

Ukraine activities in the area of atmospheric air protection under the context of Convention on Long Range Transboundary Air Pollution

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Workshop to promote the ratification of the CLRTAP Protocols

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Ukrainian State Environmental Strategy

- Main principles (Strategy) of Ukrainian State policy for the period up to 2020 are stipulated in the Ukrainian Act dated as 21.12.2010 №2818-VI. The National Action Plan on environment protection that was adopted on 25-th of May 2011 by the Ordinance of the Cabinet of Ministers of Ukraine № 577-r acts as a key mechanism to implement the strategy. This plan is meant for the period from 2011 to 2015.
- Protocol on Ukraine accessing the Energy Community was ratified by the Ukrainian Act dated as 15.12.2010 №2787-VI (was enacted in Ukraine on 01.02.2011).
- In the Ordinance of the Cabinet of Ministers of Ukraine dated as 15.03.2006 № 145-r the energy strategy of Ukraine for the period up to 2030 and long prospects was approved. In a framework of this strategy the main principles of the fuel-and-energy complex greening were developed envisaging reduction of SO_x, NO_x and dust emissions in Ukraine.
- In the Ordinance of the Cabinet of Ministers of Ukraine dated as 20.11.2010 №2174-r the Ukrainian Transport Strategy for the period up to 2020 was approved.



In a framework of EU “State management of atmospheric air quality in ENPI countries East -Air -Q – GOV” project the following national project is being implemented:

Meeting international obligations under the convention as well as its protocols (improvement of reports on a Joint observation and evaluation of long-range air pollutants transfer in Europe (hereinafter - EMEP) considering changes in the Emissions Inventory Guidebook (CORINAIR), revision of a national guidebook “Pollutants emission volumes in the atmospheric air” considering EMEP/EAOC European Guidebook

This project incorporates activities targeted at the following:

- Improvement of EMEP reporting;
- Improvement of a State statistical reporting in the area of atmospheric air protection considering the EU legislation; European EMEP/EAOC Guidance
- Introducing the International Pollutants Classifier in Ukraine
- Revising a national guidebook “Pollutants emission volumes in the atmospheric air” considering EMEP/EAOC European Guidebook
- Development of a software complex



According to commitments on CLRTAP Ukraine shall submit:

Report on EMEP Protocol regarding emissions from stationary and mobile sources on the following substances:

- No_x
- CO_2
- SO_x
- Ammonia
- Heavy metals (cadmium, mercury and lead)
- POP (PCB, dioxins/furans, PAC and HCB)

Review of strategies and policies in the area of atmospheric air protection in the form of replies to the Questionnaire on strategies and policies on atmospheric air protection



Emissions of pollutants into the atmospheric air from the stationary sources are regulated by Chapter 11 of Ukrainian Law on “Atmospheric air protection” with the purpose of ensuring environmental safety, establishment of a favorable living conditions and prevention of a negative impact on environment

Emissions of pollutants in the atmospheric air can be made only after a corresponding permit is received

- Permits for emissions into the atmospheric air can be issued under the following conditions:
- Non-exceeding the given environmental safety of atmospheric air standards during the period of effect thereof
- Non-exceeding the given permissible emission from stationary sources standards
- Meeting requirements towards the technological processes with regards to limitation of pollutants emissions



There are three groups of entities:

- Group 1- entities that are registered by the State and have production facilities or technological equipment where the best available technologies and management methods shall be implemented
- Group 2 - entities that are registered by the State and do not have productions or technological equipment where the best available technologies and management methods shall be implemented
- Group 3- entities that are neither included in Group 1, nor Group 2.



Atmospheric Air Protection Standards

- Ordinance of the Cabinet of Ministers of Ukraine dated as 28.12.2001 № 1780 “On emissions limit value standards development and approval” for stationary sources the Ministry of Natural resources by its order dated as 27.06.2006 № 309 approved pollutants emissions limit values for existing stationary sources and for the ones that are currently is under design, construction or retrofit
- The standards are defined with the purpose of meeting atmospheric air environmental safety standards considering cost-efficiency as well as technological processes level and technological state of equipment and gas-cleaning installations along with the requirements of national and EU legislation
- The standards restrict mass-concentration of pollutants in the point source emissions from stationary sources (mg/m³)
- Meeting the emission limit standards is mandatory for all stationary sources



Atmospheric Air Protection Standards

The order by the Ministry of Natural Resources contains a check-list of equipment types for which emission limit standards from stationary sources shall be established (Order by the Ministry of Natural Resources dated as 16.08.2004 №317). This check-list is in line with the Annex 1, IPPC Directive (new edition - 2010/75/EC)-comprehensive pollution prevention and control

For the equipment from this check-list the following technological standards shall be applicable:

- **Permissible emissions technological standards** restrict mass-concentration of pollutants in gases ($\text{mg}/\text{v}3$) that flow-off individual equipment types and structures at outlets from the equipment and can be divided as:
 - **Current technological standards** – for already existing individual equipment types and structures at the level of enterprises with the best existing manufacturing technology for similar technological processes and capacity;
 - **Prospective technological standards**– for the new, under design and retrofit individual equipment types and structures, considering the cutting edge domestic and international achievements in the corresponding area



As of now in Ukraine the following Stationary Sources Categories have been analyzed:

- 1. Thermal power plants with a nominal heat output above 50 MWt
- 2. Cement manufacturing
- 3. Installations for cement clinker manufacturing in rotary kilns with production capacity over 500 ton per day
- 4. Coke furnaces
- 5. Agglomeration production
- Installations for roasting and agglomeration of a metal ore (including a sulphide ore)
- 6. Glass manufacturing installations including a fiberglass with smelting capacity that exceeds 20 tons per day
- 7. Installation for ferroalloy smelting with capacity exceeding 20 ton per day

- For the above manufacturing sites technological standards have been approved where both ELS as well as timelines to reach them are identified



Integrated approach Towards Setting Pollutant Emissions Limit Values in the Emission Permits

- While setting pollutants emissions limit values an integrated approach is applied which is based on quality of environment as well as technical methods ensuring meeting the environmental safety standards along with implementation of cutting-edge technical tools to reduce environmental impact considering economic affordability of such tools
- This approach enables to reach both efficient atmospheric air protection as well as create stimulus to optimize manufacturing processes and introduce technological innovations



Pollutant Emission Permit Contains the Following Values:

- Max permissible pollutant emission volumes in the atmospheric air by stationary sources
- Specifications to the technological processes, equipment, structures, cleaning a gas-dust flow, manufacturing inspection, and administrative actions in case of emergency situations occurrence of a technogenic or natural cause
- Check-list of activities on implementation of BATs and management methods
- Check-list of activities on reduction of pollutants emission
- Check-list of activities on execution of control over meeting the given max permissible pollutant emission values



Air Quality Monitoring is Performed by the Following Agents:

- **Hydrometeorology administration** makes an observation over the state of atmospheric air in 53 cities of Ukraine via 163 observation stationary points and 2 mobile stations. The statutory program for atmospheric air quality monitoring includes 7 pollutants such as: dust, nitrogen dioxide, sulphur dioxide, carbon dioxide, formaldehyde, lead and benzopyrene.
- At 81 stationary point observations are performed against 8 heavy metals: cadmium, iron, zinc, copper, nickel, lead, chromium, and manganese.
- **State ecological inspection (Ministry of environment)** makes random sampling at emission sources. Over 65 parameters are getting measured.
- **State sanitary and epidemiology service (Ministry of public health)** performs an observation over quality of atmospheric air in residential and recreational areas. Namely, near the main roads, sanitary protection areas, residential buildings, school and pre-school institution's territories, medical institution's territories in the cities and at manufacturing sites. Besides, analysis of air quality in residential areas upon the local population's requests can be also performed.



Air Quality Monitoring

- It shall be noted that recently we are observing a growing interest from the local and municipal authorities towards atmospheric air quality. Municipalities of Odessa and Donetsk have purchased and commenced into operations the automatic posts to monitor the state of atmospheric air in the cities.
- According to the current legislation it is required to execute an ongoing monitoring at large energy installations stationary sources that are either new or retrofitted – from 2007 , and for existing sources – from 2014.



Plan to Adjust Ukrainian Environmental Legislation to the EU Legislation

Directive 2008/50/EC On ambient air quality and cleaner air for Europe
dated as 21-st of May 2008

Directive 2004/107/EC relating to arsenic, cadmium, mercury, nickel and polycyclic aromatic
hydrocarbons in ambient air



Major Issues Encountered by Ukraine on the Way To Sign And Ratify The Protocols:

- 1. The technological equipment used at Ukrainian enterprises is outdated and energy consuming, the more so it is accompanied by non-efficient cleaning systems. At that, implementation of BAT requires lots of time and significant financial expenditures
- 2. Not all the categories of stationary sources have been analyzed vs capacity to reach emissions limit values defined in the Annexes to the Protocols. Implementaion timelines have not been analyzed, either
- 3. Modern measurement devices to perform control and monitoring over meeting commitments on the Protocols are missing
- 4. Methodologies to measure pollutant concentration in emissions are not aligned with the European legislation requirements



Goteborg Protocol

- In the revised protocol the commitments on PM_{2.5} emission reduction are introduced
- Ukraine neither makes measurements of PM_{2.5}, nor has any calculation methodologies for PM_{2.5} at stationary sources
- Based on what methodologies these emissions shall be calculated or measured? Are there any guidance documents regarding regulating of PM_{2.5} where a check-list of manufacturing sites could have been specified?
- In the national pollutants emission regulation system each individual VOC is regulated separately.
- In order to access the Protocol it is required to introduce a new VOC emission regulation system at stationary sources
- Does any guidance document exist on measurement and calculation of VOC from different production types?



Goteborg Protocol

- Ukraine does not have a system to regulate VOC content in the products
- In it required to add a “black carbon” definition to the pollutants emission regulation system
- Execution of emissions monitoring at stationary sources of emissions

- Ukraine needs both methodological as well as expert’s support on these matters. Besides, it is required to translate in Russian the guidance documents where measurement and calculation methodologies along with a list of enterprises having such emissions could have been specified.



Thanks for Your Attention!

