

TFTEI

Under the Convention on Long Range Transboundary Air Pollution

## Case Study on EECCAs

Technological Pathway towards the ratification of the  
Amended Gothenburg Protocol  
Discussion at the 8<sup>th</sup> TFTEI Annual Meeting in Rome,  
with EECCA experts

*Presented by*

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Developed by the TFTEI Technical Secretariat

## *Introduction*

At the 8<sup>th</sup> Annual meeting of the Task Force on Techno-economic Issues (TFTEI), Rome 6-7 Oct, 2022, an informal session took place on the first day, focused on the Case Study carried out by the TFTEI Technical Secretariat, concerning the analysis of a possible technological pathway towards the ratification of the AGP, in 4 selected SEE and EECCA countries (Serbia, Georgia, Kazakhstan, and Moldova), with the participation of experts from those countries.

The subject was discussed in the perspective of the Thematic Session on Barriers, planned during the EB 42<sup>nd</sup> Session, with the aim of providing input to the discussion.

The summary of the outcomes of the analysis is included in Section III of the GPG document “*Technical information for the review of the Gothenburg Protocol*” (ECE/EB.AIR/2022/5)

## General approach adopted

For each of the selected country: Serbia, Georgia, Kazakhstan and Moldova, the analysis included:

- Assessment of air quality,
- Assessment of the main sources of SO<sub>2</sub>, PM, NO<sub>x</sub> and VOC,
- Assessment of current regulations implemented for stationary sources covered by annexes IV (SO<sub>2</sub>), V (NO<sub>x</sub>), VI (VOC), X (PM), XI (VOC in products), and Annex VIII (mobile sources),
- Assessment of plans under development for strengthening air pollution reduction policies and measures related to the sources covered by Annexes IV, V, VI, VIII, X and XI,
- Identification and recommendations on the implementation of the technological pathway.

The work has been carried out in full transparency, in collaboration with country experts from the Environment Ministries

## Air quality in the selected countries

### Air quality:

- The four countries face air quality problems due to high levels in the PM<sub>10</sub> and PM<sub>2.5</sub> concentrations.
- In two countries the air quality is affected by high values in SO<sub>2</sub> concentrations:
  - High levels in SO<sub>2</sub> concentrations are detected in one city in Serbia, due to industrial installations.
  - Very high SO<sub>2</sub> concentrations levels are detected in several cities, in Kazakhstan
- NO<sub>2</sub> concentrations can be significantly higher, in cities.

## Mains emission sources in the selected countries

### Emissions:

- Large SO<sub>2</sub> and NO<sub>x</sub> emissions are generated from the energy production sector in Serbia and in Kazakhstan (extensive use of national coal and/or lignite, in-most often in absence of efficient abatement technology devices).
- Significant SO<sub>2</sub>, NO<sub>x</sub> emissions are generated in the Industry Sector, in Serbia and in Kazakhstan.
- The road transport sector is the main source of NO<sub>x</sub> emissions in Moldova and Georgia
- In all the four countries, the residential sector (domestic heating by wood or coal) is one of the largest source of PM<sub>10</sub> and PM<sub>2.5</sub> emissions.

## **National Regulations and their evolution - comparison with ELVs in the AGP TAs :**

- Each country has its own regulation for Industrial Plants and LCPs, although they are not yet fully associated to ELVs, similarly to the provisions in the AGP (IV,V,VI,X) TAs (different situations are found in the 4 countries)
- In the four countries, the legislative framework, with upgrade of their national legislations, is under development, for a stricter control of the industrial emissions. Through different states of progress, in the four countries, the upgrade is aimed at implementing the provisions of the EU Industrial Emission Directive, in their national policy framework
- In Kazakhstan, the development of country specific BREFs is in progress to better reflect the national characteristics of the industrial sectors.
- In Serbia, Moldova and Georgia the *EU BREFs are taken as reference*.

## **National Regulations evolution :**

- The sulphur content in gasoil (Annex IV) is reduced to 0.1% in Serbia, Moldova and Georgia.
- The legal framework for the VOC content in products (Annex XI) is ready in Serbia and Moldova, and being developed in Georgia.
- In Serbia, Georgia and Moldova the upgrade in their national legislations is in progress to control the VOC emissions generated in petrol distribution and storage (Stage I, Table 1 in annex VI of AGP).
- Serbia is further developing its national legislation to better control VOC emissions from car re-fuelling in service-stations, (Stage II, Table 2 of annex VI AGP).
- In general, few actions are implemented to reduce PM emissions, in domestic heating use of solid fuel. Serbia developed a draft Air Protection Programme and the Action Plan, including measures in the domestic heating sector

- ***Road vehicles,***
  - The legal framework is in place to adopt the latest regulations for new vehicles produced or imported in Serbia, with some delays in the implementation.
  - The legal framework is in progress in Georgia for introducing the Euro 5 standard
  - For Kazakhstan and Moldova, information is expected to be provided later on.
- ***Non Road Mobile Machineries (NRMM)***
  - The latest EU Directive 2016/1628 was scheduled to be transposed in Serbia in 2020,
  - No plans for NRMM exist in Georgia and Kazakhstan,
  - For Moldova, information is expected to be provided later on.



# Technological Pathway towards the compliance with the AGP provisions

Taking into account the different characteristics in the four countries, a number of suitable technologies have been identified, both primary and secondary measures, to improve the emission abatement, for SO<sub>x</sub>, NO<sub>x</sub>, VOC, PM.

The progressive implementation of such measures, here called technological pathway, would allow the countries to achieve the conditions for the compliance with the provisions in the AGP technical annexes (IV, V, VI and X), *tentatively, in the period 2030-2035* (possibly later for what concerns the car re-fuelling)

However, at the same time, the development of the national legal framework is needed.

The implementation of EU directives provisions is at different states of progress, in the four countries, for what concerns industrial sources, fuel quality, service stations, application of Euro standards on new vehicles

# Technological Pathway towards the compliance with the AGP provisions

In the domestic heating sector, the solid fuel burning in small appliances, remains a major challenge, in the four countries. Not only technical measures (more efficient new appliances) would be needed, but also phase out and replacement of old appliances, with subsidies, and energy efficiency policies in buildings, and use of cleaner fuels.

For road vehicles, the import of old second-hand vehicles should only be allowed for recent vehicles, complying with recent Euro standards. However, when second-hand vehicles are imported from outside Europe, the identification of their actual emission standards is quite difficult.

Some comments from the EECCA experts:

- The TFTEI analysis will be taken in due consideration in advising the policy makers in the country, in the process of upgrading the national legislation, as compared to the EU legislation.
- In one country, the Transport and Domestic heating sectors have been indicated as the most challenging, and some difficulties exist in implementing the most advanced technologies (i.e. euro 6).
- Enough time should be allowed to the industrial sector to upgrade the technology system so to achieve the compliance with the new stricter requirements, introduced in the national legislation.
- Since the ratifications seem far to come (2030-2035) in EECCA, it would be better to focus on implementation of measures, rather than on ratifications.
- Different itineraries between EECCAs and other Parties (who have already ratified) would be preferable in the Protocol (i.e, a separated section for EECCAs, also considering the significant differences among the EECCAs themselves)
- Being a Party to the Convention is useful anyway, it helped to make progress, i.e. in emission inventory quality.

## Some conclusions:

The open discussion with the EECCA experts, during the informal session of the TTEI meeting contributed to :

- Highlight a number of aspects in the EECCAs concerning their difficulties in upgrading their technology system, especially in some sectors,
- Allow the EECCA experts to express their views on possible changes in the structure of the Protocol,
- Allow the EECCA experts to express their difficulties to upgrade the legislation, at national level.

The TFTEI analysis on the 4 countries, would facilitate the discussion between the experts and the policy makers in the EECCA Countries

Some hints are offered to the discussion in the frame of the Thematic Session on Barriers, at EB-42

# Thanks for your attention !

TFTEI Web site : [tftei.citepa.org](http://tftei.citepa.org)

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