for the complex monitoring at the enterprises and visualization of calculations of the pollutant transfer from emission sources. (Masalova V., Kazakhstan Agency of Applied Ecology). Speaker presented the possibilities of the database and applied modeling programs.

Participants discussed the following issues during the workshop:

1. Problems existing in Kazakhstan regarding pollution monitoring and modeling and ways to solve them taking into account the EMEP standards and requirements;

2. Key priorities of the EMEP measurement program development and the national and regional levels;

3. National report on air pollution monitoring and modeling in Kazakhstan (extensive outline, allocation of responsibilities, time schedule).

Also participants considered the main barriers to establish the monitoring system in Kazakhstan in accordance with the EMEP requirements; key directions of the program implementation and maintenance in the country; preliminary tasks for development of the EMEP monitoring and measurement program at the national level; extensive outline for the National report on air pollution monitoring and modeling in Kazakhstan. Local and international experts allocated the responsibilities and tasks in preparation of the report.

The final report of the project will be considered and discussed at the International Conferences on pollutant emissions inventory and air pollution monitoring and modeling that are to be conducted in Almaty in October 2003 with participation of experts from countries of Eastern Europe, Caucasus, and Central Asia, which are the new Parties of the Convention.